PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
1545 WOODROFFE AVENUE, OTTAWA, ONTARIO

Project No.: CCO-21-2432-06

Prepared for:

Circle K Stores and Alimentation Couche-Tard
305 Milner Avenue, Suite 400
Toronto, ON
M1B 3V4

Prepared by:

McIntosh Perry Consulting Engineers Ltd.
115 Walgreen Road, RR3
Carp, ON
K0A 1L0

Original: September 17, 2021
Revised: November 25, 2021

McINTOSH PERRY

EXECUTIVE SUMMARY

McIntosh Perry (MP) was retained by Circle K Stores and Alimentation Couche-Tard (Client) to conduct a Phase Two Environmental Site Assessment (ESA) in connection with the property located at 1545 Woodroffe Avenue, Ottawa, Ontario (hereinafter referred to as the Site or Phase Two Property). The Phase Two Property is currently developed with an active, single-storey convenience store and retail fuel outlet, car wash and a vacant single-storey commercial building formerly occupied by a Tim Horton's restaurant.

It is understood that this Phase Two ESA is being completed as a component of the City of Ottawa Site Plan submission process. McIntosh Perry conducted a Phase One ESA at the Phase Two Property, the findings of which are outlined in the report entitled "Phase One Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared for the Client and dated August 11, 2021 (2021 McIntosh Perry Phase One ESA). Based on the findings of the 2021 McIntosh Perry Phase One ESA, Areas of Potential Environmental Concern (APECs) at the Site included the site's use as a retail fuel outlet and underground storage tanks, the presence of a car wash, the potential presence of fill material of unknown quality at the Site, the presence of an on-Site transformer.

Accordingly, McIntosh Perry recommended a Phase Two ESA for the Site. This Phase Two ESA has been prepared in general accordance with the requirements of O. Reg. 153/04 (as amended) and is also in general compliance with "Phase II Environmental Site Assessment", Canadian Standards Association standard CSA Z769-00 (reaffirmed 2018). It is understood that this Phase Two ESA is being completed as a component of the City of Ottawa Site Plan submission process.

The Phase Two ESA was completed concurrently with a geotechnical investigation at the Site on August 17 and 18, 2021. A total of eight (8) boreholes were advanced at the Site, of which five (5) were instrumented with groundwater monitoring wells. A total of twelve (12) soil samples (including one (1) duplicate) were collected for analysis of selected parameters, including petroleum hydrocarbons, fractions 1 through 4 (PHCs), volatile organic compounds (VOCs) inclusive of benzene, toluene, ethylbenzene, and xylenes (BTEX), metals and inorganics and polycyclic aromatic hydrocarbons (PAHs).

Groundwater sampling was completed on September 1, 2021, with a total of six (6) groundwater samples (including one (1) duplicate) collected for laboratory analysis of PHCs, metals and inorganics, VOCs and PAHs from the monitoring wells installed on August 17 and 18, 2021. Groundwater levels were observed at depths ranging from 2.78 to 4.80 metres below ground surface (mbgs). Groundwater at the Site was interpreted to flow in a north-easterly direction.

In addition to analyzing the groundwater results collected during the field activities for this Phase Two ESA, the groundwater analytical results obtained during the 2016 WSP Groundwater Report and the 2021 McIntosh Perry Groundwater Quality Testing Report results have also been utilized to provide a more robust representation of the complexities of the subsurface impacts at the Site. The borehole logs and monitoring well installation details available in the 2009 O'Connor Phase II ESA, the 2010 O'Connor Supplemental Phase II ESA and the 2012 O'Connor Supplemental Phase II ESA have also been utilized in the Figures and Tables appended to this Phase Two ESA.

The appropriate Ontario Ministry of the Environment, Conservation and Parks standards were determined to be the standards outlined in Table 3 (Full Depth Generic Site Condition Standards in Coarse textured soil and in a non-potable groundwater condition for Industrial/Commercial/Community land uses) in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011 (Table 3 Standards).

All concentrations of the analyzed parameters within the soil and groundwater samples submitted for laboratory analyses during this Phase Two ESA were below the O.Reg. 153/04 (2011) Table 3 SCS, with the exception of the following:

- Soil sample BH6-SS2 (0.76 and 1.37 mbgs), collected from borehole BH21-6(MW): electrical conductivity (EC) exceedance of Table 3 SCS; and,
- Groundwater sample from BH21-6(MW), screened between 3.05 – 6.1 mbgs: PHC F1-F2 and xylene exceedances of Table 3 SCS.

This EC exceedance in the soil sampled from BH21-6(MW) is expected to be the result of the application of road salt for de-icing purposes for pedestrian and vehicular safety. It is noted that in December of 2019, new regulation amendments associated with salt impacts were enacted, which allow for the exemption of salt impacts if the QP determines the impacts to be resultant from de-icing activities for the purpose of human and vehicular safety.

All concentrations of the analyzed parameters in the groundwater samples submitted for laboratory analysis during the 2016 WSP Groundwater Report were in compliance with MECP Table 3 SCS with the exception of the following:

- BH-5: Exceedance of Table 3 SCS for PHC F1 to F4, benzene and tetrachloroethane (1,1,1,2-)
- BH-8: Exceedance of Table 3 SCS for PHC F1 to F4 and tetrachloroethane (1,1,1,2-)
- BH-11: Exceedance of Table 3 SCS for PHC F1, F2 and xylenes
- BH-12: Exceedance of Table 3 SCS for PHC F1 to F3, benzene, ethylbenzene, tetrachloroethane (1,1,1,2-) and xylenes
- BH-13: Exceedance of Table 3 SCS for PHC F1, F2 and F4
- BH-13 (Duplicate): Exceedance of Table 3 SCS for PHC F1, F2 and F4

All concentrations of analyzed parameters in the groundwater samples submitted for laboratory analysis during the 2021 McIntosh Perry Groundwater Quality Testing Report were in compliance with MECP Table 3 SCS with the exception of the following:

- BH-5: Exceedance of Table 3 SCS for PHC F2
- BH-6: Exceedance of Table 3 SCS for PHC F1 to F3
- BH-6 (Duplicate): Exceedance of Table 3 SCS for PHC F1 to F3
- BH-8: Exceedance of Table 3 SCS for PHC F1 and F2
- BH-11: Exceedance of Table 3 SCS for PHC F1 and F2

Given the above-noted concentrations of PHCs F1-F4 and xylenes within groundwater sampled at the Site in the vicinity of BH21-6(MW) and the historical data indicating long-term PHC and VOC contamination throughout the Site, remediation of the groundwater is recommended, or in the absence of remediation, a Risk Assessment should be completed. It is our understanding that remediation of groundwater impacts will be undertaken concurrently with the proposed redevelopment of the Site.

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

1.0 INTRODUCTION

McIntosh Perry (MP) was retained by Circle K Stores and Alimentation Couche-Tard (Client) to conduct a Phase Two Environmental Site Assessment (ESA) in connection with the property located at 1545 Woodroffe Avenue, Ottawa, Ontario (hereinafter referred to as the Site or Phase Two Property). The Phase Two Property is currently developed with an active, single-storey convenience store and retail fuel outlet, car wash and a vacant single-storey commercial building formerly occupied by a Tim Horton's restaurant. The location of the Phase Two Property is indicated on Figure 1 (Site Location). A legal survey plan illustrating the boundaries of the Phase Two Property is included in Appendix A.

It is understood that this Phase Two ESA is being completed as a component of the City of Ottawa Site Plan submission process. The proposed redevelopment of the Site (commercial to commercial) does not represent a change to a more sensitive land use and, as such, a Record of Site Condition (RSC) will not be required prior to the redevelopment of the Phase Two Property in accordance with Ontario Regulation (O. Reg.) 153/04 (as amended).

McIntosh Perry conducted a Phase One ESA at the Phase Two Property, the findings of which are outlined in the report entitled "Phase One Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared for the Client and dated August 11, 2021 (2021 McIntosh Perry Phase One ESA). Based on the findings of the 2021 McIntosh Perry Phase One ESA, the following potentially contaminating activities (PCAs) were identified on the Phase Two Property and were considered to represent areas of potential environmental concern (APECs) in relation to the Phase Two Property:

- #27. Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles – Previous environmental reports by O'Connor Associates Environmental Inc. identified an automotive servicing garage was historically present (circa 1955) on the northeast and southwest portions of the Phase One Property;
- #28. Gasoline and Associated Products in Fixed Tanks – Three 50,000 L gasoline USTs and one 25,000 L diesel UST are currently located on the southwest portion of the Phase One Property. Additional gasoline USTs have historically been located south of the current tank nest on the southeast portion of the Phase One Property but were removed prior to the installation of the present-day USTs;
- #30. Importation of Fill Material of Unknown Quality – Previous environmental reports by O'Connor Associates Environmental Inc. identified Fill of Unknow Origin throughout the Phase One Property;
- #50. Soap and Detergent Manufacturing, Processing and Bulk Storage – car wash located in the southeast portion of the Phase One Property; and,
- #55 Transformer Manufacturing, Processing and Use – Pad-mounted oil-cooled transformer located on the west portion of the Phase One Property.

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 operating procedures and in general accordance with the requirements of O.Reg. 153/04 (as amended).

1.1 Site Description

The Phase Two Property is currently occupied by an active Circle K retail fuel outlet, convenience store and car wash, and a vacant commercial building formerly used as a Tim Horton's restaurant and associated paved laneway and landscaped areas. The Phase One Property has an official plan designation as a GM15 Subzone of the General Mixed-Use Zone, permitting automobile service stations, car washes and gas bars (GM15 H9.5), as shown on the City of Ottawa Zoning By-law (Sections 187 and 188).

The total area of the Site is approximately 0.82 hectares (ha).

1.1.1 Property Identification

The legal descriptions of the Site are as follows:

PCL 30-2, SEC NEPEAN-1 RIDEAU FRONT; PT ROAD ALLOWANCE BTN LTS 30 & 31, CON 1 RIDEAU FRONT, PART 1, 4R3336; NEPEAN
PIN: 04657-0590

CONSOLIDATION OF VARIOUS PROPERTIES PART OF LOT 30, CONCESSION 1, RIDEAU FRONT AS IN CR362577 AND PART 1 ON PLAN 5R4787 EXCEPT PART 1 PLAN
PIN: 04657-0604

1.2 Property Ownership and Contact Details

MP was retained to complete this Phase Two ESA by Circle K Stores and Alimentation Couche-Tard. Circle K Stores Inc. is the current registered owner of the Phase Two Property. MP's primary contact for the Site is Mr. Joe Widjaja of Sovereign Design and Management Services and can be contacted at joe@samanagement.ca.

1.3 Current and Proposed Future Uses

The Phase Two Property is currently occupied by an active, single-storey Circle K retail fuel outlet, convenience store and car wash, and a vacant commercial building formerly used as a Tim Horton's restaurant with associated laneways, parking and landscaped areas, as well as three gasoline USTs and one diesel UST. It is MP's understanding that the intended future use of the Site is for continued commercial operations, including a redeveloped car wash, restaurant and retail fuel outlet. Although this does not represent a change in land use, it is our understanding that this Phase Two ESA is required as part of the Site Plan Approval process.

1.4 Applicable Site Condition Standards

The following considerations were used to select the most appropriate site condition standards for the Phase Two Property:

- The intended use of the Phase Two Property is commercial;
- The Phase Two Property is serviced by the City of Ottawa municipal water distribution system. Therefore, potable groundwater standards are applicable to the Phase Two Property;

- Based on the drilling results of this Phase Two ESA, bedrock is situated greater than 2 mbgs. As such, the Phase Two Property is not considered to be located in an area with shallow soil;
- The Phase Two Property is not located within 30 m of a water body. Nepean creek, a tributary of the Rideau River, is the nearest water body and is located approximately 2.1 kilometres (km) northeast of the Site, at its closest point;
- The Phase Two Property is not located within, adjacent to, or within 30 m of any areas of natural significance (e.g., Provincially Significant Wetland, Area of Natural and Scientific Interest, etc.);
- In the absence of grain size analysis results at the time of writing this report, McIntosh perry has conservatively assumed that coarse-grained site condition standards apply

Given the above-noted information, it was determined that the applicable Ontario Ministry of the Environment, Conservation and Parks (MECP) standards are those outlined in Table 3 (Full Depth Generic Site Condition Standards in coarse textured soil and in a non-potable groundwater condition for Industrial/Commercial/ Community land uses) in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011 (Table 3 Standards).

Soil results were also compared to MECP Table 1 Background SCS for the purpose of determining off-site disposal options.

2.0 BACKGROUND INFORMATION

2.1 Physical Setting

2.1.1 Water Bodies and Areas of Natural Significance

No waterbodies are located within the Phase One Study Area. The closest permanent water body to the Site is Nepean Creek, a tributary of the Rideau River, located approximately 2.1 km northeast of the Site. Additionally, the Ottawa River is located approximately 5.1 kilometres (km) north of the Site, at its closest point and the Rideau River, a tributary of the Ottawa River, is located approximately 4.4 kilometres (km) east of the Site, at its closest point. Nepean creek flows northeast into the Rideau River, which flows north into the Ottawa River, which ultimately flows east into the Lake of Two Mountains and eventually outlets into the St. Lawrence River.

During the Phase One ESA, considerations were made for the following Ministry of Natural Resources (MNRF) maintained areas of natural significance:

- Areas of Natural and Scientific Interest;
- Provincially Significant Wetlands; and,
- Wildlife Management Areas.

The Phase One Property and Phase One Study Area were not determined to be located within an MNRF-maintained area of natural significance for the purposes of O. Reg. 153/04 (as amended). The Phase One Property and Phase One Study Area were also not determined to be located within any of the following areas identified in the City of Ottawa Official Plan:

- Natural Heritage Network
- Environmentally Sensitive Areas and Areas of Natural and Scientific Interest
- Oak Ridges Moraine Conservation Plan and Greenbelt Plan
- Landform Conservation Areas
- Special Policy Areas
- Wellhead Protection Areas

2.1.2 Enhanced Investigation Property

The Phase Two property is considered an 'enhanced investigation property' as defined by O.Reg. 153/04 (as amended) due to the historical presence of automotive repair facilities and a retail fuel outlet, in addition to the Site's current use as a bulk liquid fuel dispensing facility.

2.1.3 Topography and Surface Water Drainage Features

Elevation at the Site ranges from approximately 86 to 89 m above mean sea level (masl). The topography is generally flat, with a slight slope in a north direction. Site drainage consists primarily of sheet flow to on-Site catch basins and municipal storm drains along Woodroffe Avenue. Interior roof drains convey stormwater from

the Site Buildings directly into the municipal stormwater sewer system. On-site infiltration of water is interpreted to occur in areas of permeable ground surface.

2.1.4 Potable Water Source

Potable water is provided to the Phase Two Property by the City of Ottawa from a surface water source. Groundwater is not used as a source of potable water.

2.1.5 Geology and Hydrogeology

McIntosh Perry obtained a Surficial Geology Report and a Bedrock Geology Report for the Site and the surrounding area from ERIS of Toronto, Ontario during research for the 2021 McIntosh Perry Phase One ESA. The ERIS Surficial Geology Report, as well as additional details about the source of information and the surficial geological units found within 2000 m of the Phase One Property are included in Appendix B of the 2021 McIntosh Perry Phase One ESA.

The ERIS Surficial Geology Report, utilizing data from the Ontario Geological Survey (2010), classifies the overburden at the Site as highly permeable organic deposits consisting primarily of peat and muck in wetlands classified as bogs, swamps and poorly drained areas. Additionally, the Phase Two Property is located within the Ottawa Valley Clay Plains, according to physiological data provided by ERIS of Toronto, Ontario

The ERIS Bedrock Geology Report, utilizing data from the Ontario Geological Survey (2010), classifies the bedrock under the Site and surrounding area as predominantly Lower Ordovician dolostone and sandstone of the Beekmantown Group.

The Site occurs within the Lower Ottawa River watershed which is a secondary watershed of the Great Lakes - St. Lawrence River watershed. The site is located between the Ottawa River and one of its tributaries, the Rideau River, which flows north into the Ottawa River. On a local scale groundwater is interpreted to flow to the northeast and on a regional scale groundwater is inferred to flow generally north towards the Ottawa River.

2.2 Past Investigations

McIntosh Perry reviewed the following previous environmental reports prepared in connection with the Site:

- "Fuel Distribution System Upgrade and Remedial Excavation, 1545 Woodroffe Avenue (at Medhurst Drive), Ottawa, Ontario", prepared by O'Connor Associates Environmental Inc, dated October 13, 2009. (2009 O'Connor Fuel Distribution Report)
- "Phase II Environmental Site Assessment, 1545 Woodroffe Avenue (at Medhurst Drive), Ottawa, Ontario", prepared by O'Connor Associates Environmental Inc., dated October 13, 2009. (2009 O'Connor Phase II ESA)
- "Supplementary Phase II Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by O'Connor Associates Environmental Inc., dated June 25, 2010. (2010 O'Connor Supplementary Phase II ESA)

- "Supplementary Phase Two Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by O'Connor Associates Environmental Inc., dated January 17, 2012.
  (2012 O'Connor Supplementary Phase Two ESA (January))
- "Supplementary Phase Two Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by O'Connor Associates Environmental Inc., dated October 11, 2012.
  (2012 O'Connor Supplementary Phase Two ESA (October))
- "Subsurface Investigation, Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by O'Connor Associates Environmental Inc., dated October 11, 2012.
  (2012 O'Connor Subsurface Investigation)
- "Contaminant Management Plan, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by Parsons Canada Ltd., dated February 21, 2013.
  (2013 Parsons CMP)
- "Soil Vapour Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by O'Connor Associates Environmental, Inc., dated April 2, 2014.
  (2014 O'Connor Soil Vapour Report)
- "Supplementary Phase Two Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by Parsons Canada Ltd., dated April 9, 2015.
  (2015 Parsons Supplementary Phase Two ESA)
- "Phase I Environmental Site Assessment, 1545 Woodroffe Avenue, Nepean, Ontario", prepared by SNC-Lavalin, dated July 2015.
  (2015 SNC-Lavalin Phase I ESA)
- "Groundwater Monitoring and Sampling Data Package, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by Parsons Canada Ltd., dated August 5, 2015.
  (2015 Parsons Groundwater Package)
- "Groundwater Monitoring and Sampling Report, IOL Site No. 302287, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by WSP Canada Inc., dated June 15, 2016.
  (2016 WSP Groundwater Report)
- "Environmental Update and Summary of Groundwater Quality Testing, Circle K Retail Fuel Outlet, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by McIntosh Perry, dated April 2021.
  (2021 McIntosh Perry Groundwater Quality Testing)
- "Phase One Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by McIntosh Perry, dated August 2021.
  (2021 McIntosh Perry Phase One ESA)

The following provides a brief summary of the above listed previous environmental reports from the 2021 McIntosh Perry Phase One ESA:

2.2.1 2009 O'Connor Phase II ESA

Imperial Oil Limited retained O'Connor Associates Environmental Inc. to conduct a Phase II ESA at the Site between November 2008 and October 2009 in preparation for the UST removal, replacement and relocation

described in the 2009 O'Connor Fuel Distribution Report. The Phase II ESA was completed in accordance with the applicable standards at the time:

- MOE Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario (1996).
- MOE Draft Guideline for Phase II Environmental Site Assessments in Ontario (March 22, 2006).
- MOE Table 3 full depth generic site condition standards for commercial/industrial/community land use and medium and fine textured soils (2004).

The Phase II ESA indicated that the commercial property formerly occupied by a Tim Horton's restaurant was used as an automotive service and repair garage prior to 1993.

The scope of work for the Phase II ESA included the advancement of seven (7) boreholes (BH-1 through BH-7) to a maximum depth of 6.1 mbgs in the southwest portion of the Site, surrounding the USTs and fuel pumps. Monitoring wells were installed following the drilling of each borehole; three (3) monitoring wells (BH-3, BH-4 and BH-6) were screened within a sand layer and four (4) monitoring wells (BH-1, BH-2, BH-5 and BH-7) within the upper clay layer.

Native soils at the Site were generally described as sandy clay and silt, underlain by well-sorted medium to coarse-grained sand with hydraulic conductivities of 1.7×10^{-8} m/s and 1.4×10^{-4} m/s, respectively. Groundwater flow direction was inferred to be southwest within the clay layer and north within the sand layer.

Two (2) soil samples were selected from each borehole based on field observations and/or screening results and submitted for laboratory analysis of BTEX, PHC fractions F1 to F4, and lead. The soil samples submitted for analysis from BH-2, BH-4 and BH-5 were not in exceedance of the applicable standards. Soil analyzed from a depth of 3.0 mbgs in BH-1 and BH-3 demonstrated exceedances of PHC fraction F1.

In December 2008, groundwater samples from six (6) monitoring wells (BH-1 through BH-5 and BH-7) were submitted for laboratory analysis of BTEX, PHC fractions F1 to F4, and lead. Groundwater from BH-6 was not sampled due to observations of a PHC sheen on the surface of the water. Free product was not observed in the groundwater from any of the six (6) wells sampled in December 2008. All groundwater samples submitted for analysis were determined to be within the applicable standards for all parameters analyzed. Vapour concentrations measured within the monitoring wells ranged between 175 parts per million (ppm) and 100% of the lower explosive limit (LEL). There was no applicable groundwater standard for PHC fractions F1 to F4 at the time of the 2009 O'Connor Phase II ESA.

The borehole logs and monitoring well installation details available in the 2009 O'Connor Phase II ESA have been utilized in the Figures and Tables appended to this Phase Two ESA to provide a more complete representation of the subsurface conditions at the Site.

2.2.2 2009 O'Connor Fuel Distribution Report

O'Connor Associates Environmental Inc. prepared a Fuel Distribution System Upgrade and Remedial Excavation report in October 2009 for Imperial Oil Limited at the active Esso retail fuel outlet, located at 1545 Woodroffe Avenue in Ottawa, Ontario. The purpose of the excavation was to replace the existing fuel distribution system

with upgraded equipment and evaluate the extent of the petroleum hydrocarbon (PHC) impacts in the soil surrounding the underground storage tanks (USTs), distribution piping and pump islands.

On May 12, 2009, six (6) USTs (U1-U6) were removed from the south portion of the Site, between Medhurst Drive and the current location of the tank nest. The close proximity of the USTs to the southeast property boundary along Medhurst Drive necessitated the installation of a permanent pile and lagging shoring system. One (1) additional UST (U7) was uncovered and removed during the excavation of the current tank nest location. A vacuum truck was used to remove a total of 2,605 L of liquid fuel from these seven (7) USTs and each was purged with dry ice prior to removal for off-Site disposal. The following table summarizes the details of the USTs removed in 2009:

Table 1: USTs Removed in 2009

UST ID	Location	Fuel Type	Capacity (L)
U1	Southeast of the current UST nest	Gasoline	13,600
U2	Southeast of the current UST nest	Gasoline	22,700
U3	Southeast of the current UST nest	Gasoline	22,700
U4	Southeast of the current UST nest	Diesel	13,600
U5	Southeast of the current UST nest	Gasoline	13,600
U6	Southeast of the current UST nest	Gasoline	22,700
U7	Current UST nest – southeast of the fuel pumps	Unknown – furnace oil suspected	2,273

Following the removal of the seven (7) USTs, the excavation was expanded to an approximate depth of 4.5 mbgs with an approximate floor area of 409 m^2 to facilitate the installation of four (4) replacement USTs north of the previous tank nest. A second excavation, with an approximate floor area of 265 m^2 and maximum depth of 1.0 mbgs, was completed to investigate and remove PHC impacted soil from the area of the fuel pump islands, north of the first excavation. All concrete and underground piping unearthed during the excavation was removed and transported off-Site for recycling or disposal, as appropriate. The final walls and floors of the excavations were sampled and the analytical results indicated that the majority of the soils sampled satisfied the criteria used at the time (MOE Table 3). Analytical results from two (2) samples from the north wall of the fuel pump island excavation and two (2) samples from the UST excavation (south and west walls) did not satisfy the applicable standards. All reported exceedances were sampled from depths between 3.0 and 4.5 mbgs. No groundwater or free product were observed during the excavations.

In total, approximately 1,635 cubic metres (m^3) of soil was excavated from the two (2) locations. The excavated soil was field screened, and a representative sample was submitted for laboratory analysis for every 100 tonnes removed. After the receipt of analytical results, 550 m^3 of soil was determined to be appropriate for use as backfill while the remainder, 1,085 m^3 of soil, was transported off-Site disposal. Imported granular B material,

sampled and analyzed to ensure MOE compliance, was used to complete the backfilling process during the installation of four (4) replacement USTs and associated piping and fuel distribution pumps.

The following table summarizes the details of the USTs installed in 2009:

Table 2: USTs Installed in 2009			
UST ID	Location	Fuel Type	Capacity (L)
UST1	Current location – southeast of the fuel pumps	Gasoline	50,000*
UST2	Current location – southeast of the fuel pumps	Gasoline	50,000*
UST3	Current location – southeast of the fuel pumps	Gasoline	50,000*
UST4	Current location – southeast of the fuel pumps	Diesel	25,000

* The 50,000 L capacity USTs are reported as having a capacity 46,000 L in later reports.

It is noted that the changes have been enacted to many of the sampling procedures, analytical methods and standards utilized at the time of this report.

2.2.3 2010 O'Connor Supplementary Phase II ESA

Imperial Oil Limited retained O'Connor Associates Environmental Inc. to conduct a Supplementary Phase II ESA at the Site in March 2010 to investigate potential PHC impacts in the soil and groundwater in the south portion of the Site. The scope of work for this Supplementary Phase II included the advancement of five (5) additional boreholes and the installation of five (5) monitoring wells (BH-8 through BH-12). The Supplementary Phase II ESA was completed in accordance with the following applicable standards at the time:

- MOE Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario (1996).
- MOE Table 3 (non-potable) full depth site condition standards, for industrial/commercial /community land use and medium and fine textured soils (2004).

A total of eleven (11) soil samples were selected to be submitted for laboratory analysis of BTEX, PHCs fractions F1 to F4, and lead based on field observations and screening. The results for all soil samples submitted satisfied the applicable standards for all parameters analyzed and free product was not observed during the drilling and soil sampling activities.

Monitoring wells installed in BH-8, BH-9, BH-11 and BH-12 were screened within the sand layer and BH-10 was screened within the lower clay layer. Groundwater flow direction was inferred to be in a northwest direction within the sand layer and was undetermined for the lower clay layer due to insufficient data. The hydraulic conductivity of the sand layer was calculated to be 3.93×10^{-4} m/s with an estimated flow velocity of 2.4 m/year. Free product was not observed in any of the newly installed monitoring wells (BH-8 through BH-12). Subsurface vapour concentration measured in BH-8 through BH-12 ranged between 25 ppm and greater than 100 % LEL. Groundwater was sampled from BH-6 through BH-9 and BH-11 and BH-12 and submitted for laboratory analysis of BTEX, PHCs fractions F1 to F4, and lead. BH-10 could not be sampled due to excessive volumes of silt in the

groundwater sampled at the time. All analytical results from the groundwater samples submitted for analysis were in compliance with the applicable standards, however there were no groundwater standards for PHCs F1 to F4 at the time of this Supplementary Phase II ESA. The following table compares the groundwater analytical results for PHCs fractions F1 to F4 with the current Table 3, Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition (Table 3 Standards):

Table 3: 2010 PHCs F1 – F4 Analytical Results

PHC Fraction	Table 3 Standard – 2021 (µg/L)	BH-5	BH-6	BH-7	BH-8	BH-9	BH-11	BH-12
F1	750	11,000	5,600	<100	910	<100	850	2,700
F2	150	4,900	650	<100	460	<100	460	1,100
F3	500	240	2,100	<100	<100	<100	<100	<100
F4	500	<100	730	<100	110	<100	<100	<100

Bolded values indicate exceedances of the 2021 Table 3 Standards. It is noted that sampling and analytical methodologies have changed since 2010 and the above comparison is for information purposes only.

The borehole logs and monitoring well installation details available in the 2010 O'Connor Supplemental Phase II ESA have been utilized in the Figures and Tables appended to this Phase Two ESA to provide a more complete representation of the subsurface conditions at the Site.

2.2.4 2012 O'Connor Subsurface Investigation

Imperial Oil retained O'Connor Associates Environmental Inc., a Parsons Company, in March 2012 to conduct a subsurface investigation along Woodroffe Avenue and Medhurst Drive, to the south and west of the Esso retail fuel outlet located at 1545 Woodroffe Avenue, Ottawa, Ontario. The 2012 O'Connor Subsurface Investigation was completed in accordance with the following applicable standards:

- MOE Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (as amended).
- MOE Table 3 (non-potable) full depth site condition standards, for industrial/commercial /community land use and medium and fine textured soils (2011) – Woodroffe Avenue, BH201 and BH202.
- MOE Table 3 (non-potable) full depth site condition standards, for industrial/commercial /community land use and medium and fine textured soils (2011) – Medhurst Drive, BH101-BH104.

The scope of work for the subsurface investigation included the advancement of two (2) boreholes and the installation of two (2) groundwater monitoring wells (BH201 and BH202) on Woodroffe Avenue, west of the Site. Six (6) soil samples (three (3) from each borehole) were submitted for laboratory analysis of BTEX, PHC

fractions F1 to F4, hexane and lead. Analytical results indicated that all soil samples submitted for analysis were incompliance with Table 3 Standards for medium and fine textured soils.

Groundwater flow direction was inferred to be to the northwest. Subsurface vapour concentrations measured in 2012 ranged between 11% LEL in BH1010 and 27% LEL in BH102, and between 160 ppm in BH103 and 240 ppm in BH202.

Groundwater samples from each of the newly installed monitoring wells (BH201 and BH202) were submitted for laboratory analysis of BTEX, PHC fractions F1 to F4, hexane and lead. Four (4) additional groundwater monitoring wells (BH101 - BH104), reportedly installed in 2010, were located to the south of the Site, on Medhurst Drive. Three (3) groundwater samples (BH101 – BH103) were collected and submitted for laboratory analysis from these previously installed monitoring wells on Medhurst Drive. The monitoring well identified as BH104 was not located on Medhurst Drive during the 2012 O'Connor Subsurface Investigation and was presumed destroyed. Analytical results for xylenes and PHC fractions F1 and F2 in the groundwater sample collected from BH101 were in exceedance of the applicable Table 3 Standards and the concentration of hexane was elevated. All other analytical results were within the applicable Table 3 Standards and free product was not observed in any of the monitoring wells sampled.

2.2.5 2012 O'Connor Supplementary Phase Two ESA (January)

Imperial Oil Limited retained O'Connor Associates Environmental Inc. to conduct a Supplementary Phase Two ESA at the Site in 2011 to investigate potential PHC impacts in the soil and groundwater in the south portion of the Site, as described in previous reports. The scope of work included the advancement of three (3) boreholes followed by the installation of three (3) monitoring wells (BH-13, BH-14 and BH-15). In addition, the monitoring well (BH-10) previously installed in the clay and silt layer for the 2010 O'Connor Supplementary Phase II ESA was redrilled with the monitoring well screened in the sand layer. The Supplementary Phase Two ESA was completed in accordance with the following applicable standards at the time:

- MOE Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (as amended).
- MOE Full depth generic site condition standards in a non-potable groundwater condition for industrial/commercial/community property use and medium and fine textured soils (amended 2011).

A total of six (6) soil samples (two (2) from each new borehole) were selected to be submitted for laboratory analysis of BTEX, PHCs fractions F1 to F4, hexane and lead based on field observations and screening. The results for all soil samples submitted for analysis satisfied the applicable standards for all parameters analyzed, except PHC fraction F1 from depths between 3.1 and 3.7 mbgs (within the water table) in BH-13, located west of the fuel pumps. A soil sample (WC-1545) was submitted for ignitability analysis and waste classification through bulk analysis of BTEX, PHC fractions F1 to F4 and metals, and a leachate analysis of volatile organic compounds (VOCs), and PCBs. The results classified the soil as the Site as not ignitable and non-hazardous solid waste according to the applicable standard.

Monitoring wells installed in BH-13 and BH-14 were screened between 3.7 and 6.1 mbgs within the sand layer. BH-15 was screened within a layer of silt between 3.0 and 6.1 mbgs. Groundwater flow direction thorough the sand layer was inferred to be in a radial pattern outward from the location of BH-13 and was undetermined for the lower silt layer due to insufficient data. Free product was observed in monitoring well BH-12 and purged from the well for off-Site disposal. Subsurface vapour concentrations were measured in monitoring wells BH-5 through BH-15 and ranged between 60 ppm and 17% LEL.

A total of nine (9) monitoring wells were sampled (BH-5 through BH-11 and BH-13 through BH-15) and submitted for laboratory analysis of BTEX, PHCs fractions F1 to F4, and lead. BH-12 could not be sampled at the time due to a measurable amount of free product (2mm) observed in the monitoring well. The analytical results for four (4) of the monitoring wells sampled (BH-7, BH-9, BH-10 and BH-14) were in compliance with the applicable Table 3 Standards. The analytical results from five (5) of the monitoring wells sampled (BH-5, BH-6, BH-8, BH-11 and BH-13) were in exceedance of one or more of the parameters analyzed. All of the five (5) monitoring wells exceeded the Table 3 Standard for PHC fraction F2, while BH-5, BH-6 and BH-13 also exceeded the standard for PHC fraction F1. The groundwater sampled from BH-6 was also determined to be in exceedance of the applicable standards for benzene, ethylbenzene and total xylenes.

The borehole logs and monitoring well installation details available in the 2012 O'Connor Supplemental Phase II ESA have been utilized in the Figures and Tables appended to this Phase Two ESA to provide a more complete representation of the subsurface conditions at the Site.

2.2.6 2012 O'Connor Supplementary Phase Two ESA (October)

Imperial Oil Limited retained O'Connor Associates Environmental Inc., a Parsons Company, to conduct an additional Supplementary Phase two ESA at the Site in October 2012 to further investigate the potential impacts in the soil and groundwater at the Site, as described in previous reports. The scope of work included the advancement of one (1) borehole followed by the installation of one (1) monitoring well (BH-16) to investigate potential impacts in the vicinity of the car wash on the east portion of the Site. The Supplementary Phase Two ESA was completed in accordance with the following applicable standards at the time:

- MOE Guidance for Completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04 (as amended).
- MOE Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (as amended).
- MOE Full depth generic site condition standards in a non-potable groundwater condition for industrial/commercial/community property use and medium and fine textured soils (amended 2011).

Two (2) soil samples were collected from BH-16 and submitted for laboratory analysis of pH, BTEX, PHCs fractions F1 to F4, hexane and lead based on field observations and screening. The results for all soil samples submitted for analysis satisfied the applicable standards for all parameters.

Groundwater monitoring and sampling was completed at BH-16 and each of the accessible previously installed monitoring wells at the Site. Free product was not observed in any of the accessible monitoring wells however,

BH-12 was observed to have a surface sheen at the time of sampling. Vapour concentrations within the monitoring wells were measured between <5ppm (non-detectable) at BH-16, and 100% LEL at BH-12.

A total of nine (9) monitoring wells were sampled (BH-5 through BH-8, BH-10 through BH-13 and BH-16) and submitted for laboratory analysis of BTEX, PHCs fractions F1 to F4, and lead. The analytical results for three (3) of the monitoring wells sampled (BH-7, BH-11 and BH-16) were in compliance with the applicable Table 3 Standards. The analytical results from six (6) of the monitoring wells sampled (BH-5, BH-6, BH-8, BH-10, BH-12 and BH-13) were in exceedance of one or more of the parameters analyzed. All of the six (6) monitoring wells exceeded the Table 3 Standard for PHC fraction F2, while BH-5, BH-6, BH-8, BH-12 and BH-13 also exceeded the standard for PHC fraction F1. The groundwater sampled from BH-12 was also determined to be in exceedance of the applicable standards for benzene.

2.2.7 2013 Parsons CMP

Imperial Oil retained O'Connor Associates Environmental Inc., a Parsons Company, to update the contaminant management plan (CMP) originally prepared in 2011 to outline proposed methods of monitoring and containing the PHC impacts described in previous reports. The CMP was prepared in accordance with the following applicable standard:

- Technical Standards and Safety Authority (TSSA) document titled Environmental Management Protocol for Fuel Handling Sites in Ontario (August 2012).

The CMP describes plans to monitor ten (10) on-Site (BH-5, BH-7, BH-8, BH-10, BH-11, BH-12, BH-13, BH-14, BH-15 and BH-16) and five (5) off-Site monitoring wells (BH101, BH102, BH103, BH201 and BH202) on an annual basis for groundwater levels, subsurface combustible vapour concentrations, evidence of free product or sheen and any indications of significant degradation of the overall environmental conditions at the Site. The CMP proposed collecting and submitting groundwater samples for laboratory analysis of BTEX, PHC fractions F1 to F4, and lead from each of the fifteen (15) monitoring wells during the proposed annual monitoring events. Results were to be reported to the TSSA immediately upon discovery of significant adverse results or observations, or annually, following the monitoring events.

2.2.8 2014 O'Connor Soil Vapour Report

Imperial Oil Limited retained O'Connor Associates Environmental Inc., a Parsons Company, to conduct an additional soil vapour assessment at the Site in 2013 to investigate subsurface soil vapour concentrations of contaminants of concern. The scope of work included the advancement of two (2) shallow boreholes for the installation of two (2) soil gas monitoring wells (SGMW-1 and SGMW-2) in the vicinity of BH-12, west of the convenience store and north or the fuel pumps. SGMW-1 was installed in May 2012 and SGMW-2 was installed in October 2013. The 2014 O'Connor Soil Vapour Report was completed in accordance with the following applicable standards:

- MOE Modified Generic Risk Assessment Spreadsheet for industrial/commercial/community property use (April 15, 2011).

- MOE Full depth generic site condition standards in a non-potable groundwater condition for industrial/commercial/community property use and medium and fine textured soils (amended 2011).

Two (2) soil samples were selected from SGMW-1 (SGMW-1-0-0.6 and SGMW-1-1.8-2.4) and submitted for laboratory analysis of BTEX, PHCs fractions F1 to F4, hexane and lead based on past reports, field observations and screening. The analytical results for all soil samples submitted for analysis satisfied the applicable standards for all parameters. Concentrations of the analyzed parameters were elevated and detectable in the soil sampled between 1.8 and 2.4 mbgs, except PHC fraction F2. Analytical results for the duplicate sample taken from depths between 1.8 and 2.4 mbgs were in exceedance of Table 3 Standards for Benzene. All parameters analyzed from SGMW-1-0-0.6 were not detected above the laboratory minimum detection limits.

Soil gas monitoring well leak tests (water and helium) were performed with satisfactory results on both newly installed SGMWs. A total of three (3) soil vapour samples were collected and submitted for laboratory analysis of BTEX, PHCs fractions F1 to F2. SGMW-1 was sampled on June 19, 2012 and again on January 15, 2013 with results indicating exceedances of benzene and compliance with all other analyzed parameters when compared to the applicable soil vapour screening criteria. SGMW-2 was sampled on October 17, 2013 with results indicating exceedances of benzene and compliance with all other analyzed parameters.

2.2.9 2015 Parsons Supplementary Phase Two ESA

Imperial Oil Limited retained O'Connor Associates Environmental Inc., a Parsons Company, to conduct an additional Supplementary Phase two ESA at the Site in December 2014 to further investigate the potential impacts in the soil and groundwater at the Site, as described in previous reports. The scope of work included the advancement of eleven (11) boreholes (BH-301 to BH-311) followed by the installation of seven (7) monitoring well (BH-301, BH-302, BH-303, BH-305, BH-306, BH-308 and BH309) to investigate potential impacts throughout the Site. The Supplementary Phase Two ESA was completed in accordance with the following applicable standards at the time:

- MOECC Guidance for Completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04 (as amended).
- MOECC Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (as amended).
- MOECC Table 3 Full depth generic site condition standards in a non-potable groundwater condition for industrial/commercial/community property use and medium and fine textured soils (amended 2011).

A total of twenty-two (22) soil samples (two (2) samples from each borehole) were collected and submitted for laboratory analysis of BTEX, PHCs fractions F1 to F4, hexane, lead, polycyclic aromatic hydrocarbons (PAHs), PCBs and select metals and VOCs based on past reports, field observations and screening. The VOCs selected for analysis included ethylene dibromide, dichlorodifluoromethane, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, methyl t-butyl ether, tetrachloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, trichlorofluoromethane,

and vinyl chloride. The metals selected for laboratory analysis included arsenic, barium, chromium, copper, and zinc. The results for all soil samples submitted for analysis satisfied the applicable Table 3 Standards for all parameters.

Groundwater from seven (7) monitoring wells (BH-301 to BH-311) was sampled and submitted for laboratory analysis of BTEX, PHCs fractions F1 to F4, hexane, lead and other select metals and VOCs. The metals and VOCs selected for analysis were consistent with those parameters used to analyze the soil samples, as listed above. The results for all groundwater samples submitted for analysis satisfied the applicable Table 3 Standards for all parameters in all newly installed monitoring wells except BH-306, installed north of the convenience store. The analytical results for the groundwater sampled from BH-306 indicated exceedances of PHC fractions F1 and F2 and compliance with all other applicable standards however, the additional selected metals were not included in the analysis of BH-306.

Free product was not observed in any of the accessible monitoring wells during the field activities. Subsurface combustible vapour concentrations within the monitoring wells were measured between <5ppm (non-detectable) at BH-305 and BH-308, and 220 ppm at BH-302.

2.2.10 2015 SNC-Lavalin Phase I ESA

SNC-Lavalin Inc. was retained by Imperial Oil Limited to prepare a Phase I ESA in accordance with the Canadian Standards Association (CSA) "Phase I Environmental Site Assessment" Standard Z768-01 (CSA, 2012) to identify any current or past activities on the Site and surrounding properties that could impact the quality of the soil and groundwater at the Site.

The following Areas of Potential Environmental Concern were identified on-Site:

- Current and historical retail fuel storage and dispensing in the southwest portion of the Site
- Car wash in the east portion of the Site
- Automotive service bay and repair garage previously located in the northeast and northwest portions of the Site
- Transformer box in the west portion of the Site
- Fill of unknown origin throughout the Site

The following Areas of Potential Environmental Concern were identified off-Site:

- Known and unknown soil and groundwater impacts in the road allowance south of the Site, along Medhurst Drive
- Pole mounted transformer and transformer box within the road allowance southwest of the Site
- Registered generator of light fuels, paint, aliphatic solvents and waste oils at 72A/G Brockinton Crescent, located north and east of the Site

Due to the above noted APECs identified on-Site and off-Site, it was concluded that there is evidence of potentially contaminated activities that may give rise to subsurface impacts at the Site.

2.2.11 2015 Parsons Groundwater Package

Imperial Oil retained O'Connor Associates Environmental Inc., a Parsons Company, to conduct groundwater monitoring and sampling in June 2015 at the previously installed and accessible monitoring wells on-Site. This Groundwater Monitoring and Sampling Data Package was completed in accordance with the following applicable standards at the time:

- MOECC Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (as amended).
- MOECC Table 3 Full depth generic site condition standards in a non-potable groundwater condition for industrial/commercial/community property use and medium and fine textured soils (amended 2011).

Groundwater from ten (10) monitoring wells (BH-5, BH-7, BH-8, BH-10, BH-11, BH-12, BH-13, BH-14, BH-15, BH-16) was sampled and submitted for laboratory analysis of BTEX, PHCs fractions F1 to F4, hexane and lead. The results of four (4) of the groundwater samples submitted for analysis (BH-7, BH-14, BH-15 and BH-16) satisfied the applicable Table 3 Standards for all parameters. The analytical results from seven (7) of the monitoring wells sampled (BH-5, BH-8, BH-10, BH-11, BH-12 and BH-13) were in exceedance of one or more of the parameters analyzed. All six (6) groundwater samples exceeded the Table 3 Standard for PHC fraction F1 and F2, except BH-8 which only exceeded for PHC fraction F2. BH-12 also exceeded the Table 3 Standards for PHC fraction F3, as well as benzene and xylenes.

Free product was not observed in any of the accessible monitoring wells during the field activities. Subsurface combustible vapour concentrations within the monitoring wells were measured between <5ppm (non-detectable) at BH-7 and BH-14, and 100% LEL at BH-11, BH-12 and BH-13.

2.2.12 2016 WSP Groundwater Report

In 2016, Couche Tard Inc. retained WSP Canada Inc. to complete a limited groundwater monitoring and sampling program at the 1545 Woodroffe Avenue, Ottawa, Ontario prior to their potential purchase of the Site to investigate the condition of the groundwater. The scope of work included the advancement of eleven (11) boreholes (BH-301 to BH-311) followed by the installation of seven (7) monitoring well (BH-301, BH-302, BH-303, BH-305, BH-306, BH-308 and BH309) to investigate potential impacts throughout the Site. The Groundwater Report was completed in accordance with the following applicable standards at the time:

- MOE Guidance for Completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04 (as amended).
- MOE Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (amended July 1, 2011).
- MOE Table 3 Full Depth Generic Site Condition Standards in a non-potable groundwater condition for industrial/commercial/community property use and medium and fine textured soils (amended 2011).

Groundwater monitoring activities were conducted in April 2016, including the collection of subsurface combustible vapour readings, groundwater levels and field observations. The maximum subsurface vapour reading was 11,100 ppm in BH-12. Free product was observed in BH-12 measuring 50 mm in thickness and a sheen was observed on the surface of the purged groundwater in BH-5. Groundwater flow direction was inferred to be in a northwest direction.

Based on the results of headspace vapour readings, observations of the presence or absence of free product or sheen and the condition of the monitoring wells, only five (5) on-Site monitoring wells (BH-5, BH-8, BH-11, BH-12 and BH-13) were sampled and analyzed for VOCs (including BTEX) and PHCs fractions F1 to F4. Groundwater from three (3) of the monitoring wells proposed for sampling were not considered viable due to various reasons, including excessive sand infiltration in BH-10, a missing well cap on BH101 (off-Site) and the inaccessibility of BH102 (off-Site).

The results for all groundwater samples submitted for analysis significantly exceeded the applicable Table 3 Standards for PHC fractions F1 and F2. Additional exceedances for PHC fractions F3 in BH-5, BH-8 and BH-12 and PHC fractions F4 in BH-5, BH-8 and BH-13 were reported. The VOC analysis results for the groundwater sample from BH-13 were in compliance with the applicable Table 3 Standard. Exceedance of total xylenes were reported in the groundwater samples collected from BH-11 and BH-12, tetrachloroethane (1, 1, 1, 2-) exceedances were reported in BH-5 and BH-8, Benzene exceedances were reported in BH-5 and BH-12 and additional exceedances of ethylbenzene and tetrachloroethane (1, 1, 2, 2-) were reported only in the sample collected from BH-12. It is noted that the results from the majority of the VOC parameters analyzed for the groundwater sample collected from BH-12 were inconclusive due to the laboratory minimum detection limits having been increased to concentrations greater than the applicable Table 3 Standards due to matrix interference requiring dilution prior to analysis. This 2016 WSP Groundwater Report indicates a potential deterioration of the groundwater conditions at the Site since the investigations in 2015.

The groundwater analytical results obtained during the 2016 WSP Groundwater Report have been utilized in the Figures and Tables appended to this Phase Two ESA, as well as in the discussion section, to provide a more complete representation of the subsurface impacts at the Site.

2.2.13 2021 McIntosh Perry Groundwater Quality Testing

McIntosh Perry was retained Circle K – Central Canada Division to complete an Environmental Update and Summary of Groundwater Quality Testing at the Site in 2021 to assist in the City of Ottawa's Site Plan Approval process. McIntosh Perry reviewed all the past reports outlined above, inspected all accessible monitoring wells and completed groundwater sampling at selected existing monitoring wells on-Site. Groundwater samples were submitted for laboratory analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX) and petroleum hydrocarbons, fractions 1 through 4. The Groundwater Update was completed in accordance with the following applicable standards at the time:

- MECP Guidance for Completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04 (as amended).

- MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (2011).
- Table 3 Full-Depth Generic Site Condition Standards for Industrial/Commercial/Community Land Use and Residential/Parkland/Institutional Land Use in a Non-Potable Groundwater Condition and medium-fine grained soil texture.

McIntosh Perry compared the results of the groundwater monitoring and sampling activities to the past reports, discussed above, and identified historical trends at each of the sampled monitoring wells. Contaminant concentrations at BH-5 are described as consistent or slightly decreasing with the 2021 results indicating only a PHC fraction F1 exceedance. The results of the 2021 groundwater sampling of BH-6 demonstrated exceedances in PHC fraction F1 to F4 but is noted as showing a generally decreasing trend over time in contaminant concentrations. Groundwater sampling results from BH-8 are consistent with historical datasets, indicating exceedances in PHC fraction F1 to F4. Analytical results from BH-11 in 2021 are also consistent with historical data, indication PHC fraction F1 to F3 exceedances. The results of the 2021 groundwater sampling of BH-13 demonstrated an exceedance of the Table 3 Standard for only PHC fraction F1, which is generally consistent with the historical data collected at this location. Contaminant concentrations in the groundwater of BH-7, BH-9, BH-14 and BH-15 have generally remained below laboratory detection limits and below Table 3 Standards throughout their sampling history, consistent with the 2021 sampling results.

Headspace vapour readings within the sampled monitoring wells were recorded between 0 ppm at BH-13, and 610 ppm at BH-8. The highest vapour readings were measured at the monitoring wells located northeast of the fuel pumps, tank nest and convenience store. It is noted that the combustible vapour concentrations in the sampled monitoring wells appear to have generally attenuated over time.

The groundwater analytical results obtained during the 2021 McIntosh Perry Groundwater Quality Testing Report have been utilized in the Figures and Tables appended to this Phase Two ESA, as well as in the discussion section, to provide additional information about the subsurface impacts at the Site.

2.2.14 2021 McIntosh Perry Phase One ESA Report

Based on a Phase One ESA completed on August 11, 2021 by McIntosh Perry, the Site was first developed circa 1955 with an historic automotive servicing garage, which has since been demolished. The present-day commercial buildings were developed circa 1990, with the exception of the fuel distribution infrastructure (pump islands, piping, USTs, etc.) which was replaced in 2009. To the best of McIntosh Perry's knowledge, the Site has been utilized for commercial purposes, including automotive servicing and retail fuel sales, since its development, prior to which the Phase One Property appeared to be agricultural and forested lands.

Areas of Potential Environmental Concern at the Site included the site's use as a retail fuel outlet and underground storage tanks, the presence of a car wash, the potential presence of fill material of unknown quality at the Site, and the presence of transformers adjacent to the Site.

3.0 SCOPE OF INVESTIGATION

3.1 Overview of Site Investigation

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

- Underground service locate clearance was provided by public utility service provides through Ontario One Call and a private utility locating service;
- In coordination with a geotechnical investigation at the Site, the advancement of eight (8) boreholes at the Phase Two Property to a maximum depth of 8.2 mbgs, five (5) of which were completed as monitoring wells by a licensed water well contractor to the requirements of O.Reg. 903;
- Submission of "worst case" soil samples collected from each borehole, as determined through field screening, for laboratory analyses of select parameters VOCs, PHCs, metals and inorganics, and/or PAHs;
- Submission of groundwater samples collected from each newly installed monitoring well for laboratory analysis of VOCs, PHCs, metals and inorganics, and PAHs;
- Submission of representative soil samples for analysis of pH and grain size, for determination of the appropriate MECP standards for the Phase Two Property;
- Completion of a quality assurance/quality control (QA/QC) program consisting of the submission of field duplicate and trip blank samples; and
- Completion of a relative elevation survey of the ground surface elevation of each borehole advanced at the Site.

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

3.2 Media Investigated

Soil samples were obtained from selected boreholes and submitted for laboratory analyses of the selected contaminants of potential concern (COPCs). Five (5) boreholes were instrumented with monitoring wells and subsequently sampled for each of the selected COPCs.

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

3.2.1 Contaminants of Potential Concern

Based on the nature of the PCAs and APECs identified at the Phase Two Property, the following COPCs were identified:

- VOCs inclusive of BTEX – this parameter group is commonly associated with gasoline and fuels. BTEX were selected as COPCs for the Site due to the presence of the retail fuel outlet on-Site;

- PHCs (F1-F4) – this parameter group includes hydrocarbon chains of various lengths associated with gasoline (F1), diesel and kerosene (F2), and heavy oils (F3 and F4). PHCs (F1-F4) were selected as a COPC for the Site due to the presence of the retail fuel outlet on-Site as well as the transformer, which, though appeared to be a non-PCB type based on age, may still contain oil as a dielectric fluid;
- PAHs – this parameter group includes semi-volatile substances such as benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, dibenzo[a,h]anthracene, fluoranthene, and indeno[1,2,3-cd]pyrene, commonly released from burning coal, oil, gasoline, and wood, in addition to a variety of other PAH parameters. PAHs are also known to be present within heavy oils. PAHs were selected as a COPC for the Site due to the potential for heavy oils and lubricants to enter the subsurface as a result of the car wash currently on-site and the historic automotive servicing garage; and,
- Metals – this parameter group includes metals such as arsenic, antimony, selenium, boron, mercury, and chromium IV. Metals were selected as a COPC for the Site due to the former presence of automotive repair facilities and a retail fuel outlet, as well as the historical presence of metal impacts within soil on the Entire Property in the vicinity of the Phase Two Property.

3.3 Overview of Soil and Groundwater Data and Regulation Changes

It is noted that in December of 2019, new regulation amendments associated with salt impacts were enacted. These amendments permitted the exemption of salt impacts if the impacts were deemed by the Qualified Person (QP) to be resultant from de-icing activities for the purpose of human and vehicular safety.

A data analysis was completed to re-evaluate existing soil results in the context of current regulations. Based on this re-evaluation, the QP determined that as electrical conductivity (EC) and sodium adsorption ratio (SAR) were eligible for the exemption application. Accordingly, with application of the regulatory amendment that provides exemption relief for impact resulting from de-icing activities, EC, SAR, sodium and chloride are not considered contaminants of concern for the Phase Two Property. However, these parameters must still be considered when determining destinations for excess soil from the Site, per the requirements of O.Reg. 406/19 (On-Site and Excess Soil Management).

3.4 Phase One Conceptual Site Model

During the 2021 McIntosh Perry Phase One ESA, a Phase One Conceptual Site Model (CSM) was developed. A Phase One CSM provides a summary of environmental conditions at the Site, as identified through the completion of a Phase One ESA. The purpose of the CSM is to identify the location and nature of all PCAs within the Phase One Study Area, including the Phase One Property, and to determine whether these PCAs result in APECs in relation to the Phase One Property.

A Phase One Conceptual Site Model (CSM) provides a summary of environmental conditions at the Site, as identified through the completion of a Phase One ESA. The purpose of the CSM is to identify the location and nature of all PCAs within the Phase One Study Area, including the Phase One Property, and to determine whether these potentially contaminating activities (PCAs) result in areas of potential environmental concern

(APECs) in relation to the Phase One Property. The Phase One CSM is presented in Figures 1 through 6 of the 2021 McIntosh Perry Phase One ESA and present the following information:

- The locations of existing buildings and structures;
- The location of any water bodies within the Phase One Study Area;
- The locations of any areas of natural significance within the Phase One Study Area;
- The locations of any potable drinking water wells on the Phase One Property;
- Roads within the Phase One Study Area;
- Uses of properties within the Phase One Study Area outside of the Phase One Property;
- Areas where any PCAs have occurred within the Phase One Study Area; and,
- The locations of APECs on the Phase One Property.

The following subsections provide a discussion of the information presented on the above-noted CSM figures in the 2021 McIntosh Perry Phase One ESA:

3.4.1 Existing Buildings and Structures

3.4.1.1 Structures and Other Improvements

The Phase One Property is currently developed with an active, single-storey Circle K retail fuel outlet, convenience store and car wash, and a vacant commercial building formerly used as a Tim Horton's restaurant with associated laneways, parking and landscaped areas, as well as three gasoline USTs and one diesel UST.

3.4.1.2 Below Ground Structures

Three (3) 50,000 L gasoline USTs and one (1) 25,000 L diesel UST and an oil/water separator were observed on Phase One Property along with storm drains throughout the site as well as buried utilities including Hydro, gas, sewer lines and bell.

3.4.2 Water Bodies

The closest permanent water body to the Site is Nepean Creek, a tributary of the Rideau River, located approximately 2.1 km northeast of the Site. Additionally, the Ottawa River is located approximately 5.1 kilometres (km) north of the Site, at its closest point and the Rideau River, a tributary of the Ottawa River, is located approximately 4.4 kilometres (km) east of the Site, at its closest point.

There are no waterbodies located within the Phase One Study Area.

3.4.3 Areas of Natural Significance

During the Phase One ESA, considerations were made for the following MNRF maintained areas of natural significance:

- Areas of Natural and Scientific Interest;
- Provincially Significant Wetlands; and,

- Wildlife Management Areas.

The Phase One Property and Phase One Study Area were not determined to be located within an MNRF-maintained area of natural significance for the purposes of O. Reg. 153/04 (as amended). The Phase One Property and Phase One Study Area were also not determined to be located within any of the following areas identified in the City of Ottawa Official Plan:

- Natural Heritage Network
- Environmentally Sensitive Areas and Areas of Natural and Scientific Interest
- Oak Ridges Moraine Conservation Plan and Greenbelt Plan
- Landform Conservation Areas
- Special Policy Areas
- Wellhead Protection Areas

3.4.4 Water Wells

As part of this Phase One ESA, McIntosh Perry reviewed well records within the Phase One Study Area, as identified in the MECP's Water Well Information System database. Well records for the monitoring wells installed as part of the previous environmental reports for the Phase One Property, summarized in Section 3.1.6, were among the search results. Several other monitoring well records were encountered within the Phase One Study Area. One (1) industrial water well record was identified within the Phase One Study Area.

No potable water wells were observed on the Phase One Property or within the Phase One Study Area during the Site reconnaissance.

On-Site monitoring wells were inspected as part of the 2021 McIntosh Perry Groundwater Update, summarized above in Section 2.2.13. Sixteen (16) monitoring wells were observed on the Phase One Property during MP's site visit in March 2021.

3.4.5 Potentially Contaminating Activities

The following PCAs were identified within the Phase One Study Area:

Table 4: Potentially Contaminating Activities

#	Potential Contaminating Activity	Location of PCA	Proximity of PCA to Phase One ESA Property	Time Frame Associated with PCA	Information Source	Does the PCA warrant an APEC
1	Automotive servicing garage	Northeast and southwest portion of the Phase One Property	On-Site	Historic	Previous reports review	YES

Table 4: Potentially Contaminating Activities						
#	Potential Contaminating Activity	Location of PCA	Proximity of PCA to Phase One ESA Property	Time Frame Associated with PCA	Information Source	Does the PCA warrant an APEC
2	Gasoline and diesel USTs and retail fuel outlet	South portion of the Phase One Property	On-Site	Historic and Current	Previous reports review, ERIS search results, Opta search results, TSSA	Yes
3	Fill of unknown quality	Throughout the Phase One Property	On-Site	Historic and Current	Previous Reports Review	Yes
4	Car wash	Southeast portion of the Phase One Property	On-Site	Historic and Current	Previous Reports Review, Site Reconnaissance	Yes
5	Transformer Box	West portion of the Phase One Property	On-Site	Historic and Current	Previous Reports Review, Site Reconnaissance	Yes
6	Generation of waste oils and lubricants, aliphatic solvents, paints/ pigments/ coatings waste	72G Brockington Crescent	Approximately 125 m north and inferred to be hydraulically downgradient from the Site	Historic and Current	ERIS search results, previous environmental reports	NO, based on separation distance and lack of evidence of improper storage or spills
7	Spill of 100 L hydraulic fluid	Intersection of Knoxdale and Woodroffe	Approximately 10 m southwest of the Site	Historic (1990)	ERIS search results (Ontario Spills)	NO, based on down-gradient position of road relative to Site

The locations of these PCAs are provided on Figure 5 in the 2021 McIntosh Perry Phase One ESA.

3.4.6 Areas of Potential Environmental Concern

The following APECs were identified at the Phase One Property:

Table 5: Areas of Potential Environmental Concern

Area of Potential Environmental Concern	Potentially Contaminating Activity*	Location	Contaminants of Potential Concern	Media Potentially Impacted
APEC-1 (On-Site automotive servicing garage-historic)	27: Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Northeast and southwest portion of the Phase One Property	PHCs, PAHs, VOCs, Metals	Soil and Groundwater
APEC-2 (On-Site gasoline and diesel USTs and retail fuel outlet)	28: Gasoline and Associated Products Storage in Fixed Tanks	Southwest portion of the Phase One Property	PHCs, PAHs, VOCs, Metals	Soil and Groundwater
APEC-3 (On-Site fill of unknown quality)	30: Importation of Fill Material of Unknown Quality	Throughout the Phase One Property	PHCs, PAHs, VOCs, Metals	Soil and Groundwater
APEC-4 (On-Site car wash)	50: Soap and Detergent Manufacturing, Processing and Bulk Storage	Southeast portion of the Phase One Property	PHCs, PAHs, VOCs, Metals	Soil and Groundwater
APEC-5 (Transformer box)	55: Transformer Manufacturing, Processing and Use	West portion of the Phase One Property	PHCs	Soil and Groundwater

The locations of these APECs are provided on Figure 6 in the 2021 McIntosh Perry Phase One ESA.

3.4.7 Contaminants of Potential Concern

The contaminants of potential concern (COPCs) associated with the APECs at the Phase One Property were identified to be metals, volatile organic compounds (VOCs), petroleum hydrocarbons (PHCs) in the F1 to F4 fraction ranges (F1-F4), and polycyclic aromatic hydrocarbons (PAHs), as indicated in the APEC table provided above.

3.4.8 Underground Utilities

During the Site reconnaissance, several underground utilities were noted to be likely present at the Site including, but not limited to, municipal water and sewer services, electricity, natural gas and telecommunications services. The locations and depths of these underground utilities were not determined as part of this Phase One ESA. No Site-specific concerns regarding underground utility service trenches were identified.

3.4.9 Hydrology

The Site occurs within the Lower Ottawa River watershed which is a secondary watershed of the Great Lakes - St. Lawrence River watershed. The Ottawa River is located approximately 5.1 kilometres (km) north of the Site,

at its closest point. The Rideau River, a tributary of the Ottawa River, is located approximately 4.4 kilometres (km) east of the Site, at its closest point.

Site drainage consists primarily of sheet flow to on-Site catch basins and municipal storm drains along Woodroffe Avenue. Interior roof drains convey stormwater from the Site Buildings directly into the municipal stormwater sewer system. On-site infiltration of water is interpreted to occur in areas of permeable ground surface.

3.4.10 Geology

3.4.10.1 Surficial Geology

McIntosh Perry obtained a Surficial Geology Report for the Site and the surrounding area from ERIS of Toronto, Ontario. The ERIS Surficial Geology Report, as well as additional details about the source of information and the surficial geological units found within 2000 m of the Phase One Property are included in Appendix B of the 2021 McIntosh Perry Phase One ESA.

The ERIS Surficial Geology Report, utilizing data from the Ontario Geological Survey (2010), classifies the overburden at the Site as highly permeable organic deposits consisting primarily of peat and muck in wetlands classified as bogs, swamps and poorly drained areas.

3.4.10.2 Bedrock Geology

McIntosh Perry obtained a Bedrock Geology Report for the Site and the surrounding area from ERIS of Toronto, Ontario. The ERIS Bedrock Geology Report, as well as additional details about the source of information and the bedrock found within 2000 m of the Phase One Property are included in Appendix B of the 2021 McIntosh Perry Phase One ESA.

The ERIS Bedrock Geology Report, utilizing data from the Ontario Geological Survey (2010), classifies the bedrock under the Site and surrounding area as predominantly Lower Ordovician dolostone and sandstone of the Beekmantown Group.

4.0 INVESTIGATION METHOD

4.1 General

The APECs identified during the 2021 McIntosh Perry Phase One ESA were investigated through the advancement of eight (8) boreholes and the installation of five (5) monitoring wells throughout the Phase Two Property concurrently with a geotechnical investigation. A description of this investigation is provided in the following subsections.

4.2 Borehole Drilling

On August 17 and 18, 2021, CCC Drilling of Ottawa, Ontario (CCC) advanced eight (8) boreholes at the Phase Two Property under the supervision and direction of McIntosh Perry personnel. The work was completed concurrently with a geotechnical investigation. The boreholes were advanced by a truck-mounted CME 55 drill rig using hollow stem augers, to a maximum depth of 8.2 mbgs. Soil samples were collected from each borehole at continuous intervals.

To minimize cross-contamination, metal sampling rods were cleaned with a mixture of Alconox® (a biodegradable phosphate-free cleaning agent) and water. Soil samples were obtained continuously throughout each borehole using split spoon sampler.

The borehole locations are provided on Figure 2 (Borehole and Monitoring Well Location Plan). Monitoring well construction details are provided on the borehole logs in Appendix B.

4.3 Soil: Sampling

Soil samples were collected from the boreholes advanced at the Site. Each soil sample was retrieved from split spoon sample and placed directly into laboratory-supplied glassware, then stored on ice within coolers.

The overburden/subsurface materials at the Phase Two Property generally consisted of fill materials comprising sand and gravel with some silt underlain by native materials consisting of silty clay underlain by silty sand that extended to the maximum borehole completion depth of 8.2 mbgs. Bedrock was not encountered as part of this drilling program.

The overburden materials at the Phase Two Property generally consisted of fill material over native silty sand and clay.

A detailed description of the stratigraphy encountered at the Phase Two Property is provided on the borehole logs in Appendix B.

4.4 Soil: Field Screening Measurements

Soil headspace vapour concentration readings of soil samples obtained from the boreholes and test pits were taken using an RKI Eagle 2 gas meter, which is a combined combustible gas indicator (CGI) and photoionization

detector (PID). The CGI was operated in methane elimination mode and calibrated to hexane, and the PID was calibrated to isobutylene.

The CGI component of the RKI Eagle 2 detected petroleum-based vapours and the PID component of the RKI Eagle 2 detected VOC-based vapours. The RKI Eagle 2 has an accuracy of +/- 25 parts per million by volume (ppm_v) or +/- 5% of the reading (whichever is greater). The RKI Eagle 2 was calibrated prior to use in the field by the equipment supplier, following the manufacturer's specifications.

The field screening measurements were used to direct the selection of soil samples for laboratory analyses. Vapour readings obtained from the soil samples collected from the boreholes advanced at the Site ranged from 0 to 220 parts per million by volume (ppm_v) on the CGI and from 0 to 84 ppm_v on the PID.

4.5 Groundwater: Monitoring Well Installation

A total of five (5) monitoring wells were installed on August 17 and 18, 2021 by CCC, under the supervision of McIntosh Perry personnel.

The groundwater monitoring wells were instrumented with 2-inch (50.8 millimetre) diameter polyvinyl chloride (PVC) monitoring well components and sealed at the surface with a lockable J-plug and a steel flush-mount casing.

The wells were constructed using Schedule 40 PVC well screen (10 slot) flush-threaded to Schedule 40 PVC riser pipe. A silica sand 'filter pack' was installed in the annular space around the well screen. A bentonite clay seal was installed above the screened interval to prevent infiltration of surface water into the well. Monitoring well installation was conducted in conformance with O. Reg. 903 (as amended).

To ensure the collection of representative groundwater samples, prior to sampling each monitoring well was developed using dedicated positive displacement pumps consisting of polyethylene tubing and foot valves. Each monitoring well was purged of a minimum of three well volumes, where possible.

Monitoring well construction details are provided on the borehole logs included in Appendix B, as well as on Table 6 in this report.

4.6 Groundwater: Field Measurement of Water Quality Parameters

Field measurement of water quality parameters were measured concurrently with groundwater sampling on September 1, 2021 by McIntosh Perry staff. Measurement of pH, temperature, dissolved oxygen, electrical conductivity, total dissolved solids, and oxidation-reduction potential was preformed using a Horiba multi-parameter meter. Groundwater purging continued until field parameters had relatively stabilized. Upon stabilization of these parameters in groundwater purged from the monitoring wells, a groundwater sample was collected.

Final field parameter values are shown on Table A10, appended to this report.

4.7 Groundwater: Sampling

McIntosh Perry carried out groundwater level monitoring and sampling activities on September 1, 2021. Prior to collecting samples, the static water level was measured at each well using an electronic water level tape. Groundwater levels are summarized in the table below:

Table 6: Monitoring Well Construction Details and Groundwater Levels

MW ID	Total Depth (m)	Screened Interval (mbgs)	Ground Surface Elevation (m AD)	Water Level Measurement (mbgs)	Water Level Elevation (m AD)	Sample Date
BH21-1 (MW)	7.01	3.96 – 7.01	88.9	2.78	86.12	September 1, 2021
BH21-2 (MW)	7.6	4.55 – 7.6	89	4.35	84.65	September 1, 2021
BH21-3 (MW)	5.9	2.85 – 5.9	88.7	4.80	83.9	September 1, 2021
BH21-5 (MW)	6.1	3.05 – 6.1	88.4	4.77	83.63	September 1, 2021
BH21-6 (MW)	6.1	3.05 – 6.1	88.4	3.28	85.12	September 1, 2021

Notes: Elevation measurements reference the on-site catch basin nearest Medhurst Drive at 88.600 metres above sea level (masl) as the local datum; elevations are measured in metres above datum (m AD).

Immediately following water level measurements, monitoring wells were purged a minimum of three well volumes to ensure the groundwater samples were representative of on-Site groundwater conditions. Groundwater was sampled directly into laboratory-supplied bottles for the analyses of VOCs, metals and inorganics, PAHs and PHCs for all wells.

Groundwater sampling was completed in general accordance with MECP's "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario" (May 1996) and McIntosh Perry's internal Standard Operating Procedures (SOPs).

4.8 Sediment: Sampling

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

4.9 Analytical Testing

Based on the results of field screening, select "worse case" soil samples, collected from the boreholes advanced at the Phase Two Property, were submitted for laboratory analyses of select parameters, including PHCs (F1-F4), metals and inorganics, VOCs, and PAHs. All soil samples selected for laboratory analysis were submitted to AGAT Laboratories (AGAT), of Ottawa, Ontario, under strict Chain of Custody documentation protocols.

The laboratory used for this investigation, AGAT, is accredited by the Standards Council of Canada and the Canadian Association for Laboratory Accreditation, in accordance with the international standard ISO/IEC 17025:2005 – General Requirements for the Competence of Testing and Calibration Laboratories. AGAT is accredited for analysis of all parameters required under the O. Reg. 153/04 – Record of Site Condition, as outlined in the MECP Technical Update entitled 'Laboratory Accreditation Requirements Under the New Record of Site Condition Regulation (O. Reg. 153/04)'.

4.10 Residue Management Procedures

Soil cuttings generated as part a of this Phase Two ESA were stored within two (2) 205-L drums on the Phase Two Property and purged groundwater generated during this Phase Two ESA was stored within 20-L pails on the Phase Two Property. Arrangements are to be made to have the soil cuttings and purged groundwater removed for off-Site disposal at a registered waste disposal site by a licensed third-party waste hauler. Fluids used for equipment cleaning as part of this Phase Two ESA were removed for off-Site disposal by the drilling contractor (Strata). No other wastes were generated as part of this Phase Two ESA that would require management.

4.11 Elevation Surveying

Geodetic elevations of the ground surface of each borehole were obtained using a laser level on August 26, 2021. The elevations were related to a local geodetic benchmark. The selected local benchmark was an on-site catch basin with a surveyed geodetic elevation of 88.600 metres above sea level (m ASL). For the purposes of this Phase Two ESA, the level of accuracy provided by the elevation survey were deemed satisfactory.

4.12 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 and groundwater 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 C.

5.0 REVIEW AND EVALUATION

5.1 Geology

The overburden/subsurface materials at the Phase Two Property generally consisted of asphalt underlain by sand and gravel fill materials, to depths ranging between 1.5 and 2.7 mbgs, over native silty clay and silty sand to borehole completion depths ranging between 5.9 and 8.2 mbgs. Bedrock was not encountered as part of this drilling program.

A detailed description of the stratigraphy encountered at the Phase Two Property is provided on the borehole logs in Appendix B.

5.2 Groundwater: Elevations and Flow Direction

During the August 2021 drilling event, five (5) monitoring wells were installed and screened within the saturated silty clay and sand layers at the Site, interpreted to represent the local unconfined aquifer. On September 1, 2021, groundwater levels were measured in the monitoring wells using an electronic water level tape. The groundwater levels of all monitoring wells were measured and documented in Table 6 provided in Section 4.7 of this report and are presented on the borehole logs in Appendix C. Groundwater is interpreted to flow in a north-easterly direction.

No visual evidence of free phase product was observed in the purged water during the well development or groundwater sampling events.

On September 1, 2021, static water levels were measured in the newly installed monitoring wells indicating that the shallow water table elevations at the Site range between 2.78 to 4.80 mbgs.

5.3 Groundwater: Hydraulic Gradients

The horizontal hydraulic gradient was estimated for the water table of the aquifer based on the September 1, 2021 groundwater elevations.

The horizontal hydraulic gradient is calculated using the following equation:

$i = \Delta h / \Delta s$

Where,

i = horizontal hydraulic gradient

Δh (m) = groundwater elevation difference; and,

Δs (m) = separation distance.

The horizontal hydraulic gradient was calculated based on five (5) monitoring wells (BH21-1(MW), BH21-2(MW), BH21-3(MW), BH21-5(MW) and BH21-6(MW)). The groundwater contour plan is shown on Figure 4 and the groundwater levels are listed above in Table 6 and presented on the borehole logs in Appendix C.

Based on the measured groundwater elevations, the on-site hydraulic gradient was calculated to be approximately 0.03 m/m. Groundwater is interpreted to flow in a northeast direction.

It should be noted that vertical hydraulic gradients were not evaluated for the Site as a second water bearing unit was not encountered at the depths investigated at the Site.

5.4 Soil Texture

Grain size analysis results were not yet available at the time of writing this report. Field observations indicate that the native soils at the Site generally consist of silty sand underlain by silty clay over silty sand. In the absence of a grain-size analysis, and based on field observations, coarse-grained soils were assumed as a conservative measure. Therefore, it is our interpretation that coarse-textured soil SCS are applicable to the Site.

5.5 Soil: Field Screening

Soil headspace vapour concentration readings of soil samples obtained from the boreholes and test pits were taken using an RKI Eagle 2 gas meter, which is a combined combustible gas indicator (CGI) and photoionization detector (PID). The CGI was operated in methane elimination mode and calibrated to hexane, and the PID was calibrated to isobutylene.

Vapour readings obtained from the soil samples collected from the boreholes advanced at the Site ranged from 0 to 220 parts per million by volume (ppm_v) on the CGI and ranged from 0 to 84 ppm_v on the PID. The maximum isobutylene and hexane readings were both obtained from the soil sample (BH2-SS4) collected between 3.05 and 3.66 mbgs from BH21-2(MW).

The soil samples did not exhibit significant visual or olfactory evidence of contamination.

5.6 Soil Quality

The soil samples submitted for laboratory analyses were as follows:

Table 7: Soil Sample Summary

BH ID	Sample ID	Approx. Depth/ Stratigraphy	Chemical Analysis	Rationale
BH21-1 (MW)	BH1-SS4	3.05-3.66 mbgs; silty clay	PHCs	Address APECs 2 and 4

Table 7: Soil Sample Summary				
BH ID	Sample ID	Approx. Depth/ Stratigraphy	Chemical Analysis	Rationale
BH21-2 (MW)	BH2-Fill	Surface fill	VOCs, metals and inorganics, PAHs	Address APEC 3
BH21-2 (MW)	BH2-SS4	3.05-3.66 mbgs; silty clay	PHCs	Address APECs 2 and 4
BH21-3 (MW)	BH3-SS7	4.57-5.18 mbgs; silty clay	PHCs	Address APECs 1, 2 and 4
BH21-5 (MW)	BH5-SS5	4.57-5.18 mbgs; silty clay	PHCs	Address APECs 1, 2, 4 and 5
BH21-6 (MW)	BH6-SS2	0.76-1.37 mbgs; silty clay	VOCs, metals and inorganics, PAHs	Address APECs 1 - 4
BH21-6 (MW)	BH6-SS8	5.33-5.94 mbgs; silty clay	PHCs	Address APECs 1, 2 and 4
BH21-7	BH7-SS1	0-0.61 mbgs; fill-silty sand	VOCs, metals and inorganics	Address APECs 1 - 5
BH21-7	BH7-SS2	0.76-1.37 mbgs; fill-silty sand	PAHs	Address APECs 1 - 5
BH21-7	BH7-SS4	2.29-2.90 mbgs; silty sand	VOCs, metals and inorganics, PHCs, PAHs	Address APECs 1, 2, 4 and 5
Soil-Dup	BH7-SS4	2.29-2.90 mbgs; silty sand	PHCs	QA/QC
BH21-8	BH8-SS2	1.52-2.13 mbgs; silty sand	VOCs, metals and inorganics, PAHs	Address APECs 1, 2 and 4

These samples were selected as "worst case", based on the results of field screening and on anticipated contaminant characteristics and depths. Each of the above-noted samples were submitted for laboratory analyses of select parameters, including VOCs inclusive of BTEX, PHCs, metals and inorganics and PAHs. The analytical results and sample depths are presented in Tables A2 – A5 (appended to this report) and are summarized in the following subsections.

Metals and Inorganics

Analytical results for the soil samples collected and submitted for analysis of metals and inorganics indicate parameters which, in some cases, exceed laboratory detection limits but are below the applicable MECP SCS with the following exceptions:

- BH2-FILL: Table 1 SCS exceedance of SAR
- BH6-SS2: Table 1 SCS exceedance of SAR, Table 1 SCS exceedance of barium, Table 3 SCS exceedance of EC

- BH7-SS1: Table 1 SCS exceedance of SAR, Table 1 SCS exceedance of barium
- BH8-SS2: Table 1 SCS exceedance of SAR

The SAR and EC exceedances in the soil samples are expected to be the results of the application of road salt for de-icing purposes for pedestrian and vehicular safety and do not represent a significant risk to the soil structure at such ratios. The Table 1 SCS exceedances of SAR, EC and barium are used to determine the proper off-site disposal options for any excess soils generated on-site.

PHCs (F1-F4)

Analytical results for all soil samples analyzed for PHCs indicate that all sample results were below the reported laboratory detection limits and therefore, in compliance with MECP Table 3 and Table 1 Site Condition Standards.

VOCs

Analytical results for all soil samples analyzed for VOCs indicate that sample results were below the reported laboratory detection limits and therefore, in compliance with MECP Table 3 and Table 1 Site Condition Standards with the exception of the following:

- BH6-SS8: Exceedance of Table 1 SCS for ethylbenzene, toluene and xylene

These Table 1 SCS exceedances of ethylbenzene, toluene and xylene in the soil sampled from BH-6 are applicable in the determination of the proper off-site disposal options for excess soils generated on-site.

PAHs

Analytical results for all soil samples analyzed for PAHs indicate that all concentrations were below the reported laboratory detection limits and therefore, in compliance with MECP Table 3 and Table 1 Site Condition Standards.

5.7 Groundwater Quality

The groundwater samples collected for this Phase Two ESA and submitted for laboratory analyses were as follows:

Table 8: Phase Two ESA Groundwater Sample Summary

BH ID	Sample ID	Approx. Depth/ Screened Interval	Chemical Analysis	Rationale
BH21-1 (MW)	BHMW1	3.96 – 7.01	Metals and inorganics, PHCs, PAHs, VOCs	Address APECs 2 - 4
BH21-2 (MW)	BHMW2	4.55 – 7.6	Metals and inorganics, PHCs, PAHs, VOCs	Address APECs 2 - 4

Table 8: Phase Two ESA Groundwater Sample Summary				
BH ID	Sample ID	Approx. Depth/ Screened Interval	Chemical Analysis	Rationale
BH21-3 (MW)	BHMW3	2.85 – 5.9	Metals and inorganics, PHCs, PAHs, VOCs	Address APECs 1 - 4
BH21-5 (MW)	BHMW5	3.05 – 6.1	Metals and inorganics, PHCs, PAHs, VOCs	Address APECs 1 - 3 and 5
BH21-6 (MW)	BHMW6	3.05 – 6.1	Metals and inorganics, PHCs, PAHs, VOCs	Address APECs 1 - 3 and 5
BH21-3 (MW)	DUP	2.85 – 5.9	Metals and inorganics, PHCs, PAHs, VOCs	QA/QC

All groundwater analysis results were compared to Table 3 Full Depth Generic Site Condition Standards in a non-potable groundwater condition.

The groundwater samples collected for the 2016 WSP Groundwater Report and submitted for laboratory analyses were as follows:

Table 9: 2016 WSP Groundwater Report Sample Summary				
BH ID	Sample ID	Approx. Depth/ Screened Interval	Chemical Analysis	Rationale
BH-5	BH-5	1.8 - 4.6	PHCs and VOCs	Selected Location
BH-8	BH-6	4.5 - 6.0	PHCs and VOCs	Selected Location
BH-11	BH-11	3.1 - 6.1	PHCs and VOCs	Selected Location
BH-12	BH-12	3.0 - 6.0	PHCs and VOCs	Selected Location
BH-13	BH-13	3.7 - 6.1	PHCs and VOCs	Selected Location
BH-13	BH-13 (Duplicate)	3.7 - 6.1	PHCs and VOCs	QA/QC

All groundwater analysis results from the 2016 WSP Groundwater Report were compared to Table 3 Full Depth Generic Site Condition Standards in a non-potable groundwater condition.

The groundwater samples collected for the 2021 McIntosh Perry Groundwater Quality Testing Report and submitted for laboratory analyses were as follows:

Table 10: 2021 McIntosh Perry Groundwater Quality Testing Report Sample Summary

BH ID	Sample ID	Approx. Depth/ Screened Interval	Chemical Analysis	Rationale
BH-5	BH-5	1.8 - 4.6	PHCs and BTEX	2015 Parsons Supplementary Phase Two ESA and 2016 WSP Groundwater Report
BH-6	BH-6	4.6 - 6.1	PHCs and BTEX	2015 Parsons Supplementary Phase Two ESA and 2016 WSP Groundwater Report
BH-6	BH-6 (Duplicate)	4.6 - 6.1	PHCs and BTEX	QA/QC
BH-7	BH-7	1.9 - 4.7	PHCs and BTEX	2015 Parsons Supplementary Phase Two ESA and 2016 WSP Groundwater Report
BH-8	BH-8	4.5 - 6.0	PHCs and BTEX	2015 Parsons Supplementary Phase Two ESA and 2016 WSP Groundwater Report
BH-9	BH-9	5.8 - 7.3	PHCs and BTEX	2015 Parsons Supplementary Phase Two ESA and 2016 WSP Groundwater Report
BH-11	BH-11	3.1 - 6.1	PHCs and BTEX	2015 Parsons Supplementary Phase Two ESA and 2016 WSP Groundwater Report
BH-13	BH-13	3.7 - 6.1	PHCs and BTEX	2015 Parsons Supplementary Phase Two ESA and 2016 WSP Groundwater Report
BH-14	BH-14	3.7 - 6.1	PHCs and BTEX	2015 Parsons Supplementary Phase Two ESA and 2016 WSP Groundwater Report
BH-15	BH-15	3.0 - 6.1	PHCs and BTEX	2015 Parsons Supplementary Phase Two ESA and 2016 WSP Groundwater Report

All groundwater analysis results from the 2121 McIntosh Perry Groundwater Quality Testing Report were compared to Table 3 Full Depth Generic Site Condition Standards in a non-potable groundwater condition.

Laboratory Certificates of Analysis are included in Appendix C.

PHCs (F1-F4)

All concentrations of PHCs in the groundwater samples submitted for laboratory analysis during this Phase Two ESA were below the reported laboratory detection limits and therefore, in compliance with MECP Table 3 SCS with the exception of the following:

- BH21-6(MW): Exceedance of Table 3 SCS for PHC fractions 1 and 2 (PHCs F1-F2)

All concentrations of PHCs in the groundwater samples submitted for laboratory analysis during the 2016 WSP Groundwater Report were in compliance with MECP Table 3 SCS with the exception of the following:

- BH-5: Exceedance of Table 3 SCS for PHC F1 to F4
- BH-8: Exceedance of Table 3 SCS for PHC F1 to F4
- BH-11: Exceedance of Table 3 SCS for PHC F1 and F2
- BH-12: Exceedance of Table 3 SCS for PHC F1 to F3
- BH-13: Exceedance of Table 3 SCS for PHC F1, F2 and F4
- BH-13 (Duplicate): Exceedance of Table 3 SCS for PHC F1, F2 and F4

All concentrations of PHCs in the groundwater samples submitted for laboratory analysis during the 2021 McIntosh Perry Groundwater Quality Testing Report were in compliance with MECP Table 3 SCS with the exception of the following:

- BH-5: Exceedance of Table 3 SCS for PHC F2
- BH-6: Exceedance of Table 3 SCS for PHC F1 to F3
- BH-6 (Duplicate): Exceedance of Table 3 SCS for PHC F1 to F3
- BH-8: Exceedance of Table 3 SCS for PHC F1 and F2
- BH-11: Exceedance of Table 3 SCS for PHC F1 and F2

VOCs

All concentrations of VOCs in the groundwater samples submitted for laboratory analysis during this Phase Two ESA were in compliance with MECP Table 3 SCS with the exception of the following:

- BH21-6(MW): Exceedance of Table 3 SCS for xylenes.

All concentrations of VOCs in the groundwater samples submitted for laboratory analysis during the 2016 WSP Groundwater Report were in compliance with MECP Table 3 SCS with the exception of the following:

- BH-5: Exceedance of Table 3 SCS for benzene and tetrachloroethane (1,1,1,2-)
- BH-8: Exceedance of Table 3 SCS for tetrachloroethane (1,1,1,2-)
- BH-11: Exceedance of Table 3 SCS for xylenes
- BH-12: Exceedance of Table 3 SCS for benzene, ethylbenzene, tetrachloroethane (1,1,1,2-) and xylenes

As the majority of the significant VOC exceedances occurred in BTEX parameters during previous reports, the 2021 McIntosh Perry Groundwater Quality Testing Report analyzed only BTEX parameters. All concentrations of BTEX in the groundwater samples submitted for laboratory analysis in compliance with MECP Table 3 SCS.

Metals and Inorganics

All concentrations of metals and inorganics in the groundwater samples submitted for laboratory analysis during this Phase Two ESA were below the Table 3 SCS.

PAHs

All concentrations of PAHs in the groundwater samples submitted for laboratory analysis during this Phase Two ESA were below the Table 3 SCS.

5.8 Sediment Quality

No water bodies were present on the Phase Two Property and, as such, no sediment quality was not assessed as part of this Phase Two ESA.

5.9 Quality Assurance and Quality Control Results

The soil samples collected for laboratory analyses of PHCs (F1) were preserved in the field with laboratory-supplied methanol, which was issued in pre-filled vials. The remaining samples were placed directly in laboratory-supplied glass jars. Immediately upon collection, the soil samples we placed directly on ice and delivered to the analytical laboratory to be analyzed within their allotted holding time.

The soil samples were submitted to AGAT. During analysis, AGAT followed internal QA/QC procedures to confirm the validity of the analytical results, which included the analysis of laboratory duplicate samples, laboratory control samples, method blanks, matrix spikes, and comparison to internal reference material. No remarks were made within the Certificate of Analysis that qualified any of the analytical results, nor were the validity of any results qualified within the Certificate of Analysis. A copy of the Certificate of Analysis provided for the analyzed soil samples is included as Appendix C.

Data quality objectives for this Phase Two ESA were implemented to ensure the precision, accuracy, reproducibility, representativeness and completeness of field data obtained. In order to ensure that these data quality objectives were met, one (1) field duplicate soil sample (Soil-Dup) was collected and submitted for laboratory analysis of VOCs and PHCs. In addition, one (1) field duplicate groundwater sample (DUP) was collected and submitted for analysis of metals and inorganics, PHCs, PAHs and VOCs.

The purpose of the collection of field duplicate samples is to measure the precision or reproducibility of the field and laboratory methodology used in the collection and analysis of the samples. The precision is evaluated in terms of the relative percent difference (RPD) between the analyses of the field duplicate sample and its corresponding original sample. The RPDs of the original and field duplicate samples were not calculated in situations where one or both of the original and field duplicate samples exhibit concentrations of analyzed

parameters that are below the laboratory Reporting Detection Limits (RDLs).

The RPD between the involved samples were calculated using the following formula:

$$RPD = \frac{(A - B)}{\frac{(A + B)}{2}} \times 100\%$$

Where:
A = concentration of compound in the primary sample
B = concentration of compound in the duplicate sample

Notes:

- RPD is calculated only for result pairs with concentrations greater than 5 times of the method detection limit in both samples.
- RPDs are not calculated where results are below the laboratory RDLs for sample pair.

RPD calculations are summarized in Table A1, appended to this report.

The acceptable RPD limits for various analyzed groups are listed in the following table:

Parameter Group	Recommended RPD in Soil	Recommended RPD in Groundwater
PHC	30%	30%
VOCs	50%	30%
PAHs	40%	30%
PCBs	40%	30%
1,4-Dioxane	50%	30%
Dioxins/Furans	40%	30%
Organochlorine (OC) Pesticides	40%	30%
Metals	30%	20%
Hexavalent Chromium, Cr(VI)	35%	20%
Cyanide (CN-)	35%	20%
Fraction Organic Carbon (FOC), Chloride	35%	20%
Methyl Mercury	40%	30%
Electric Conductivity	10%	-

Parameter Group	Recommended RPD in Soil	Recommended RPD in Groundwater
pH	Within 0.3 pH units	-
* Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act - Laboratory Services Branch Ministry of the Environment - March 9, 2004, amended as of July 1, 2011		

The relative percent difference (RPD) between field duplicate samples and their corresponding original samples is calculated to evaluate whether the analytical data met the overall data quality objectives of a Phase Two ESA. RPD values were generally within acceptable parameters, and in all cases, original and duplicate samples either both passed or both exceeded SCS, and as such, the conclusions at the borehole location from which the duplicate is taken is not considered to be affected. It is our opinion that the data meets the data quality objectives of this Phase Two ESA.

5.10 Phase Two Conceptual Site Model

The Phase Two Property is currently developed with an active, single-storey Circle K retail fuel outlet, convenience store and car wash, and a vacant commercial building formerly used as a Tim Horton's restaurant with associated laneways, parking and landscaped areas, as well as three gasoline USTs and one diesel UST.

5.10.1 Potentially Contaminating Activities

Potentially Contaminating Activities at the Site are outlined in the Phase One Conceptual Site Model in Section 3.2.5 of this report.

5.10.2 Area of Potential Environmental Concern

Areas of Potential Environmental Concern at the Site are outlined in the Phase One Conceptual Site Model in Section 3.2.6 of this report.

5.10.3 Subsurface Structures and Utilities

During the Phase One ESA Site reconnaissance, several underground utilities were noted to be likely present at the Site including, but not limited to, municipal water and sewer services, electricity, natural gas and telecommunications services. Due to underground service locates completed as a component of the Phase Two ESA, the potential presence of underground services required the pre-excavation of all boreholes with a hydrovac excavator. Accordingly, shallow soil samples were not obtained from all boreholes.

In general, underground service trenches may act as preferential contaminant transport pathways. However, based on the analytical results obtained as part of this Phase Two ESA, underground service trenches do not appear to have had a significant impact on contaminant transport or distribution at the Site.

5.10.4 Physical Setting

5.10.4.1 Stratigraphy

Stratigraphy observed during the Phase Two ESA and geotechnical investigation were generally consistent with available mapping.

The overburden/subsurface materials at the Phase Two Property generally consisted of asphalt underlain by sand and gravel fill materials, to depths ranging between 1.5 and 2.7 mbgs, over native silty clay and silty sand to borehole completion depths ranging between 5.9 and 8.2 mbgs. Bedrock was not encountered as part of this drilling program.

A detailed description of the stratigraphy encountered at the Phase Two Property is provided on the borehole logs in Appendix B.

5.10.4.2 Hydrogeology

Based on the groundwater measurements taken as part of the 2021 McIntosh Perry Phase Two ESA, groundwater at the Phase Two Property is inferred to be located at a depth between approximately 2.78 to 4.80 mbgs. Groundwater at the Site is inferred to flow in a north-easterly direction, with a horizontal hydraulic gradient of approximately 0.03 m/m. On a regional scale, groundwater is inferred to flow in a northerly direction towards the Ottawa River.

5.10.4.3 Bedrock

Bedrock was not encountered in any of the boreholes advanced during the Phase Two ESA, which were advanced to a maximum depth of 8.2 mbgs. As such, the Phase Two Property is not considered to be a shallow soil property.

A detailed description of the stratigraphy encountered at the Phase Two Property is provided on the borehole logs in Appendix B.

5.10.5 Potable Site Condition Standards

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

5.10.6 Water Bodies and Areas of Natural Significance

No waterbodies are located within the Phase One Study Area. The closest permanent water body to the Site is Nepean Creek, a tributary of the Rideau River, located approximately 2.1 km northeast of the Site. Additionally, the Ottawa River is located approximately 5.1 kilometres (km) north of the Site, at its closest point and the Rideau River, a tributary of the Ottawa River, is located approximately 4.4 kilometres (km) east of the Site, at its closest point. Nepean creek flows northeast into the Rideau River, which flows north into the Ottawa River, which ultimately flows east into the Lake of Two Mountains and eventually outlets into the St. Lawrence River.

During the Phase One ESA, considerations were made for the following Ministry of Natural Resources (MNRF) maintained areas of natural significance:

- Areas of Natural and Scientific Interest;
- Provincially Significant Wetlands; and,
- Wildlife Management Areas.

The Phase One Property and Phase One Study Area were not determined to be located within an MNRF-maintained area of natural significance for the purposes of O. Reg. 153/04 (as amended). The Phase One Property and Phase One Study Area were also not determined to be located within any of the following areas identified in the City of Ottawa Official Plan:

- Natural Heritage Network
- Environmentally Sensitive Areas and Areas of Natural and Scientific Interest
- Oak Ridges Moraine Conservation Plan and Greenbelt Plan
- Landform Conservation Areas
- Special Policy Areas
- Wellhead Protection Areas.

5.10.7 Site Condition Standards - N/A or N/V Values

During this Phase Two ESA, no contaminants of concern were identified at the Phase Two Property that do not have corresponding criteria listed within the Table 1 and Table 3 Standards.

5.10.8 Approximate Locations of Proposed Buildings and Other Structures

The locations of present-day buildings and other structures are shown on Figure 2 of this report. It is understood that the Site will be redeveloped with a similar development and the land use will not change.

6.0 GROUNDWATER DISCUSSION

Analytical results from the groundwater samples collected and submitted for laboratory analysis during the 2016 WSP Groundwater Report and the 2021 McIntosh Perry Groundwater Quality Testing Report have been included in this discussion and the appended Figures and Tables to allow for the indirect comparison of results and a more complete representation of the complexities of the subsurface impacts at the Site. The Laboratory Certificates of Analysis from the 2016 WSP Groundwater Report and the 2021 McIntosh Perry Groundwater Quality Testing Report are included in Appendix C.

BH21-6(MW) is located in the vicinity of BH-11 which was installed during the 2010 O'Connor Supplemental Phase II ESA and sampled during both, the 2016 WSP Groundwater Report and the 2021 McIntosh Perry Groundwater Quality Testing Report. BH21-6(MW) and BH-11 are located along the southeastern property boundary near the UST nest and the pump islands, and are both screened at the same subsurface interval of approximately 3.0 to 6.1 mbgs. In 2016, the analytical results from BH-11 indicated an exceedance of xylenes,

which by April 2021 had decreased from 4,740 micrograms per litre (µg/L) to 48.9 µg/L, and no longer exceeded the Table 3 SCS.

BH-12, installed during the 2010 O'Connor Supplemental Phase II ESA, and BH-13, installed during the 2012 O'Connor Supplemental Phase II ESA, are also located in the southeast corner of the Site, northeast of the pump islands and UST nest. BH-12 and BH-13 are screened between depths of approximately 3.0 and 6.0 mbgs and 3.7 to 6.1 mbgs, respectively. BH-12 and BH-13 were both sampled during the 2016 WSP Groundwater Report with results indicating significant exceedances of all BTEX parameters, with the exception of toluene, in BH-12 and detectable concentrations of all BTEX parameters in BH-13, without exceedances. BH-12 could not be sampled in 2021 due to the condition of the well at the time of sampling, however the results obtained from the groundwater collected from BH-13 in April 2021 indicate a reduction in the concentration of all BTEX parameters.

In contrast, the groundwater samples collected from BH21-6(MW) in September 2021 for this Phase Two ESA indicate that the concentrations of xylenes (6,980 µg/L) in the southeast corner of the Site have generally increased since 2016, with detectable levels of ethylbenzene and toluene consistent with the 2016 analytical results from BH-11.

As the Site is an active fuel station, it is unknown whether these fluctuations in the concentration of xylenes and other BTEX parameters in the groundwater sampled from the monitoring wells in the southeast corner of the Site between 2016 and 2021 are the result of the natural subsurface mobilization of contaminants, localized inconsistencies in the generally heterogenous subsurface environment, or the introduction of an additional source of contamination (i.e. fuel spill or leak).

Furthermore, the results obtained from BH-11 during the 2016 WSP Groundwater Report also indicated exceedances of PHCs F1 and F2 with concentrations of 17,500 µg/L and 3,230 µg/L, respectively. McIntosh Perry sampled BH-11 in March of 2021 during the 2021 McIntosh Perry Groundwater Quality Testing Report with results indicating continued PHC F1 and F2 exceedances in the groundwater at less than 10% of the concentrations observed in 2016 (1,490 µg/L and 250 µg/L, respectively). Direct comparison of the above noted results indicates persistent PHC contamination decreasing in concentration significantly between April 2016 and March 2021.

BH-12 and BH-13 were both sampled during the 2016 WSP Groundwater Report with results indicating significant PHC exceedances, particularly in BH-12, however BH-12 could not be sampled in 2021 due to the condition of the well at the time of sampling. Comparison of the results obtained from BH-13 in April 2016 to March 2021 indicated a significant reduction in the concentrations of PHCs in the groundwater at this location.

It is not known whether these reductions in the concentrations of PHCs are a localized effect resulting from repeated purging of free product and highly contaminated groundwater prior to each sampling event, as per standard operating procedure, or whether these reductions are more generalized and resulting from the natural attenuation of these substances over time.

Additionally, these reductions in the concentrations of PHCs in the groundwater sampled from BH-11 and BH-13 in the southeast corner of the Site are not consistent with the groundwater results obtained in September 2021 during this Phase Two ESA. Results from BH21-6(MW) indicate continued PHC F1 and F2 impacts in the southeast corner of the Site at similar levels to those observed in BH-11 and BH-13 during the 2016 WSP Groundwater Report (F1: 12,800 µg/L and F2: 1,200 µg/L).

Finally, BH-5, installed during the 2009 O'Connor Phase II ESA, and BH-8, installed during the 2010 O'Connor Supplemental Phase II ESA, are both located in the centre of the Site, northwest of the UST nest and west of the pump islands, in the general vicinity of BH21-2(MW). It is noted that BH-5 is screened at a shallow depth interval, between 1.8 and 4.6 mbgs, whereas BH-8 is screened between 4.5 and 6.0 mbgs, more consistent with majority of the monitoring wells on-Site.

BH-5 and BH-8 were sampled during the 2016 WSP Groundwater Report and the 2021 McIntosh Perry Groundwater Quality Testing Report with results indicating detectable concentrations of all BTEX parameters in BH-8 in 2016 and 2021 with only minor variability over time. Results from BH-5 in 2016 indicated detectable concentrations of all BTEX parameters with an exceedance of the Table 3 SCS for benzene, which by March 2021 was no longer detectable in the groundwater sampled from BH-5. The March 2021 results of the groundwater samples analyzed from BH-5 also indicated a reduction in the concentration of toluene to levels that were no longer detectable and reduced, though still detectable, concentrations of ethylbenzene and xylenes. The groundwater sampled from BH21-2(MW) in September 2021 for the Phase Two ESA indicated that all VOCs were below the concentrations detectable by laboratory methods, including all BTEX parameters.

The analytical results from BH-5 obtained in 2016 indicated significant exceedances of all PHC parameters which had all decreased substantially by March 2021. The concentration of PHC F4 in the groundwater sampled from BH-5 in March 2021 was no longer detectable, PHC F1 and F3 were no longer in exceedance of Table 3 SCS and, while still in exceedance, the concentration of PHC F2 had decreased from 14,800 µg/L in 2016 to 580 µg/L in March 2021.

Conversely, the analytical results from BH-8 between April 2016 and March 2021 indicated increased concentrations of PHC F1 and F2; from 950 µg/L to 1,490 µg/L and 180 µg/L to 250 µg/L, respectively. The concentrations of PHC F3 and F4 decreased between April 2016 and March 2021 to compliant but detectable levels of PHC F3 and non-detectable levels of PHC F4. The groundwater sampled from BH21-2(MW) in September 2021 indicated that all PHC parameters were below the concentrations detectable by laboratory methods.

It is noted that the comparison of analytical results obtained from different consultants by different methods and analyzed at different laboratories with different procedures can not be substantially relied upon as the variables are unquantifiable. This comparison only serves to provide a more robust representation of the complexities of the subsurface impacts at the Site over time. In order to reliably analyze and determine the potential trends occurring in the concentrations of subsurface contaminants at the Site, a long-term investigation and deliberate sampling plan would be required. The current available data does not allow for such analyses of trends, as the data sets are not consistent or large enough.

7.0 CONCLUSIONS

Following a Phase One ESA which identified several on-Site APECs at 1545 Woodroffe Avenue, Ottawa, Ontario, McIntosh Perry completed a Phase Two ESA at the above-noted Site. The investigation consisted of drilling eight (8) boreholes, five (5) of which were instrumented with monitoring wells. Soil and overburden groundwater samples were submitted for laboratory analysis of key COPC (PHC F1-F4, VOC, BTEX, metals and PAHs) to establish the presence and approximate extent of any on-Site impacts.

The results of this sampling program indicate exceedances of O.Reg. 153/04 (2011) Table 3 SCS for PHCs F1-F2 and xylene in one (1) groundwater sample (BH21-6(MW)) submitted for analysis from the southern corner of the property, adjacent to the intersection of Medhurst Drive and Woodroffe Avenue. The soil sampled from depths between 0.76 and 1.37 mbgs at BH21-6(MW) indicate an exceedance of O.Reg. 153/04 (2011) Table 3 SCS for electrical conductivity (EC).

This EC exceedance in the soil sampled from BH21-6(MW) is expected to be the result of the application of road salt for de-icing purposes for pedestrian and vehicular safety. It is noted that in December of 2019, new regulation amendments associated with salt impacts were enacted, which allow for the exemption of salt impacts if the QP determines the impacts to be resultant from de-icing activities for the purpose of human and vehicular safety.

In addition to analyzing the groundwater results collected during the field activities for this Phase Two ESA, the groundwater analytical results obtained during the 2016 WSP Groundwater Report and the 2021 McIntosh Perry Groundwater Quality Testing Report results have also been utilized to provide a more robust representation of the complexities of the subsurface impacts at the Site.

All concentrations of the analyzed parameters in the groundwater samples submitted for laboratory analysis during the 2016 WSP Groundwater Report were in compliance with MECP Table 3 SCS with the exception of the following:

- BH-5: Exceedance of Table 3 SCS for PHC F1 to F4, benzene and tetrachloroethane (1,1,1,2-)
- BH-8: Exceedance of Table 3 SCS for PHC F1 to F4 and tetrachloroethane (1,1,1,2-)
- BH-11: Exceedance of Table 3 SCS for PHC F1, F2 and xylenes
- BH-12: Exceedance of Table 3 SCS for PHC F1 to F3, benzene, ethylbenzene, tetrachloroethane (1,1,1,2-) and xylenes
- BH-13: Exceedance of Table 3 SCS for PHC F1, F2 and F4
- BH-13 (Duplicate): Exceedance of Table 3 SCS for PHC F1, F2 and F4

All concentrations of analyzed parameters in the groundwater samples submitted for laboratory analysis during the 2021 McIntosh Perry Groundwater Quality Testing Report were in compliance with MECP Table 3 SCS with the exception of the following:

- BH-5: Exceedance of Table 3 SCS for PHC F2
- BH-6: Exceedance of Table 3 SCS for PHC F1 to F3

- BH-6 (Duplicate): Exceedance of Table 3 SCS for PHC F1 to F3
- BH-8: Exceedance of Table 3 SCS for PHC F1 and F2
- BH-11: Exceedance of Table 3 SCS for PHC F1 and F2

All other soil and groundwater samples submitted for analysis during this Phase Two ESA indicate concentrations below laboratory detection limits or in compliance with Table 3 SCS. It should be noted that O.Reg. 153/04 (2011) Table 1 SCS were exceeded for various parameters at several locations across the Site. However, Table 1 full-depth background SCS are not strictly applicable to this investigation, and would only be used in the event of future excavation at the Site. Soils which meet Table 1 SCS may be considered as "clean fill" for soil management purposes under the current regulatory framework in Ontario (January 2019).

7.1 Recommendations

Given the above-noted concentrations of PHCs F1-F4 and xylenes within groundwater sampled at the Site in the vicinity of BH21-6(MW) and the historical data indicating long-term PHC and VOC contamination throughout the Site, remediation of the groundwater is recommended, or in the absence of remediation, a Risk Assessment should be completed. It is our understanding that remediation of groundwater impacts will be undertaken concurrently with the proposed redevelopment of the Site.

7.2 Signatures

This Phase Two ESA has been conducted under the supervision of Dan Arnott, P.Eng. Dan has over 13 years of experience in conducting and managing Phase One and Two ESAs in accordance with O. Reg. 153/04 (as amended), is a licensed professional engineer in Ontario and is a Qualified Person (QP_{ESA}) under O. Reg. 153/04 (as amended). It is the opinion of the QP_{ESA} that this Phase Two ESA has been conducted in accordance with O. Reg. 153/04 (as amended) and that no deficiencies were present within the assessment that would affect the validity of the Phase Two ESA.

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

Stacey Johnston, GIT
Environmental Scientist
(613) 229-0760
s.johnston@mcintoshperry.com

Dan Arnott, P.Eng., QP_{ESA}
Geo-Environmental Engineer
(613) 714-4589
d.arnott@mcintoshperry.com

Ref. U:\Ottawa\01 Project - Proposals\2021 Jobs\CCO\CCO-21-2432-06 Circle K_Studies_1545 Woodroffe\04 - ESA\Ph Two ESA\Report\Draft\CCO-21-2432-06 - Rev Phase Two ESA_Circle K Studies_1545 Woodroffe Avenue, Ottawa, ON_Draft_21-11-25.docx

8.0 LIMITATIONS

This report has been prepared, and the work referred to in this report has been undertaken by, McIntosh Perry for the Client. It is intended for the sole, and exclusive use of the Client and respective financial Institutions, affiliated companies, partners, insurers, agents, employees and advisors with respect to the current (within 18 months of report date) activities associated with the Phase Two Property located at the municipal address of 1545 Woodroffe Avenue, Ottawa, Ontario.

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 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 with respect to this report and any conclusions or recommendations made in this report reflect McIntosh Perry'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.

9.0 REFERENCES

Canadian Standards Association (CSA), Z768-01: Phase I Environmental Site Assessment, CSA International, Toronto, 2001 (Updated 2003, Reaffirmed 2016).

McIntosh Perry 'Environmental Update and Summary of Groundwater Quality Testing, Circle K Retail Fuel Outlet, 1545 Woodroffe Avenue, Ottawa, Ontario', April 19, 2021.

McIntosh Perry 'Phase One Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario', August 11, 2021.

Natural Resources Canada (NRCAN), 2011. Geobase online mapping tool: Hydro Network GIS Data accessed through <http://geobase.ca/geobase/en/viewer.jsp?group=nhn>.

O'Connor Associates Environmental Inc. 'Fuel Distribution System Upgrade and Remedial Excavation, 1545 Woodroffe Avenue (at Medhurst Drive), Ottawa, Ontario', October 13, 2009.

O'Connor Associates Environmental Inc. 'Phase II Environmental Site Assessment, 1545 Woodroffe Avenue (at Medhurst Drive), Ottawa, Ontario', October 13, 2009.

O'Connor Associates Environmental Inc. 'Subsurface Investigation, Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario', October 11, 2012.

O'Connor Associates Environmental Inc. 'Supplementary Phase Two Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario', October 11, 2012.

O'Connor Associates Environmental Inc. 'Supplementary Phase II Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario', June 25, 2010.

O'Connor Associates Environmental Inc. 'Supplementary Phase Two Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario', January 17, 2012.

O'Connor Associates Environmental, Inc. 'Soil Vapour Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario', April 2, 2014.

Natural Resources Canada, 2011. Geobase online mapping tool: Hydro Network GIS Data accessed through <http://geobase.ca/geobase/en/viewer.jsp?group=nhn>.

Ontario Geologic Survey (OGS), 2019. GIS Data for bedrock and surficial geology stratigraphy.

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

Ontario Geological Survey, 2019 – Google Earth™(website: http://www.mndmf.gov.on.ca/mines/ogs_earth_e.asp).

Parsons Canada Ltd. 'Contaminant Management Plan, 1545 Woodroffe Avenue, Ottawa, Ontario', February 21, 2013.

Parsons Canada Ltd. 'Groundwater Monitoring and Sampling Data Package, 1545 Woodroffe Avenue, Ottawa, Ontario', August 5, 2015.

Parsons Canada Ltd. 'Supplementary Phase Two Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario', April 9, 2015.

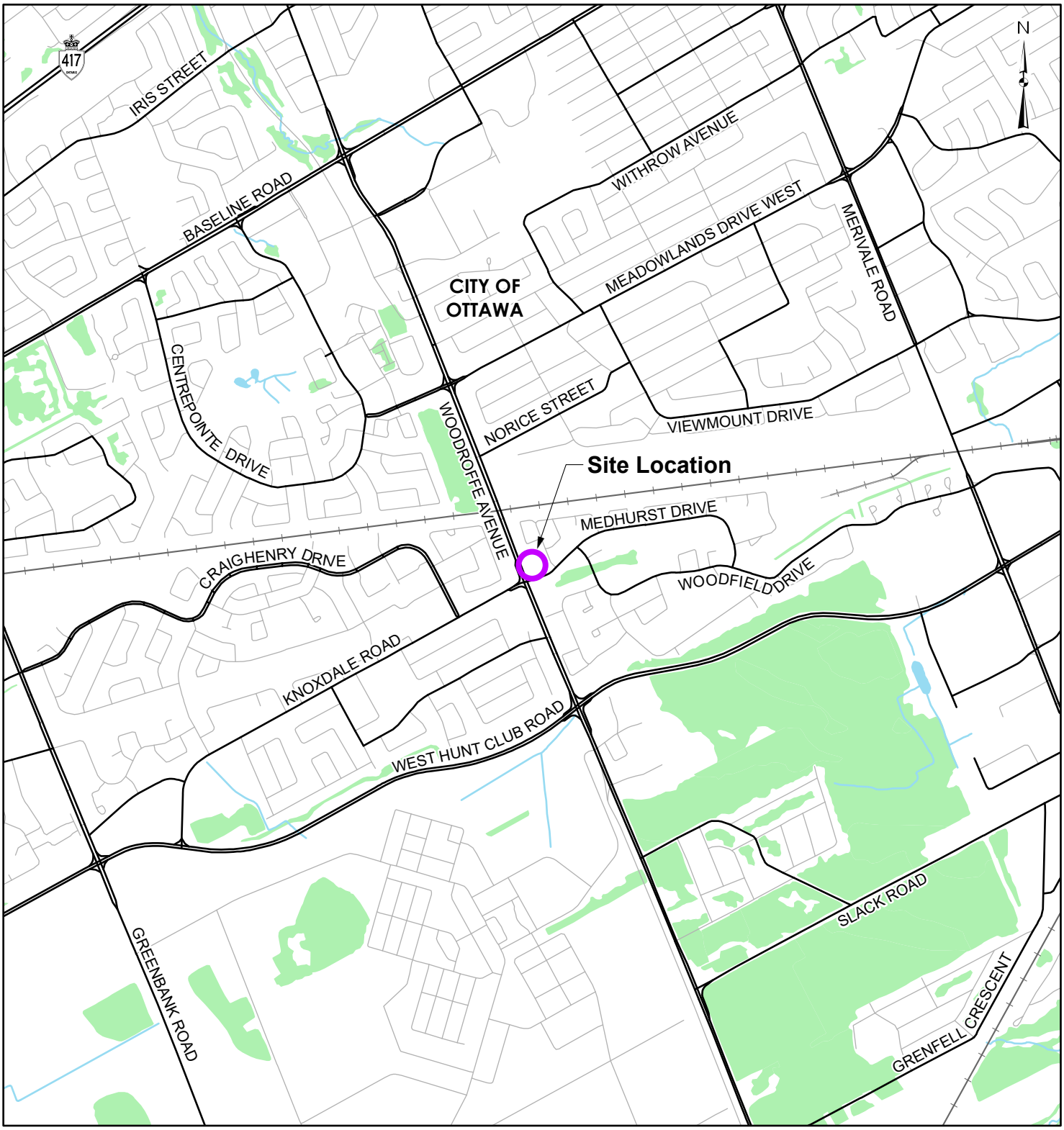
SNC-Lavalin 'Phase I Environmental Site Assessment, 1545 Woodroffe Avenue, Nepean, Ontario', July 2015.

WSP Canada Inc. 'Groundwater Monitoring and Sampling Report, IOL Site No. 302287, 1545 Woodroffe Avenue, Ottawa, Ontario', June 15, 2016.

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
1545 WOODROFFE AVENUE, OTTAWA, ONTARIO

FIGURES

McINTOSH PERRY



600 300 0 600

Scale 1:25,000 Metres

LEGEND

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

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2021.

CLIENT: CIRCLE K STORES/MAC'S CONVENIENCE LTD.

PROJECT: PHASE TWO ESA
1545 WOODROFFE AVENUE, OTTAWA, ON

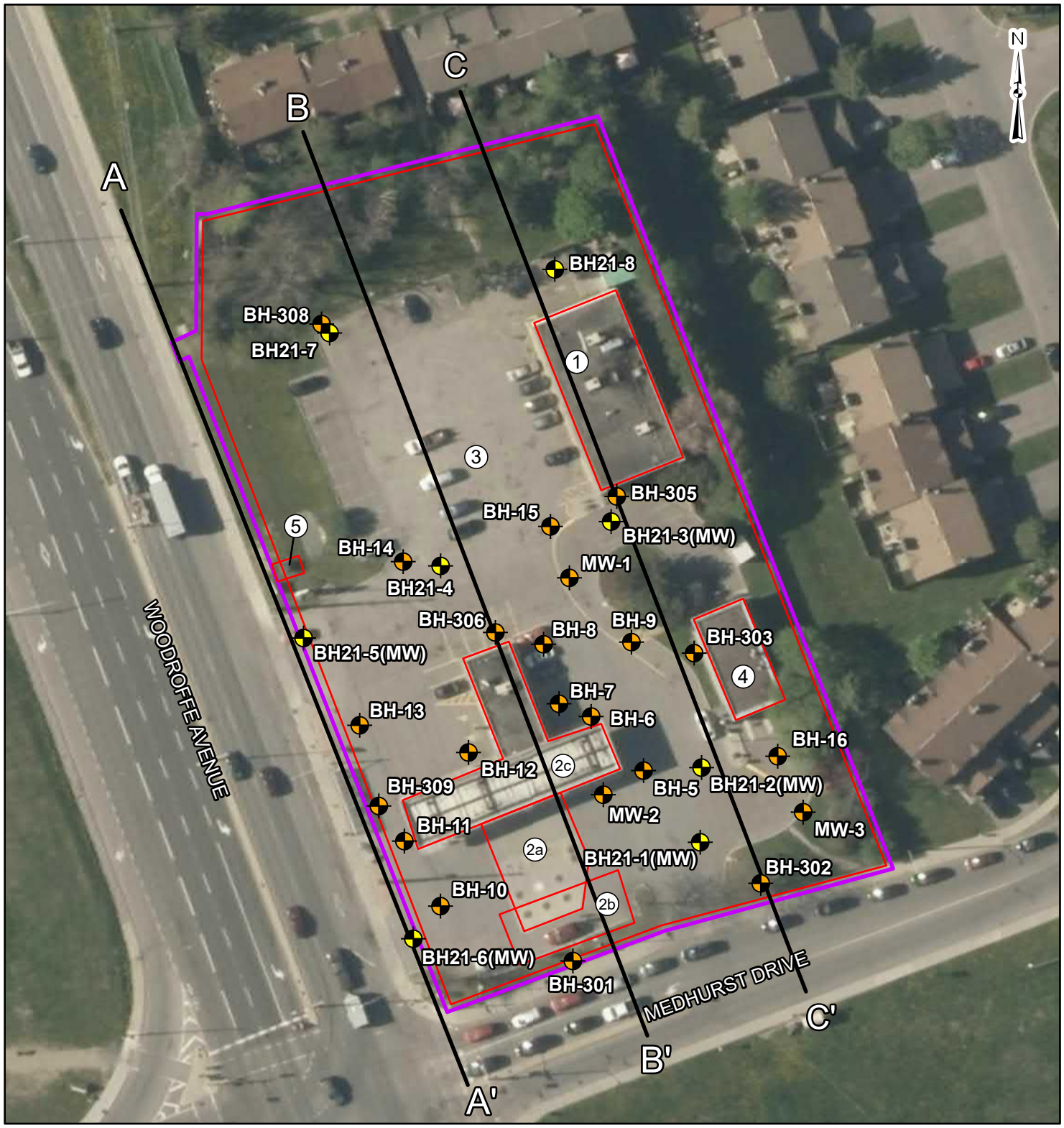
TITLE: SITE LOCATION

McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO: CCO-21-2432-06	
Date	Sep., 09, 2021
GIS	EU
Checked By	DA

FIGURE: 1

C:\Users\e.ungun\McIntosh Perry\GIS - Documents\Projects\2021\CCO\CCO-21-2432-06 Circle K - 1545 Woodroffe Ave\prjx\Env\Phase II ESA\CCO-21-2432-06 PhaseIIESA.aprx



LEGEND

- Approximate Site Boundary
- Borehole/Monitoring Well Location (Previous Reports)
- Borehole/Monitoring Well Location (2021 Phase II ESA)
- Cross Section
- APEC

1 1545 Woodroffe Avenue (On-Site) - Former Automotive Servicing Garage

2 1545 Woodroffe Avenue (On-Site) a - Current Tank Nest b - Former Tank Nest c - Retail Fuel Outlet

3 1545 Woodroffe Avenue (On-Site) - Fill of Unknown Quality

4 1545 Woodroffe Avenue (On-Site) - Car Wash

5 1545 Woodroffe Avenue (On-Site) - Transformer

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2021.

20 10 0 20

Scale 1:800 Metres

CLIENT: CIRCLE K STORES/MAC'S CONVENIENCE LTD.

PROJECT: PHASE TWO ESA
1545 WOODROFFE AVENUE, OTTAWA, ON

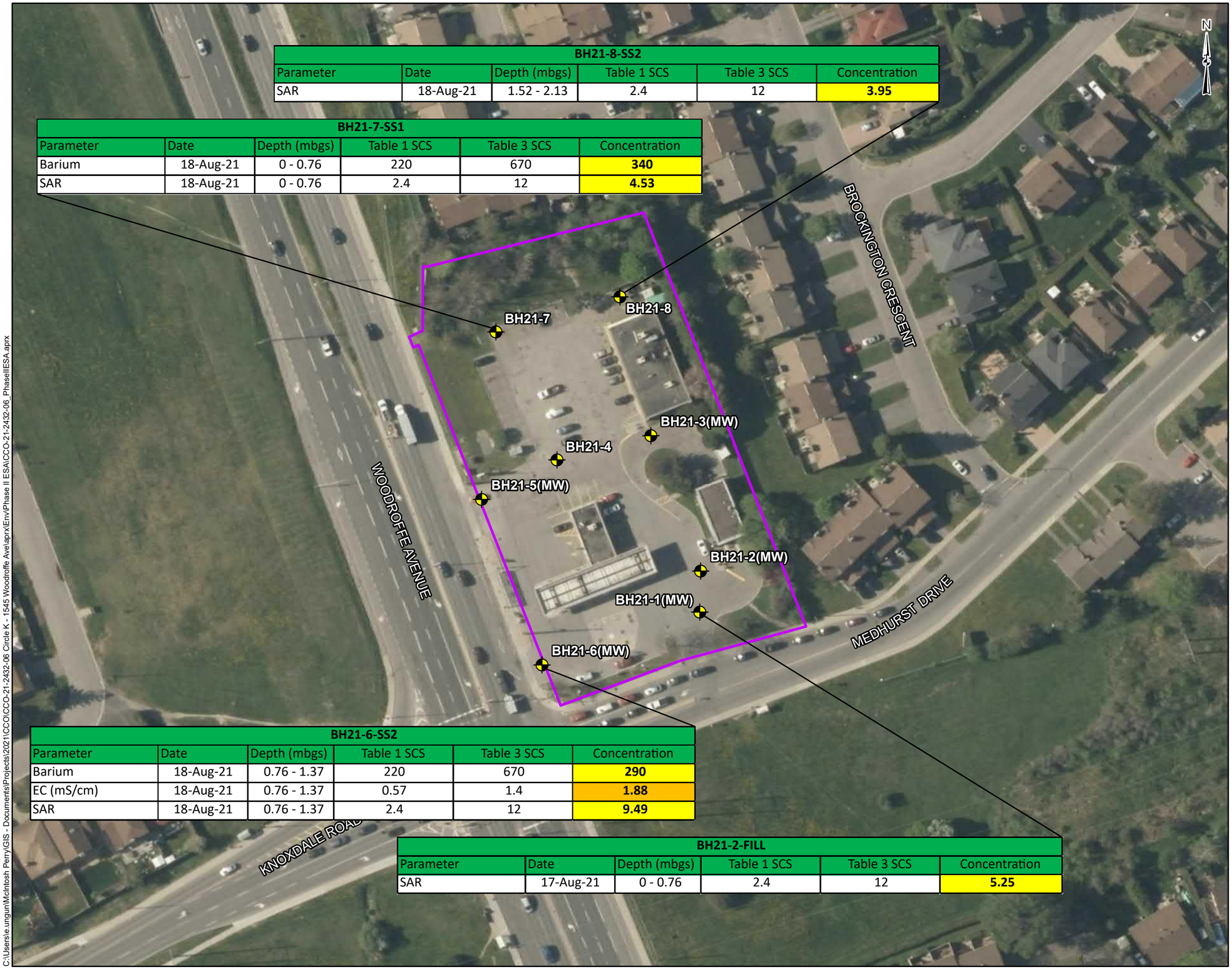
TITLE: BOREHOLE/MONITORING WELL LOCATION (2021 MCINTOSH PERRY PHASE TWO ESA)

McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO:	CCO-21-2432-06
Date	Nov., 22, 2021
GIS	EU
Checked By	DA

FIGURE: 2

C:\Users\s.klassen\McIntosh Perry\GIS - Documents\Projects\2021\CCO\CCO-21-2432-06 Circle K - 1545 Woodroffe Ave\aprx\Env\Phase II ESA\CCO-21-2432-06_PhaseIIESA.aprx



C:\Users\e.ungun\McIntosh Perry\GIS - Documents\Projects\2021\CCO\CCO-21-2432-06 Circle K - 1545 Woodroffe Ave\aprx\Env\Phase II ESA\CCO-21-2432-06_PhaseIIESA.aprx

LEGEND

- Approximate Site Boundary
- Borehole/Monitoring Well Location
- Exceeds Table 1 SCS
- Exceeds Table 3 SCS

NOTES:

- Table 1: Full Depth Background Site Condition Standards for Residential/Parkland/Industrial/Commercial/Community Property Use in the document entitled “Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act” prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011.

- Table 3: Full Depth Generic Site Condition Standards in Coarse textured soil and in a non-potable groundwater condition for Industrial/Commercial/Community property uses in the document entitled “Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act” prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011.

- All sample concentrations in micrograms per gram (µg/g), unless otherwise stated.

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2021.

20 10 0 20
Scale 1:1,000 Metres

CLIENT: CIRCLE K STORES/MAC'S CONVENIENCE LTD.

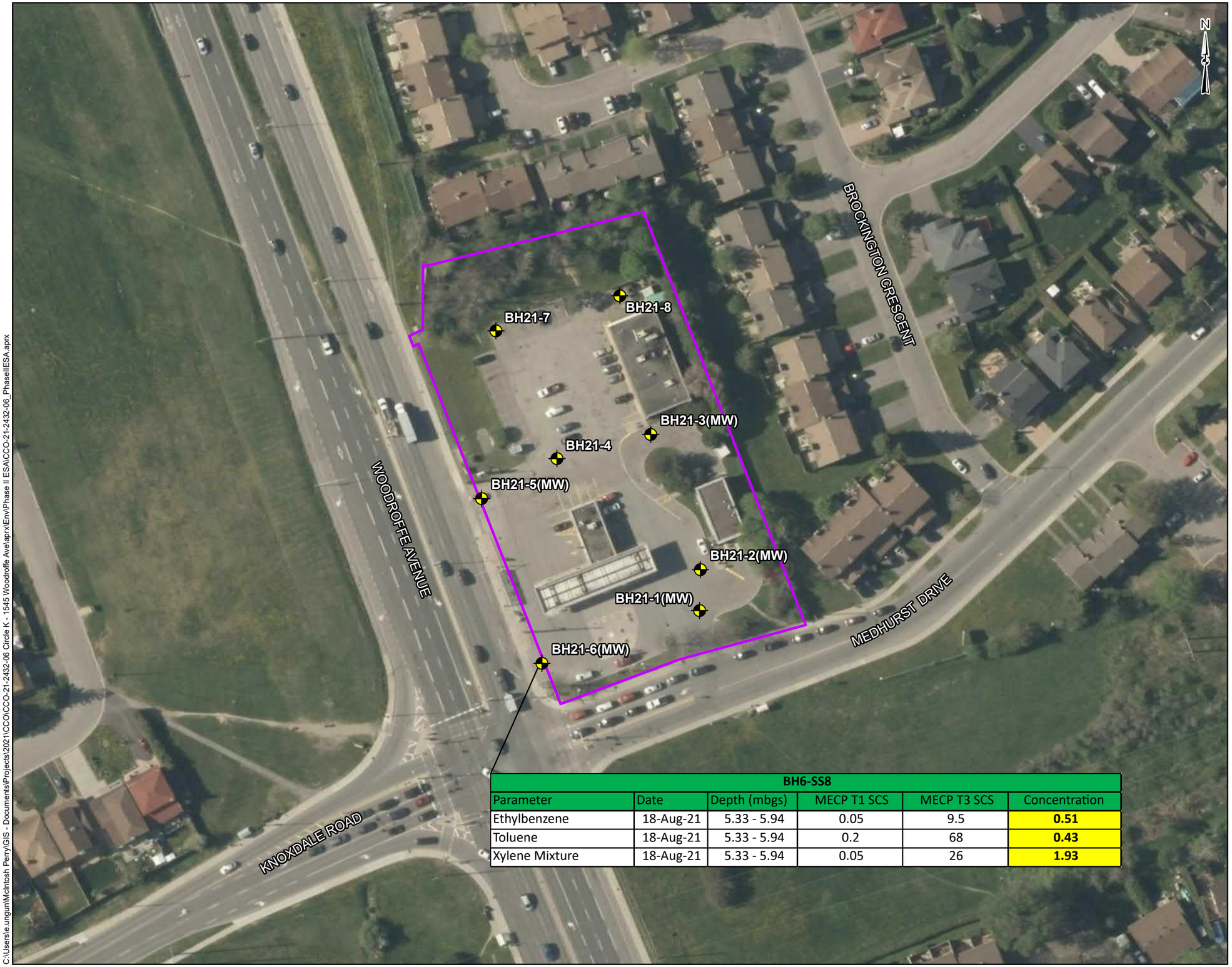
PROJECT: PHASE TWO ESA
1545 WOODROFFE AVENUE, OTTAWA, ON

TITLE: SOIL EXCEEDANCES
METALS AND INORGANICS - PLAN VIEW

McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO:	CCO-21-2432-06
Date	Sep., 09, 2021
GIS	EU
Checked By	DA

FIGURE: 3A



BH6-SS8					
Parameter	Date	Depth (mbgs)	MECP T1 SCS	MECP T3 SCS	Concentration
Ethylbenzene	18-Aug-21	5.33 - 5.94	0.05	9.5	**0.51**
Toluene	18-Aug-21	5.33 - 5.94	0.2	68	**0.43**
Xylene Mixture	18-Aug-21	5.33 - 5.94	0.05	26	**1.93**

LEGEND

- Approximate Site Boundary
- Borehole/Monitoring Well Location
- Exceeds Table 1 SCS
- Exceeds Table 3 SCS

NOTES:

- Table 1: Full Depth Background Site Condition Standards for Residential/Parkland/Industrial/Commercial/Community Property Use in the document entitled “Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act” prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011.

- Table 3: Full Depth Generic Site Condition Standards in Coarse textured soil and in a non-potable groundwater condition for Industrial/Commercial/Community property uses in the document entitled “Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act” prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011.

- All sample concentrations in micrograms per gram (µg/g), unless otherwise stated.

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2021.

20 10 0 20
Scale 1:1,000 Metres

CLIENT: CIRCLE K STORES/MAC'S CONVENIENCE LTD.

PROJECT: PHASE TWO ESA
1545 WOODROFFE AVENUE, OTTAWA, ON

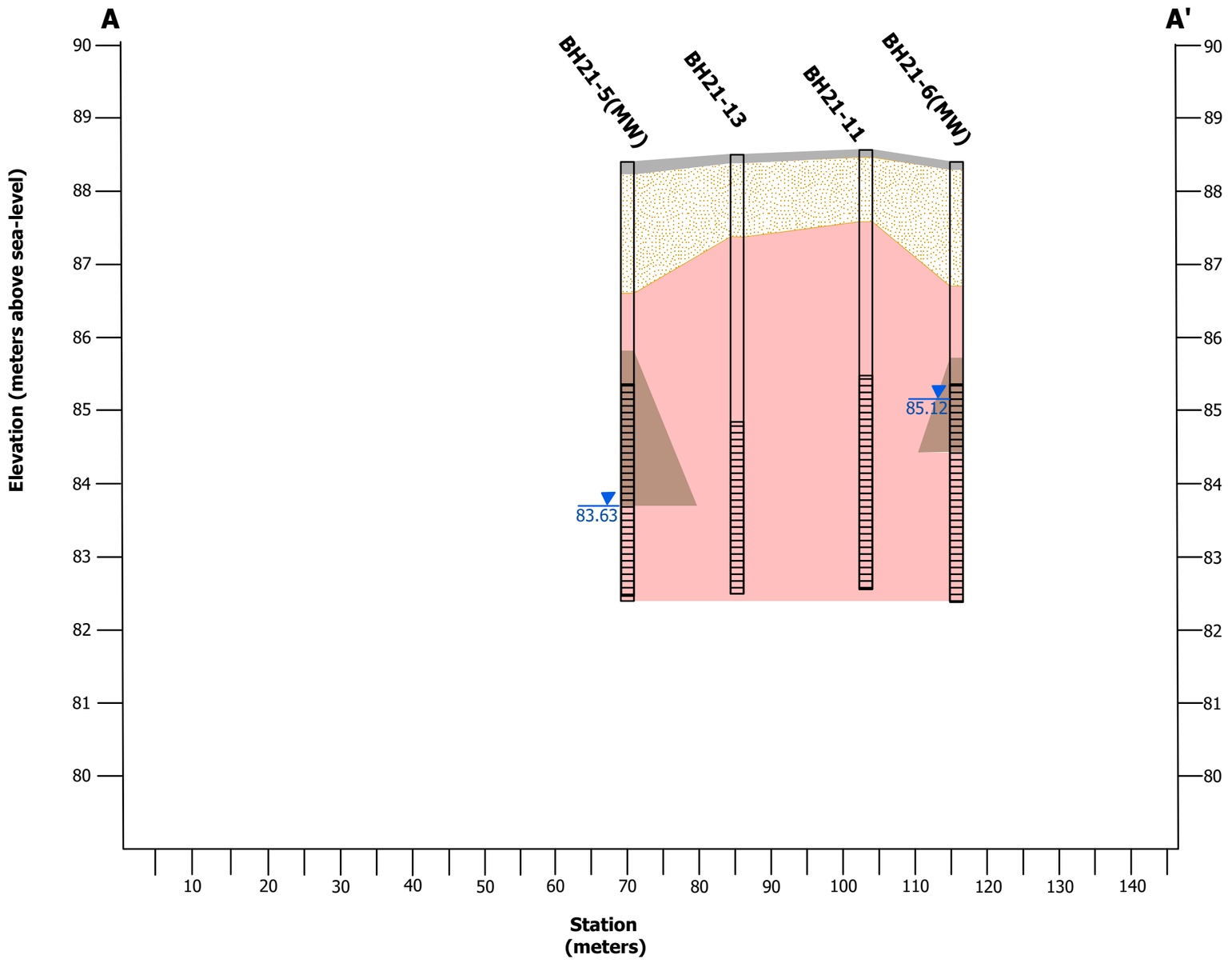
TITLE: SOIL EXCEEDANCES
VOLATILE ORGANIC COMPOUNDS - PLAN VIEW

McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO: CCO-21-2432-06	FIGURE:
Date: Sep., 09, 2021	3B
GIS: EU	
Checked By: DA	

C:\Users\e.ungun\McIntosh Perry\GIS - Documents\Projects\2021\CCO\CCO-21-2432-06 Circle K - 1545 Woodroffe Ave\aprx\Env\Phase II ESA\CCO-21-2432-06_PhaseIIESA.aprx

PROFILE VIEW



LEGEND

- Approximate Site Boundary
- Cross Section

- Asphalt
- Gravel and Sand Fill with Trace to Some Silt
- Silty Sand
- Silty Clay
- Water Level
- Screen

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2021.

CLIENT:
CIRCLE K STORES/MAC'S CONVENIENCE LTD.

PROJECT:
PHASE TWO ESA
1545 WOODROFFE AVENUE, OTTAWA, ON

TITLE:
CROSS SECTION A-A'

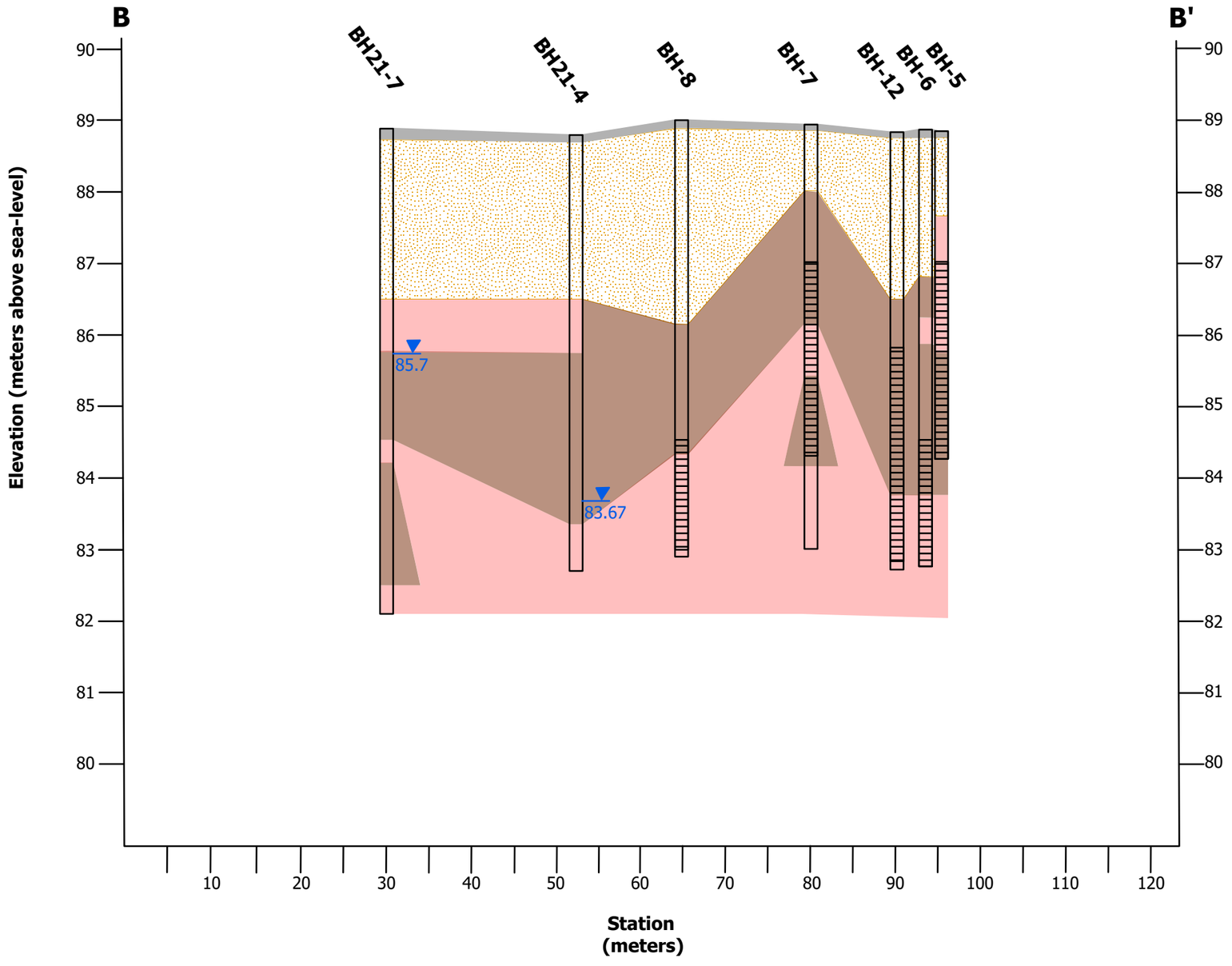
McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO:	CCO-21-2432-06
Date	Nov., 24, 2021
GIS	EU
Checked By	SJ

FIGURE: 4A

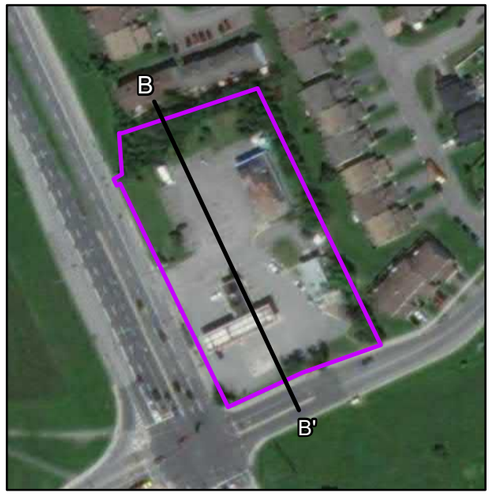
C:\Users\e.ungun\McIntosh Perry\GIS - Documents\Projects\2021\CCO\CCO-21-2432-06 Circle K - 1545 Woodroffe Ave\aprx\Env\Phase II ESA\CCO-21-2432-06_CrossSection.aprx

PROFILE VIEW



LEGEND

- Approximate Site Boundary
- Cross Section



- Asphalt
- Gravel and Sand Fill with Trace to Some Silt
- Silty Sand
- Silty Clay
- Water Level
- Screen

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2021.

CLIENT: CIRCLE K STORES/MAC'S CONVENIENCE LTD.

PROJECT: PHASE TWO ESA
1545 WOODROFFE AVENUE, OTTAWA, ON

TITLE: CROSS SECTION B-B'

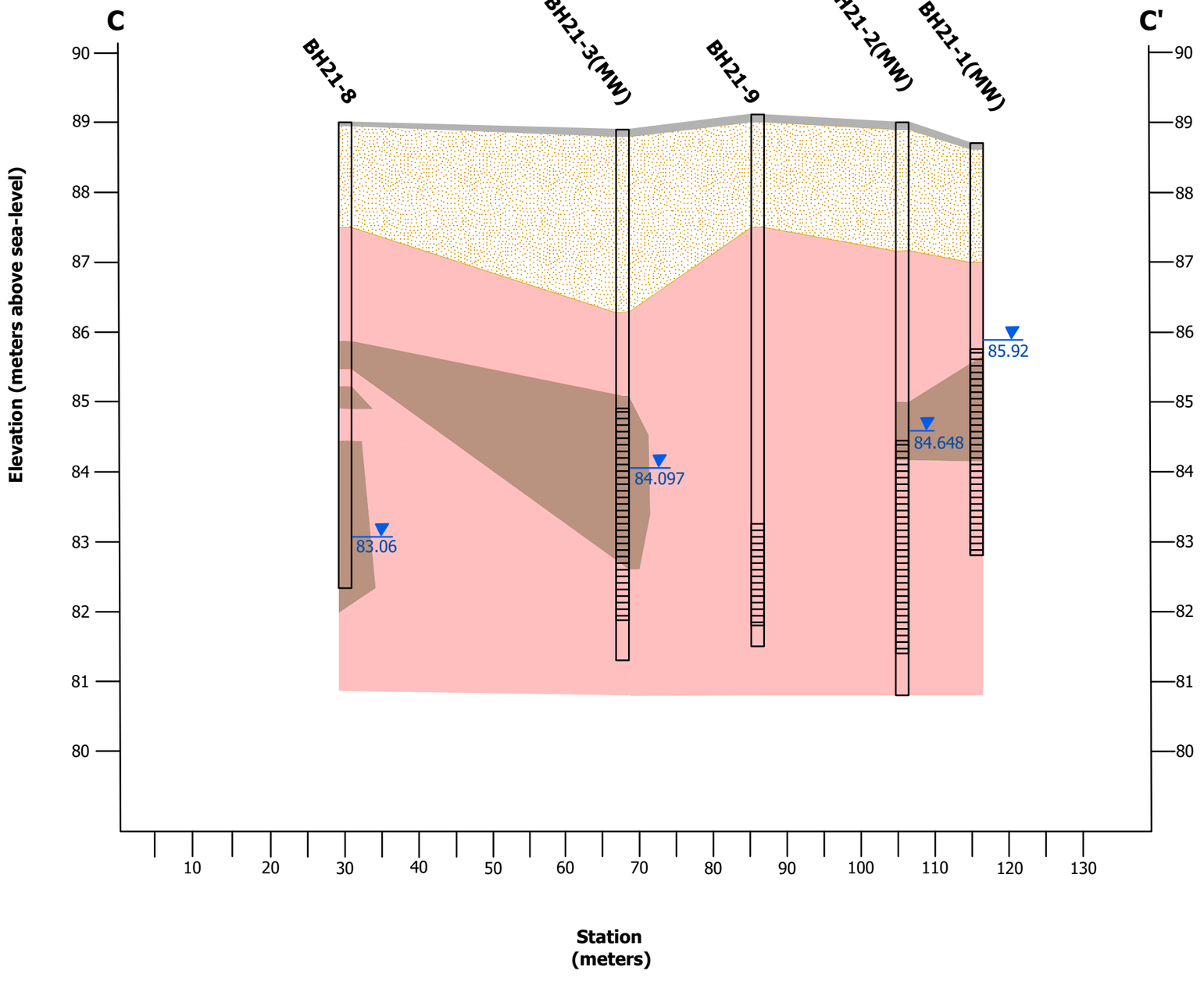
McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO:	CCO-21-2432-06
Date	Nov., 24, 2021
GIS	EU
Checked By	SJ

FIGURE: 4B

C:\Users\e.ungun\McIntosh Perry\GIS - Documents\Projects\2021\CCO\CCO-21-2432-06 Circle K - 1545 Woodroffe Ave\aprx\Env\Phase II ESA\CCO-21-2432-06_CrossSection.aprx

PROFILE VIEW



LEGEND

- Approximate Site Boundary
- Cross Section

- Asphalt
- Gravel and Sand Fill with Trace to Some Silt
- Silty Sand
- Silty Clay
- Water Level
- Screen

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2021.

CLIENT: CIRCLE K STORES/MAC'S CONVENIENCE LTD.

PROJECT: PHASE TWO ESA
1545 WOODROFFE AVENUE, OTTAWA, ON

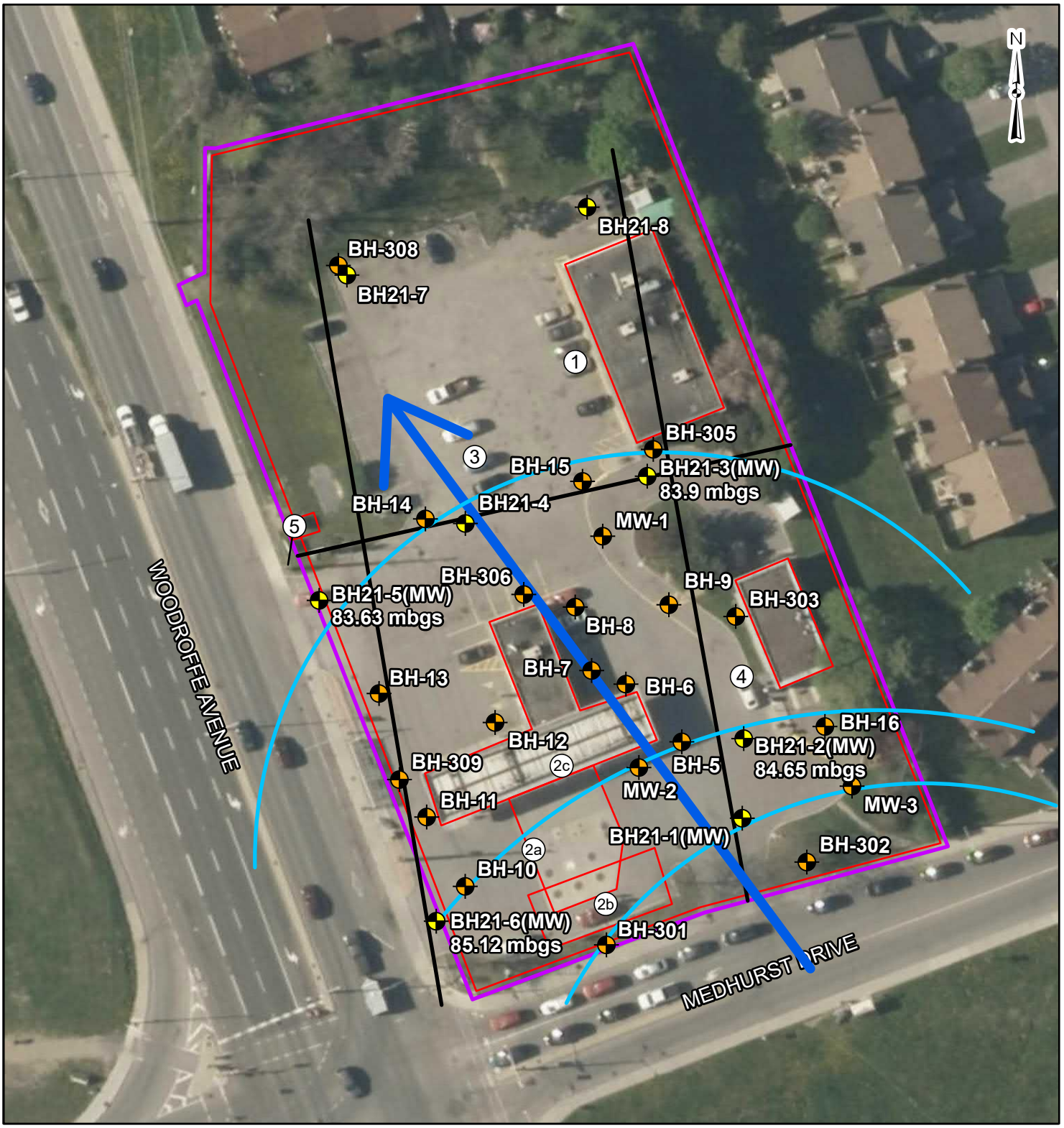
TITLE: CROSS SECTION C-C'

McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO:	CCO-21-2432-06
Date	Nov., 24, 2021
GIS	EU
Checked By	SJ

FIGURE: 4C

C:\Users\e.ungun\McIntosh Perry\GIS - Documents\Projects\2021\CCO\CCO-21-2432-06 Circle K - 1545 Woodroffe Ave\aprx\Env\Phase II ESA\CCO-21-2432-06_CrossSection.aprx



LEGEND

- Borehole/Monitoring Well Location (Previous Reports)
- Borehole/Monitoring Well Location (2021 Phase II ESA)
- Cross Section
- APEC
- Approximate Site Boundary
- Groundwater Contour
- Groundwater Flow Direction

1. 1545 Woodroffe Avenue (On-Site) - Former Automotive Servicing Garage
2. 1545 Woodroffe Avenue (On-Site) a - Current Tank Nest; b - Former Tank Nest; c - Retail Fuel Outlet
3. 1545 Woodroffe Avenue (On-Site) - Fill of Unknown Quality
4. 1545 Woodroffe Avenue (On-Site) - Car Wash
5. 1545 Woodroffe Avenue (On-Site) - Transformer

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2021.

20 10 0 20
Scale 1:800 Metres

CLIENT: CIRCLE K STORES/MAC'S CONVENIENCE LTD.

PROJECT: PHASE TWO ESA
1545 WOODROFFE AVENUE, OTTAWA, ON

TITLE: GROUNDWATER CONTOUR PLAN

McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO:	CCO-21-2432-06
Date	Sep., 16, 2021
GIS	EU
Checked By	DA

FIGURE: 5

C:\Users\s.klassen\McIntosh Perry\GIS - Documents\Projects\2021\CCO\CCO-21-2432-06 Circle K - 1545 Woodroffe Ave\aprx\Env\Phase II ESA\CCO-21-2432-06_PhaseIIESA.aprx

2016 WSP Groundwater Report: BH-5				
Parameter	Date	Screen Depth (mbgs)	MECP T3 SCS	Concentration
PHCs F1	21-Apr-16	1.8 - 4.6	750	**14800**
PHCs F2	21-Apr-16	1.8 - 4.6	150	**14800**
PHCs F3	21-Apr-16	1.8 - 4.6	500	**3820**
PHCs F4	21-Apr-16	1.8 - 4.6	500	**3680**
Benzene	21-Apr-16	1.8 - 4.6	44	**89.6**
Tetrachloroethane, 1,1,1,2-	21-Apr-16	1.8 - 4.6	3.3	**31**
2021 McIntosh Perry Groundwater Quality Testing: BH-5				
Parameter	Date	Screen Depth (mbgs)	MECP T3 SCS	Concentration
PHCs F2	21-Apr-16	1.8 - 4.6	150	**580**

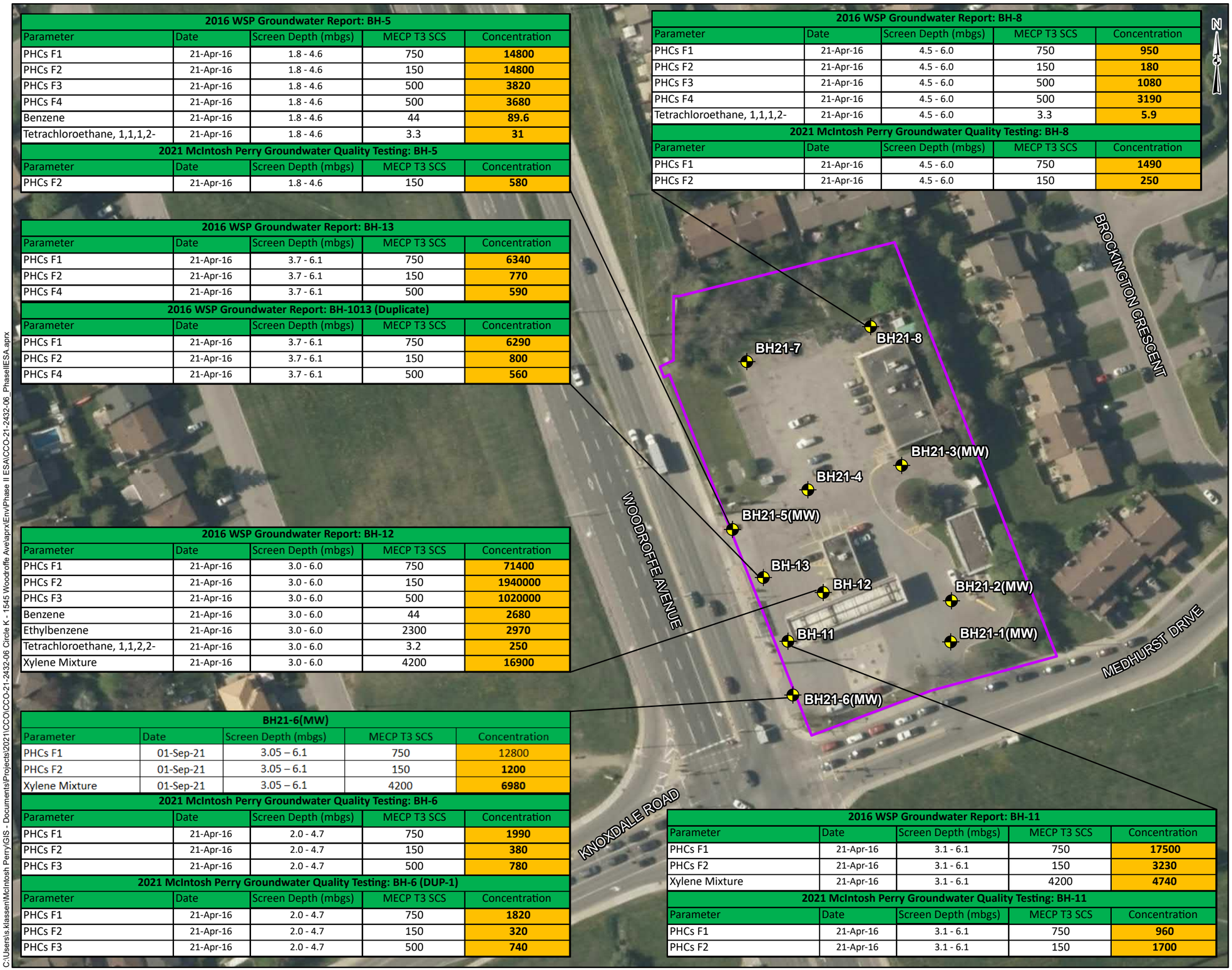
2016 WSP Groundwater Report: BH-8				
Parameter	Date	Screen Depth (mbgs)	MECP T3 SCS	Concentration
PHCs F1	21-Apr-16	4.5 - 6.0	750	**950**
PHCs F2	21-Apr-16	4.5 - 6.0	150	**180**
PHCs F3	21-Apr-16	4.5 - 6.0	500	**1080**
PHCs F4	21-Apr-16	4.5 - 6.0	500	**3190**
Tetrachloroethane, 1,1,1,2-	21-Apr-16	4.5 - 6.0	3.3	**5.9**
2021 McIntosh Perry Groundwater Quality Testing: BH-8				
Parameter	Date	Screen Depth (mbgs)	MECP T3 SCS	Concentration
PHCs F1	21-Apr-16	4.5 - 6.0	750	**1490**
PHCs F2	21-Apr-16	4.5 - 6.0	150	**250**

2016 WSP Groundwater Report: BH-13				
Parameter	Date	Screen Depth (mbgs)	MECP T3 SCS	Concentration
PHCs F1	21-Apr-16	3.7 - 6.1	750	**6340**
PHCs F2	21-Apr-16	3.7 - 6.1	150	**770**
PHCs F4	21-Apr-16	3.7 - 6.1	500	**590**
2016 WSP Groundwater Report: BH-1013 (Duplicate)				
Parameter	Date	Screen Depth (mbgs)	MECP T3 SCS	Concentration
PHCs F1	21-Apr-16	3.7 - 6.1	750	**6290**
PHCs F2	21-Apr-16	3.7 - 6.1	150	**800**
PHCs F4	21-Apr-16	3.7 - 6.1	500	**560**

2016 WSP Groundwater Report: BH-12				
Parameter	Date	Screen Depth (mbgs)	MECP T3 SCS	Concentration
PHCs F1	21-Apr-16	3.0 - 6.0	750	**71400**
PHCs F2	21-Apr-16	3.0 - 6.0	150	**1940000**
PHCs F3	21-Apr-16	3.0 - 6.0	500	**1020000**
Benzene	21-Apr-16	3.0 - 6.0	44	**2680**
Ethylbenzene	21-Apr-16	3.0 - 6.0	2300	**2970**
Tetrachloroethane, 1,1,2,2-	21-Apr-16	3.0 - 6.0	3.2	**250**
Xylene Mixture	21-Apr-16	3.0 - 6.0	4200	**16900**

BH21-6(MW)				
Parameter	Date	Screen Depth (mbgs)	MECP T3 SCS	Concentration
PHCs F1	01-Sep-21	3.05 – 6.1	750	12800
PHCs F2	01-Sep-21	3.05 – 6.1	150	**1200**
Xylene Mixture	01-Sep-21	3.05 – 6.1	4200	**6980**
2021 McIntosh Perry Groundwater Quality Testing: BH-6				
Parameter	Date	Screen Depth (mbgs)	MECP T3 SCS	Concentration
PHCs F1	21-Apr-16	2.0 - 4.7	750	**1990**
PHCs F2	21-Apr-16	2.0 - 4.7	150	**380**
PHCs F3	21-Apr-16	2.0 - 4.7	500	**780**
2021 McIntosh Perry Groundwater Quality Testing: BH-6 (DUP-1)				
Parameter	Date	Screen Depth (mbgs)	MECP T3 SCS	Concentration
PHCs F1	21-Apr-16	2.0 - 4.7	750	**1820**
PHCs F2	21-Apr-16	2.0 - 4.7	150	**320**
PHCs F3	21-Apr-16	2.0 - 4.7	500	**740**

2016 WSP Groundwater Report: BH-11				
Parameter	Date	Screen Depth (mbgs)	MECP T3 SCS	Concentration
PHCs F1	21-Apr-16	3.1 - 6.1	750	**17500**
PHCs F2	21-Apr-16	3.1 - 6.1	150	**3230**
Xylene Mixture	21-Apr-16	3.1 - 6.1	4200	**4740**
2021 McIntosh Perry Groundwater Quality Testing: BH-11				
Parameter	Date	Screen Depth (mbgs)	MECP T3 SCS	Concentration
PHCs F1	21-Apr-16	3.1 - 6.1	750	**960**
PHCs F2	21-Apr-16	3.1 - 6.1	150	**1700**



LEGEND

- Approximate Site Boundary
- Borehole/Monitoring Well Location
- Exceeds Table 3 SCS

NOTES:

- Table 3: Full Depth Generic Site Condition Standards in Coarse textured soil and in a non-potable groundwater condition for Industrial/Commercial/Community property uses in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011.

- All sample concentrations in micrograms per litre (µg/L), unless otherwise stated

- 2016 WSP Groundwater Report: Analytical results obtained from: "Groundwater Monitoring and Sampling Report, IOL Site No. 302287, 1545 Woodroffe Avenue, Ottawa,

- 2021 McIntosh Perry Groundwater Quality Testing: Analytical results obtained from: "Environmental Update and Summary of Groundwater Quality Testing, Circle K Retail Fuel Outlet, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by McIntosh Perry, dated April 2021.

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2021.

20 10 0 20
Scale 1:1,000 Metres

CLIENT: CIRCLE K STORES/MAC'S CONVENIENCE LTD.

PROJECT: PHASE TWO ESA
1545 WOODROFFE AVENUE, OTTAWA, ON

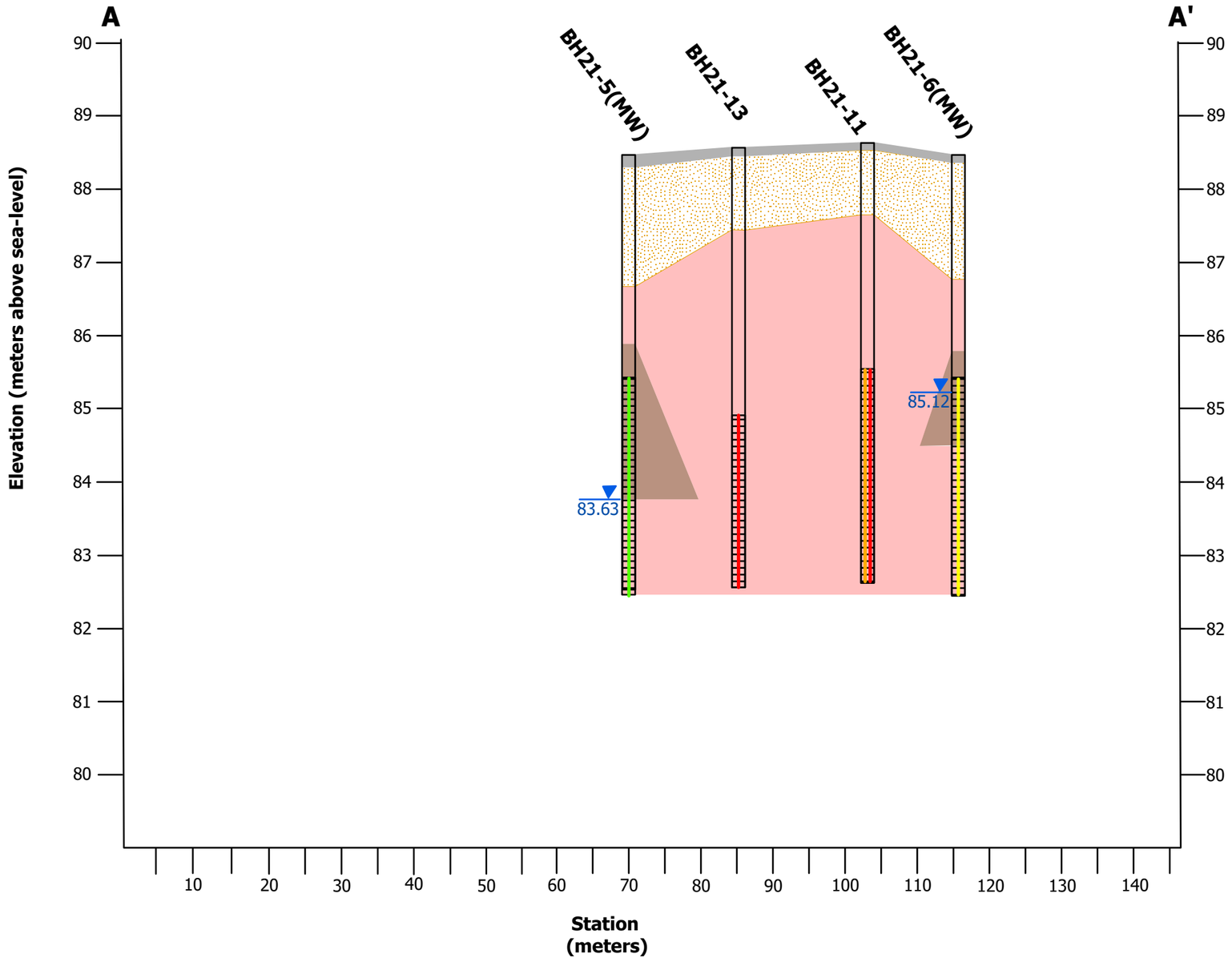
TITLE: GROUNDWATER EXCEEDANCES PLAN VIEW

McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO:CCO-21-2432-06		FIGURE:
Date	Nov., 24, 2021	6
GIS	EU	
Checked By	DA	

C:\Users\s.klassen\McIntosh Perry\GIS - Documents\Projects\2021\CCO\CCO-21-2432-06 Circle K - 1545 Woodroffe Ave\aprx\Env\Phase II ESA\CCO-21-2432-06_PhaseIIESA.aprx

PROFILE VIEW



LEGEND

- Approximate Site Boundary
- Cross Section

- Asphalt
- Gravel and Sand Fill with Trace to Some Silt
- Silty Sand
- Silty Clay
- Water Level (from 2021 MP Phase Two ESA)
- Screen
- No Table 3 SCS Groundwater Exceedance
- Table 3 SCS Exceedances - 2021 MP Phase Two ESA
- Table 3 SCS Exceedances - 2021 MP Groundwater Testing
- No Table 3 SCS Groundwater Exceedance

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2021.

CLIENT: CIRCLE K STORES/MAC'S CONVENIENCE LTD.

PROJECT: PHASE TWO ESA
1545 WOODROFFE AVENUE, OTTAWA, ON

TITLE: GROUNDWATER EXCEEDANCES
CROSS SECTION A-A'

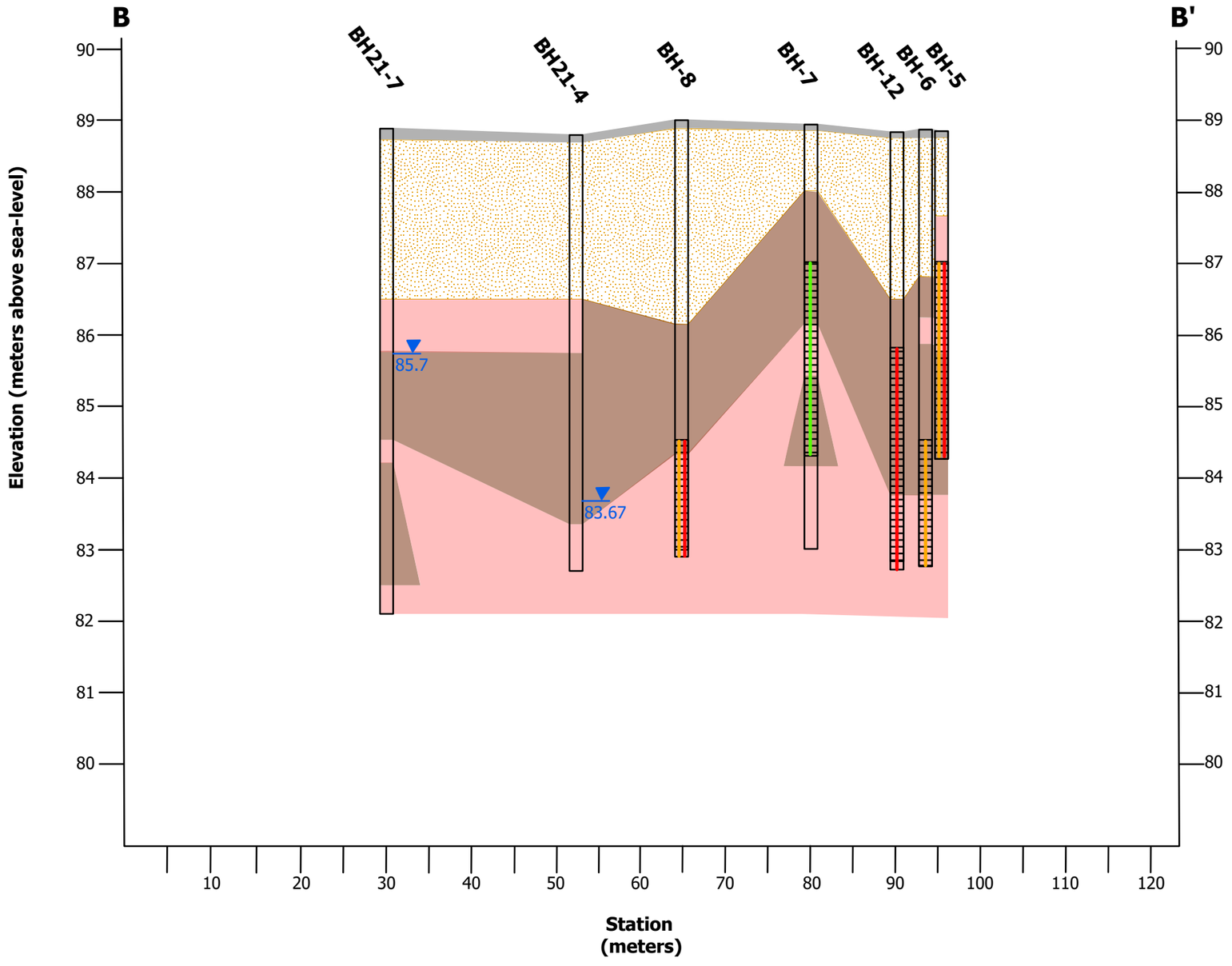
McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO:	CCO-21-2432-06
Date	Nov., 24, 2021
GIS	EU
Checked By	SJ

FIGURE: 7A

C:\Users\e.ungun\McIntosh Perry\GIS - Documents\Projects\2021\CCO\CCO-21-2432-06 Circle K - 1545 Woodroffe Ave\aprx\Env\Phase II ESA\CCO-21-2432-06_CrossSection.aprx

PROFILE VIEW



LEGEND

- Approximate Site Boundary
- Cross Section

- Asphalt
- Gravel and Sand Fill with Trace to Some Silt
- Silty Sand
- Silty Clay
- Water Level (from 2021 MP Phase Two ESA)
- Screen
- No Table 3 SCS Groundwater Exceedance
- Table 3 SCS Exceedances - 2021 MP Phase Two ESA
- Table 3 SCS Exceedances - 2021 MP Groundwater Testing
- No Table 3 SCS Groundwater Exceedance

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2021.

CLIENT: CIRCLE K STORES/MAC'S CONVENIENCE LTD.

PROJECT: PHASE TWO ESA
1545 WOODROFFE AVENUE, OTTAWA, ON

TITLE: GROUNDWATER EXCEEDANCES
CROSS SECTION B-B'

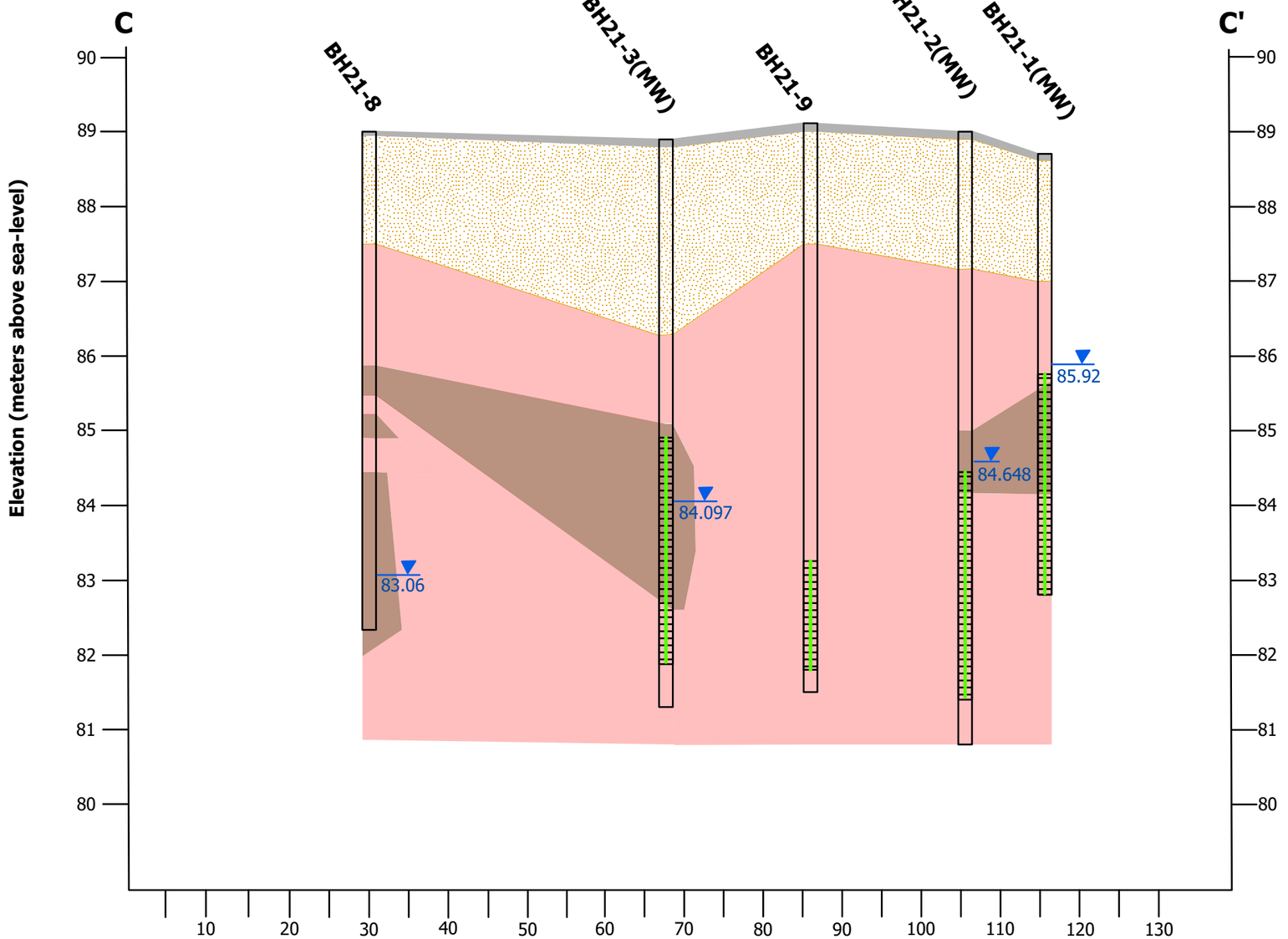
McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO:	CCO-21-2432-06
Date	Nov., 24, 2021
GIS	EU
Checked By	SJ

FIGURE: 7B

C:\Users\e.ungun\McIntosh Perry\GIS - Documents\Projects\2021\CCO\CCO-21-2432-06 Circle K - 1545 Woodroffe Ave\aprx\Env\Phase II ESA\CCO-21-2432-06_CrossSection.aprx

PROFILE VIEW



LEGEND

- Approximate Site Boundary
- Cross Section

- Asphalt
- Gravel and Sand Fill with Trace to Some Silt
- Silty Sand
- Silty Clay
- Water Level (from 2021 MP Phase Two ESA)
- Screen
- No Table 3 SCS Groundwater Exceedance
- Table 3 SCS Exceedances - 2021 MP Phase Two ESA
- Table 3 SCS Exceedances - 2021 MP Groundwater Testing
- No Table 3 SCS Groundwater Exceedance

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2021.

CLIENT: CIRCLE K STORES/MAC'S CONVENIENCE LTD.

PROJECT: PHASE TWO ESA
1545 WOODROFFE AVENUE, OTTAWA, ON

TITLE: GROUNDWATER EXCEEDANCES
CROSS SECTION C-C'

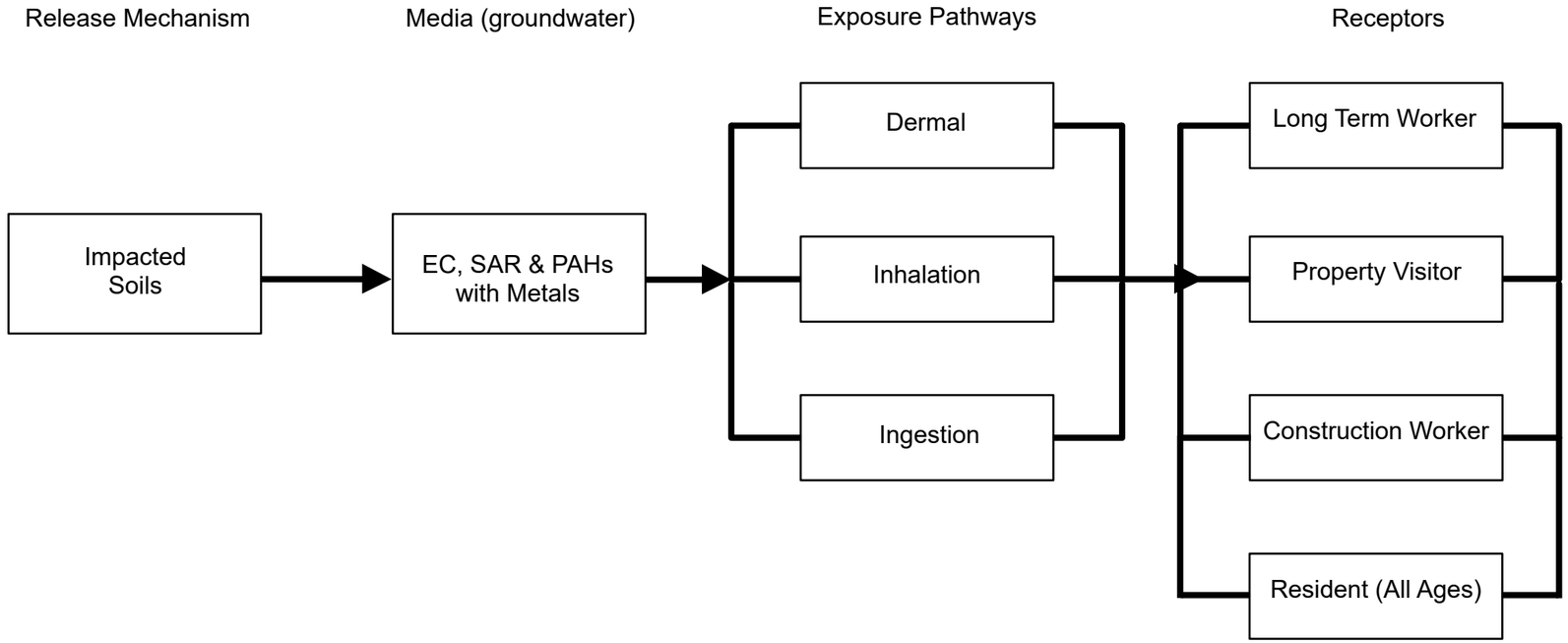
McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO:	CCO-21-2432-06
Date	Nov., 24, 2021
GIS	EU
Checked By	SJ

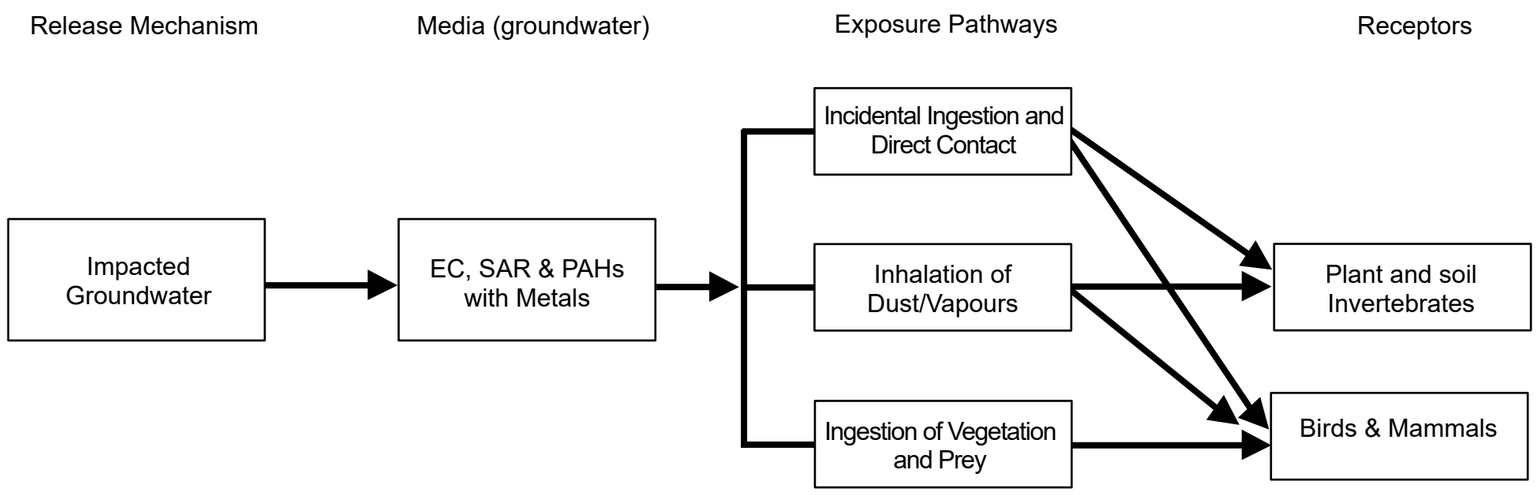
FIGURE: 7C

C:\Users\e.ungun\McIntosh Perry\GIS - Documents\Projects\2021\CCO\CCO-21-2432-06 Circle K - 1545 Woodroffe Ave\aprx\Env\Phase II ESA\CCO-21-2432-06_CrossSection.aprx

Human Receptors and Exposure Pathways



Ecological Receptors and Exposure Pathways



C:\Users\e.ungun\McIntosh Perry\GIS - Documents\Projects\2021\CCO\CCO-21-2432-06 Circle K - 1545 Woodroffe Ave\aprx\Env\Phase II ESA\CCO-21-2432-06_PhaseIIESA.aprx

CLIENT: CIRCLE K STORES/MAC'S CONVENIENCE LTD.

PROJECT: PHASE TWO ESA
1545 WOODROFFE AVENUE, OTTAWA, ON

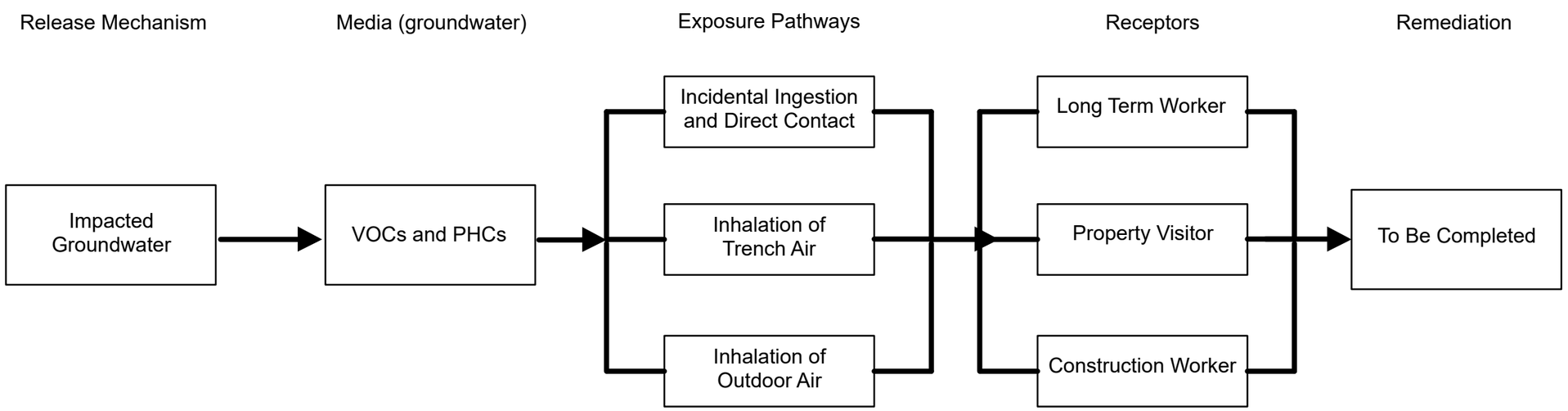
TITLE: SOIL CONTAMINANT TRANSPORT PATHWAYS

McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

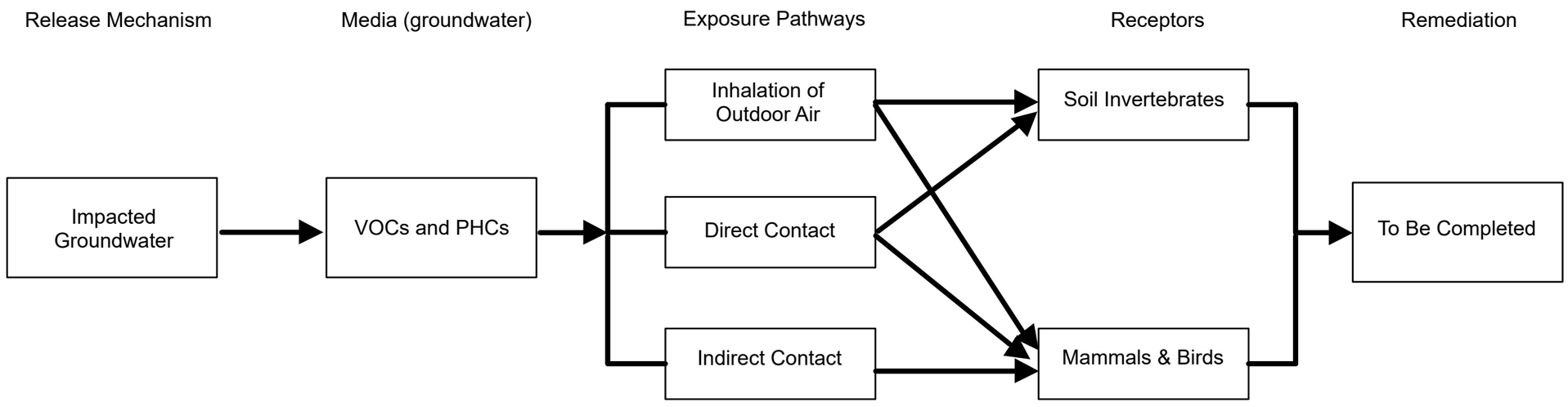
PROJECT NO:	CCO-20-2230
Date	Sep., 16, 2021
GIS	EU
Checked By	SJ

FIGURE: 8

Human Receptors and Exposure Pathways in Groundwater



Ecological Receptors and Exposure Pathways



CLIENT: CIRCLE K STORES/MAC'S CONVENIENCE LTD.

PROJECT: PHASE TWO ESA
1545 WOODROFFE AVENUE, OTTAWA, ON

TITLE: RECEPTORS AND CONTAMINANT EXPOSURE PATHWAYS IN GROUNDWATER

McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO: CCO-20-2230	FIGURE: 9
Date	Sep., 16, 2021
GIS	EU
Checked By	SJ

C:\Users\e.ungun\McIntosh Perry\GIS - Documents\Projects\2021\CCO\CCO-21-2432-06 Circle K - 1545 Woodroffe Ave\aprx\Env\Phase II ESA\CCO-21-2432-06_PhaseIIESA.aprx

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
1545 WOODROFFE AVENUE, OTTAWA, ONTARIO

TABLES

McINTOSH PERRY

Table A1
Summary of Samples Submitted for Analysis

Data Source	Sample Location	Sample ID	Media	Sample Date	Sample Depth (mbgs)	Laboratory Analysis				
						M & I	PHCs	BTEX	VOCs	PAHs
2016 WSP Groundwater Report[a]	BH-5	BH-5	Groundwater	21-Apr-16	-		X	X	X	
	BH-8	BH-6	Groundwater	21-Apr-16	-		X	X	X	
	BH-11	BH-11	Groundwater	21-Apr-16	-		X	X	X	
	BH-12	BH-12	Groundwater	22-Apr-16	-		X	X	X	
	BH-13	BH-13	Groundwater	21-Apr-16	-		X	X	X	
	BH-13	BH-13 (Duplicate)	Groundwater	21-Apr-16	-		X	X	X	
2021 McIntosh Perry Groundwater Quality Testing[b]	BH-5	BH-5	Groundwater	25-Mar-21	-		X	X		
	BH-6	BH-6	Groundwater	25-Mar-21	-		X	X		
	BH-6	BH-6 (Duplicate)	Groundwater	25-Mar-21	-		X	X		
	BH-7	BH-7	Groundwater	25-Mar-21	-		X	X		
	BH-8	BH-8	Groundwater	25-Mar-21	-		X	X		
	BH-9	BH-9	Groundwater	25-Mar-21	-		X	X		
	BH-11	BH-11	Groundwater	25-Mar-21	-		X	X		
	BH-13	BH-13	Groundwater	25-Mar-21	-		X	X		
	BH-14	BH-14	Groundwater	25-Mar-21	-		X	X		
	BH-15	BH-15	Groundwater	25-Mar-21	-		X	X		
2021 McIntosh Perry Phase Two ESA	BH21-1(MW)	BH1-SS4	Soil	17-Aug-21	3.0 - 3.66		X	X	X	
	BH21-2(MW)	BH2-FILL	Soil	17-Aug-21	0 - 0.76	X				X
	BH21-2(MW)	BH2-SS4	Soil	17-Aug-21	3.0 - 3.66		X	X	X	
	BH21-3(MW)	BH3-SS7	Soil	17-Aug-21	4.57 - 5.18		X	X	X	
	BH21-5(MW)	BH5-SS5	Soil	18-Aug-21	4.57 - 5.18		X	X	X	
	BH21-6(MW)	BH6-SS2	Soil	18-Aug-21	0.76 - 1.37	X				X
	BH21-6(MW)	BH6-SS8	Soil	18-Aug-21	5.33 - 5.94		X	X	X	
	BH21-7	BH7-SS1	Soil	18-Aug-21	0 - 0.76	X				
	BH21-7	BH7-SS2	Soil	18-Aug-21	0.76 - 1.37					X
	BH21-7	BH7-SS4	Soil	18-Aug-21	2.29 - 2.90		X	X	X	
	BH21-8	BH8-SS2	Soil	18-Aug-21	1.52 - 2.13	X				X
	BH21-7 (SS4)	BH7-SS4 (Duplicate)	Soil	18-Aug-21	2.29 - 2.90		X	X	X	
	BH21-1(MW)	BHMW1	Groundwater	01-Sep-21	-	X	X	X	X	X
	BH21-2(MW)	BHMW2	Groundwater	01-Sep-21	-	X	X	X	X	X
	BH21-3(MW)	BHMW3	Groundwater	01-Sep-21	-	X	X	X	X	X
	BH21-5(MW)	BHMW5	Groundwater	01-Sep-21	-	X	X	X	X	X
	BH21-6(MW)	BHMW6	Groundwater	01-Sep-21	-	X	X	X	X	X
	BH21-3(MW)	BH21-3(MW) (Duplicate)	Groundwater	01-Sep-21	-	X	X	X	X	X

Notes:

mbgs	Metres below ground surface
M & I	Metals and inorganics
PHCs	Petroleum hydrocarbons
BTEX	Benzene, toluene, ethylbenzene and xylene
VOCs	Volatile organic compounds
PAHs	Polycyclic aromatic hydrocarbons
-	No value
a	Data source: "Groundwater Monitoring and Sampling Report, IOL Site No. 302287, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by WSP Canada Inc., dated June 15, 2016.
b	Data source: "Environmental Update and Summary of Groundwater Quality Testing, Circle K Retail Fuel Outlet, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by McIntosh Perry, dated April 2021.

Table A2
Monitoring Well Completion Details

Data Source	Monitoring Well ID	Total Depth (m)	Screened Interval (mbgs)*	Ground Elevation (mAD)*	Water Level Measurement (mbgs)	Water Elevation (mAD)	Sample Date	Comments
2016 WSP Groundwater Report[a]	BH-5	4.60	1.8 - 4.6	88.92	2.90	85.89	21-Apr-16	-
	BH-8	6.00	4.5 - 6.0	89.00	4.88	84.00	21-Apr-16	-
	BH-11	6.10	3.1 - 6.1	88.57	4.35	84.18	21-Apr-16	-
	BH-12	6.00	3.0 - 6.0	88.82	4.78	84.00	21-Apr-16	-
	BH-13	6.10	3.7 - 6.1	88.49	4.38	84.04	21-Apr-16	-
2021 McIntosh Perry Groundwater Quality Testing[b]	BH-5	4.60	1.8 - 4.6	88.92	-	-	25-Mar-21	-
	BH-6	4.70	4.6 - 6.1	88.89	-	-	25-Mar-21	-
	BH-7	4.70	1.9 - 4.7	88.94	-	-	25-Mar-21	-
	BH-8	6.00	4.5 - 6.0	89.00	-	-	25-Mar-21	-
	BH-9	7.30	5.8 - 7.3	89.10	-	-	25-Mar-21	-
	BH-11	6.10	3.1 - 6.1	88.57	-	-	25-Mar-21	-
	BH-13	6.10	3.7 - 6.1	88.49	-	-	25-Mar-21	-
	BH-14	6.10	3.7 - 6.1	88.85	-	-	25-Mar-21	-
	BH-15	6.10	3.0 - 6.1	88.94	-	-	25-Mar-21	-
2021 McIntosh Perry Phase Two ESA	BH21-1(MW)	5.94	2.90 - 5.94	88.735	2.776	85.959	1-Sep-21	Flush mount casing
	BH21-2(MW)	8.23	4.57 - 7.62	88.965	4.352	84.613	1-Sep-21	Flush mount casing
	BH21-3(MW)	7.62	3.96 - 7.01	88.938	4.803	84.135	1-Sep-21	Flush mount casing
	BH21-5(MW)	6.10	3.05 - 6.10	88.447	4.774	83.673	1-Sep-21	Flush mount casing
	BH21-6(MW)	6.10	3.05 - 6.10	88.385	3.281	85.104	1-Sep-21	Flush mount casing

Notes:

mbgs — Metres below ground surface

mAD — Metres above datum

\- — No value

a — Data source: "Groundwater Monitoring and Sampling Report, IOL Site No. 302287, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by WSP Canada Inc., dated June 15, 2016.

b — Data source: "Environmental Update and Summary of Groundwater Quality Testing, Circle K Retail Fuel Outlet, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by McIntosh Perry, dated April 2021.

* — 2021 McIntosh Perry Phase Two ESA on-Site local benchmark is the catch basin at the Medhurst Drive entrance, elevation of 88.600 m

2016 WSP Groundwater Report and 2021 McIntosh Perry Groundwater Quality Testing elevations and screened intervals obtained from Parson's on-Site report dated April 9, 2015 and off-site report dated October 11, 2012 (Relative to local benchmark (BH5 top of riser pipe) having an elevation of 88.79 m)

Table A3
Soil Analytical Results: Metals and Inorganics

Sample ID	Reported Detection Limits (µg/g)	Table 1 SCS[a]	Table 3 SCS[b]	BH2-FILL	BH6-SS2	BH7-SS1	BH8-SS2
Sample Depth (mbgs)				0 - 0.76	0.76 - 1.37	0 - 0.76	1.52 - 2.13
Sample Date (dd-mmm-yy)				17-Aug-21	18-Aug-21	18-Aug-21	18-Aug-21
Parameter							
Antimony	0.8	1.3	40	<0.8	<0.8	<0.8	<0.8
Arsenic	1	18	18	2	2	2	1
Barium	2.0	220	670	78.3	290	340	118
Beryllium	0.4	2.5	8	<0.4	0.4	0.4	<0.4
Boron	5	36	120	9	11	<5	<5
Boron, Hot Water Ext.	0.10	NA	2	0.24	0.34	0.2	0.15
Cadmium	0.5	1.2	1.9	<0.5	<0.5	<0.5	<0.5
Chromium	5	70	160	7	21	46	29
Chromium VI	0.2	0.66	8	<0.2	<0.2	<0.2	<0.2
Cobalt	0.5	21	80	2.9	7.7	12.6	6.7
Copper	1.0	92	230	3.7	11	24.7	13.5
Cyanide	0.040	0.051	0.051	<0.040	<0.040	<0.040	<0.040
Lead	1	120	120	9	9	10	3
Mercury	0.10	0.27	3.9	<0.10	<0.10	<0.10	<0.10
Molybdenum	0.5	2	40	<0.5	<0.5	<0.5	<0.5
Nickel	1	82	270	4	15	27	16
Selenium	0.8	1.5	5.5	<0.8	<0.8	<0.8	<0.8
Silver	0.5	0.5	40	<0.5	<0.5	<0.5	<0.5
Thallium	0.5	1	3.3	<0.5	<0.5	<0.5	<0.5
Uranium	0.50	2.5	33	<0.50	<0.50	0.64	0.58
Vanadium	0.4	86	86	6.6	30.2	60.2	38.5
Zinc	5	290	340	8	37	80	35
Electrical Conductivity (mS/cm)	0.005	0.57	1.4	0.294	1.88	0.438	0.307
Sodium Adsorption Ratio	-	2.4	12	5.25	9.49	4.53	3.95
pH (CaCl2)	-	-	5.0-9.0	7.93	7.75	7.76	7.62

Notes:

µg/g	All sample concentrations in micrograms per gram, unless otherwise stated
mbgs	metres below ground surface
-	No value
123	Sample exceeds Table 1 SCS
123	Sample exceeds Table 3 SCS
a	Table 1: Full Depth Background Site Condition Standards for Residential/Parkland/Industrial/Commercial/Community Property Use in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011
b	Table 3: Full Depth Generic Site Condition Standards in Coarse textured soil and in a non-potable groundwater condition for Industrial/Commercial/Community property uses in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011

Table A4
Soil Analytical Results: Petroleum Hydrocarbons

Sample ID	Reported Detection Limits (µg/g)	Relative Percent Difference (%)	Table 1 SCS[a]	Table 3 SCS[b]	BH1-SS4	BH2-SS4	BH3-SS7	BH5-SS5	BH6-SS8	BH7-SS4	BH7-SS4 (Duplicate)
Sample Depth (mbgs)					3.0 - 3.66	3.0 - 3.66	4.57 - 5.18	4.57 - 5.18	5.33 - 5.94	2.29 - 2.90	2.29 - 2.90
Sample Date (dd-mmm-yy)					17-Aug-21	17-Aug-21	17-Aug-21	18-Aug-21	18-Aug-21	18-Aug-21	18-Aug-21
Parameter											
F1 (C6-C10)	5	0	25	55	<5	<5	<5	<5	<5	<5	<5
F2 (C10-C16)	10	0	10	230	<10	<10	<10	<10	<10	<10	<10
F3 (C16-C34)	50	0	240	1700	<50	<50	<50	<50	<50	<50	<50
F4 (C34-C50)	50	0	120	3300	<50	<50	<50	<50	<50	<50	<50

Notes:

µg/g	All sample concentrations in micrograms per gram, unless otherwise stated
mbgs	metres below ground surface
-	No value
123	Sample exceeds Table 1 SCS
123	Sample exceeds Table 3 SCS
a	Table 1: Full Depth Background Site Condition Standards for Residential/Parkland/Industrial/Commercial/Community Property Use in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011
b	Table 3: Full Depth Generic Site Condition Standards in Coarse textured soil and in a non-potable groundwater condition for Industrial/Commercial/Community property uses in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011

Table A5
Soil Analytical Results: Volatile Organic Compounds

Sample ID	Reported Detection Limits	Relative Percent			BH1-SS4	BH2-SS4	BH3-SS7	BH5-SS5	BH6-SS8	BH7-SS4	BH7-SS4 (Duplicate)
Sample Depth (mbgs)					3.0 - 3.66	3.0 - 3.66	4.57 - 5.18	4.57 - 5.18	5.33 - 5.94	2.29 - 2.90	2.29 - 2.90
Sample Date (dd-mmm-yy)	(µg/g)	Difference (%)	Table 1 SCS[a]	Table 3 SCS[b]	17-Aug-21	17-Aug-21	17-Aug-21	18-Aug-21	18-Aug-21	18-Aug-21	18-Aug-21
Parameter											
Acetone	0.50	0	0.5	16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Benzene	0.02	0	0.02	0.32	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromodichloromethane	0.05	0	0.05	18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	0.05	0	0.05	0.61	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromomethane	0.05	0	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	0.05	0	0.05	0.21	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	0.05	0	0.05	2.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chloroform	0.04	0	0.05	0.47	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Dibromochloromethane	0.05	0	0.05	13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichlorobenzene, 1,2-	0.05	0	0.05	6.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichlorobenzene, 1,3-	0.05	0	0.05	9.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichlorobenzene, 1,4-	0.05	0	0.05	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichlorodifluoromethane	0.05	0	0.05	16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloroethane, 1,1-	0.02	0	0.05	17	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dichloroethane, 1,2-	0.03	0	0.05	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Dichloroethylene, 1,1-	0.05	0	0.05	0.064	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloroethylene, cis-1,2-	0.02	0	0.05	55	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dichloroethylene, trans-1,2-	0.05	0	0.05	1.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloropropane, 1,2-	0.03	0	0.05	0.16	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Dichloropropene, 1,3-	0.04	0	0.05	0.18	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Ethylbenzene	0.05	0	0.05	9.5	<0.05	<0.05	<0.05	<0.05	0.51	<0.05	<0.05
Ethylene Dibromide	0.04	0	0.05	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Hexane (n)	0.05	0	0.05	46	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Ethyl Ketone	0.50	0	0.5	70	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	0.50	0	0.5	31	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl tert-Butyl Ether (MTBE)	0.05	0	0.05	11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.05	0	0.05	1.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	0.05	0	0.05	34	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrachloroethane, 1,1,1,2-	0.04	0	0.05	0.087	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethane, 1,1,2,2-	0.05	0	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	0.05	0	0.05	4.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	0.05	0	0.2	68	<0.05	<0.05	<0.05	<0.05	0.43	<0.05	<0.05
Trichloroethane, 1,1,1-	0.05	0	0.05	6.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethane, 1,1,2-	0.04	0	0.05	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Trichloroethylene	0.03	0	0.05	0.91	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichlorofluoromethane	0.05	0	0.25	4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.02	0	0.02	0.032	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Xylene Mixture	0.05	0	0.05	26	<0.05	<0.05	<0.05	<0.05	1.93	<0.05	<0.05

Notes:

µg/g	All sample concentrations in micrograms per gram, unless otherwise stated
mbgs	metres below ground surface
-	No value
123	Sample exceeds Table 1 SCS
123	Sample exceeds Table 3 SCS
a	Table 1: Full Depth Background Site Condition Standards for Residential/Parkland/Industrial/Commercial/Community Property Use in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011
b	Table 3: Full Depth Generic Site Condition Standards in Coarse textured soil and in a non-potable groundwater condition for Industrial/Commercial/Community property uses in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011

Table A6
Soil Analytical Results: Polycyclic Aromatic Hydrocarbons

Sample ID	Reported Detection Limits (µg/g)	Table 1 SCS[a]	Table 3 SCS[b]	BH2-Fill	BH6-SS2	BH7-SS2	BH8-SS2
Sample Depth (mbgs)				0 - 0.76	0.76 - 1.37	0.76 - 1.37	1.52 - 2.13
Sample Date (dd-mmm-yy)				17-Aug-21	18-Aug-21	18-Aug-21	18-Aug-21
Parameter							
	0.05	0.072	96	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	0.05	0.093	0.15	<0.05	<0.05	<0.05	<0.05
Anthracene	0.05	0.16	0.67	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	0.05	0.36	0.96	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	0.05	0.3	0.3	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	0.05	0.47	0.96	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	0.05	0.68	9.6	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	0.05	0.48	0.96	<0.05	<0.05	<0.05	<0.05
Chrysene	0.05	2.8	9.6	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	0.05	0.1	0.1	<0.05	<0.05	<0.05	<0.05
Fluoranthene	0.05	0.56	9.6	<0.05	<0.05	<0.05	<0.05
Fluorene	0.05	0.12	62	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	0.05	0.23	0.76	<0.05	<0.05	<0.05	<0.05
Methlynaphthalene, 2-(1-)	0.05	0.59	76	<0.05	<0.05	<0.05	<0.05
Naphthalene	0.05	0.09	9.6	<0.05	<0.05	<0.05	<0.05
Phenanthrene	0.05	0.69	12	<0.05	<0.05	<0.05	<0.05
Pyrene	0.05	1	96	<0.05	<0.05	<0.05	<0.05

Notes:

µg/g	All sample concentrations in micrograms per gram, unless otherwise stated
mbgs	metres below ground surface
-	No value
123	Sample exceeds Table 1 SCS
123	Sample exceeds Table 3 SCS
a	Table 1: Full Depth Background Site Condition Standards for Residential/Parkland/Industrial/Commercial/Community Property Use in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011
b	Table 3: Full Depth Generic Site Condition Standards in Coarse textured soil and in a non-potable groundwater condition for Industrial/Commercial/Community property uses in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011

Table A7
Groundwater Analytical Results: Metals and Inorganics

Data Source				2021 McIntosh Perry Phase Two ESA					
Sample ID	Reported Detection Limits (µg/L)	Relative Percent Difference (%)	Table 3 SCS*	BH21-1(MW)	BH21-2(MW)	BH21-3(MW)	BH21-3(MW) (Duplicate)	BH21-5(MW)	BH21-6(MW)
Sample Date (dd-mmm-yy)				01-Sep-21	01-Sep-21	01-Sep-21	01-Sep-21	01-Sep-21	01-Sep-21
Parameter									
Antimony	1	0	20000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic	1	0	1900	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Barium	2	9.16	29000	188	175	388	354	111	759
Beryllium	0.5	0	67	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Boron	10	0.56	45000	40.9	36	54	53.7	41.3	44
Cadmium	0.2	0	2.7	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	2	0	810	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chromium VI	2	0	140	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000
Cobalt	0.5	0	66	<0.50	0.9	<0.50	<0.50	<0.50	<0.50
Copper	1	0	87	<1.0	1.1	<1.0	<1.0	<1.0	<1.0
Cyanide, Free	2	0	66	<2	<2	<2	<2	<2	<2
Lead	0.5	42.52	25	0.78	0.89	0.77	<0.50	0.66	0.62
Mercury	0.02	0	0.29	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Molybdenum	0.5	-35.94	9200	2.92	2.99	1.05	1.51	2.72	1.64
Nickel	3	12.12	490	<3.0	3.7	3.5	3.1	4.8	3.1
Selenium	1	0	63	2.7	<1.0	2	<1.0	2.5	1.6
Silver	0.2	0	1.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	0.3	0	510	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Uranium	0.5	0	420	17	20.4	<0.50	<0.50	5.95	1.45
Vanadium	0.4	29.79	250	<0.40	0.51	0.54	<0.40	<0.40	0.81
Zinc	5	0	1100	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Chloride	100	-1.64	2300000	771000	586000	423000	430000	428000	857000
Sodium	500	-7.09	2300000	336000	248000	204000	219000	192000	443000
Electrical Conductivity (uS/cm)	2	-0.72	-	3190	2530	2780	2800	2040	3590
pH	-	0.13	-	7.67	7.78	7.69	7.68	7.76	7.73

Notes:

µg/L	All sample concentrations in micrograms per litre, unless otherwise stated
-	No value
123	Sample exceeds Table 3 SCS
*	Table 3: Full Depth Generic Site Condition Standards in Coarse textured soil and in a non-potable groundwater condition for Industrial/Commercial/Community property uses in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011

Table A8
Groundwater Analytical Results: Petroleum Hydrocarbons

Data Source				2016 WSP Groundwater Report[a]					
Sample ID	Reported Detection Limits (µg/L)	Relative Percent Difference (%)	Table 3 SCS*	BH-5	BH-8	BH-11	BH-12	BH-13	BH-13 (Duplicate)
Sample Date (dd-mmm-yy)				21-Apr-16	21-Apr-16	21-Apr-16	21-Apr-16	21-Apr-16	21-Apr-16
Parameter									
F1 (C6-C10)	25	0	750	14800	950	17500	71400	6340	6290
F2 (C10-C16)	100	0	150	14800	180	3230	1940000	770	800
F3 (C16-C34)	100	0	500	3820	1080	<50	1020000	160	170
F4 (C34-C50)	100	0	500	3680	3190	<50	<51	590	560

Notes:

µg/L	All sample concentrations in micrograms per litre, unless otherwise stated
-	No value
123	Sample exceeds Table 3 SCS
*	Table 3: Full Depth Generic Site Condition Standards in Coarse textured soil and in a non-potable groundwater condition for Industrial/Commercial/Community property uses in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011
a	Analytical results obtained from: "Groundwater Monitoring and Sampling Report, IOL Site No. 302287, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by WSP Canada Inc., dated June 15, 2016.
b	Analytical results obtained from: "Environmental Update and Summary of Groundwater Quality Testing, Circle K Retail Fuel Outlet, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by McIntosh Perry, dated April 2021.

Table A8
Groundwater Analytical Results: Petroleum Hydrocarbons

Data Source				2021 McIntosh Perry Groundwater Quality Testing[b]									
Sample ID	Reported Detection Limits (µg/L)	Relative Percent Difference (%)	Table 3 SCS*	BH-5	BH-6	BH-6 (Duplicate)	BH-7	BH-8	BH-9	BH-11	BH-13	BH-14	BH-15
Sample Date (dd-mmm-yy)				25-Mar-21	25-Mar-21	25-Mar-21	25-Mar-21	25-Mar-21	25-Mar-21	25-Mar-21	25-Mar-21	25-Mar-21	25-Mar-21
Parameter													
F1 (C6-C10)	25	0	750	268	1990	1820	<25	1490	<25	960	410	32	<25
F2 (C10-C16)	100	0	150	580	380	320	<100	250	<100	1700	<100	<100	<100
F3 (C16-C34)	100	0	500	370	780	740	<100	140	<100	290	<100	<100	<100
F4 (C34-C50)	100	0	500	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100

Notes:

µg/L	All sample concentrations in micrograms per litre, unless otherwise stated
-	No value
123	Sample exceeds Table 3 SCS
*	Table 3: Full Depth Generic Site Condition Standards in Coarse textured soil and in a non-potable groundwater condition for Industrial/Commercial/Community property uses in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011
a	Analytical results obtained from: "Groundwater Monitoring and Sampling Report, IOL Site No. 302287, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by WSP Canada Inc., dated June 15, 2016.
b	Analytical results obtained from: "Environmental Update and Summary of Groundwater Quality Testing, Circle K Retail Fuel Outlet, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by McIntosh Perry, dated April 2021.

Table A8
Groundwater Analytical Results: Petroleum Hydrocarbons

Data Source				2021 McIntosh Perry Phase Two ESA					
Sample ID	Reported Detection Limits (µg/L)	Relative Percent Difference (%)	Table 3 SCS*	BH21-1(MW)	BH21-2(MW)	BH21-3(MW)	BH21-3(MW) (Duplicate)	BH21-5(MW)	BH21-6(MW)
Sample Date (dd-mmm-yy)				01-Sep-21	01-Sep-21	01-Sep-21	01-Sep-21	01-Sep-21	01-Sep-21
Parameter									
F1 (C6-C10)	25	0	750	<25	<25	<25	<25	<25	12800
F2 (C10-C16)	100	0	150	<100	<100	<100	<100	<100	1200
F3 (C16-C34)	100	0	500	<100	<100	<100	<100	<100	<100
F4 (C34-C50)	100	0	500	<100	<100	<100	<100	<100	<100

Notes:

µg/L	All sample concentrations in micrograms per litre, unless otherwise stated
-	No value
123	Sample exceeds Table 3 SCS
*	Table 3: Full Depth Generic Site Condition Standards in Coarse textured soil and in a non-potable groundwater condition for Industrial/Commercial/Community property uses in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011
a	Analytical results obtained from: "Groundwater Monitoring and Sampling Report, IOL Site No. 302287, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by WSP Canada Inc., dated June 15, 2016.
b	Analytical results obtained from: "Environmental Update and Summary of Groundwater Quality Testing, Circle K Retail Fuel Outlet, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by McIntosh Perry, dated April 2021.

Table A9
Groundwater Analytical Results: Volatile Organic Compounds

Data Source				2016 WSP Groundwater Report[a]					
Sample ID	Reported Detection Limits	Relative Percent Difference (%)	Table 3 SCS*	BH-5	BH-8	BH-11	BH-12	BH-13	BH-1013 (Duplicate)
Sample Date (dd-mmm-yy)	(µg/L)			21-Apr-16	21-Apr-16	21-Apr-16	21-Apr-16	21-Apr-16	21-Apr-16
Parameter									
Acetone	1.0	0	130000	<30	60	<30	<3000	<30	<30
Benzene	0.20	0	44	89.6	12.2	14.5	2680	31	33.1
Bromodichloromethane	0.20	0	85000	<0.3	<0.3	<0.3	<30	<0.3	<0.3
Bromoform	0.10	0	380	<0.4	<0.4	<0.4	<40	<0.4	<0.4
Bromomethane	0.20	0	5.6	<0.5	<0.5	<0.5	<50	<0.5	<0.5
Carbon Tetrachloride	0.20	0	0.79	<0.2	<0.2	<0.2	<20	<0.2	<0.2
Chlorobenzene	0.10	0	630	<0.2	<0.2	<0.2	<20	<0.2	<0.2
Chloroform	0.20	0	2.4	<0.5	0.6	<0.5	<50	<0.5	<0.5
Dibromochloromethane	0.10	0	82000	<0.3	<0.3	<0.3	<30	<0.3	<0.3
Dichlorobenzene, 1,2-	0.10	0	4600	<0.4	<0.4	<0.4	<40	<0.4	<0.4
Dichlorobenzene, 1,3-	0.10	0	9600	<0.4	<0.4	<0.4	<40	<0.4	<0.4
Dichlorobenzene, 1,4-	0.10	0	8	<0.4	<0.4	<0.4	<40	<0.4	<0.4
Dichlorodifluoromethane	0.20	0	4400	<0.5	<0.5	<0.5	<50	<0.5	<0.5
Dichloroethane, 1,1-	0.30	0	320	<0.4	<0.4	<0.4	<40	<0.4	<0.4
Dichloroethane, 1,2-	0.20	0	1.6	<0.2	<0.2	<0.2	<20	<0.2	<0.2
Dichloroethylene, 1,1-	0.30	0	1.6	<0.5	<0.5	<0.5	<50	<0.5	<0.5
Dichloroethylene, cis-1,2-	0.20	0	1.6	<0.4	<0.4	<0.4	<40	<0.4	<0.4
Dichloroethylene, trans-1,2-	0.20	0	1.6	<0.4	<0.4	<0.4	<40	<0.4	<0.4
Dichloropropane, 1,2-	0.20	0	16	<0.5	<0.5	<0.5	<50	<0.5	<0.5
Dichloropropane, 1,3-	0.30	0	5.2	<0.2	<0.2	<0.2	<20	<0.2	<0.2
Ethylbenzene	0.10	0	2300	894	252	928	2970	1290	1270
Ethylene Dibromide	0.10	0	0.25	<0.2	<0.2	<0.2	<20	<0.2	<0.2
Hexane (n)	0.20	0	51	14	<5	<5	<500	21	23
Methyl Ethyl Ketone	1.0	0	470000	<10	<10	<10	<1000	<10	<10
Methyl Isobutyl Ketone	1.0	0	140000	<10	<10	<10	5000	<10	<10
Methyl tert-Butyl Ether (MTBE)	0.20	0	190	<2	<2	<2	<200	<2	<2
Methylene Chloride	0.30	0	610	<4	<4	<4.0	<400	<4	<4.0
Styrene	0.10	0	1300	<0.5	<0.5	<0.5	270	10.5	10.9
Tetrachloroethane, 1,1,1,2-	0.10	0	3.3	31	5.9	<0.5	<50	<0.5	<0.5
Tetrachloroethane, 1,1,2,2-	0.10	0	3.2	0.8	<0.5	<0.5	250	<0.5	<0.5
Tetrachloroethylene	0.20	0	1.6	<0.3	<0.3	<0.3	<30	<0.3	<0.3
Toluene	0.20	0	18000	5.1	107	525	8920	76.2	62.5
Trichloroethane, 1,1,1-	0.30	0	640	<0.4	<0.4	<0.4	<40	<0.4	<0.4
Trichloroethane, 1,1,2-	0.20	0	4.7	<0.4	<0.4	<0.4	<40	<0.4	<0.4
Trichloroethylene	0.20	0	1.6	<0.3	<0.3	<0.3	<30	<0.3	<0.3
Trichlorofluoromethane	0.40	0	2500	<0.5	<0.5	<0.5	<50	<0.5	<0.5
Vinyl Chloride	0.17	0	0.5	<0.2	<0.2	<0.2	<20	<0.2	<0.2
Xylene Mixture	0.20	0	4200	3520	135	4740	16900	1250	1240

Notes:

µg/L	All sample concentrations in micrograms per litre, unless otherwise stated
-	No value
123	Sample exceeds Table 3 SCS
*	Table 3: Full Depth Generic Site Condition Standards in Coarse textured soil and in a non-potable groundwater condition for Industrial/Commercial/Community property uses in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011
a	Analytical results obtained from: "Groundwater Monitoring and Sampling Report, IOL Site No. 302287, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by WSP Canada Inc., dated June 15, 2016.
b	Analytical results obtained from: "Environmental Update and Summary of Groundwater Quality Testing, Circle K Retail Fuel Outlet, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by McIntosh Perry, dated April 2021.

Table A9
Groundwater Analytical Results: Volatile Organic Compounds

Data Source				2021 McIntosh Perry Groundwater Quality Testing[b]									
Sample ID	Reported Detection Limits	Relative Percent Difference (%)	Table 3 SCS[a]	BH-5	BH-6	BH-6 (Duplicate)	BH-7	BH-8	BH-9	BH-11	BH-13	BH-14	BH-15
Sample Date (dd-mmm-yy)	(µg/L)			25-Mar-21	25-Mar-21	25-Mar-21	25-Mar-21	25-Mar-21	25-Mar-21	25-Mar-21	25-Mar-21	25-Mar-21	25-Mar-21
Parameter													
Acetone	1.0	0	130000	-	-	-	-	-	-	-	-	-	-
Benzene	0.20	0	44	<0.20	34	25	<0.2	25.9	<0.20	5.89	1.95	<0.20	<0.20
Bromodichloromethane	0.20	0	85000	-	-	-	-	-	-	-	-	-	-
Bromoform	0.10	0	380	-	-	-	-	-	-	-	-	-	-
Bromomethane	0.20	0	5.6	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	0.20	0	0.79	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	0.10	0	630	-	-	-	-	-	-	-	-	-	-
Chloroform	0.20	0	2.4	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	0.10	0	82000	-	-	-	-	-	-	-	-	-	-
Dichlorobenzene, 1,2-	0.10	0	4600	-	-	-	-	-	-	-	-	-	-
Dichlorobenzene, 1,3-	0.10	0	9600	-	-	-	-	-	-	-	-	-	-
Dichlorobenzene, 1,4-	0.10	0	8	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane	0.20	0	4400	-	-	-	-	-	-	-	-	-	-
Dichloroethane, 1,1-	0.30	0	320	-	-	-	-	-	-	-	-	-	-
Dichloroethane, 1,2-	0.20	0	1.6	-	-	-	-	-	-	-	-	-	-
Dichloroethylene, 1,1-	0.30	0	1.6	-	-	-	-	-	-	-	-	-	-
Dichloroethylene, cis-1,2-	0.20	0	1.6	-	-	-	-	-	-	-	-	-	-
Dichloroethylene, trans-1,2-	0.20	0	1.6	-	-	-	-	-	-	-	-	-	-
Dichloropropane, 1,2-	0.20	0	16	-	-	-	-	-	-	-	-	-	-
Dichloropropane, 1,3-	0.30	0	5.2	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	0.10	0	2300	23.9	209	186	0.14	194	<0.10	53.2	109	0.14	<0.10
Ethylene Dibromide	0.10	0	0.25	-	-	-	-	-	-	-	-	-	-
Hexane (n)	0.20	0	51	-	-	-	-	-	-	-	-	-	-
Methyl Ethyl Ketone	1.0	0	470000	-	-	-	-	-	-	-	-	-	-
Methyl Isobutyl Ketone	1.0	0	140000	-	-	-	-	-	-	-	-	-	-
Methyl tert-Butyl Ether (MTBE)	0.20	0	190	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	0.30	0	610	-	-	-	-	-	-	-	-	-	-
Styrene	0.10	0	1300	-	-	-	-	-	-	-	-	-	-
Tetrachloroethane, 1,1,1,2-	0.10	0	3.3	-	-	-	-	-	-	-	-	-	-
Tetrachloroethane, 1,1,2,2-	0.10	0	3.2	-	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	0.20	0	1.6	-	-	-	-	-	-	-	-	-	-
Toluene	0.20	0	18000	<0.20	2.5	1.9	<0.2	0.57	<0.20	0.44	0.75	<0.20	<0.20
Trichloroethane, 1,1,1-	0.30	0	640	-	-	-	-	-	-	-	-	-	-
Trichloroethane, 1,1,2-	0.20	0	4.7	-	-	-	-	-	-	-	-	-	-
Trichloroethylene	0.20	0	1.6	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	0.40	0	2500	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	0.17	0	0.5	-	-	-	-	-	-	-	-	-	-
Xylene Mixture	0.20	0	4200	25.1	355	339	<0.2	116	<0.20	48.9	13.5	<0.20	<0.20

Notes:

µg/L	All sample concentrations in micrograms per litre, unless otherwise stated
-	No value
123	Sample exceeds Table 3 SCS
*	Table 3: Full Depth Generic Site Condition Standards in Coarse textured soil and in a non-potable groundwater condition for Industrial/Commercial/Community property uses in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011
a	Analytical results obtained from: "Groundwater Monitoring and Sampling Report, IOL Site No. 302287, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by WSP Canada Inc., dated June 15, 2016.
b	Analytical results obtained from: "Environmental Update and Summary of Groundwater Quality Testing, Circle K Retail Fuel Outlet, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by McIntosh Perry, dated April 2021.

Table A9
Groundwater Analytical Results: Volatile Organic Compounds

Data Source				2021 McIntosh Perry Phase Two ESA					
Sample ID	Reported Detection Limits (µg/L)	Relative Percent Difference (%)	Table 3 SCS*	BH21-1(MW)	BH21-2(MW)	BH21-3(MW)	BH21-3(MW) (Duplicate)	BH21-5(MW)	BH21-6(MW)
Sample Date (dd-mmm-yy)				01-Sep-21	01-Sep-21	01-Sep-21	01-Sep-21	01-Sep-21	01-Sep-21
Parameter									
Acetone	1.0	0	130000	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0
Benzene	0.20	0	44	<0.20	<0.20	<0.20	<0.20	<0.20	<2.00
Bromodichloromethane	0.20	0	85000	<0.20	<0.20	<0.20	<0.20	<0.20	<2.00
Bromoform	0.10	0	380	<0.10	<0.10	<0.10	<0.10	<0.10	<1.00
Bromomethane	0.20	0	5.6	<0.20	<0.20	<0.20	<0.20	<0.20	<2.00
Carbon Tetrachloride	0.20	0	0.79	<0.20	<0.20	<0.20	<0.20	<0.20	<2.00
Chlorobenzene	0.10	0	630	<0.10	<0.10	<0.10	<0.10	<0.10	<1.00
Chloroform	0.20	0	2.4	<0.20	<0.20	<0.20	<0.20	<0.20	<2.00
Dibromochloromethane	0.10	0	82000	<0.10	<0.10	<0.10	<0.10	<0.10	<1.00
Dichlorobenzene, 1,2-	0.10	0	4600	<0.10	<0.10	<0.10	<0.10	<0.10	<1.00
Dichlorobenzene, 1,3-	0.10	0	9600	<0.10	<0.10	<0.10	<0.10	<0.10	<1.00
Dichlorobenzene, 1,4-	0.10	0	8	<0.10	<0.10	<0.10	<0.10	<0.10	<1.00
Dichlorodifluoromethane	0.20	0	4400	<0.20	<0.20	<0.20	<0.20	<0.20	<2.00
Dichloroethane, 1,1-	0.30	0	320	<0.30	<0.30	<0.30	<0.30	<0.30	<3.00
Dichloroethane, 1,2-	0.20	0	1.6	<0.20	<0.20	<0.20	<0.20	<0.20	<2.00
Dichloroethylene, 1,1-	0.30	0	1.6	<0.30	<0.30	<0.30	<0.30	<0.30	<3.00
Dichloroethylene, cis-1,2-	0.20	0	1.6	<0.20	<0.20	<0.20	<0.20	<0.20	<2.00
Dichloroethylene, trans-1,2-	0.20	0	1.6	<0.20	<0.20	<0.20	<0.20	<0.20	<2.00
Dichloropropane, 1,2-	0.20	0	16	<0.20	<0.20	<0.20	<0.20	<0.20	<2.00
Dichloropropane, 1,3-	0.30	0	5.2	<0.30	<0.30	<0.30	<0.30	<0.30	<3.00
Ethylbenzene	0.10	0	2300	<0.10	<0.10	<0.10	<0.10	<0.10	2100
Ethylene Dibromide	0.10	0	0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<1.00
Hexane (n)	0.20	0	51	<0.20	<0.20	<0.20	<0.20	<0.20	<2.00
Methyl Ethyl Ketone	1.0	0	470000	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0
Methyl Isobutyl Ketone	1.0	0	140000	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0
Methyl tert-Butyl Ether (MTBE)	0.20	0	190	<0.20	<0.20	<0.20	<0.20	<0.20	<2.00
Methylene Chloride	0.30	0	610	<0.30	<0.30	<0.30	<0.30	<0.30	<3.00
Styrene	0.10	0	1300	<0.10	<0.10	<0.10	<0.10	<0.10	<1.00
Tetrachloroethane, 1,1,1,2-	0.10	0	3.3	<0.10	<0.10	<0.10	<0.10	<0.10	<1.00
Tetrachloroethane, 1,1,2,2-	0.10	0	3.2	<0.10	<0.10	<0.10	<0.10	<0.10	<1.00
Tetrachloroethylene	0.20	0	1.6	<0.20	<0.20	<0.20	<0.20	<0.20	<2.00
Toluene	0.20	0	18000	<0.20	<0.20	<0.20	<0.20	<0.20	247
Trichloroethane, 1,1,1-	0.30	0	640	<0.30	<0.30	<0.30	<0.30	<0.30	<3.00
Trichloroethane, 1,1,2-	0.20	0	4.7	<0.20	<0.20	<0.20	<0.20	<0.20	<2.00
Trichloroethylene	0.20	0	1.6	<0.20	<0.20	<0.20	<0.20	<0.20	<2.00
Trichlorofluoromethane	0.40	0	2500	<0.40	<0.40	<0.40	<0.40	<0.40	<4.00
Vinyl Chloride	0.17	0	0.5	<0.17	<0.17	<0.17	<0.17	<0.17	<1.70
Xylene Mixture	0.20	0	4200	<0.20	<0.20	<0.20	<0.20	<0.20	6980

Notes:

µg/L	All sample concentrations in micrograms per litre, unless otherwise stated
-	No value
123	Sample exceeds Table 3 SCS
*	Table 3: Full Depth Generic Site Condition Standards in Coarse textured soil and in a non-potable groundwater condition for Industrial/Commercial/Community property uses in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011
a	Analytical results obtained from: "Groundwater Monitoring and Sampling Report, IOL Site No. 302287, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by WSP Canada Inc., dated June 15, 2016.
b	Analytical results obtained from: "Environmental Update and Summary of Groundwater Quality Testing, Circle K Retail Fuel Outlet, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by McIntosh Perry, dated April 2021.

Table A10
Groundwater Analytical Results: Polycyclic Aromatic Hydrocarbons

Data Source				2021 McIntosh Perry Phase Two ESA					
Sample ID	Reported Detection Limits (µg/L)	Relative Percent Difference (%)	Table 3 SCS*	BH21-1(MW)	BH21-2(MW)	BH21-3(MW)	BH21-3(MW) (Duplicate)	BH21-5(MW)	BH21-6(MW)
Sample Date (dd-mmm-yy)				01-Sep-21	01-Sep-21	01-Sep-21	01-Sep-21	01-Sep-21	01-Sep-21
Parameter									
Acenaphthene	0.20	0	600	<0.20	<0.20	<0.20	<0.20	<0.20	0.25
Acenaphthylene	0.20	0	1.8	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Anthracene	0.10	0	2.4	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo(a)anthracene	0.20	0	4.7	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzo(a)pyrene	0.01	0	0.81	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo(b)fluoranthene	0.10	0	0.75	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo(g,h,i)perylene	0.20	0	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzo(k)fluoranthene	0.10	0	0.4	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chrysene	0.10	0	1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dibenz(a,h)anthracene	0.20	0	0.52	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fluoranthene	0.20	0	130	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fluorene	0.20	0	400	<0.20	<0.20	<0.20	<0.20	<0.20	0.87
Indeno(1,2,3-cd)pyrene	0.20	0	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methlynaphthalene, 2-(1-)	0.20	0	1800	<0.20	<0.20	<0.20	<0.20	<0.20	28
Naphthalene	0.20	0	1400	<0.20	<0.20	<0.20	<0.20	<0.20	95.2
Phenanthrene	0.10	0	580	<0.10	<0.10	<0.10	<0.10	<0.10	0.48
Pyrene	0.20	0	12000	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Notes:

µg/L	All sample concentrations in micrograms per litre, unless otherwise stated
-	No value
123	Sample exceeds Table 3 SCS
*	Table 3: Full Depth Generic Site Condition Standards in Coarse textured soil and in a non-potable groundwater condition for Industrial/Commercial/Community property uses in the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011

Table A11
Groundwater Field Parameters

Sample ID	BH21-1(MW)	BH21-2(MW)	BH21-3(MW)	BH21-5(MW)	BH21-6(MW)
Screened Interval (mbgs)	2.90 – 5.94	4.57 – 7.62	3.96 – 7.01	3.05 – 6.10	3.05 – 6.10
Sample Date (dd-mmm-yy)	01-Sep-21	01-Sep-21	01-Sep-21	01-Sep-21	01-Sep-21
Parameter					
pH	7.18	7.53	6.87	7.31	7.09
Temperature (°C)	12.16	12.71	14.57	13.32	14.18
Dissolved Oxygen (mg/L)	0.1	0	2.9	4.75	0
Electrical Conductivity (mS/cm)	3.11	2.48	2.72	1.99	3.51
Total Dissolved Solids (g/L)	1.99	1.59	1.74	1.27	2.1
Turbidity (NTU)	9.4	56.4	29.6	28	101
Oxidation-Reduction Potential (mV)	-21	36	-21	35	-110
Colour	Clear	Clear	Clear	Clear	Clear
Odour	None	None	None	None	None
Headspace Vapour - Hexane (ppm)	0	380	0	55	15
Headspace Vapour - Isobutylene (ppm)	109	297	0	58	16

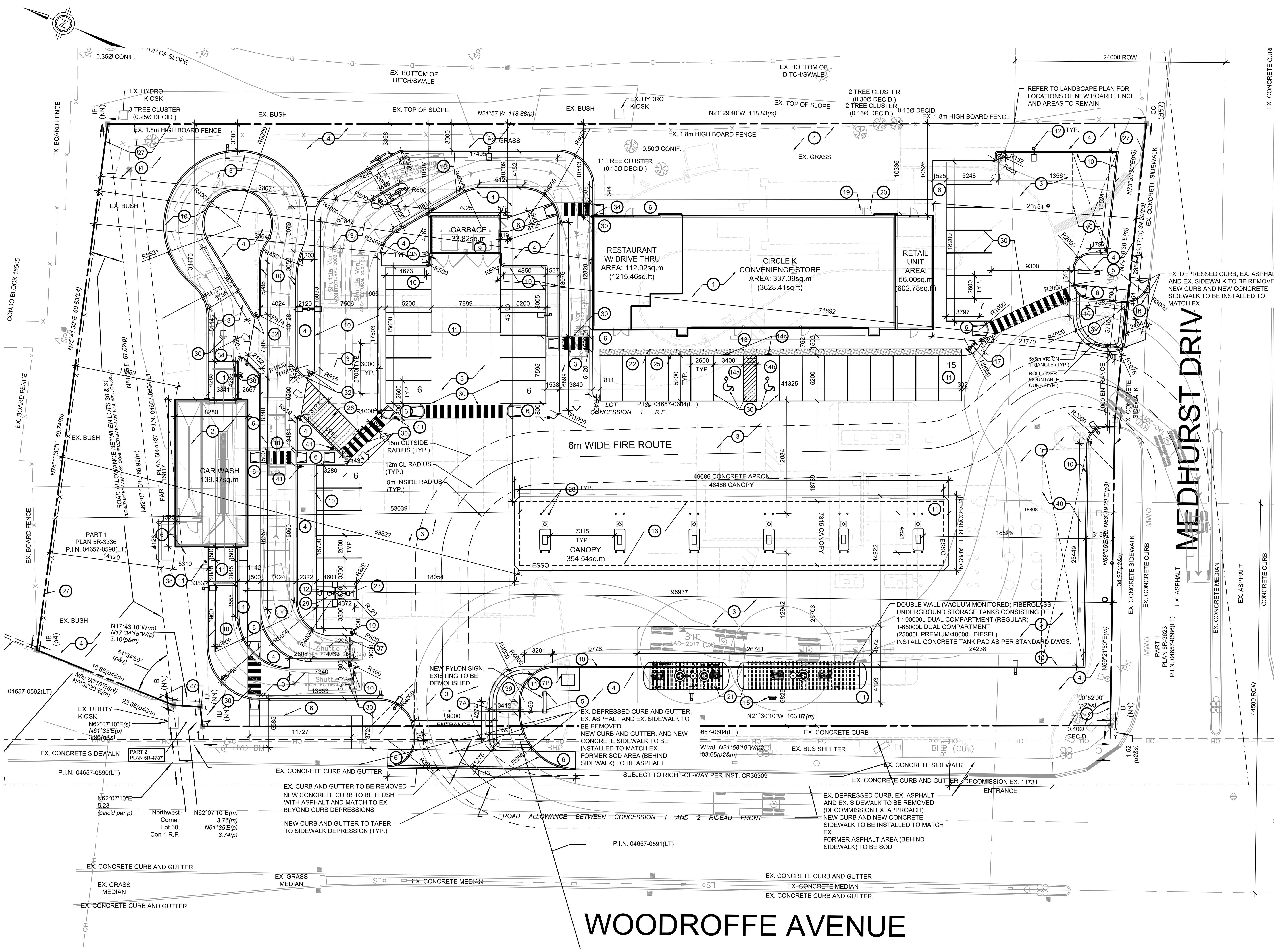
Notes:

mbgs	metres below ground surface
mg/L	Milligrams per litre
mS/cm	MilliSiemens per centimeter
g/L	Grams per litre
NTU	Nephelometric Turbidity Units
mV	millivolts

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
1545 WOODROFFE AVENUE, OTTAWA, ONTARIO

APPENDIX A – SURVEY PLAN

McINTOSH PERRY



A PROPOSED SITE PLAN
SCALE 1:250

DEVELOPMENT STATISTICS		
GM - GENERAL MIXED USE ZONE (SECTIONS 187 & 188) & GM 15 SUBZONE		
	REQUIREMENT ZONING BY-LAW 2008-250	PROPOSED
LOT AREA		8209.89m2
LOT WIDTH		60.74m
MIN. REQUIRED FRONT YARD (MEDHURST) & CORNER SIDE YARD SETBACK	3.0m AND 5.0m ABUTTING RESIDENTIAL	98.9m CAR WASH, 71.8m GARBAGE ENCLOSURE, 19.3m CANOPY, 21.7m STORE
MIN. REQUIRED REAR YARD SETBACK	NO MIN. AND 7.5m ABUTTING RESIDENTIAL AND 3.0m ABUTTING A STREET	11.8m CAR WASH, 38.0m GARBAGE ENCLOSURE, 52.4m CANOPY, 56.8m STORE
MIN. REQUIRED INTERIOR SIDE YARD SETBACK	5.0m ABUTTING RESIDENTIAL	31.4m CARWASH, 10.5m GARBAGE ENCLOSURE, 43.1m CANOPY, 10.3m STORE
MAX. BUILDING HEIGHT	18m	6.4m CANOPY, 7.01m STORE, 5.13m CAR WASH
CANOPY AREA		354.54m2
TOTAL STORE AREA		506m2
RETAIL AREA		56.00m2
CONVENIENCE STORE AREA		337.09m2
RESTAURANT AREA		112.92m2
GARBAGE ENCLOSURE AREA		33.81m2
CAR WASH AREA		139.47m2

	REQUIREMENT ZONING BY-LAW 2008-250	PROPOSED
PARKING MIN. 2.6, MAX. 3.1 x5.2m	20	36 @ 2.6x5.2 AND 2 @ 3.3x5.2
GAS BAR	0	0
CONVENIENCE STORE (AREA C)	3.4/100m2	12
RESTAURANT-FAST FOOD	10/100m2	12
CAR WASH	0	0
RETAIL	3.4/100m2	2
BARRIER-FREE TYPE A 3.4m WIDE & TYPE B 2.4m WIDE	13-25 REQUIRED SPACES = 1 TYPE A & 1 TYPE B	1 TYPE A 3.4x5.2m & 1 TYPE B 2.6x5.2m
TOTAL PARKING PROVIDED	20 STALLS (2 BARRIER-FREE)	36 @ 2.6x5.2, 2 @ 3.3x5.2, 1 @ 3.4x5.2 & 1 @ 2.6x5.2 = 40 STALLS
AISLE WIDTH	6.0 MIN (TWO-WAY TRAFFIC)	6.2m
LOADING	1/2000-4999m2	1
BICYCLE PARKING (MIN. 0.6x1.8)	1/250m2 OF GFA = 1	5
LANDSCAPE AREA	NO MIN. AND 3.0m ABUTTING RESIDENTIAL OR INSTITUTIONAL OR A STREET	3m
LANDSCAPE MIN. AREA	15%	30%
QUEUING SPACES (MIN. 3x5.7m)	CAR WASH QUEUING: MIN. 10 SPACES INGRESS & 1 EGRESS	13 INGRESS, 4 EGRESS @ 3.5x7m EACH
	RESTAURANT WITH MENU BOARD 7 AT/BEFORE ORDER BOARD, MIN. TOTAL 11	9 TO MENU BOARD, 11 TOTAL @ 3x5.7m EACH

(#) KEYNOTES:

1. CONVENIENCE STORE BUILDING AREA.
2. CAR WASH BUILDING AREA.
3. ASPHALT AREA. REFER TO CIVIL DRAWINGS AND GEOTECHNICAL REPORT.
4. LANDSCAPE AREA.
5. PROPOSED NEW MONUMENT SIGN, UNDER SEPARATE PERMIT. REFER TO SITE ELECTRICAL PLANS FOR POWER REQUIREMENTS.
6. CONCRETE WALK, RAMPS TO MEET OBC REQUIRMENTS, REFER TO CIVIL DRAWINGS.
7. EX. ELECTRICAL TRANSFORMER (7A) TO BE RELOCATED ON NEW CONCRETE PAD (7B).
8. OUTDOOR SEATING - NOT USED.
9. TRASH ENCLOSURE, REFER TO DRAWING SD1.2.
10. CONCRETE CURBS (WITH CURB DEPRESSIONS) WHERE INDICATED. REFER TO CIVIL DRAWINGS.
11. CONCRETE SLAB. REFER TO CIVIL DRAWINGS.
12. YARD LIGHT. REFER TO SITE ELECTRICAL AND STRUCTURAL DRAWINGS.
13. ACCESSIBLE ACCESS (CONCRETE IS FLUSH WITH ASPHALT), REFER TO CIVIL DRAWINGS.
14. 14a ACCESSIBLE PARKING STALL TYPE A. 14b ACCESSIBLE PARKING STALL TYPE B. 14c ACCESSIBLE PARKING POLE MOUNTED SIGN.
15. VENT RACK.
16. FUEL CANOPY AREA, REFER TO FUEL DRAWINGS.
17. BIKE RACK. REFER TO DRAWING SD1.2.
18. 1016mm HIGH SCREEN WALL - NOT USED.
19. C02 WITH STORAGE CABINET
20. BUILDING SERVICE ENTRANCE SECTION
21. PROVIDE AND INSTALL FUEL STORAGE TANKS PER FUEL DRAWINGS.
22. 102mm BOLLARDS, SPACED EVERY 1524mm, REFER TO DRAWINGS. SD1.2.
23. AIR MACHINE PROVIDED BY CIRCLE K VENDOR, REFER TO ELECTRICAL DRAWINGS.
24. EMERGENCY SHUT-OFF SWITCH, REFER TO FUEL DRAWINGS.
25. 762mm WIDE CONCRETE COLOUR BAND, REFER TO DRAWING SD1.2.
26. OUTDOOR PAINTED STRIPES FOR NO-PARKING AREA.
27. PROPERTY LINE
28. 102mm DIAMETER FUEL CANOPY BOLLARDS WITH GREY COVERS.
29. VACUUM ISLAND.
30. PAINTED LINES/DIRECTIONAL ARROWS.
31. MASONRY COLUMN AND METAL FENCE WALL - NOT USED.
32. POSTS WITH CHAIN.
33. CARWASH ENTRY TICKET READER & BOLLARD.
34. 102mm BOLLARDS
35. 150mm BOLLARDS
36. TICKET MACHINE
37. HEIGHT RESTRICTION BAR
38. COUNT DOWN TIMER ON CONCRETE PAD
39. MOUNTABLE ROLL-OVER CURB SEE DRAWING SD1.2
40. ON SITE SNOW STORAGE AREA
41. YIELD TO PEDESTRIAN SIGN

GENERAL NOTES:

1. SIGNS REQUIRE A SEPARATE PERMIT.
2. DUMPSTERS AND MECHANICAL EQUIPMENT WILL BE SCREENED FROM THE PUBLIC.
3. WALLS OVER 1829mm HIGH APPROVED BY SEPERATE PERMIT.
4. PARKING WILL BE PAVED.
5. PARKING WILL BE WITHIN 182.88m OF BUILDING.
6. THERE SHALL BE NO OBSTRUCTION OF SITE SIGNAGE BY LANDSCAPE PLANT MATERIAL, AND SUCH MUST BE RELOCATED/CORRECTED BEFORE THE FIELD INSPECTION WILL ACCEPT/PASS THE SIGN IN THE FIELD OR ISSUE A CERTIFICATE OF OCCUPANCY FOR A PROJECT.
7. ALL ROOF MOUNTED MECHANICAL EQUIPMENT SHALL BE FULLY SCREENED BY PARAPET WALLS EQUAL TO, OR GREATER THAN, THE HIGHEST POINT ON THE MECHANICAL EQUIPMENT.
8. SOLID MASONRY WALLS AND GATES EQUAL TO, OR GREATER THAN, THE HIGHEST POINT ON THE MECHANICAL EQUIPMENT SHALL SCREEN ALL GROUND MOUNTED MECHANICAL EQUIPMENT.
9. ALL SITE IMPROVEMENTS, INCLUDING LANDSCAPE AND SITE CLEANUP, MUST BE COMPLETED PRIOR TO CERTIFICATE OF OCCUPANCY FOR ANY BUILDING WITHIN A PHASE.
10. THE FIRE DEPT. DOUBLE CHECK ASSEMBLY SHALL BE PAINTED TO MATCH ADJACENT WALL COLOR.
11. ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS NOTED OTHERWISE.
12. ALL DIMENSIONS MUST BE VERIFIED BY THE GC PRIOR TO CONSTRUCTION. ANY DISCREPANCIES MUST BE BROUGHT TO THE ATTENTION OF CIRCLE K'S REPRESENTATIVE.
13. ALL WORK TO BE DONE BY THE GC UNLESS NOTED OTHERWISE.
14. EVERYTHING TO BE CONSIDERED NEW UNLESS NOTED OTHERWISE.
15. MAKE GOOD ALL AREA'S DISTURBED DURING CONSTRUCTION.
16. GC IS RESPONSIBLE FOR ALL LOCATES BEFORE CONSTRUCTION START.
17. TOPOGRAPHIC SURVEY INFORMATION: BY MCINTOSH PERRY SURVEYING INC., FILE: CSI-21-1534, DATED 2020-12-11, RECEIVED FROM CLIENT ON 2020-12-15.
18. LEGAL INFORMATION: PART OF LOT 30, CONCESSION 1 RIDEAU FRONT AND PART OF THE ROAD ALLOWANCE BETWEEN LOTS 30 AND 31, CONCESSION 1, RIDEAU FRONT, GEOGRAPHIC TOWNSHIP OF NEPEAN, CITY OF OTTAWA

CONTACT INFORMATION:

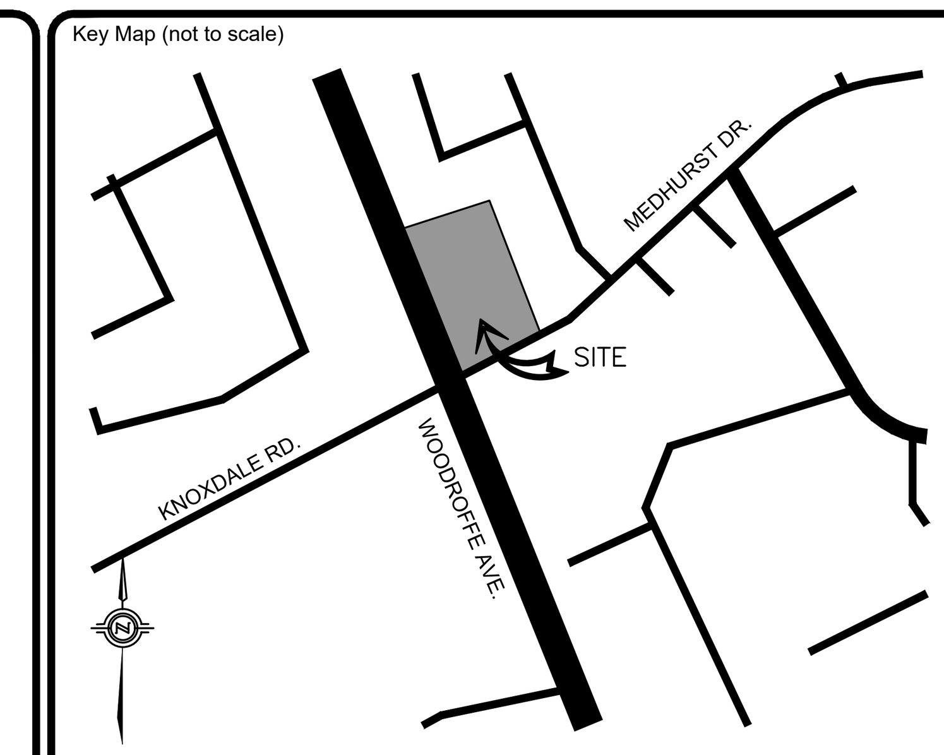
SURVEYOR:
MCINTOSH PERRY SURVEYING INC.
3240 DRUMMOND CON. 5A, R.R. #7
PERTH, ON K7H 3C9
613.267.6524
WWW.MCINTOSHPERRY.COM

DEVELOPER/OWNER:
CIRCLE K CENTRAL CANADA DIVISION
305 MILNER AVE. SUITE 400
TORONTO, ON M1B 3V4
416.291.4444

APPLICANT/ENGINEERING FIRM:
CRYSTAL FRAZAO
EXP SERVICES INC.
1595 CLARK BLVD.
BRAMPTON, ON L6T 4V1
905.793.9800

DESIGNER (BUILDING & LANDSCAPE):
WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, A DIVISION OF WOOD CANADA LIMITED
2020 WINSTON PARK DR., SUITE 600
OAKVILLE, ON L6H 6X7
905.568.2929

Key Map (not to scale)



LEGEND:

- IRON BAR
- BENCHMARK
- EX. FIRE HYDRANT
- EX. LIGHT POLE
- EX. LIGHT STANDARD
- EX. STORM MH
- EX. SANITARY MH
- EX. STORM CB
- EX. WATER VALVE
- EX. VALVE CHAMBER
- EX. BELL & HYDRO POLE
- EX. GUY WIRE AND ANCHOR
- EX. TRAFFIC SIGNAL
- EX. GAS VALVE
- EX. SIGN
- EX. TREE
- SUBJECT PROPERTY
- PROPERTY LINE
- EX. CONC. CURB
- EX. CENTERLINE OF DITCH
- EX. ROAD CENTERLINE
- EX. FENCE
- EX. STORM SEWER
- EX. SANITARY SEWER
- EX. WATER MAINS
- EX. NATURAL GAS
- EX. OVERHEAD HYDRO
- EX. UNDERGROUND HYDRO
- EX. UNDERGROUND BELL
- EX. TRAFFIC CABLES
- EX.CONTOUR
- NEW YARD LIGHT
- NEW STORM MH
- NEW SANITARY MH
- NEW STORM CB
- NEW STORM CBMH
- NEW CONC. CURB
- NEW CURB CUT/DEPRESSED CURB
- FIRE ROUTE SIGN
- NEW 1.8m HIGH WOOD FENCE

No.	REVISIONS	Date	By	App.
B	REISSUED FOR SPA	AUG. 5 2021	C.F.	C.F.
A	ISSUED FOR SPA	APR 27 2021	C.F	C.F

exp Services Inc.
t: +1.905.793.9800 | f: +1.905.793.0641
1595 Clark Boulevard
Brampton, ON L6T 4V1
Canada
www.exp.com

• BUILDINGS • EARTH & ENVIRONMENT • ENERGY • INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •

Owner/Client: CIRCLE K

Location:
1545 WOODROFFE AVE.
OTTAWA, ON

Title:
PROPOSED SITE PLAN

Designed By:		Drawn By: T.M.	Checked By: C.F
Scale: AS NOTED		Date: DECEMBER 2020	City Drawing No.:
Project No.: BRM00606364-B0			Drawing No.: A01

CITY DWG. # 17094

CITY # D07-12-21-0056

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
1545 WOODROFFE AVENUE, OTTAWA, ONTARIO

APPENDIX B – BOREHOLE LOGS

McINTOSH PERRY

LOG OF BOREHOLE MW 21-1

PROJECT: Circle K - 1545 Woodroffe Ave
CLIENT: Circle K
PROJECT LOCATION: 1545 Woodroffe Ave, Ottawa, ON
DATUM: MTM Zone 9
BH LOCATION: N 5021867 E 363474

DRILLING DATA
Method: Hollow Stem Augers
Diameter: 200 mm
Date: Aug-17-2021

REF. NO.: CCO-21-2432
ENCL NO.: 1

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
88.7	Asphalt											
0.0 / 88.5	**Asphalt**, 90 mm											
0.2	**Sandy gravel**,trace silt, dark brown to brown, damp, (FILL)		1	GS			88					
87.1			2	SS	5							
1.7 / 86.7	**Sandy Silt**, trace gravel, black, soft (Organic)		3	SS	4		87					
2.0	**Silty Sand**, compact, grey, moist		4	SS	15		86					
85.5												
3.2	**Silty Clay**, soft to firm, grey, wet		5	SS	2		85					
84.2												
4.6	**Silty Sand**, compact, grey, wet		6	SS	12		84					
82.8			7	SS	5		83					
5.9	**End of Borehole**											
	Monitor Well Installed											

GRAPH NOTES: $+^3$ $\times^3$: Numbers refer to Sensitivity ○ ε=3% Strain at Failure

MP SOIL LOG 1545_WOODROFFE_CIRCLEK.GPJ SPL.GDT 21-9-3

LOG OF BOREHOLE MW 21-2

PROJECT: Circle K - 1545 Woodroffe Ave
CLIENT: Circle K
PROJECT LOCATION: 1545 Woodroffe Ave, Ottawa, ON
DATUM: MTM Zone 9
BH LOCATION: N 5021878 E 363474

DRILLING DATA
Method: Hollow Stem Augers
Diameter: 200 mm
Date: Aug-17-2021

REF. NO.: CCO-21-2432
ENCL NO.: 2

(m) ELEV / DEPTH	DESCRIPTION	NUMBER	TYPE	BLOWS 0.3 m "N"	ELEVATION
89.0	Asphalt				
88.8	**Asphalt**, 100 mm				
88.6	**Sandy gravel**, grey, dry, (Fill)				
0.2	**Gravelly sand**, trace silt (Fill)	1	GS		
88.4					
0.6	**Gravelly sand**, trace silt, trace clay, trace organics, loose, dark brown, moist (Fill)	2	SS	8	88
87.1		3	SS	4	
87.8	**Sandy Silt**, trace clay, compact, grey, moist				87
2.0	**Silty Sand**, compact, grey, moist	4	SS	16	
		5	SS	5	86
85.0					
4.0	**Silty Clay**, very soft, grey, wet	6	SS	1	85
84.1		7	SS	10	
4.9	**Silty Sand**, loose to compact, brown to grey, wet				84
		8	SS	9	
		9	SS	8	83
					82
		10	SS	16	
80.7					81
8.2	**End of Borehole**				
	Monitor Well Installed				

DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100)
SHEAR STRENGTH (kPa) (50 100 150 200 250)
o UNCONFINED + FIELD VANE & Sensitivity
● QUICK TRIAXIAL × LAB VANE
PLASTIC LIMIT w_P | NATURAL MOISTURE CONTENT w | LIQUID LIMIT w_L
WATER CONTENT (%) (10 20 30)
POCKET PEN. (Cu) (kPa)
NATURAL UNIT WT (kg/m³)
REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL

GRAPH NOTES: $+^3$, $\times^3$: Numbers refer to Sensitivity; o ε_f=3% Strain at Failure

MP SOIL LOG 1545 WOODROFFE CIRCLEK.GPJ SPL.GDT 21-9-3

LOG OF BOREHOLE MW 21-3

PROJECT: Circle K - 1545 Woodroffe Ave
CLIENT: Circle K
PROJECT LOCATION: 1545 Woodroffe Ave, Ottawa, ON
DATUM: MTM Zone 9
BH LOCATION: N 5021914 E 363460

DRILLING DATA
Method: Hollow Stem Augers
Diameter: 200 mm
Date: Aug-17-2021

REF. NO.: CCO-21-2432
ENCL NO.: 3

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION
88.9	Asphalt						
~~88.8~~	**Asphalt**, 100 mm						
~~88.7~~ 0.2	**Sandy gravel**, dry (Fill)		1	GS			
	Gravelly Sand, trace silt, brown, damp, (Fill)						
88.0							88
0.9	**Silty Sand**, trace gravel, compact, brown, damp, (Fill)		2	SS	12		
87.1							87
1.8	**Silty Sand**, trace gravel, loose, brown to dark brown, damp, (Fill)		3	SS	9		
86.2			4	SS	6		
2.7	**Silty Sand**, loose, grey, moist						86
85.1			5	SS	7		
3.8	**Silty Clay**, soft to firm, grey, wet		6	SS	1		85
			7	SS	WOH		84
82.7							
6.3	**Silty Sand**, compact, grey, moist		8	SS	WOH		83
			9	SS	3		82
81.3							
7.6	**End of Borehole**						
	Monitor Well Installed						

DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100)

SHEAR STRENGTH (kPa)
○ UNCONFINED + FIELD VANE & Sensitivity
● QUICK TRIAXIAL × LAB VANE
50 100 150 200 250

PLASTIC LIMIT w_P | NATURAL MOISTURE CONTENT w | LIQUID LIMIT w_L
WATER CONTENT (%)
10 20 30

POCKET PEN. (Cu) (kPa)

NATURAL UNIT WT (Mg/m³)

REMARKS AND GRAIN SIZE DISTRIBUTION (%)
GR SA SI CL

GRAPH NOTES: $+^3, \times^3$: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

MP SOIL LOG 1545_WOODROFFE_CIRCLEK.GPJ SPL.GDT 21-9-3

LOG OF BOREHOLE BH 21-4

PROJECT: Circle K - 1545 Woodroffe Ave
CLIENT: Circle K
PROJECT LOCATION: 1545 Woodroffe Ave, Ottawa, ON
DATUM: MTM Zone 9
BH LOCATION: N 5021907 E 363435

DRILLING DATA
Method: Hollow Stem Augers
Diameter: 200 mm
Date: Aug-18-2021

REF. NO.: CCO-21-2432
ENCL NO.: 4

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L / WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
88.8	Asphalt											
88.8	**Asphalt**, 100 mm											
88.5	**Sandy gravel**, dry (Fill)											
0.3	**Gravelly Sand**, some silt, brown, dry (Fill)		1	GRAB								
			2	SS	6		88					
86.9												
1.8	**Silty Sand**, trace gravel, trace organics, loose, grey, moist		3	SS	6		87					
86.5												
2.3	**Silty Sand**, compact, grey, moist		4	SS	14		86					
85.7												
3.1	**Silty Clay**, trace sand, soft, grey, wet		5	SS	2		85					
				VANE				+ 4.0				
				VANE				+ 4.8				
			6	SS	WOH		84					
83.3												
5.5	**Silty Sand**, loose, grey, wet		7	SS	8		83					
82.7												
6.1	**End of Borehole**											

GRAPH NOTES: +3, ×3: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

MP SOIL LOG 1545 WOODROFFE CIRCLEK.GPJ SPL.GDT 21-9-3

LOG OF BOREHOLE MW 21-5

PROJECT: Circle K - 1545 Woodroffe Ave
CLIENT: Circle K
PROJECT LOCATION: 1545 Woodroffe Ave, Ottawa, ON
DATUM: MTM Zone 9
BH LOCATION: N 5021896 E 363415

DRILLING DATA
Method: Hollow Stem Augers
Diameter: 200 mm
Date: Aug-18-2021

REF. NO.: CCO-21-2432
ENCL NO.: 5

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
88.4	Asphalt											
88.2	**Asphalt**, 150 mm											
0.2	**Gravelly Sand**, some silt, grey to brown, dry, (Fill)											
87.7												
0.8	**Sandy Silt**, trace clay, loose, grey, damp		1	SS	5							
86.6			2	SS	7							
86.8	**Silty Sand**, organic, loose, dark brown, moist											
2.0	**Silty Sand**, compact, grey, moist											
85.9			3	SS	7							
2.6	**Silty Clay**, soft to firm, grey, wet		4	SS	1							
				VANE				10.9				
				VANE				8.7				
83.7												
4.7	**Silty Sand**, compact, grey, wet		5	SS	12							
			6	SS	7							
82.3												
6.1	**End of Borehole**											
	Monitor Well Insatlled											

DRAFT

GRAPH NOTES: $+^3$, $\times^3$: Numbers refer to Sensitivity; ○ ■=3% Strain at Failure

MP SOIL LOG 1545_WOODROFFE_CIRCLEK.GPJ SPL.GDT 21-9-3

LOG OF BOREHOLE MW 21-6

PROJECT: Circle K - 1545 Woodroffe Ave
CLIENT: Circle K
PROJECT LOCATION: 1545 Woodroffe Ave, Ottawa, ON
DATUM: MTM Zone 9
BH LOCATION: N 5021852 E 363432

DRILLING DATA
Method: Hollow Stem Augers
Diameter: 200 mm
Date: Aug-18-2021

REF. NO.: CCO-21-2432
ENCL NO.: 6

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION
88.4	Asphalt						
88.3 / 0.1	**Asphalt**, 95 mm						
	Gravelly Sand, compact, brown, damp, (Fill)		1	SS	9		88
			2	SS	16		87
86.7 / 1.7	**Silty Sand**, trace organics, loose, dark brown, moist		3	SS	10		
86.4 / 2.0	**Silty Sand**, loose, grey to brown, damp		4	SS	7		86
85.6 / 2.7	**Silty Clay**, soft to firm, grey, wet		5	SS	1		85
84.4 / 4.0	**Silty Sand**, trace gravel, compact, grey, wet		6	SS	15		84
			7	SS	15		83
82.3 / 6.1			8	SS	11		
	End of Borehole						
	Monitor Well Installed						

DYNAMIC CONE PENETRATION RESISTANCE PLOT: 20 40 60 80 100

SHEAR STRENGTH (kPa): ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE
50 100 150 200 250

PLASTIC LIMIT w_P | NATURAL MOISTURE CONTENT w | LIQUID LIMIT w_L
WATER CONTENT (%): 10 20 30

POCKET PEN. (Cu) (kPa)

NATURAL UNIT WT (Mg/m³)

REMARKS AND GRAIN SIZE DISTRIBUTION (%)
GR SA SI CL

GRAPH NOTES: $+^3$, $\times^3$: Numbers refer to Sensitivity ○ ε=3% Strain at Failure

MP SOIL LOG 1545_WOODROFFE_CIRCLEK.GPJ SPL.GDT 21-9-3

LOG OF BOREHOLE BH 21-7

PROJECT: Circle K - 1545 Woodroffe Ave
CLIENT: Circle K
PROJECT LOCATION: 1545 Woodroffe Ave, Ottawa, ON
DATUM: MTM Zone 9
BH LOCATION: N 5021941 E 363418

DRILLING DATA
Method: Hollow Stem Augers
Diameter: 200 mm
Date: Aug-18-2021

REF. NO.: CCO-21-2432
ENCL NO.: 7

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (C_u) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
88.8	Asphalt											
88.8	**Asphalt**, 38 mm											
88.4	**Sandy gravel**, trace silt, brown, dry, (Fill)		1	SS	8							
0.5	**Silty Sand**, some gravel, compact, brown, moist, (Fill)		2	SS	10		88					
86.9			3	SS	3		87					
2.0	**Sandy Silt**, trace gravel, loose, brown to dark brown, moist											
86.6												
2.3	**Silty Sand**, loose, brown to grey, moist to wet		4	SS	5		86					
85.8												
3.1	**Silty Clay**, soft to firm, brown to grey, wet		5	SS	3							
			6	SS	1		85					
84.6												
4.3	**Sandy Silt**, soft, dark grey, wet											
84.3												
4.6	**Silty Clay**, soft to firm, trace sand, dark grey, wet		7	SS	1		84					
			8	SS	WOH		83					
82.4												
6.4	**Silty Sand**, compact, grey, wet											
82.1												
6.7	**End of Borehole**											

DRAFT

GRAPH NOTES: $+^3$ $\times^3$: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

MP SOIL LOG 1545_WOODROFFE_CIRCLEK.GPJ SPL.GDT 21-9-3

LOG OF BOREHOLE BH 21-8

PROJECT: Circle K - 1545 Woodroffe Ave
CLIENT: Circle K
PROJECT LOCATION: 1545 Woodroffe Ave, Ottawa, ON
DATUM: MTM Zone 9
BH LOCATION: N 5021951 E 363451

DRILLING DATA
Method: Hollow Stem Augers
Diameter: 200 mm
Date: Aug-18-2021

REF. NO.: CCO-21-2432
ENCL NO.: 8

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) O UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L / WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
89.0	Asphalt											
88.9	**Asphalt**, 50 mm											
88.1	**Gravelly Sand**, trace silt, loose, brown, moist, (Fill)		1	SS	9		88					
87.5												
1.5 / 87.2	**Sandy Silt**, organic, loose, damp		2	SS	5		87					
1.8	**Silty Sand**, compact, brown, moist to wet		3	SS	11							
85.9							86					
3.1 / 85.5	**Silty Clay, trace sand, soft, grey, wet**		4	SS	3							
3.5 / 85.2	**Silty Sand**, loose, grey, wet											
3.8 / 84.9	**Silty Clay, trace sand, soft to firm, grey, wet**		5	SS	2		85					
4.1 / 84.4	**Silty Sand**, loose, grey, wet											
4.6	**Silty Clay, trace sand, soft, grey, wet**		6	SS	1		84					
82.3												
6.7	**End of Borehole**						83					

GRAPH NOTES: + 3, × 3: Numbers refer to Sensitivity; O ε=3% Strain at Failure

MP SOIL LOG 1545_WOODROFFE_CIRCLEK.GPJ SPL.GDT 21-9-3

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
1545 WOODROFFE AVENUE, OTTAWA, ONTARIO

APPENDIX C – CERTIFCATES OF ANALYSIS

McINTOSH PERRY

AGAT Laboratories

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**
RR#3 115 WALGREEN ROAD
CARP, ON K0A1L0
(613) 836-2184

ATTENTION TO: **Dan Arnott**

PROJECT: **CCO-21-2432-06**

AGAT WORK ORDER: **21T790737**

SOIL ANALYSIS REVIEWED BY: **Jacky Zhu, Spectroscopy Technician**

TRACE ORGANICS REVIEWED BY: **Neli Popnikolova, Senior Chemist**

DATE REPORTED: **Aug 27, 2021**

PAGES (INCLUDING COVER): **17**

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.*

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 21T790737

PROJECT: CCO-21-2432-06

CLIENT NAME: MCINTOSH PERRY LIMITED

ATTENTION TO: Dan Arnott

SAMPLING SITE:

SAMPLED BY:D.Arnott + K.Cortez

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-08-27

				SAMPLE DESCRIPTION:	BH2-Fill	BH6-SS2	BH7-SS1	BH8-SS2
				SAMPLE TYPE:	Soil	Soil	Soil	Soil
				DATE SAMPLED:	2021-08-17 10:54	2021-08-18 11:15	2021-08-18 13:45	2021-08-18 16:05
Parameter	Unit	G / S	RDL		2876497	2876500	2876507	2876519
Antimony	µg/g	40	0.8		<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1		2	2	2	1
Barium	µg/g	670	2.0		78.3	290	340	118
Beryllium	µg/g	8	0.4		<0.4	0.4	0.4	<0.4
Boron	µg/g	120	5		9	11	<5	<5
Boron (Hot Water Soluble)	µg/g	2	0.10		0.24	0.34	0.20	0.15
Cadmium	µg/g	1.9	0.5		<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	5		7	21	46	29
Cobalt	µg/g	80	0.5		2.9	7.7	12.6	6.7
Copper	µg/g	230	1.0		3.7	11.0	24.7	13.5
Lead	µg/g	120	1		9	9	10	3
Molybdenum	µg/g	40	0.5		<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	270	1		4	15	27	16
Selenium	µg/g	5.5	0.8		<0.8	<0.8	<0.8	<0.8
Silver	µg/g	40	0.5		<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	3.3	0.5		<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	33	0.50		<0.50	<0.50	0.64	0.58
Vanadium	µg/g	86	0.4		6.6	30.2	60.2	38.5
Zinc	µg/g	340	5		8	37	80	35
Chromium, Hexavalent	µg/g	8	0.2		<0.2	<0.2	<0.2	<0.2
Cyanide, Free	µg/g	0.051	0.040		<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	3.9	0.10		<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	1.4	0.005		0.294	**1.88**	0.438	0.307
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	12	N/A		5.25	9.49	4.53	3.95
pH, 2:1 CaCl2 Extraction	pH Units	5.0-9.0	NA		7.93	7.75	7.76	7.62

Certified By:

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 21T790737

PROJECT: CCO-21-2432-06

CLIENT NAME: MCINTOSH PERRY LIMITED

ATTENTION TO: Dan Arnott

SAMPLING SITE:

SAMPLED BY:D.Arnott + K.Cortez

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2021-08-19 **DATE REPORTED: 2021-08-27**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Industrial/Commercial/Community Property Use - Coarse Textured Soils
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.

2876497-2876519 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio. SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 21T790737

PROJECT: CCO-21-2432-06

CLIENT NAME: MCINTOSH PERRY LIMITED

SAMPLING SITE:

ATTENTION TO: Dan Arnott

SAMPLED BY:D.Arnott + K.Cortez

O. Reg. 153(511) - PAHs (Soil)

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-08-27

		SAMPLE DESCRIPTION:		BH2-Fill	BH6-SS2	BH7-SS2	BH8-SS2
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-17 10:54	2021-08-18 11:15	2021-08-18 13:45	2021-08-18 16:05
Parameter	**Unit**	**G / S**	**RDL**	**2876497**	**2876500**	**2876514**	**2876519**
Naphthalene	µg/g	9.6	0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.15	0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	96	0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	62	0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	12	0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.67	0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	9.6	0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	96	0.05	<0.05	<0.05	<0.05	<0.05
Benz(a)anthracene	µg/g	0.96	0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	9.6	0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.96	0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.96	0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.76	0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	9.6	0.05	<0.05	<0.05	<0.05	<0.05
1 and 2 Methlynaphthalene	µg/g	76	0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	4.7	16.4	13.5	15.8
Surrogate	**Unit**	**Acceptable Limits**					
Naphthalene-d8	%	50-140		89	89	87	87
Acridine-d9	%	50-140		85	85	85	85
Terphenyl-d14	%	50-140		96	96	96	96

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Industrial/Commercial/Community Property Use - Coarse Textured Soils
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.

2876497-2876519 Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowich

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 21T790737

PROJECT: CCO-21-2432-06

CLIENT NAME: MCINTOSH PERRY LIMITED

SAMPLING SITE:

ATTENTION TO: Dan Arnott

SAMPLED BY:D.Arnott + K.Cortez

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

DATE RECEIVED: 2021-08-19 **DATE REPORTED: 2021-08-27**

				SAMPLE DESCRIPTION:	BH1-SS4	BH2-SS4	BH3-SS7	BH5-SS5	BH6-SS8	Soil-Dup	BH7-SS4
				SAMPLE TYPE:	Soil	Soil	Soil	Soil	Soil	Soil	Soil
				DATE SAMPLED:	2021-08-17 09:27	2021-08-17 11:27	2021-08-17 14:30	2021-08-18 09:50	2021-08-18 12:30	2021-08-18	2021-08-18
Parameter	**Unit**	**G / S**	**RDL**		**2876493**	**2876494**	**2876498**	**2876499**	**2876502**	**2876517**	**2876520**
F1 (C6 - C10)	µg/g	55	5		<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5		<5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	230	10		<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	1700	50		<50	<50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	3300	50		<50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	3300	50		NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1		29.3	12.3	28.9	13.9	17.6	21.1	21.4
Surrogate	**Unit**	**Acceptable Limits**									
Toluene-d8	% Recovery	50-140			74	80	74	70	72	113	82
Terphenyl	%	60-140			93	99	85	81	97	74	77

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Industrial/Commercial/Community Property Use - Coarse Textured Soils
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.

2876493-2876520 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is 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 without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 21T790737

PROJECT: CCO-21-2432-06

CLIENT NAME: MCINTOSH PERRY LIMITED

SAMPLING SITE:

ATTENTION TO: Dan Arnott

SAMPLED BY:D.Arnott + K.Cortez

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-08-27

		SAMPLE DESCRIPTION:		BH1-SS4	BH2-SS4	BH3-SS7	BH5-SS5	BH6-SS8	Soil-Dup	BH7-SS4
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-17 09:27	2021-08-17 11:27	2021-08-17 14:30	2021-08-18 09:50	2021-08-18 12:30	2021-08-18	2021-08-18
Parameter	Unit	G / S	RDL	2876493	2876494	2876498	2876499	2876502	2876517	2876520
Dichlorodifluoromethane	µg/g	16	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.032	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	4	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	16	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.064	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	1.6	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	1.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	11	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	17	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	70	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	55	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.47	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	6.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.21	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.32	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.16	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.91	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	18	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	31	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	68	0.05	<0.05	<0.05	<0.05	<0.05	0.43	<0.05	<0.05
Dibromochloromethane	ug/g	13	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	4.5	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.087	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	2.4	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	9.5	0.05	<0.05	<0.05	<0.05	<0.05	0.51	<0.05	<0.05

Certified By: N Popnikolof

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 21T790737

PROJECT: CCO-21-2432-06

CLIENT NAME: MCINTOSH PERRY LIMITED

SAMPLING SITE:

ATTENTION TO: Dan Arnott

SAMPLED BY:D.Arnott + K.Cortez

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2021-08-19 **DATE REPORTED: 2021-08-27**

				SAMPLE DESCRIPTION:	BH1-SS4	BH2-SS4	BH3-SS7	BH5-SS5	BH6-SS8	Soil-Dup	BH7-SS4
				SAMPLE TYPE:	Soil	Soil	Soil	Soil	Soil	Soil	Soil
				DATE SAMPLED:	2021-08-17 09:27	2021-08-17 11:27	2021-08-17 14:30	2021-08-18 09:50	2021-08-18 12:30	2021-08-18	2021-08-18
Parameter	**Unit**	**G / S**	**RDL**		**2876493**	**2876494**	**2876498**	**2876499**	**2876502**	**2876517**	**2876520**
m & p-Xylene	ug/g		0.05		<0.05	<0.05	<0.05	<0.05	1.50	<0.05	<0.05
Bromoform	ug/g	0.61	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	34	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05		<0.05	<0.05	<0.05	<0.05	0.43	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	9.6	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.2	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	6.8	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	26	0.05		<0.05	<0.05	<0.05	<0.05	1.93	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.18	0.04		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
n-Hexane	µg/g	46	0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1		29.3	12.3	28.9	13.9	17.6	21.1	21.4
Surrogate	**Unit**	**Acceptable Limits**									
Toluene-d8	% Recovery	50-140			111	110	109	110	112	112	111
4-Bromofluorobenzene	% Recovery	50-140			95	95	96	95	97	94	96

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Industrial/Commercial/Community Property Use - Coarse Textured Soils
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.

2876493-2876520 The sample was analyzed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

AGAT Laboratories

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

Exceedance Summary

AGAT WORK ORDER: 21T790737

PROJECT: CCO-21-2432-06

CLIENT NAME: MCINTOSH PERRY LIMITED

ATTENTION TO: Dan Arnott

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
2876500	BH6-SS2	ON T3 S ICC CT	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	1.4	1.88

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

Quality Assurance

CLIENT NAME: MCINTOSH PERRY LIMITED
AGAT WORK ORDER: 21T790737
PROJECT: CCO-21-2432-06
ATTENTION TO: Dan Arnott
SAMPLING SITE:
SAMPLED BY:D.Arnott + K.Cortez

Soil Analysis

RPT Date: Aug 27, 2021			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	2876783		<0.8	<0.8	NA	< 0.8	128%	70%	130%	106%	80%	120%	95%	70%	130%
Arsenic	2876783		1	1	NA	< 1	116%	70%	130%	104%	80%	120%	101%	70%	130%
Barium	2876783		21.8	22.7	4.0%	< 2.0	108%	70%	130%	100%	80%	120%	93%	70%	130%
Beryllium	2876783		<0.4	<0.4	NA	< 0.4	84%	70%	130%	105%	80%	120%	100%	70%	130%
Boron	2876783		<5	<5	NA	< 5	87%	70%	130%	117%	80%	120%	102%	70%	130%
Boron (Hot Water Soluble)	2886718		0.31	0.33	NA	< 0.10	91%	60%	140%	100%	70%	130%	101%	60%	140%
Cadmium	2876783		<0.5	<0.5	NA	< 0.5	112%	70%	130%	104%	80%	120%	104%	70%	130%
Chromium	2876783		14	14	NA	< 5	100%	70%	130%	93%	80%	120%	88%	70%	130%
Cobalt	2876783		2.2	2.1	NA	< 0.5	102%	70%	130%	101%	80%	120%	97%	70%	130%
Copper	2876783		7.2	6.8	5.7%	< 1.0	97%	70%	130%	103%	80%	120%	94%	70%	130%
Lead	2876783		3	3	NA	< 1	107%	70%	130%	100%	80%	120%	95%	70%	130%
Molybdenum	2876783		0.6	0.5	NA	< 0.5	118%	70%	130%	111%	80%	120%	108%	70%	130%
Nickel	2876783		5	5	0.0%	< 1	103%	70%	130%	102%	80%	120%	97%	70%	130%
Selenium	2876783		<0.8	<0.8	NA	< 0.8	75%	70%	130%	106%	80%	120%	102%	70%	130%
Silver	2876783		<0.5	<0.5	NA	< 0.5	103%	70%	130%	104%	80%	120%	98%	70%	130%
Thallium	2876783		<0.5	<0.5	NA	< 0.5	109%	70%	130%	102%	80%	120%	99%	70%	130%
Uranium	2876783		0.66	0.68	NA	< 0.50	111%	70%	130%	106%	80%	120%	104%	70%	130%
Vanadium	2876783		23.8	24.0	0.8%	< 0.4	113%	70%	130%	99%	80%	120%	96%	70%	130%
Zinc	2876783		16	15	NA	< 5	109%	70%	130%	110%	80%	120%	112%	70%	130%
Chromium, Hexavalent	2886718		<0.2	<0.2	NA	< 0.2	106%	70%	130%	102%	80%	120%	96%	70%	130%
Cyanide, Free	2872577		<0.040	<0.040	NA	< 0.040	100%	70%	130%	96%	80%	120%	107%	70%	130%
Mercury	2876783		<0.10	<0.10	NA	< 0.10	109%	70%	130%	109%	80%	120%	113%	70%	130%
Electrical Conductivity (2:1)	2876497	2876497	0.294	0.315	6.9%	< 0.005	108%	80%	120%						
Sodium Adsorption Ratio (2:1) (Calc.)	2876497	2876497	5.25	5.25	0.0%	NA									
pH, 2:1 CaCl2 Extraction	2877411		7.36	7.41	0.7%	NA	101%	80%	120%						

Comments: NA signifies Not Applicable.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.
Duplicate NA: results are under 5X the RDL and will not be calculated.

Certified By:

AGAT Laboratories

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

Quality Assurance

CLIENT NAME: MCINTOSH PERRY LIMITED

AGAT WORK ORDER: 21T790737

PROJECT: CCO-21-2432-06

ATTENTION TO: Dan Arnott

SAMPLING SITE:

SAMPLED BY:D.Arnott + K.Cortez

Trace Organics Analysis

RPT Date: Aug 27, 2021			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)															
F1 (C6 - C10)	2876795		<5	<5	NA	< 5	94%	60%	140%	104%	60%	140%	111%	60%	140%
F2 (C10 to C16)	2889363		< 10	< 10	NA	< 10	110%	60%	140%	97%	60%	140%	77%	60%	140%
F3 (C16 to C34)	2889363		< 50	< 50	NA	< 50	115%	60%	140%	100%	60%	140%	73%	60%	140%
F4 (C34 to C50)	2889363		< 50	< 50	NA	< 50	85%	60%	140%	104%	60%	140%	84%	60%	140%
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	2878593		<0.05	<0.05	NA	< 0.05	97%	50%	140%	119%	50%	140%	106%	50%	140%
Vinyl Chloride	2878593		<0.02	<0.02	NA	< 0.02	115%	50%	140%	96%	50%	140%	86%	50%	140%
Bromomethane	2878593		<0.05	<0.05	NA	< 0.05	98%	50%	140%	73%	50%	140%	82%	50%	140%
Trichlorofluoromethane	2878593		<0.05	<0.05	NA	< 0.05	103%	50%	140%	79%	50%	140%	82%	50%	140%
Acetone	2878593		<0.50	<0.50	NA	< 0.50	81%	50%	140%	98%	50%	140%	85%	50%	140%
1,1-Dichloroethylene	2878593		<0.05	<0.05	NA	< 0.05	94%	50%	140%	84%	60%	130%	112%	50%	140%
Methylene Chloride	2878593		<0.05	<0.05	NA	< 0.05	81%	50%	140%	106%	60%	130%	107%	50%	140%
Trans- 1,2-Dichloroethylene	2878593		<0.05	<0.05	NA	< 0.05	89%	50%	140%	94%	60%	130%	92%	50%	140%
Methyl tert-butyl Ether	2878593		<0.05	<0.05	NA	< 0.05	81%	50%	140%	88%	60%	130%	86%	50%	140%
1,1-Dichloroethane	2878593		<0.02	<0.02	NA	< 0.02	90%	50%	140%	82%	60%	130%	76%	50%	140%
Methyl Ethyl Ketone	2878593		<0.50	<0.50	NA	< 0.50	84%	50%	140%	91%	50%	140%	82%	50%	140%
Cis- 1,2-Dichloroethylene	2878593		<0.02	<0.02	NA	< 0.02	73%	50%	140%	91%	60%	130%	93%	50%	140%
Chloroform	2878593		<0.04	<0.04	NA	< 0.04	82%	50%	140%	89%	60%	130%	86%	50%	140%
1,2-Dichloroethane	2878593		<0.03	<0.03	NA	< 0.03	84%	50%	140%	91%	60%	130%	93%	50%	140%
1,1,1-Trichloroethane	2878593		<0.05	<0.05	NA	< 0.05	79%	50%	140%	81%	60%	130%	90%	50%	140%
Carbon Tetrachloride	2878593		<0.05	<0.05	NA	< 0.05	77%	50%	140%	73%	60%	130%	75%	50%	140%
Benzene	2878593		<0.02	<0.02	NA	< 0.02	90%	50%	140%	95%	60%	130%	104%	50%	140%
1,2-Dichloropropane	2878593		<0.03	<0.03	NA	< 0.03	88%	50%	140%	94%	60%	130%	97%	50%	140%
Trichloroethylene	2878593		<0.03	<0.03	NA	< 0.03	89%	50%	140%	90%	60%	130%	100%	50%	140%
Bromodichloromethane	2878593		<0.05	<0.05	NA	< 0.05	86%	50%	140%	86%	60%	130%	110%	50%	140%
Methyl Isobutyl Ketone	2878593		<0.50	<0.50	NA	< 0.50	103%	50%	140%	91%	50%	140%	81%	50%	140%
1,1,2-Trichloroethane	2878593		<0.04	<0.04	NA	< 0.04	98%	50%	140%	83%	60%	130%	98%	50%	140%
Toluene	2878593		<0.05	<0.05	NA	< 0.05	93%	50%	140%	78%	60%	130%	78%	50%	140%
Dibromochloromethane	2878593		<0.05	<0.05	NA	< 0.05	81%	50%	140%	81%	60%	130%	83%	50%	140%
Ethylene Dibromide	2878593		<0.04	<0.04	NA	< 0.04	104%	50%	140%	94%	60%	130%	80%	50%	140%
Tetrachloroethylene	2878593		<0.05	<0.05	NA	< 0.05	97%	50%	140%	88%	60%	130%	108%	50%	140%
1,1,1,2-Tetrachloroethane	2878593		<0.04	<0.04	NA	< 0.04	113%	50%	140%	112%	60%	130%	110%	50%	140%
Chlorobenzene	2878593		<0.05	<0.05	NA	< 0.05	105%	50%	140%	88%	60%	130%	113%	50%	140%
Ethylbenzene	2878593		<0.05	<0.05	NA	< 0.05	94%	50%	140%	85%	60%	130%	105%	50%	140%
m & p-Xylene	2878593		<0.05	<0.05	NA	< 0.05	89%	50%	140%	96%	60%	130%	105%	50%	140%
Bromoform	2878593		<0.05	<0.05	NA	< 0.05	74%	50%	140%	73%	60%	130%	71%	50%	140%
Styrene	2878593		<0.05	<0.05	NA	< 0.05	81%	50%	140%	73%	60%	130%	102%	50%	140%
1,1,2,2-Tetrachloroethane	2878593		<0.05	<0.05	NA	< 0.05	87%	50%	140%	92%	60%	130%	99%	50%	140%
o-Xylene	2878593		<0.05	<0.05	NA	< 0.05	91%	50%	140%	102%	60%	130%	94%	50%	140%

AGAT Laboratories

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

Quality Assurance

CLIENT NAME: MCINTOSH PERRY LIMITED

AGAT WORK ORDER: 21T790737

PROJECT: CCO-21-2432-06

ATTENTION TO: Dan Arnott

SAMPLING SITE:

SAMPLED BY:D.Arnott + K.Cortez

Trace Organics Analysis (Continued)

RPT Date: Aug 27, 2021			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
1,3-Dichlorobenzene	2878593		<0.05	<0.05	NA	< 0.05	106%	50%	140%	98%	60%	130%	111%	50%	140%
1,4-Dichlorobenzene	2878593		<0.05	<0.05	NA	< 0.05	108%	50%	140%	97%	60%	130%	90%	50%	140%
1,2-Dichlorobenzene	2878593		<0.05	<0.05	NA	< 0.05	80%	50%	140%	100%	60%	130%	79%	50%	140%
n-Hexane	2878593		<0.05	<0.05	NA	< 0.05	109%	50%	140%	99%	60%	130%	107%	50%	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).

O. Reg. 153(511) - PAHs (Soil)

Naphthalene	2839994	< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	111%	50%	140%	102%	50%	140%
Acenaphthylene	2839994	< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	85%	50%	140%	96%	50%	140%
Acenaphthene	2839994	< 0.05	< 0.05	NA	< 0.05	96%	50%	140%	96%	50%	140%	94%	50%	140%
Fluorene	2839994	< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	84%	50%	140%	95%	50%	140%
Phenanthrene	2839994	< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	85%	50%	140%	84%	50%	140%
Anthracene	2839994	< 0.05	< 0.05	NA	< 0.05	102%	50%	140%	96%	50%	140%	90%	50%	140%
Fluoranthene	2839994	< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	85%	50%	140%	84%	50%	140%
Pyrene	2839994	< 0.05	< 0.05	NA	< 0.05	96%	50%	140%	84%	50%	140%	85%	50%	140%
Benz(a)anthracene	2839994	< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	85%	50%	140%	81%	50%	140%
Chrysene	2839994	< 0.05	< 0.05	NA	< 0.05	96%	50%	140%	96%	50%	140%	85%	50%	140%
Benzo(b)fluoranthene	2839994	< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	85%	50%	140%	96%	50%	140%
Benzo(k)fluoranthene	2839994	< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	84%	50%	140%	85%	50%	140%
Benzo(a)pyrene	2839994	< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	85%	50%	140%	84%	50%	140%
Indeno(1,2,3-cd)pyrene	2839994	< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	96%	50%	140%	98%	50%	140%
Dibenz(a,h)anthracene	2839994	< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	85%	50%	140%	84%	50%	140%
Benzo(g,h,i)perylene	2839994	< 0.05	< 0.05	NA	< 0.05	102%	50%	140%	84%	50%	140%	85%	50%	140%

Certified By: N Popnikolof

AGAT Laboratories

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

Method Summary

CLIENT NAME: MCINTOSH PERRY LIMITED

AGAT WORK ORDER: 21T790737

PROJECT: CCO-21-2432-06

ATTENTION TO: Dan Arnott

SAMPLING SITE:

SAMPLED BY:D.Arnott + K.Cortez

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Arsenic	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Barium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Beryllium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	modified from EPA 6010D and MSA PART 3, CH 21	ICP/OES
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET 93 -6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium, Hexavalent	INOR-93-6068	modified from EPA 3060 and EPA 7196	SPECTROPHOTOMETER
Cyanide, Free	INOR-93-6052	modified from ON MOECC E3015, SM 4500-CN- I, G-387	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	modified from EPA 7471B and SM 3112 B	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6036	modified from MSA PART 3, CH 14 and SM 2510 B	EC METER
Sodium Adsorption Ratio (2:1) (Calc.)	INOR-93-6007	modified from EPA 6010D & Analytical Protocol	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	modified from EPA 9045D and MCKEAGUE 3.11	PH METER

AGAT Laboratories

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

Method Summary

CLIENT NAME: MCINTOSH PERRY LIMITED

AGAT WORK ORDER: 21T790737

PROJECT: CCO-21-2432-06

ATTENTION TO: Dan Arnott

SAMPLING SITE:

SAMPLED BY:D.Arnott + K.Cortez

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluorene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benz(a)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Chrysene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
1 and 2 Methlynaphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acridine-d9	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Terphenyl-d14	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
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
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS

AGAT Laboratories

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

Method Summary

CLIENT NAME: MCINTOSH PERRY LIMITED

AGAT WORK ORDER: 21T790737

PROJECT: CCO-21-2432-06

ATTENTION TO: Dan Arnott

SAMPLING SITE:

SAMPLED BY:D.Arnott + K.Cortez

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Bromomethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS

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

Method Summary

CLIENT NAME: MCINTOSH PERRY LIMITED

AGAT WORK ORDER: 21T790737

PROJECT: CCO-21-2432-06

ATTENTION TO: Dan Arnott

SAMPLING SITE:

SAMPLED BY:D.Arnott + K.Cortez

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Bromoform	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene (Cis + Trans)	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE

AGAT Laboratories

ice 86 77 92

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

Chain of Custody Record

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

Laboratory Use Only

Work Order #: 21T790737
Cooler Quantity: 1
Arrival Temperatures: 14.2 | 14.1 | 13.1
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes: ICe

Report Information:

Company: McIntosh Perry
Contact: Dan Arnott
Address: 115 Walgreen Rd
Ottawa (Carp), ON
Phone: 613-714-4587 Fax:
Reports to be sent to:
1. Email: D.arnott@mcintoshperry.com
2. Email: K.cortez@mcintoshperry.com

Regulatory Requirements:

(Please check all applicable boxes)

☒ Regulation 153/04 — Table 3 (Indicate One) — ☒ Ind/Com ☐ Res/Park ☐ Agriculture
Soil Texture (Check One): ☒ Coarse ☐ Fine
☐ Excess Soils R406 — Table (Indicate One)
☐ Regulation 558
☐ CCME
☐ Sewer Use ☐ Sanitary ☐ Storm — Region
☐ Prov. Water Quality Objectives (PWQO)
☐ Other (Indicate One)

Is this submission for a **Record of Site Condition?** ☐ Yes ☒ No

Report Guideline on *Certificate of Analysis* ☒ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☒ 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: ~~1545 Woodroffe Corte K~~ DJA CCO-21-2432-06
Site Location: 1545 Woodroffe Ave
Sampled By: D. Arnott & K. Cortez
AGAT Quote #: 307123 PO: CCO-21-2432-06

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:

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	Field Filtered - Metals, Hg, CrVI, DOC (Y/N)	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs, Analyze F4G if required ☐ Yes ☐ No	O. Reg 153: PAHs	O. Reg 153: PCBs	O. Reg 153: VOC	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Excess Soils SPLP Rainwater Leach SPLP: ☐ Metals ☐ VOCs ☐ SVOCs	O. Reg 406: Excess Soils Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Salt - EC/SAR	Potentially Hazardous or High Concentration (Y/N)
BH1 - SS4	17/08/21	9:27 AM PM	2	S					X			X					
BH2 - SS4	17/08/21	11:27 AM PM	2	S					X			X					
BH2 - Fill	17/08/21	10:54 AM PM	1	S			X			X							
BH3 - SS7	17/08/21	2:30 AM PM	3	S					X			X					
BH5 - SS5	18-Aug-21	09:50 AM PM	2	S					X			X					
BH6 - SS2	18-Aug-21	11:15 AM PM	2	S			X			X							
BH6 - SS7	18-Aug-21	12:15 AM PM	2	S	HOLD				X			X					
BH6 - SS8	18-Aug-21	12:30 AM PM	2	S					X			X					
BH7 - SS1	18-Aug-21	1:45 AM PM	1	S			X										
BH7 - SS2	18-Aug-21	1:45 AM PM	1	S						X							
Soil - DUP	18-Aug-21	AM PM	2	S					X			X					

Samples Relinquished By (Print Name and Sign): DJA Dan Arnott	Date 19-Aug-21	Time 09:00 AM	Samples Received By (Print Name and Sign): Jeff Sans	Date 19 Aug 21	Time 9:15
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date 21/8/20	Time 10:55
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page 1 of 2

N°: T 111932

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

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
Contact: Dan Arnott
Address: 115 Walgreen Rd
Carp, ON K0A 1L0
Phone: (613) 714-4589 Fax:
Reports to be sent to:
1. Email: d.arnott@mcintoshperry.com
2. Email: k.cortez@mcintoshperry.com

Regulatory Requirements:

(Please check all applicable boxes)

- [x] Regulation 153/04 — Table 3 (Indicate One) — [x] Ind/Com [ ] Res/Park [ ] Agriculture
- Soil Texture (Check One): [x] Coarse [ ] Fine
- [ ] Excess Soils R406 — Table (Indicate One)
- [ ] Regulation 558
- [ ] CCME
- [ ] Sewer Use [ ] Sanitary [ ] Storm — Region
- [ ] Prov. Water Quality Objectives (PWQO)
- [ ] Other — Indicate One

Is this submission for a **Record of Site Condition?** [ ] Yes [x] No

Report Guideline on *Certificate of Analysis* [x] Yes [ ] No

Laboratory Use Only

Work Order #: 21T790737
Cooler Quantity:
Arrival Temperatures: 14.2 | 14.1 | 13.1
Custody Seal Intact: [ ] Yes [ ] No [x] N/A
Notes: JC

Turnaround Time (TAT) Required:

Regular TAT [x] 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-21-2432-06
Site Location: 1545 Woodroffe
Sampled By: D. Arnott + K. Cortez
AGAT Quote #: 307123 PO: CCO-21-2432-06
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes [x] No [ ]
Company:
Contact:
Address:
Email:

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	Field Filtered - Metals, Hg, CrVI, DOC (Y/N)	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - CrVI, Hg, HWSB	O. Reg 153: BTEX, F1-F4 PHCs (Analyze F4G if required Yes/No)	O. Reg 153: PAHs	O. Reg 153: PCBs	O. Reg 153: VOC	O. Reg 558: Landfill Disposal Characterization TCLP: M&I, VOCs, ABNs, B(a)P, PCBs	O. Reg 406: Excess Soils SPLP Rainwater Leach: Metals, VOCs, SVOCs	O. Reg 406: Excess Soils Characterization Package: pH, ICPMS Metals, BTEX, F1-F4	Salt - EC/SAR	Potentially Hazardous or High Concentration (Y/N)
BH8-SS2	18-Nov-21	4:05 PM	2	S			X			X							
		AM PM															
		AM PM															
		AM PM															
		AM PM															
		AM PM															
		AM PM															
		AM PM															
		AM PM															
		AM PM															
		AM PM															

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Dan Arnott	19-Nov-21	9:00 am	Jeff Jones	19/11/21	9:15
			Simin	21/8/20	10:55

Page 2 of 2
No: T111931

Document ID: DIV-78-1511.018

Pink Copy - Client | Yellow Copy - AGAT | White Copy- AGAT

Date Issued: August 24, 2020

AGAT Laboratories

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**
RR#3 115 WALGREEN ROAD
CARP, ON K0A1L0
(613) 836-2184

ATTENTION TO: **Dan Arnott**

PROJECT: **CCO-21-2432-06**

AGAT WORK ORDER: **21Z796520**

TRACE ORGANICS REVIEWED BY: **Neli Popnikolova, Senior Chemist**

WATER ANALYSIS REVIEWED BY: **Jacky Zhu, Spectroscopy Technician**

DATE REPORTED: **Sep 14, 2021**

PAGES (INCLUDING COVER): **15**

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.*

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 21Z796520

PROJECT: CCO-21-2432-06

CLIENT NAME: MCINTOSH PERRY LIMITED

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodrotte Ave. Ottawa, ON

SAMPLED BY:Kevin Cortez

O. Reg. 153(511) - PAHs (Water)

DATE RECEIVED: 2021-09-02

DATE REPORTED: 2021-09-14

		SAMPLE DESCRIPTION:		BH MW1	BH MW2	BH MW3	BH MW5	BH MW6	Dup
		SAMPLE TYPE:		Water	Water	Water	Water	Water	Water
		DATE SAMPLED:		2021-09-01 11:41	2021-09-01 11:41	2021-09-01 11:41	2021-09-01 11:41	2021-09-01 11:41	2021-09-01 11:41
Parameter	**Unit**	**G / S**	**RDL**	**2922657**	**2925666**	**2925667**	**2925668**	**2925669**	**2925670**
Naphthalene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	95.2	<0.20
Acenaphthylene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Acenaphthene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	0.25	<0.20
Fluorene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	0.87	<0.20
Phenanthrene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	0.48	<0.10
Anthracene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Fluoranthene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Pyrene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzo(a)anthracene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chrysene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo(b)fluoranthene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo(k)fluoranthene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo(a)pyrene	µg/L		0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dibenz(a,h)anthracene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzo(g,h,i)perylene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2-and 1-methyl Naphthalene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	28.0	<0.20
Sediment				No	No	No	No	No	No
Surrogate	**Unit**	**Acceptable Limits**							
Naphthalene-d8	%	50-140		89	89	85	89	89	89
Acridine-d9	%	50-140		85	89	96	85	104	96
Terphenyl-d14	%	50-140		84	96	85	96	110	85

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2922657-2925670 Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 21Z796520

PROJECT: CCO-21-2432-06

CLIENT NAME: MCINTOSH PERRY LIMITED

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodrotte Ave. Ottawa, ON

SAMPLED BY:Kevin Cortez

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)

DATE RECEIVED: 2021-09-02 **DATE REPORTED: 2021-09-14**

				SAMPLE DESCRIPTION:	BH MW1	BH MW2	BH MW3	BH MW5	BH MW6	Dup
				SAMPLE TYPE:	Water	Water	Water	Water	Water	Water
				DATE SAMPLED:	2021-09-01 11:41	2021-09-01 11:41	2021-09-01 11:41	2021-09-01 11:41	2021-09-01 11:41	2021-09-01 11:41
Parameter	**Unit**	**G / S**	**RDL**		**2922657**	**2925666**	**2925667**	**2925668**	**2925669**	**2925670**
F1 (C6-C10)	µg/L		25		<25	<25	<25	<25	12800	<25
F1 (C6 to C10) minus BTEX	µg/L		25		<25	<25	<25	<25	3470	<25
F2 (C10 to C16)	µg/L		100		<100	<100	<100	<100	1200	<100
F2 (C10 to C16) minus Naphthalene	µg/L		100		<100	<100	<100	<100	1100	<100
F3 (C16 to C34)	µg/L		100		<100	<100	<100	<100	<100	<100
F3 (C16 to C34) minus PAHs	µg/L		100		<100	<100	<100	<100	<100	<100
F4 (C34 to C50)	µg/L		100		<100	<100	<100	<100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L		500		NA	NA	NA	NA	NA	NA
Sediment					No	No	No	No	No	No
Surrogate	**Unit**	**Acceptable Limits**								
Toluene-d8	% Recovery	50-140			93.2	80	118	79	81	107
Terphenyl	% Recovery	60-140			119	108	96	96	89	85

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2922657-2925670 The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is 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 and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
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.

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 21Z796520

PROJECT: CCO-21-2432-06

CLIENT NAME: MCINTOSH PERRY LIMITED

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodrotte Ave. Ottawa, ON

SAMPLED BY:Kevin Cortez

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2021-09-02

DATE REPORTED: 2021-09-14

SAMPLE DESCRIPTION:				BH MW1	BH MW2	BH MW3	BH MW5		BH MW6		Dup
SAMPLE TYPE:				Water	Water	Water	Water		Water		Water
DATE SAMPLED:				2021-09-01 11:41	2021-09-01 11:41	2021-09-01 11:41	2021-09-01 11:41		2021-09-01 11:41		2021-09-01 11:41
Parameter	Unit	G / S	RDL	2922657	2925666	2925667	2925668	RDL	2925669	RDL	2925670
Dichlorodifluoromethane	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	2.00	<2.00	0.20	<0.20
Vinyl Chloride	µg/L		0.17	<0.17	<0.17	<0.17	<0.17	1.70	<1.70	0.17	<0.17
Bromomethane	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	2.00	<2.00	0.20	<0.20
Trichlorofluoromethane	µg/L		0.40	<0.40	<0.40	<0.40	<0.40	4.00	<4.00	0.40	<0.40
Acetone	µg/L		1.0	<1.0	<1.0	<1.0	<1.0	10.0	<10.0	1.0	<1.0
1,1-Dichloroethylene	µg/L		0.30	<0.30	<0.30	<0.30	<0.30	3.00	<3.00	0.30	<0.30
Methylene Chloride	µg/L		0.30	<0.30	<0.30	<0.30	<0.30	3.00	<3.00	0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	2.00	<2.00	0.20	<0.20
Methyl tert-butyl ether	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	2.00	<2.00	0.20	<0.20
1,1-Dichloroethane	µg/L		0.30	<0.30	<0.30	<0.30	<0.30	3.00	<3.00	0.30	<0.30
Methyl Ethyl Ketone	µg/L		1.0	<1.0	<1.0	<1.0	<1.0	10.0	<10.0	1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	2.00	<2.00	0.20	<0.20
Chloroform	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	2.00	<2.00	0.20	<0.20
1,2-Dichloroethane	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	2.00	<2.00	0.20	<0.20
1,1,1-Trichloroethane	µg/L		0.30	<0.30	<0.30	<0.30	<0.30	3.00	<3.00	0.30	<0.30
Carbon Tetrachloride	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	2.00	<2.00	0.20	<0.20
Benzene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	2.00	<2.00	0.20	<0.20
1,2-Dichloropropane	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	2.00	<2.00	0.20	<0.20
Trichloroethylene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	2.00	<2.00	0.20	<0.20
Bromodichloromethane	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	2.00	<2.00	0.20	<0.20
Methyl Isobutyl Ketone	µg/L		1.0	<1.0	<1.0	<1.0	<1.0	10.0	<10.0	1.0	<1.0
1,1,2-Trichloroethane	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	2.00	<2.00	0.20	<0.20
Toluene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	2.00	247	0.20	<0.20
Dibromochloromethane	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	1.00	<1.00	0.10	<0.10
Ethylene Dibromide	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	1.00	<1.00	0.10	<0.10
Tetrachloroethylene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	2.00	<2.00	0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	1.00	<1.00	0.10	<0.10
Chlorobenzene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	1.00	<1.00	0.10	<0.10
Ethylbenzene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	1.00	2100	0.10	<0.10

Certified By: N Popnikolof

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 21Z796520

PROJECT: CCO-21-2432-06

CLIENT NAME: MCINTOSH PERRY LIMITED

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodrotte Ave. Ottawa, ON

SAMPLED BY:Kevin Cortez

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2021-09-02

DATE REPORTED: 2021-09-14

		SAMPLE DESCRIPTION:		BH MW1	BH MW2	BH MW3	BH MW5		BH MW6		Dup
		SAMPLE TYPE:		Water	Water	Water	Water		Water		Water
		DATE SAMPLED:		2021-09-01 11:41	2021-09-01 11:41	2021-09-01 11:41	2021-09-01 11:41		2021-09-01 11:41		2021-09-01 11:41
Parameter	**Unit**	**G / S**	**RDL**	**2922657**	**2925666**	**2925667**	**2925668**	**RDL**	**2925669**	**RDL**	**2925670**
m & p-Xylene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	2.00	5840	0.20	<0.20
Bromoform	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	1.00	<1.00	0.10	<0.10
Styrene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	1.00	<1.00	0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	1.00	<1.00	0.10	<0.10
o-Xylene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	1.00	1140	0.10	<0.10
1,3-Dichlorobenzene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	1.00	<1.00	0.10	<0.10
1,4-Dichlorobenzene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	1.00	<1.00	0.10	<0.10
1,2-Dichlorobenzene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	1.00	<1.00	0.10	<0.10
1,3-Dichloropropene	µg/L		0.30	<0.30	<0.30	<0.30	<0.30	3.00	<3.00	0.30	<0.30
Xylenes (Total)	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	2.00	6980	0.20	<0.20
n-Hexane	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	2.00	<2.00	0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**									
Toluene-d8	% Recovery	50-140		102	100	104	101	**10**	104	**1**	102
4-Bromofluorobenzene	% Recovery	50-140		98	98	98	98	**10**	96	**1**	98

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2922657-2925668 Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

2925669 Dilution factor=10
The sample was diluted to keep the target compounds in the calibration range of the instrument and avoid contaminating the Purge and Trap system. The reporting detection limit has been corrected for the dilution factor used.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

2925670 Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 21Z796520

PROJECT: CCO-21-2432-06

CLIENT NAME: MCINTOSH PERRY LIMITED

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodrotte Ave. Ottawa, ON

SAMPLED BY:Kevin Cortez

O. Reg. 153(511) - Metals & Inorganics (Water)

DATE RECEIVED: 2021-09-02

DATE REPORTED: 2021-09-14

SAMPLE DESCRIPTION:				BH MW1		BH MW2	BH MW3	BH MW5		BH MW6
SAMPLE TYPE:				Water		Water	Water	Water		Water
DATE SAMPLED:				2021-09-01 11:41		2021-09-01 11:41	2021-09-01 11:41	2021-09-01 11:41		2021-09-01 11:41
Parameter	Unit	G / S	RDL	2922657	RDL	2925666	2925667	2925668	RDL	2925669
Dissolved Antimony	µg/L		1.0	<1.0	1.0	<1.0	<1.0	<1.0	1.0	<1.0
Dissolved Arsenic	µg/L		1.0	<1.0	1.0	<1.0	<1.0	<1.0	1.0	<1.0
Dissolved Barium	µg/L		2.0	188	2.0	175	388	111	2.0	759
Dissolved Beryllium	µg/L		0.50	<0.50	0.50	<0.50	<0.50	<0.50	0.50	<0.50
Dissolved Boron	µg/L		10.0	40.9	10.0	36.0	54.0	41.3	10.0	44.0
Dissolved Cadmium	µg/L		0.20	<0.20	0.20	<0.20	<0.20	<0.20	0.20	<0.20
Dissolved Chromium	µg/L		2.0	<2.0	2.0	<2.0	<2.0	<2.0	2.0	<2.0
Dissolved Cobalt	µg/L		0.50	<0.50	0.50	0.90	<0.50	<0.50	0.50	<0.50
Dissolved Copper	µg/L		1.0	<1.0	1.0	1.1	<1.0	<1.0	1.0	<1.0
Dissolved Lead	µg/L		0.50	0.78	0.50	0.89	0.77	0.66	0.50	0.62
Dissolved Molybdenum	µg/L		0.50	2.92	0.50	2.99	1.05	2.72	0.50	1.64
Dissolved Nickel	µg/L		3.0	<3.0	3.0	3.7	3.5	4.8	3.0	3.1
Dissolved Selenium	µg/L		1.0	2.7	1.0	<1.0	2.0	2.5	1.0	1.6
Dissolved Silver	µg/L		0.20	<0.20	0.20	<0.20	<0.20	<0.20	0.20	<0.20
Dissolved Thallium	µg/L		0.30	<0.30	0.30	<0.30	<0.30	<0.30	0.30	<0.30
Dissolved Uranium	µg/L		0.50	17.0	0.50	20.4	<0.50	5.95	0.50	1.45
Dissolved Vanadium	µg/L		0.40	<0.40	0.40	0.51	0.54	<0.40	0.40	0.81
Dissolved Zinc	µg/L		5.0	<5.0	5.0	<5.0	<5.0	<5.0	5.0	<5.0
Mercury	µg/L		0.02	<0.02	0.02	<0.02	<0.02	<0.02	0.02	<0.02
Chromium VI	µg/L		2.000	<2.000	2.000	<2.000	<2.000	<2.000	2.000	<2.000
Cyanide, Free	µg/L		2	<2	2	<2	<2	<2	2	<2
Dissolved Sodium	µg/L		500	336000	250	248000	204000	192000	500	443000
Chloride	µg/L		100	771000	100	586000	423000	428000	100	857000
Electrical Conductivity	uS/cm		2	3190	2	2530	2780	2040	2	3590
pH	pH Units		NA	7.67	NA	7.78	7.69	7.76	NA	7.73

Certified By:

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 21Z796520

PROJECT: CCO-21-2432-06

CLIENT NAME: MCINTOSH PERRY LIMITED

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodrotte Ave. Ottawa, ON

SAMPLED BY:Kevin Cortez

O. Reg. 153(511) - Metals & Inorganics (Water)

DATE RECEIVED: 2021-09-02

DATE REPORTED: 2021-09-14

		SAMPLE DESCRIPTION:		Dup
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2021-09-01 11:41
Parameter	**Unit**	**G / S**	**RDL**	**2925670**
Dissolved Antimony	µg/L		1.0	<1.0
Dissolved Arsenic	µg/L		1.0	<1.0
Dissolved Barium	µg/L		2.0	354
Dissolved Beryllium	µg/L		0.50	<0.50
Dissolved Boron	µg/L		10.0	53.7
Dissolved Cadmium	µg/L		0.20	<0.20
Dissolved Chromium	µg/L		2.0	<2.0
Dissolved Cobalt	µg/L		0.50	<0.50
Dissolved Copper	µg/L		1.0	<1.0
Dissolved Lead	µg/L		0.50	<0.50
Dissolved Molybdenum	µg/L		0.50	1.51
Dissolved Nickel	µg/L		3.0	3.1
Dissolved Selenium	µg/L		1.0	<1.0
Dissolved Silver	µg/L		0.20	<0.20
Dissolved Thallium	µg/L		0.30	<0.30
Dissolved Uranium	µg/L		0.50	<0.50
Dissolved Vanadium	µg/L		0.40	<0.40
Dissolved Zinc	µg/L		5.0	<5.0
Mercury	µg/L		0.02	<0.02
Chromium VI	µg/L		2.000	<2.000
Cyanide, Free	µg/L		2	<2
Dissolved Sodium	µg/L		250	219000
Chloride	µg/L		100	430000
Electrical Conductivity	uS/cm		2	2800
pH	pH Units		NA	7.68

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2922657-2925670 Metals analysis completed on a filtered sample.
Dilution required, RDL has been increased accordingly.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

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

Quality Assurance

CLIENT NAME: MCINTOSH PERRY LIMITED

AGAT WORK ORDER: 21Z796520

PROJECT: CCO-21-2432-06

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodrotte Ave. Ottawa, ON

SAMPLED BY:Kevin Cortez

Trace Organics Analysis

RPT Date: Sep 14, 2021			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)															
F1 (C6-C10)	2919879		37	31	NA	< 25	102%	60%	140%	98%	60%	140%	84%	60%	140%
F2 (C10 to C16)	2922657	2922657	< 100	< 100	NA	< 100	122%	60%	140%	110%	60%	140%	90%	60%	140%
F3 (C16 to C34)	2922657	2922657	< 100	< 100	NA	< 100	106%	60%	140%	105%	60%	140%	73%	60%	140%
F4 (C34 to C50)	2922657	2922657	< 100	< 100	NA	< 100	92%	60%	140%	97%	60%	140%	93%	60%	140%
O. Reg. 153(511) - PAHs (Water)															
Naphthalene	2905732		< 0.20	< 0.20	NA	< 0.20	89%	50%	140%	98%	50%	140%	96%	50%	140%
Acenaphthylene	2905732		< 0.20	< 0.20	NA	< 0.20	85%	50%	140%	85%	50%	140%	103%	50%	140%
Acenaphthene	2905732		< 0.20	< 0.20	NA	< 0.20	84%	50%	140%	84%	50%	140%	107%	50%	140%
Fluorene	2905732		< 0.20	< 0.20	NA	< 0.20	85%	50%	140%	85%	50%	140%	106%	50%	140%
Phenanthrene	2905732		< 0.10	< 0.10	NA	< 0.10	84%	50%	140%	89%	50%	140%	103%	50%	140%
Anthracene	2905732		< 0.10	< 0.10	NA	< 0.10	85%	50%	140%	96%	50%	140%	100%	50%	140%
Fluoranthene	2905732		< 0.20	< 0.20	NA	< 0.20	84%	50%	140%	85%	50%	140%	95%	50%	140%
Pyrene	2905732		< 0.20	< 0.20	NA	< 0.20	85%	50%	140%	84%	50%	140%	96%	50%	140%
Benzo(a)anthracene	2905732		< 0.20	< 0.20	NA	< 0.20	84%	50%	140%	85%	50%	140%	91%	50%	140%
Chrysene	2905732		< 0.10	< 0.10	NA	< 0.10	85%	50%	140%	89%	50%	140%	87%	50%	140%
Benzo(b)fluoranthene	2905732		< 0.10	< 0.10	NA	< 0.10	84%	50%	140%	96%	50%	140%	92%	50%	140%
Benzo(k)fluoranthene	2905732		< 0.10	< 0.10	NA	< 0.10	85%	50%	140%	85%	50%	140%	100%	50%	140%
Benzo(a)pyrene	2905732		< 0.01	< 0.01	NA	< 0.01	84%	50%	140%	84%	50%	140%	108%	50%	140%
Indeno(1,2,3-cd)pyrene	2905732		< 0.20	< 0.20	NA	< 0.20	85%	50%	140%	85%	50%	140%	99%	50%	140%
Dibenz(a,h)anthracene	2905732		< 0.20	< 0.20	NA	< 0.20	85%	50%	140%	84%	50%	140%	90%	50%	140%
Benzo(g,h,i)perylene	2905732		< 0.20	< 0.20	NA	< 0.20	84%	50%	140%	85%	50%	140%	97%	50%	140%
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	2929320		<0.20	<0.20	NA	< 0.20	97%	50%	140%	81%	50%	140%	83%	50%	140%
Vinyl Chloride	2929320		<0.17	<0.17	NA	< 0.17	96%	50%	140%	103%	50%	140%	94%	50%	140%
Bromomethane	2929320		<0.20	<0.20	NA	< 0.20	107%	50%	140%	95%	50%	140%	102%	50%	140%
Trichlorofluoromethane	2929320		<0.40	<0.40	NA	< 0.40	99%	50%	140%	81%	50%	140%	105%	50%	140%
Acetone	2929320		<1.0	<1.0	NA	< 1.0	98%	50%	140%	81%	50%	140%	102%	50%	140%
1,1-Dichloroethylene	2929320		<0.30	<0.30	NA	< 0.30	91%	50%	140%	97%	60%	130%	99%	50%	140%
Methylene Chloride	2929320		<0.30	<0.30	NA	< 0.30	89%	50%	140%	107%	60%	130%	115%	50%	140%
trans- 1,2-Dichloroethylene	2929320		<0.20	<0.20	NA	< 0.20	82%	50%	140%	103%	60%	130%	97%	50%	140%
Methyl tert-butyl ether	2929320		<0.20	<0.20	NA	< 0.20	114%	50%	140%	87%	60%	130%	88%	50%	140%
1,1-Dichloroethane	2929320		<0.30	<0.30	NA	< 0.30	91%	50%	140%	94%	60%	130%	88%	50%	140%
Methyl Ethyl Ketone	2929320		<1.0	<1.0	NA	< 1.0	98%	50%	140%	98%	50%	140%	110%	50%	140%
cis- 1,2-Dichloroethylene	2929320		<0.20	<0.20	NA	< 0.20	98%	50%	140%	114%	60%	130%	106%	50%	140%
Chloroform	2929320		<0.20	<0.20	NA	< 0.20	77%	50%	140%	90%	60%	130%	102%	50%	140%
1,2-Dichloroethane	2929320		<0.20	<0.20	NA	< 0.20	77%	50%	140%	84%	60%	130%	86%	50%	140%
1,1,1-Trichloroethane	2929320		<0.30	<0.30	NA	< 0.30	79%	50%	140%	99%	60%	130%	99%	50%	140%
Carbon Tetrachloride	2929320		<0.20	<0.20	NA	< 0.20	85%	50%	140%	110%	60%	130%	92%	50%	140%

AGAT Laboratories

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

Quality Assurance

CLIENT NAME: MCINTOSH PERRY LIMITED

AGAT WORK ORDER: 21Z796520

PROJECT: CCO-21-2432-06

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodrotte Ave. Ottawa, ON

SAMPLED BY:Kevin Cortez

Trace Organics Analysis (Continued)

RPT Date: Sep 14, 2021			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Benzene	2929320		<0.20	<0.20	NA	< 0.20	93%	50%	140%	103%	60%	130%	108%	50%	140%
1,2-Dichloropropane	2929320		<0.20	<0.20	NA	< 0.20	85%	50%	140%	96%	60%	130%	111%	50%	140%
Trichloroethylene	2929320		<0.20	<0.20	NA	< 0.20	81%	50%	140%	107%	60%	130%	104%	50%	140%
Bromodichloromethane	2929320		<0.20	<0.20	NA	< 0.20	91%	50%	140%	104%	60%	130%	94%	50%	140%
Methyl Isobutyl Ketone	2929320		<1.0	<1.0	NA	< 1.0	80%	50%	140%	90%	50%	140%	117%	50%	140%
1,1,2-Trichloroethane	2929320		<0.20	<0.20	NA	< 0.20	113%	50%	140%	76%	60%	130%	102%	50%	140%
Toluene	2929320		<0.20	<0.20	NA	< 0.20	97%	50%	140%	87%	60%	130%	87%	50%	140%
Dibromochloromethane	2929320		<0.10	<0.10	NA	< 0.10	104%	50%	140%	98%	60%	130%	77%	50%	140%
Ethylene Dibromide	2929320		<0.10	<0.10	NA	< 0.10	78%	50%	140%	90%	60%	130%	96%	50%	140%
Tetrachloroethylene	2929320		<0.20	<0.20	NA	< 0.20	92%	50%	140%	89%	60%	130%	84%	50%	140%
1,1,1,2-Tetrachloroethane	2929320		<0.10	<0.10	NA	< 0.10	116%	50%	140%	77%	60%	130%	80%	50%	140%
Chlorobenzene	2929320		<0.10	<0.10	NA	< 0.10	99%	50%	140%	79%	60%	130%	92%	50%	140%
Ethylbenzene	2929320		<0.10	<0.10	NA	< 0.10	87%	50%	140%	76%	60%	130%	86%	50%	140%
m & p-Xylene	2929320		<0.20	<0.20	NA	< 0.20	88%	50%	140%	87%	60%	130%	88%	50%	140%
Bromoform	2929320		<0.10	<0.10	NA	< 0.10	104%	50%	140%	89%	60%	130%	81%	50%	140%
Styrene	2929320		<0.10	<0.10	NA	< 0.10	100%	50%	140%	75%	60%	130%	88%	50%	140%
1,1,2,2-Tetrachloroethane	2929320		<0.10	<0.10	NA	< 0.10	75%	50%	140%	76%	60%	130%	99%	50%	140%
o-Xylene	2929320		<0.10	<0.10	NA	< 0.10	93%	50%	140%	78%	60%	130%	90%	50%	140%
1,3-Dichlorobenzene	2929320		<0.10	<0.10	NA	< 0.10	101%	50%	140%	78%	60%	130%	89%	50%	140%
1,4-Dichlorobenzene	2929320		<0.10	<0.10	NA	< 0.10	106%	50%	140%	78%	60%	130%	90%	50%	140%
1,2-Dichlorobenzene	2929320		<0.10	<0.10	NA	< 0.10	109%	50%	140%	78%	60%	130%	95%	50%	140%
n-Hexane	2929320		<0.20	<0.20	NA	< 0.20	87%	50%	140%	111%	60%	130%	93%	50%	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: N Popnikolof

AGAT Laboratories

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

Quality Assurance

CLIENT NAME: MCINTOSH PERRY LIMITED

AGAT WORK ORDER: 21Z796520

PROJECT: CCO-21-2432-06

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodrotte Ave. Ottawa, ON

SAMPLED BY:Kevin Cortez

Water Analysis

RPT Date: Sep 14, 2021			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Water)															
Dissolved Antimony	2923442		<1.0	<1.0	NA	< 1.0	103%	70%	130%	104%	80%	120%	102%	70%	130%
Dissolved Arsenic	2923442		2.6	2.3	NA	< 1.0	93%	70%	130%	102%	80%	120%	108%	70%	130%
Dissolved Barium	2923442		544	569	4.5%	< 2.0	96%	70%	130%	101%	80%	120%	102%	70%	130%
Dissolved Beryllium	2923442		<0.50	<0.50	NA	< 0.50	100%	70%	130%	98%	80%	120%	113%	70%	130%
Dissolved Boron	2923442		114	127	10.8%	< 10.0	100%	70%	130%	102%	80%	120%	109%	70%	130%
Dissolved Cadmium	2923442		<0.20	<0.20	NA	< 0.20	102%	70%	130%	103%	80%	120%	104%	70%	130%
Dissolved Chromium	2923442		<2.0	<2.0	NA	< 2.0	99%	70%	130%	102%	80%	120%	101%	70%	130%
Dissolved Cobalt	2923442		<0.50	<0.50	NA	< 0.50	105%	70%	130%	105%	80%	120%	100%	70%	130%
Dissolved Copper	2923442		<1.0	<1.0	NA	< 1.0	100%	70%	130%	103%	80%	120%	96%	70%	130%
Dissolved Lead	2923442		<0.50	<0.50	NA	< 0.50	99%	70%	130%	106%	80%	120%	89%	70%	130%
Dissolved Molybdenum	2923442		1.48	1.58	NA	< 0.50	102%	70%	130%	106%	80%	120%	108%	70%	130%
Dissolved Nickel	2923442		<3.0	<3.0	NA	< 3.0	106%	70%	130%	104%	80%	120%	95%	70%	130%
Dissolved Selenium	2923442		3.3	3.6	NA	< 1.0	104%	70%	130%	99%	80%	120%	106%	70%	130%
Dissolved Silver	2923442		<0.20	<0.20	NA	< 0.20	104%	70%	130%	105%	80%	120%	88%	70%	130%
Dissolved Thallium	2923442		<0.30	<0.30	NA	< 0.30	101%	70%	130%	108%	80%	120%	95%	70%	130%
Dissolved Uranium	2923442		<0.50	<0.50	NA	< 0.50	103%	70%	130%	110%	80%	120%	103%	70%	130%
Dissolved Vanadium	2923442		1.18	1.44	NA	< 0.40	110%	70%	130%	107%	80%	120%	109%	70%	130%
Dissolved Zinc	2923442		<5.0	<5.0	NA	< 5.0	102%	70%	130%	96%	80%	120%	91%	70%	130%
Mercury	2948357		<0.02	<0.02	NA	< 0.02	98%	70%	130%	98%	80%	120%	92%	70%	130%
Chromium VI	2930919		<2.000	<2.000	NA	< 2	102%	70%	130%	103%	80%	120%	109%	70%	130%
Cyanide, Free	2927245		<2	<2	NA	< 2	98%	70%	130%	101%	80%	120%	94%	70%	130%
Dissolved Sodium	2922894		5010	4900	2.2%	< 50	100%	70%	130%	96%	80%	120%	94%	70%	130%
Chloride	2925666	2925666	586000	583000	0.5%	< 100	95%	70%	130%	103%	80%	120%	NA	70%	130%
Electrical Conductivity	2925647		141	141	0.0%	< 2	105%	90%	110%						
pH	2925647		6.90	6.86	0.6%	NA	102%	90%	110%						

Comments: NA Signifies Not Applicable.
Duplicate NA: results are less than 5X the RDL and RPD will not be calculated.
Matrix spike: Spike level < native concentration. Matrix spike acceptance limits do not apply.

Certified By:

AGAT Laboratories

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

Method Summary

CLIENT NAME: MCINTOSH PERRY LIMITED

AGAT WORK ORDER: 21Z796520

PROJECT: CCO-21-2432-06

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodrotte Ave. Ottawa, ON

SAMPLED BY:Kevin Cortez

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Fluorene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Anthracene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Pyrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(a)anthracene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Chrysene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Acridine-d9	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Terphenyl-d14	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Sediment			
F1 (C6-C10)	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	modified from MOE PHC-E3421	P&T GC/FID
Toluene-d8	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F4 (C34 to C50)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	modified from MOE PHC-E3421	BALANCE
Terphenyl	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
Dichlorodifluoromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

AGAT Laboratories

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

Method Summary

CLIENT NAME: MCINTOSH PERRY LIMITED

AGAT WORK ORDER: 21Z796520

PROJECT: CCO-21-2432-06

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodrotte Ave. Ottawa, ON

SAMPLED BY:Kevin Cortez

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Vinyl Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

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

Method Summary

CLIENT NAME: MCINTOSH PERRY LIMITED

AGAT WORK ORDER: 21Z796520

PROJECT: CCO-21-2432-06

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodrotte Ave. Ottawa, ON

SAMPLED BY:Kevin Cortez

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
m & p-Xylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromoform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

AGAT Laboratories

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

Method Summary

CLIENT NAME: MCINTOSH PERRY LIMITED

AGAT WORK ORDER: 21Z796520

PROJECT: CCO-21-2432-06

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodrotte Ave. Ottawa, ON

SAMPLED BY:Kevin Cortez

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Dissolved Antimony	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Arsenic	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Barium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Beryllium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Boron	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Cadmium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Chromium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Cobalt	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Copper	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Lead	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Molybdenum	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Nickel	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Selenium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Silver	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Thallium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Uranium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Vanadium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Zinc	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Mercury	MET-93-6100	modified from EPA 245.2 and SM 3112 B	CVAAS
Chromium VI	INOR-93-6034	modified from SM 3500-CR B	LACHAT FIA
Cyanide, Free	INOR-93-6052	modified from ON MOECC E3015, SM 4500-CN- I, G-387	TECHNICON AUTO ANALYZER
Dissolved Sodium	MET-93-6105	modified from EPA 6010D	ICP/OES
Chloride	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	modified from SM 4500-H+ B	PC TITRATE

AGAT Laboratories

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

Chain of Custody Record

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

Laboratory Use Only

Work Order #: 21Z796520

Cooler Quantity: two-ice

Arrival Temperatures: 4.5 | 4.1 | 4.4

(2) 4.8/4.1/4.6°C 8.9 | 9.4 | 9.0

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes: (1) 2.6/2.1/2.0°C

Report Information:

Company: McIntosh Perry
Contact: Kevin Cortez
Address: 115 Walgreen rd.
Carp, ON
Phone: 613 266 7641 Fax:
Reports to be sent to:
1. Email: K.cortez@mcintoshperry.com
2. Email: d.arnott@mcintoshperry.com

Regulatory Requirements:

(Please check all applicable boxes)

☐ Regulation 153/04
Table ___ (Indicate One)
☐Ind/Com ☐Res/Park ☐Agriculture
Soil Texture (Check One) ☐Coarse ☐Fine

☐ Excess Soils R406
Table ___ (Indicate One)
☐ Regulation 558
☐ CCME

☐ Sewer Use ☐Sanitary ☐Storm
___ (Region)
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
___ (Indicate One)

Is this submission for a **Record of Site Condition?** ☐ Yes ☒ No

Report Guideline on *Certificate of Analysis* ☒ Yes ☐ No

Turnaround Time (TAT) Required: on ice

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-21-2432-06
Site Location: 1545 woodroffe ave. Ottawa ON
Sampled By: Kevin Cortez
AGAT ID #: 307122 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: McIntosh Perry
Contact:
Address:
Email:

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	Field Filtered - Metals, Hg, CrVI, DOC Y/N	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐ CrV, ☐ Hg, ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs	O. Reg 153: Analyze F4G if required ☐ Yes ☐ No	O. Reg 153: PAHs	O. Reg 153: Total PCBs ☐ Aroclor	O. Reg 153: VOC	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Excess Soils SPLP Rainwater Leach	O. Reg 406: Excess Soils Characterization Package	Salt - EC/SAR	Potentially Hazardous or High Concentration (Y/N)
BH MW1	1/9/21	11:41 AM/PM	16	GW			X		X		X		X					
BH MW2	1/9/21	1:21 AM/PM	16	GW			X		X		X		X					
BH MW3	1/9/21	2:51 AM/PM	16	GW			X		X		X		X					
BH MW5	1/9/21	9:40 AM/PM	4	GW			X		X		X		X					
BH MW6	1/9/21	6:44 AM/PM	16	GW			X		X		X		X					
Dup	1/9/21		AM/PM	16	GW			X		X		X		X				
			AM/PM															
			AM/PM															
			AM/PM															
			AM/PM															
			AM/PM															

Samples Relinquished By (Print Name and Sign): Kevin Cortez	Date 2/9/21	Time 8:37am	Samples Received By (Print Name and Sign): UBenthelet	Date 2021/05/02	Time 9h45
Samples Relinquished By (Print Name and Sign): UB to Puro	Date 21/9/2	Time 16h00	Samples Received By (Print Name and Sign):	Date	Time
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign): Eva Szulin	Date	Time

Page 1 of 3

N°: T 123796

AGAT Laboratories

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**
RR#3 115 WALGREEN ROAD
CARP, ON K0A1L0
(613) 836-2184
ATTENTION TO: **Dan Arnott**
PROJECT: **CCO-21-2432-06**
AGAT WORK ORDER: **21Z726742**
TRACE ORGANICS REVIEWED BY: **Pinkal Patel, Report Reviewer**
DATE REPORTED: **Apr 01, 2021**
PAGES (INCLUDING COVER): **10**
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 following analysis, unless expressly agreed otherwise in writing. Please contact your Client Project Manager if you require additional sample storage time.*
- *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.*

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 21Z726742

PROJECT: CCO-21-2432-06

CLIENT NAME: MCINTOSH PERRY LIMITED

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodroffe/Circle K

SAMPLED BY:Fares Masoumzadeh

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

DATE RECEIVED: 2021-03-26

DATE REPORTED: 2021-04-01

		SAMPLE DESCRIPTION:		Dup-1	BH-5	BH-6	BH-7	BH-8	BH-9	BH-11	BH-13
		SAMPLE TYPE:		Water	Water	Water	Water	Water	Water	Water	Water
		DATE SAMPLED:		2021-03-25	2021-03-25	2021-03-25	2021-03-25	2021-03-25	2021-03-25	2021-03-25	2021-03-25
Parameter	**Unit**	**G / S**	**RDL**	**2277441**	**2277442**	**2277443**	**2277444**	**2277445**	**2277446**	**2277447**	**2277448**
Benzene	µg/L	44	0.20	25.0	<0.20	34.0	<0.20	25.9	<0.20	5.89	1.95
Toluene	µg/L	18000	0.20	1.90	<0.20	2.50	<0.20	0.57	<0.20	0.44	0.75
Ethylbenzene	µg/L	2300	0.10	186	23.9	209	0.14	194	<0.10	53.2	109
m & p-Xylene	µg/L		0.20	293	24.7	293	<0.20	97.0	<0.20	22.4	7.22
o-Xylene	µg/L		0.10	46.3	0.35	61.5	<0.10	18.7	<0.10	26.5	6.28
Xylenes (Total)	µg/L	4200	0.20	339	25.1	355	<0.20	116	<0.20	48.9	13.5
F1 (C6 - C10)	µg/L	750	25	**1820**	268	**1990**	<25	**1490**	<25	**960**	410
F1 (C6 to C10) minus BTEX	µg/L	750	25	**1270**	219	**1390**	<25	**1150**	<25	**852**	285
F2 (C10 to C16)	µg/L	150	100	**320**	**580**	**380**	<100	**250**	<100	**1700**	<100
F3 (C16 to C34)	µg/L	500	100	**740**	370	**780**	<100	140	<100	290	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100	<100	<100	<100	<100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L		500	NA	NA	NA	NA	NA	NA	NA	NA
Sediment				Trace	Trace	Trace	Yes	Trace	Trace	Trace	No
Surrogate	**Unit**	**Acceptable Limits**									
Toluene-d8	% Recovery	60-140		90.8	94.5	116	85.8	94.0	76.8	99.8	98.5
Terphenyl	% Recovery	60-140		71	79	85	84	82	74	83	70

Certified By:

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 21Z726742

PROJECT: CCO-21-2432-06

CLIENT NAME: MCINTOSH PERRY LIMITED

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodroffe/Circle K

SAMPLED BY:Fares Masoumzadeh

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

DATE RECEIVED: 2021-03-26 **DATE REPORTED: 2021-04-01**

		SAMPLE DESCRIPTION:		BH-14	BH-15
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2021-03-25	2021-03-25
Parameter	**Unit**	**G / S**	**RDL**	**2277449**	**2277450**
Benzene	µg/L	44	0.20	<0.20	<0.20
Toluene	µg/L	18000	0.20	<0.20	<0.20
Ethylbenzene	µg/L	2300	0.10	0.14	<0.10
m & p-Xylene	µg/L		0.20	<0.20	<0.20
o-Xylene	µg/L		0.10	<0.10	<0.10
Xylenes (Total)	µg/L	4200	0.20	<0.20	<0.20
F1 (C6 - C10)	µg/L	750	25	32	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	32	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100
F3 (C16 to C34)	µg/L	500	100	<100	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L		500	NA	NA
Sediment				Trace	Trace
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8	% Recovery	60-140		90.8	95.2
Terphenyl	% Recovery	60-140		72	74

Certified By:

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 21Z726742

PROJECT: CCO-21-2432-06

CLIENT NAME: MCINTOSH PERRY LIMITED

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodroffe/Circle K

SAMPLED BY:Fares Masoumzadeh

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

DATE RECEIVED: 2021-03-26 **DATE REPORTED: 2021-04-01**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
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.

2277441-2277443 Sediment present in sample.
The C6-C10 fraction is calculated using Toluene response factor.
Xylenes total 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 nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated 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 153/04, results are considered valid without determining the PAH contribution if not requested by the client.
NA = Not Applicable

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

2277444 Sample decanted due to sediment.
The C6-C10 fraction is calculated using Toluene response factor.
Xylenes total 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 nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated 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 153/04, results are considered valid without determining the PAH contribution if not requested by the client.
NA = Not Applicable

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

2277445-2277447 Sediment present in sample.
The C6-C10 fraction is calculated using Toluene response factor.

Certified By: Pinkal Patel

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: Dan Arnott

SAMPLING SITE:1545 Woodroffe/Circle K

SAMPLED BY:Fares Masoumzadeh

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

DATE RECEIVED: 2021-03-26

DATE REPORTED: 2021-04-01

Xylenes total 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 nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated 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 153/04, results are considered valid without determining the PAH contribution if not requested by the client.
NA = Not Applicable

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

2277448

The C6-C10 fraction is calculated using Toluene response factor.
Xylenes total 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 nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated 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 153/04, results are considered valid without determining the PAH contribution if not requested by the client.
NA = Not Applicable

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

2277449-2277450

Sediment present in sample.
The C6-C10 fraction is calculated using Toluene response factor.
Xylenes total 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 nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.

Certified By:

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 21Z726742

PROJECT: CCO-21-2432-06

CLIENT NAME: MCINTOSH PERRY LIMITED

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodroffe/Circle K

SAMPLED BY:Fares Masoumzadeh

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

DATE RECEIVED: 2021-03-26 **DATE REPORTED: 2021-04-01**

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 153/04, results are considered valid without determining the PAH contribution if not requested by the client.
NA = Not Applicable

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

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

Exceedance Summary

AGAT WORK ORDER: 21Z726742

PROJECT: CCO-21-2432-06

CLIENT NAME: MCINTOSH PERRY LIMITED

ATTENTION TO: Dan Arnott

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
2277441	Dup-1	ON T3 NPGW CT	O. Reg. 153(511) - PHCs F1 - F4 (Water)	F1 (C6 - C10)	µg/L	750	1820
2277441	Dup-1	ON T3 NPGW CT	O. Reg. 153(511) - PHCs F1 - F4 (Water)	F1 (C6 to C10) minus BTEX	µg/L	750	1270
2277441	Dup-1	ON T3 NPGW CT	O. Reg. 153(511) - PHCs F1 - F4 (Water)	F2 (C10 to C16)	µg/L	150	320
2277441	Dup-1	ON T3 NPGW CT	O. Reg. 153(511) - PHCs F1 - F4 (Water)	F3 (C16 to C34)	µg/L	500	740
2277442	BH-5	ON T3 NPGW CT	O. Reg. 153(511) - PHCs F1 - F4 (Water)	F2 (C10 to C16)	µg/L	150	580
2277443	BH-6	ON T3 NPGW CT	O. Reg. 153(511) - PHCs F1 - F4 (Water)	F1 (C6 - C10)	µg/L	750	1990
2277443	BH-6	ON T3 NPGW CT	O. Reg. 153(511) - PHCs F1 - F4 (Water)	F1 (C6 to C10) minus BTEX	µg/L	750	1390
2277443	BH-6	ON T3 NPGW CT	O. Reg. 153(511) - PHCs F1 - F4 (Water)	F2 (C10 to C16)	µg/L	150	380
2277443	BH-6	ON T3 NPGW CT	O. Reg. 153(511) - PHCs F1 - F4 (Water)	F3 (C16 to C34)	µg/L	500	780
2277445	BH-8	ON T3 NPGW CT	O. Reg. 153(511) - PHCs F1 - F4 (Water)	F1 (C6 - C10)	µg/L	750	1490
2277445	BH-8	ON T3 NPGW CT	O. Reg. 153(511) - PHCs F1 - F4 (Water)	F1 (C6 to C10) minus BTEX	µg/L	750	1150
2277445	BH-8	ON T3 NPGW CT	O. Reg. 153(511) - PHCs F1 - F4 (Water)	F2 (C10 to C16)	µg/L	150	250
2277447	BH-11	ON T3 NPGW CT	O. Reg. 153(511) - PHCs F1 - F4 (Water)	F1 (C6 - C10)	µg/L	750	960
2277447	BH-11	ON T3 NPGW CT	O. Reg. 153(511) - PHCs F1 - F4 (Water)	F1 (C6 to C10) minus BTEX	µg/L	750	852
2277447	BH-11	ON T3 NPGW CT	O. Reg. 153(511) - PHCs F1 - F4 (Water)	F2 (C10 to C16)	µg/L	150	1700

AGAT Laboratories

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

Quality Assurance

CLIENT NAME: MCINTOSH PERRY LIMITED

AGAT WORK ORDER: 21Z726742

PROJECT: CCO-21-2432-06

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodroffe/Circle K

SAMPLED BY:Fares Masoumzadeh

Trace Organics Analysis

RPT Date: Apr 01, 2021			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (Water)															
Benzene	2274022		<0.20	<0.20	NA	< 0.20	84%	60%	140%	102%	60%	140%	83%	60%	140%
Toluene	2274022		<0.20	<0.20	NA	< 0.20	84%	60%	140%	102%	60%	140%	106%	60%	140%
Ethylbenzene	2274022		<0.10	<0.10	NA	< 0.10	97%	60%	140%	100%	60%	140%	85%	60%	140%
m & p-Xylene	2274022		<0.20	<0.20	NA	< 0.20	100%	60%	140%	102%	60%	140%	100%	60%	140%
o-Xylene	2274022		<0.10	<0.10	NA	< 0.10	97%	60%	140%	110%	60%	140%	95%	60%	140%
F1 (C6 - C10)	2274022		<25	<25	NA	< 25	94%	60%	140%	94%	60%	140%	105%	60%	140%
F2 (C10 to C16)	2277449	2277449	< 100	< 100	NA	< 100	97%	60%	140%	84%	60%	140%	100%	60%	140%
F3 (C16 to C34)	2277449	2277449	< 100	< 100	NA	< 100	92%	60%	140%	75%	60%	140%	89%	60%	140%
F4 (C34 to C50)	2277449	2277449	< 100	< 100	NA	< 100	91%	60%	140%	87%	60%	140%	85%	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: Jinkal Patel

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

Method Summary

CLIENT NAME: MCINTOSH PERRY LIMITED

AGAT WORK ORDER: 21Z726742

PROJECT: CCO-21-2432-06

ATTENTION TO: Dan Arnott

SAMPLING SITE:1545 Woodroffe/Circle K

SAMPLED BY:Fares Masoumzadeh

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
Toluene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
Ethylbenzene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
m & p-Xylene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
o-Xylene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
Xylenes (Total)	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
F1 (C6 - C10)	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/FID
Toluene-d8	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F4 (C34 to C50)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	modified from MOE PHC-E3421	BALANCE
Terphenyl	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
Sediment			

ILG1 BIK

AGAT Laboratories

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

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
Contact: Dan Arnott
Address: 115 Walgreen Rd, RR Carp, ON K0A 1L0
Phone: 613.714.4589 Fax: 613.836.3742
Reports to be sent to:
1. Email: d.arnott@mcintoshperry.com
2. Email: f.masoumzadeh@mcintoshperry.com

Project Information:

Project: CCO-21-2432-01
Site Location: 1545 Woodroffe / Circle K
Sampled By: Feres Masoumzadeh
AGAT Quote #: 307123 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:

Regulatory Requirements:

(Please check all applicable boxes)

☒ Regulation 153/04 — Table 3 (Indicate One) — ☒ Ind/Com ☐ Res/Park ☐ Agriculture
Soil Texture (Check One): ☒ Coarse ☐ Fine
☐ Excess Soils R406 — Table (Indicate One)
☐ Regulation 558
☐ CCME
☐ Sewer Use ☐ Sanitary ☐ Storm — (Region)
☐ Prov. Water Quality Objectives (PWQO)
☐ Other (Indicate One)

Is this submission for a **Record of Site Condition?** ☐ Yes ☐ No

Report Guideline on *Certificate of Analysis* ☐ Yes ☐ No

Laboratory Use Only

Work Order #: 21Z726742
Cooler Quantity: one-ice packs
Arrival Temperatures: 6.7 | 7.1 | 7.2 | 4.3 | 5.2 | 5.0
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes: ice packs

Turnaround Time (TAT) Required:

Regular TAT ☒ 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

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	Field Filtered - Metals, Hg, CrVI, DOC (Y/N)	O. Reg 153: Metals & Inorganics	Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	BTEX, F1-F4 PHCs — Analyze F4G if required ☐ Yes ☐ No	PAHs	PCBs	VOC	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Excess Soils SPLP Rainwater Leach ☐ Metals ☐ VOCs ☐ SVOCs	Excess Soils Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Salt - EC/SAR	Potentially Hazardous or High Concentration (Y/N)
Dup-1	25 March 21	AM PM	5	GW	BTEX + PHC				X								
BH-5	25/3/21	AM PM	5	GW					X								
BH-6	25/3/21	AM PM	5	GW					X								
BH-7	25/3/21	AM PM	5	GW					X								
BH-8	25/3/21	PM PM	5	GW					X								
BH-9	25/3/21	AM PM	5	GW					X								
BH-11	25/3/21	PM PM	5	GW					X								
BH-13	25/3/21	PM PM	5	GW					X								
BH-14	25/3/21	PM PM	5	GW					X								
BH-15	25/3/21	PM PM	5	GW					X								
		AM PM															

Samples Relinquished By (Print Name and Sign): Feres Masoumzadeh	Date 25/3/21	Time 4:40 PM	Samples Received By (Print Name and Sign): Upon the left 2021/03/26	Date	Time 11h00
Samples Relinquished By (Print Name and Sign): UPTO PM 2021/03/26	Date	Time 16h00	Samples Received By (Print Name and Sign): KAMRAN	Date Mar 27/21	Time 10:40 AM
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page ____ of ____
N°: T111791

Document ID: DIV-78-1511.018

Pink Copy - Client | Yellow Copy - AGAT | White Copy- AGAT

Date Issued: August 24, 2020

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

Temperature: 7

Dear Lisa Gardiner:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL: _____

Charlie (Long) Qu
Laboratory Supervisor, Organics

All analysis is completed in Ottawa, Ontario (unless otherwise indicated).

Exova Ottawa is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on our CALA scope of accreditation. It can be found at http://www.cala.ca/scopes/2602.pdf.

Exova (Ottawa) is certified and accredited for specific parameters by OMAFRA, Ontario Ministry of Agriculture, Food and Rural Affairs (for farm soils). Licensed by Ontario MOE for specific tests in drinking water.

Exova (Mississauga) is accredited for specific parameters by SCC, Standards Council of Canada (to ISO 17025)

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline values listed on this report are provided for ease of use (informational purposes) only. Exova recommends consulting the official provincial or federal guideline as required.

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1236175 GW (Reg 153) - 2016-04-21 BH 5	1236176 GW (Reg 153) - 2016-04-21 BH 8	1236177 GW (Reg 153) - 2016-04-21 BH 12	1236178 GW (Reg 153) - 2016-04-21 BH 13
Petroleum Hydrocarbons	Petroleum Hydrocarbons F1	20	ug/L	STD-750		14800*	950*	71400*	6340*
	Petroleum Hydrocarbons F2	20	ug/L	STD-150		14800*	180*	1940000*	770*
	Petroleum Hydrocarbons F3	50	ug/L	STD-500		3820*	1080*	1020000*	160
	Petroleum Hydrocarbons F4	50	ug/L	STD-500		3680*	3190*	<50	590*
PHC Surrogates	O-Terphenyl	0	%			86	124	0	100
VOC Surrogates Rec	1,2-dichloroethane-d4	0	%			84	106	98	106
	4-bromofluorobenzene	0	%			119	118	119	118
	Toluene-d8	0	%			79	107	100	115
VOCs	Acetone	30	ug/L	STD-130000		<30	60		<30
		3000	ug/L	STD-130000				<3000	
	Benzene	0.5	ug/L	STD-44		89.6*	12.2		31.0
		50	ug/L	STD-44				2680*	
	Bromodichloromethane	0.3	ug/L	STD-85000		<0.3	<0.3		<0.3
		30	ug/L	STD-85000				<30	
	Bromoform	0.4	ug/L	STD-380		<0.4	<0.4		<0.4
		40	ug/L	STD-380				<40	
	Bromomethane	0.5	ug/L	STD-5.6		<0.5	<0.5		<0.5
		50	ug/L	STD-5.6				<50	
	Carbon Tetrachloride	0.2	ug/L	STD-0.79		<0.2	<0.2		<0.2
		20	ug/L	STD-0.79				<20	
	Chlorobenzene	0.2	ug/L	STD-630		<0.2	<0.2		<0.2
		20	ug/L	STD-630				<20	
	Chloroform	0.5	ug/L	STD-2.4		<0.5	0.6		<0.5
		50	ug/L	STD-2.4				<50	
	Dibromochloromethane	0.3	ug/L	STD-82000		<0.3	<0.3		<0.3
		30	ug/L	STD-82000				<30	

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1236175 GW (Reg 153) - 2016-04-21 BH 5	1236176 GW (Reg 153) - 2016-04-21 BH 8	1236177 GW (Reg 153) - 2016-04-21 BH 12	1236178 GW (Reg 153) - 2016-04-21 BH 13
VOCs	Dichlorobenzene, 1,2-	0.4	ug/L	STD-4600		<0.4	<0.4		<0.4
		40	ug/L	STD-4600				<40	
	Dichlorobenzene, 1,3-	0.4	ug/L	STD-9600		<0.4	<0.4		<0.4
		40	ug/L	STD-9600				<40	
	Dichlorobenzene, 1,4-	0.4	ug/L	STD-8		<0.4	<0.4		<0.4
		40	ug/L	STD-8				<40	
	Dichlorodifluoromethane	0.5	ug/L	STD-4400		<0.5	<0.5		<0.5
		50	ug/L	STD-4400				<50	
	Dichloroethane, 1,1-	0.4	ug/L	STD-320		<0.4	<0.4		<0.4
		40	ug/L	STD-320				<40	
	Dichloroethane, 1,2-	0.2	ug/L	STD-1.6		<0.2	<0.2		<0.2
		20	ug/L	STD-1.6				<20	
	Dichloroethylene, 1,1-	0.5	ug/L	STD-1.6		<0.5	<0.5		<0.5
		50	ug/L	STD-1.6				<50	
	Dichloroethylene, 1,2-cis-	0.4	ug/L	STD-1.6		<0.4	<0.4		<0.4
		40	ug/L	STD-1.6				<40	
	Dichloroethylene, 1,2-trans-	0.4	ug/L	STD-1.6		<0.4	<0.4		<0.4
		40	ug/L	STD-1.6				<40	
	Dichloropropane, 1,2-	0.5	ug/L	STD-16		<0.5	<0.5		<0.5
		50	ug/L	STD-16				<50	
	Dichloropropene,1,3-	0.2	ug/L	STD-5.2		<0.2	<0.2		<0.2
		20	ug/L	STD-5.2				<20	
	Dichloropropylene, 1,3-cis-	0.2	ug/L			<0.2	<0.2		<0.2
		20	ug/L					<20	
	Dichloropropylene, 1,3-trans-	0.2	ug/L			<0.2	<0.2		<0.2
		20	ug/L					<20	

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Certificate of Analysis

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

Group	Analyte	MRL	Units	Guideline	1236175 GW (Reg 153) - 2016-04-21 BH 5	1236176 GW (Reg 153) - 2016-04-21 BH 8	1236177 GW (Reg 153) - 2016-04-21 BH 12	1236178 GW (Reg 153) - 2016-04-21 BH 13
	Lab I.D.				1236175	1236176	1236177	1236178
	Sample Matrix				GW	GW	GW	GW
	Sample Type				(Reg 153)	(Reg 153)	(Reg 153)	(Reg 153)
	Sampling Date				2016-04-21	2016-04-21	2016-04-21	2016-04-21
	Sample I.D.				BH 5	BH 8	BH 12	BH 13
VOCs	Ethylbenzene	0.5	ug/L	STD-2300	894	252		1290
		50	ug/L	STD-2300			2970*	
	Ethylene dibromide	0.2	ug/L	STD-0.25	<0.2	<0.2		<0.2
		20	ug/L	STD-0.25			<20	
	Hexane (n)	5	ug/L	STD-51	14	<5		21
		500	ug/L	STD-51			<500	
	Methyl Ethyl Ketone	10	ug/L	STD-470000	<10	<10		<10
		1000	ug/L	STD-470000			<1000	
	Methyl Isobutyl Ketone	10	ug/L	STD-140000	<10	<10		<10
		1000	ug/L	STD-140000			5000	
	Methyl tert-Butyl Ether (MTBE)	2	ug/L	STD-190	<2	<2		<2
		200	ug/L	STD-190			<200	
	Methylene Chloride	4.0	ug/L	STD-610	<4.0	<4.0		<4.0
		400	ug/L	STD-610			<400	
	Styrene	0.5	ug/L	STD-1300	<0.5	<0.5		10.5
		50	ug/L	STD-1300			270	
	Tetrachloroethane, 1,1,1,2-	0.5	ug/L	STD-3.3	31.0*	5.9*		<0.5
		50	ug/L	STD-3.3			<50	
	Tetrachloroethane, 1,1,2,2-	0.5	ug/L	STD-3.2	0.8	<0.5		<0.5
		50	ug/L	STD-3.2			250*	
	Tetrachloroethylene	0.3	ug/L	STD-1.6	<0.3	<0.3		<0.3
		30	ug/L	STD-1.6			<30	
	Toluene	0.5	ug/L	STD-18000	5.1	1.0		76.2
		50	ug/L	STD-18000			8920	
	Trichloroethane, 1,1,1-	0.4	ug/L	STD-640	<0.4	<0.4		<0.4
		40	ug/L	STD-640			<40	

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1236175 GW (Reg 153) - 2016-04-21 BH 5	1236176 GW (Reg 153) - 2016-04-21 BH 8	1236177 GW (Reg 153) - 2016-04-21 BH 12	1236178 GW (Reg 153) - 2016-04-21 BH 13
VOCs	Trichloroethane, 1,1,2-	0.4	ug/L	STD-4.7		<0.4	<0.4		<0.4
		40	ug/L	STD-4.7				<40	
	Trichloroethylene	0.3	ug/L	STD-1.6		<0.3	<0.3		<0.3
		30	ug/L	STD-1.6				<30	
	Trichlorofluoromethane	0.5	ug/L	STD-2500		<0.5	<0.5		<0.5
		50	ug/L	STD-2500				<50	
	Vinyl Chloride	0.2	ug/L	STD-0.5		<0.2	<0.2		<0.2
		20	ug/L	STD-0.5				<20	
	Xylene Mixture	0.5	ug/L	STD-4200		3520	135		1250
		50	ug/L	STD-4200				16900*	
	Xylene, m/p-	0.4	ug/L			3390	122		1080
		40	ug/L					11600	
	Xylene, o-	0.4	ug/L			135	12.9		166
		40	ug/L					5280	

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

Group	Analyte	MRL	Units	Guideline	1236179 GW (Reg 153) - 2016-04-21 BH 1013	1236180 GW (Reg 153) - 2016-04-21 BH 11	1236181 GW (Reg 153) - 2016-04-21 Trip Blank
	Lab I.D. / Sample Matrix / Sample Type / Sampling Date / Sample I.D.						
Petroleum Hydrocarbons	Petroleum Hydrocarbons F1	20	ug/L	STD-750	6290*	17500*	
	Petroleum Hydrocarbons F2	20	ug/L	STD-150	800*	3230*	
	Petroleum Hydrocarbons F3	50	ug/L	STD-500	170	<50	
	Petroleum Hydrocarbons F4	50	ug/L	STD-500	560*	<50	
PHC Surrogates	O-Terphenyl	0	%		98	102	
VOC Surrogates Rec	1,2-dichloroethane-d4	0	%		103	104	107
	4-bromofluorobenzene	0	%		121	124	111
	Toluene-d8	0	%		120	117	101
VOCs	Acetone	30	ug/L	STD-130000	<30	<30	<30
	Benzene	0.5	ug/L	STD-44	33.1	14.5	<0.5
	Bromodichloromethane	0.3	ug/L	STD-85000	<0.3	<0.3	<0.3
	Bromoform	0.4	ug/L	STD-380	<0.4	<0.4	<0.4
	Bromomethane	0.5	ug/L	STD-5.6	<0.5	<0.5	<0.5
	Carbon Tetrachloride	0.2	ug/L	STD-0.79	<0.2	<0.2	<0.2
	Chlorobenzene	0.2	ug/L	STD-630	<0.2	<0.2	<0.2
	Chloroform	0.5	ug/L	STD-2.4	<0.5	<0.5	<0.5
	Dibromochloromethane	0.3	ug/L	STD-82000	<0.3	<0.3	<0.3
	Dichlorobenzene, 1,2-	0.4	ug/L	STD-4600	<0.4	<0.4	<0.4
	Dichlorobenzene, 1,3-	0.4	ug/L	STD-9600	<0.4	<0.4	<0.4
	Dichlorobenzene, 1,4-	0.4	ug/L	STD-8	<0.4	<0.4	<0.4
	Dichlorodifluoromethane	0.5	ug/L	STD-4400	<0.5	<0.5	<0.5
	Dichloroethane, 1,1-	0.4	ug/L	STD-320	<0.4	<0.4	<0.4
	Dichloroethane, 1,2-	0.2	ug/L	STD-1.6	<0.2	<0.2	<0.2
	Dichloroethylene, 1,1-	0.5	ug/L	STD-1.6	<0.5	<0.5	<0.5
	Dichloroethylene, 1,2-cis-	0.4	ug/L	STD-1.6	<0.4	<0.4	<0.4
	Dichloroethylene, 1,2-trans-	0.4	ug/L	STD-1.6	<0.4	<0.4	<0.4

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

Group	Analyte	MRL	Units	Guideline	1236179 GW (Reg 153) - 2016-04-21 BH 1013	1236180 GW (Reg 153) - 2016-04-21 BH 11	1236181 GW (Reg 153) - 2016-04-21 Trip Blank
	Lab I.D. / Sample Matrix / Sample Type / Sampling Date / Sample I.D.						
VOCs	Dichloropropane, 1,2-	0.5	ug/L	STD-16	<0.5	<0.5	<0.5
	Dichloropropene,1,3-	0.2	ug/L	STD-5.2	<0.2	<0.2	<0.2
	Dichloropropylene, 1,3-cis-	0.2	ug/L		<0.2	<0.2	<0.2
	Dichloropropylene, 1,3-trans-	0.2	ug/L		<0.2	<0.2	<0.2
	Ethylbenzene	0.5	ug/L	STD-2300	1270	928	<0.5
	Ethylene dibromide	0.2	ug/L	STD-0.25	<0.2	<0.2	<0.2
	Hexane (n)	5	ug/L	STD-51	23	<5	<5
	Methyl Ethyl Ketone	10	ug/L	STD-470000	<10	<10	<10
	Methyl Isobutyl Ketone	10	ug/L	STD-140000	<10	<10	<10
	Methyl tert-Butyl Ether (MTBE)	2	ug/L	STD-190	<2	<2	<2
	Methylene Chloride	4.0	ug/L	STD-610	<4.0	<4.0	<4.0
	Styrene	0.5	ug/L	STD-1300	10.9	<0.5	<0.5
	Tetrachloroethane, 1,1,1,2-	0.5	ug/L	STD-3.3	<0.5	<0.5	<0.5
	Tetrachloroethane, 1,1,2,2-	0.5	ug/L	STD-3.2	<0.5	<0.5	<0.5
	Tetrachloroethylene	0.3	ug/L	STD-1.6	<0.3	<0.3	<0.3
	Toluene	0.5	ug/L	STD-18000	62.5	525	<0.5
	Trichloroethane, 1,1,1-	0.4	ug/L	STD-640	<0.4	<0.4	<0.4
	Trichloroethane, 1,1,2-	0.4	ug/L	STD-4.7	<0.4	<0.4	<0.4
	Trichloroethylene	0.3	ug/L	STD-1.6	<0.3	<0.3	<0.3
	Trichlorofluoromethane	0.5	ug/L	STD-2500	<0.5	<0.5	<0.5
	Vinyl Chloride	0.2	ug/L	STD-0.5	<0.2	<0.2	<0.2
	Xylene Mixture	0.5	ug/L	STD-4200	1240	4740*	<0.5
	Xylene, m/p-	0.4	ug/L		1080	3540	<0.4
	Xylene, o-	0.4	ug/L		160	1200	<0.4

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 290004 **Analysis/Extraction Date** 2016-04-22 **Instrument** GC/FID			
Method O CCME Reg 153 **Analyst** TJB			
Petroleum Hydrocarbons F1	<20 ug/L	96	60-140
Method V 8260B **Analyst** TJB			
Dichloropropene,1,3-			
Acetone	<30 ug/L	117	60-130
Methyl Ethyl Ketone	<10 ug/L	104	60-130
Methyl Isobutyl Ketone	<10 ug/L	107	60-130
Methyl tert-Butyl Ether (MTBE)	<2 ug/L	97	60-130
Run No 306563 **Analysis/Extraction Date** 2016-04-22 **Instrument** GC/MS			
Method V 8260B **Analyst** TJB			
Tetrachloroethane, 1,1,1,2-	<0.5 ug/L	113	60-130
Trichloroethane, 1,1,1-	<0.4 ug/L	107	60-130
Tetrachloroethane, 1,1,2,2-	<0.5 ug/L	111	60-130
Trichloroethane, 1,1,2-	<0.4 ug/L	111	60-130

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Dichloroethane, 1,1-	<0.4 ug/L	96	60-130
Dichloroethylene, 1,1-	<0.5 ug/L	99	60-130
Dichlorobenzene, 1,2-	<0.4 ug/L	97	60-130
Dichloroethane, 1,2-	<0.2 ug/L	101	60-130
Dichloropropane, 1,2-	<0.5 ug/L	115	60-130
Dichlorobenzene, 1,3-	<0.4 ug/L	114	60-130
Dichlorobenzene, 1,4-	<0.4 ug/L	109	60-130
Benzene	<0.5 ug/L	99	60-130
Bromodichloromethane	<0.3 ug/L	108	60-130
Bromoform	<0.4 ug/L	113	60-130
Bromomethane	<0.5 ug/L	107	60-130
Dichloroethylene, 1,2-cis-	<0.4 ug/L	95	60-130
Dichloropropene,1,3-cis-	<0.2 ug/L	109	60-130
Carbon Tetrachloride	<0.2 ug/L	102	60-130
Chloroform	<0.5 ug/L	106	60-130
Dibromochloromethane	<0.3 ug/L	101	60-130
Dichlorodifluoromethane	<0.5 ug/L	92	60-130
Methylene Chloride	<4.0 ug/L	105	60-130

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Ethylbenzene	<0.5 ug/L	109	60-130
Ethylene dibromide	<0.2 ug/L	108	60-130
Hexane (n)	<5 ug/L	110	60-130
m/p-xylene	<0.4 ug/L	112	60-130
Chlorobenzene	<0.2 ug/L	98	60-130
o-xylene	<0.4 ug/L	112	60-130
Styrene	<0.5 ug/L	98	60-130
Dichloroethylene, 1,2-trans-	<0.4 ug/L	96	60-130
Dichloropropene,1,3-trans-	<0.2 ug/L	114	60-130
Tetrachloroethylene	<0.3 ug/L	103	60-130
Toluene	<0.5 ug/L	106	60-130
Trichloroethylene	<0.3 ug/L	108	60-130
Trichlorofluoromethane	<0.5 ug/L	106	60-130
Vinyl Chloride	<0.2 ug/L	95	60-130
Run No 306564	**Analysis/Extraction Date** 2016-04-22	**Instrument** GC/MS	
Method V 8260B	**Analyst** TJB		
Xylene Mixture			
Run No 306568	**Analysis/Extraction Date** 2016-04-22	**Instrument** GC/FID	

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Method O CCME Reg 153	**Analyst** JLD		
Petroleum Hydrocarbons F2	<20 ug/L	90	60-140
Petroleum Hydrocarbons F3	<50 ug/L	90	60-140
Petroleum Hydrocarbons F4	<50 ug/L	90	60-140

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

Sample Comment Summary

Sample ID: 1236177 BH 12 VOC MRL's elevated due to matrix interference (dilution was done).

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

Petroleum Hydrocarbons - CCME Checklist

Samples were analysed by Exova Ottawa Method AMCCME2, "Petroleum Hydrocarbons in Water and Soil, CCME/TPH" or Exova Mississauga Method 11-09-SP-2322, "Petroleum Hydrocarbons in Water and Soil, CCME/TPH". These methods comply with the reference method for the CCME CWS PHC and are validated for use in the laboratory. Exova Ottawa is accredited by CALA (ISO 17025) for all CCME F1-F4 fractions as listed in this report. Exova Mississauga is accredited by SCC (ISO 17025) for all CCME F1-F4 fractions as listed in this report. Data for QC samples (blank, duplicate, spike) are available on request

Holding/Analysis Times	Yes/No	If NO, then reasons
All fractions analyzed within recommended hold times/analysis times?	Yes	
F1		
nC6 and nC10 response factors within 30% of toluene	Yes	
BTEX was subtracted from F1 fraction		
If YES, was F1-BTEX (C6-C10) reported		
F2		
nC10, nC16 and nC34 response factors within 10% of their average (F2-F4)	Yes	
Linearity within 15% (F2-F4)	Yes	
Napthalene was subtracted from F2 fraction		Naphthalene (PAH) not requested/analysed
If YES was F2-Napthalene reported		
F3		
PAH (selected compounds) subtracted from F3 fraction		PAH not requested/analysed
If YES was F3-PAH reported		
F4		
C50 response factor within 70% of nC10+nC16+nC34 average	Yes	
Chromatogram descended to baseline by retention time of C50	Yes	
if NO was F4 (C34-C50) gravimetric reported		

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

CHAIN OF CUSTODY

807185

Exova

☑ 146 Colonnade Rd., Unit 8, Ottawa, ON K2E 7Y1 Ph: (613) 727-5692 Fax: (613) 727-5222
☐ 608 Norris Court, Kingston, ON K7P 2R9 Ph: (613) 634-9307 Fax: (613) 634-9308
☐ 380 Vansickle Rd., Unit 630, St. Catharines, ON L2R 6P7 Ph: (905) 680-8887 Fax: (905) 680-4256
☐ 2395 Speakman Drive, Mississauga, ON, L5K 1B3 Phone: (905) 822-4111 Fax : (905) 823-1446

LABORATORY USE ONLY
Report #: 1605988

Report Information*:
Client: WSP CANADA INC.
Contact: Phil Romeril, Lisa Gardiner
Address: 294, Rink Street, Suite 103 Peterborough, Ontario K9J 2K2 Canada
Email: lisa.gardiner@wspgroup.com Phone: 613-617-9237
Project: 151-10565-00, 220.31 (1545 Woodroffe Ave)

Invoice Information*:
Invoice to the same as above? Yes / (No) or:
Client: WSP CANADA INC.
Contact: Lisa Gardiner
Address: 294, Rink Street, Suite 103 Peterborough, Ontario K9J 2K2 Canada
Email: Lisa.Gardiner@wspgroup.com Phone: 705-743-6850 #228
Purchase Order #:
Exova Quote # *: 160176

Criteria Required*:
☐ ODWSOG ☐ Other, Specify:
☐ PWQO
☐ Ont. Reg. 558
☐ CCME
☐ Sanitary Sewer, City:
☐ Storm Sewer, City:
☑ Ont. Reg 153/04
Table # 3, (Coarse)/Fine, Surface/Subsurface
Type: (Com-Ind) / Res-Park / Agri / GW / Other

The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04 *:
YES ☑ / NO ☐

Is this a drinking water sample? YES / (NO)*
If yes, complete the drinking water COC

Additional Email/Fax:
1. Email: phil.romeril@wspgroup.com
2. Email: kathryn.maton@wspgroup.com
3. Email:
Fax:

Report Format:
☑ PDF ☑ Excel ☐ Other, Specify:

Turnaround Time (*rush surcharges may apply*)*:
☐ 5 Business Days (Standard)
☐ 3 Business Days (Rush)
☐ 2 Business Days (Rush)
☑ 1 Business Day (Rush)
☐ Other (specifiy date):

Notes:

* Indicates a required field
Please note that incomplete information may result in turnaround time delays.
Samples should be kept cool (4-10°C) from sampling time through drop-off at the laboratory.

Sample ID*	Date/Time Sampled*	Sample Matrix*	# Bottles	Sample Location	Parameters: PHC F1-F4	VOCs	Metals	Lab Use Only
BH5	21/04/2016 5pm	GW	3	1545 Woodroffe Ave	X	X		1236175
BH8	4:30pm				X	X		76
BH12	4pm				X	X		77
BH13	3:30pm				X	X		78
BH1013					X	X		79
BH11	3pm				X	X		80
Trip Blank			2			X		81

Samples Relinquished By:	Date/Time:	Samples Received By:	Date/Time:	Temperature:	Condition:
Kathryn Maton	21/04/2016 17:17			7°	
Samples Relinquished By:	Date/Time:	Samples Received By: YK	Date/Time: 21/04 1715	Page # of	