Phase II
Environmental Site Assessment

The Hindu Heritage Centre of Ottawa Carleton
4835 Bank Street
Ottawa, Ontario

Prepared for:

The Hindu Temple of Ottawa Carleton Inc.
4835 Bank Street
Ottawa, Ontario
K1X 1G6

Attention: Harish Gupta

LRL File No.: 170132

November 22, 2019

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EXECUTIVE SUMMARY

The Hindu Temple of Ottawa Carleton Inc. retained LRL Associates Ltd. (LRL) to complete a Phase II Environmental Site Assessment (ESA) on 4835 Bank Street in Ottawa, Ontario (herein referred to as the Site). The assessment was conducted in the context of a proposed site plan application for the construction of an additional assembly hall.

The Site under investigation is the institutional property located at 4835 Bank Street in Ottawa, Ontario. The property has a rectangular shape with an approximate area of 38,000 m^2 (9.4 acres), frontage being Bank Street. The Site contains a Heritage Centre, located in the central portion of the Site, and a detached garage located northeast of the Centre. The Centre is serviced by municipal water, natural gas and two septic systems located north and south of the building. The topography of the Site is generally flat with a gentle slope towards the west in the west portion of the Site.

The Phase I ESA and Subsurface Investigation conducted in June 2017[1] identified a former bulk petroleum facility with petroleum storage tanks approximately 40 m southeast of the Site across Bank Street. A Phase II ESA was recommended to determine whether the facility has impacted the soil and groundwater onsite. Test pits were advanced to determine the impact of identified buried waste. PHC, VOC and metals parameters analysed were below the applicable standards.

The purpose of a Phase II ESA is to determine if the potential environmental concerns identified in the Phase I ESA have negatively impacted the quality of soil and groundwater on the subject Site. Such an assessment provides information regarding the nature and extent of potential contamination to assist in making informed business decisions about the property.

Areas of potential environmental concern identified that require investigation are:

Potential Environmental Concern	Location	Comments	Contaminants of Potential Concern	Media Potentially Impacted
Bulk Petroleum Facility with Petroleum Storage Tanks	4836 Bank Street. Approximately 40 m south-west of the Site, across Bank Street.	Identified in the Phase I ESA; consists of a former bulk petroleum facility with one (1) above-ground storage tank and one (1) underground storage tank. It was reported that the tanks were removed in 1994 and subsurface impacts were identified.	PHC VOC	Soil Groundwater

PHC: Petroleum Hydrocarbon Compounds
VOC: Volatile Organic Compounds

Soil and groundwater conditions were evaluated with respect to the contaminants of concern in the context of the current regulations and guidelines applicable to contaminated sites. The investigation involved the advancement of four (4) boreholes across the Site at strategic locations based on areas of potential environmental concern (APEC). All four (4) of the boreholes were

[1] LRL Associates Ltd., Phase I Environmental Site Assessment and Subsurface Investigation, The Hindu Temple of Ottawa Carleton, 4835 Bank Street, Ottawa, Ontario, June 13, 2017, revised February 8, 2018.

completed as monitoring wells to assess the Site's hydrogeological conditions and facilitate groundwater sampling.

The findings and conclusions presented in this report apply only to the recognized environmental conditions assessed.

Regulatory requirements for assessing environmental conditions of a site are established by Ontario Regulation 153/04 – *Records of Site Conditions, Part XV.1 of the Environmental Protection Act* (O. Reg. 153/04). Site condition standards are set out in MECP's '*Soil, Ground Water and Sediment Standards for Use Under Part IV.1 of the Environmental Protection Act*, *April 15, 2011'*. The applicable SCS used was Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for institutional property use and coarse-textured soils.

Subsurface soil conditions in the area investigated on the Site generally consist of topsoil to depths between 0.05 and 0.1 m bgs followed by fill to depths between 1.2 and 1.5 m bgs and native silt till to depths between 3.3 and 6.0 m bgs where the boreholes were terminated due to refusal upon inferred bedrock. Fill was not encountered in BH/MW19-5 in the northeast portion of the Site.

The groundwater flow direction is interpreted to be toward east-northeast.

No olfactory or visual (i.e. staining or free phase) evidence of petroleum hydrocarbon impacts were observed in any of the soil samples collected. Observations were confirmed through CSV concentrations measured. CSV concentrations ranged between non-detect (<0.1 ppm) and 0.8 ppm. BTEX and PHC parameters analysed were not detected in the samples submitted for analysis.

In the monitoring wells, headspace VOC levels ranged between 0.4 ppm and 1.1 ppm. An organic film and sheen were observed in MW19-2 and MW19-3. VOC and PHC parameters were not detected in the samples submitted.

Based on our observations during drilling activities complemented with sample screening and laboratory analysis, no evidence of contamination associated with identified areas of concern was encountered in soil or groundwater onsite. The organic film and sheen noted in the groundwater from MW19-2 and MW19-3 is anticipated to be caused by the nearby septic system.

It is recommended that if groundwater monitoring wells are not required for future monitoring purposes, they should be decommissioned in accordance with O. Reg. 903.

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TABLES

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APPENDICES

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1 INTRODUCTION

The Hindu Temple of Ottawa Carleton Inc. retained LRL Associates Ltd. (LRL) to complete a Phase II Environmental Site Assessment (ESA) on the property located at 4835 Bank Street in Ottawa, Ontario (herein referred to as the Site). The assessment was conducted in the context of a proposed site plan application for the construction of an additional assembly hall.

1.1 Site Description

1.1.1 Subject Property

The Site under investigation is the institutional property located at 4835 Bank Street in Ottawa, Ontario. The Site's location is presented in **Figure 1**. The property has a rectangular shape with an approximate area of 40,000 m^2 (9.8 acres), frontage being Bank Street. The Site contains a Heritage Centre, located in the central portion of the western extent of the Site, and a detached garage located northeast of the Centre. The Centre is serviced by municipal water, natural gas and two septic systems located north and south of the building. The topography of the Site is generally flat with a gentle slope towards the west in the west portion of the Site.

For the purpose of this report, Bank Street will be inferred as being orientated in a north-south direction.

1.1.2 Surrounding Land Use

Surrounding land use is as follows:

Directions	Current Land Use	Current Occupant
North	Vacant (treed)	Vacant (treed)
South	Vacant (treed)	Vacant (treed)
East	Vacant (treed)	Vacant (treed)
West	Bank Street followed by light industrial/commercial and residential.	Home Hardware and U-Haul dealer southwest, and a residential development northwest.

1.1.3 Site Services

The Heritage Centre is serviced by natural gas, municipal water and two septic systems located north and south of the building.

1.2 Current and Proposed Future Uses

The current property use is institutional, and it is understood that the proposed use would remain as institutional.

1.3 Applicable Site Condition Standards

Regulatory requirements for assessing environmental conditions of a site are established by Ontario Regulation 153/04 – *Records of Site Conditions, Part XV.1 of the Environmental Protection Act* (O. Reg. 153/04). Site condition standards (SCSs) are set out in Ministry of Environment, Conservation and Parks' (MECP's) '*Soil, Ground Water and Sediment Standards for Use Under Part IV.1 of the Environmental Protection Act*, *April 15, 2011'*. The applicable SCSs used was the *Table 7 Generic SCSs for shallow soils in a non-potable groundwater condition*.

- The Site is serviced by municipal water;
- Native subsurface material encountered was silt till. Coarse-grained standards will be used as worst case.
- The Site is zoned and developed as institutional; and
- The Site is considered environmentally sensitive as there was less than 2 m of overburden overlying inferred bedrock.

2 BACKGROUND INFORMATION

2.1 Physical Settings

A review of the Ontario Base Map indicates that topography of the area is generally flat with a gentle slope towards the north. An unnamed tributary of the North Castor River is located approximately 1.1 km to the east of the Site with a smaller tributary running through the Site and 200 m east of the Site.

Surficial geology consists of till, plain, with a local relief less than 5 m.[2] The bedrock is described as dolomite and limestone of the Oxford Formation.[3]

2.2 Previous Investigation

A Phase I Environmental Site Assessment and Subsurface Investigation was completed at the Site in June 2017 by LRL to identify any potential areas of environmental concern associated with the Site and investigate previously identified buried waste onsite.

Report:	Phase I Environmental Site Assessment and Subsurface Investigation
Date:	June 13, 2017 (revised January 29, 2018)
Author:	LRL Associates Ltd.
Prepared for:	The Hindu Temple of Ottawa Carleton c/o Lloyd Phillips & Associates Ltd.
Description of data, analysis and findings relevant to the Phase I ESA:	
The Hindu Temple of Ottawa Carleton c/o Lloyd Phillips & Associates Ltd. retained LRL Associates Ltd. (LRL) to complete a Phase I Environmental Site Assessment (ESA) and Subsurface Investigation on 4835 Bank Street in Ottawa, Ontario. The records review revealed no records of a waste disposal site, coal tar industrial site, PCB storage site, waste receivers, spills or manufacturers within a 250 m radius. No fire insurance plans or Property Underwriters' Reports were retrieved for the Site. An environmental report conducted by others identified a former petroleum bulk facility with one (1) above-ground storage tank and one (1) underground storage tank on 4836 Bank Street, approximately 40 m south-west of the Site, across Bank Street. It was reported that the tanks were removed in 1994 and subsurface impacts were identified. The property was also listed as	

[2] St-Onge, D.A. (compilation), 2009: Surficial Geology, Lower Ottawa Valley, Ontario-Quebec, Map 2140A, Scale 1:125000
[3] Harrison, J.E., 1976: Generalized Bedrock Geology, Ottawa-Hull, Ontario and Quebec, Map 1508A, Scale 1:125000.

a waste generator for light fuels from 1992 to 1998. It presents a moderate to high risk for environmental concern.

Piles of concrete and soil were encountered along the eastern portion of the Site at the time of the Site visit. It is suspected these materials were placed here during the construction activities on the Site in the 1980's, however this was not confirmed. It presents a low to moderate risk for environmental concern.

Based on the findings of the Phase I ESA, the potential environmental risks to the Site associated with properties within 250 m are considered moderate to high.

The intrusive investigation was carried out on May 8, 2017 by way of test pit digging using a backhoe. Seven (7) test pits (TP) were advanced on the Site as part of the Terrain Analysis, three (3) of which were incorporated into the subsurface investigation (TP2, TP3 and TP5) in the areas where buried waste was observed. The test pits were advanced to depths ranging from 1.5 and 1.7 m below ground surface (bgs), where inferred bedrock was encountered, with the exception of TP2 which was terminated at a depth of 0.9 m bgs due to extensive water infiltration.

Representative soil samples collected during the investigation were submitted for laboratory analysis of Petroleum based parameters including Volatile Organic Compounds (VOC), namely Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) at select locations, Petroleum Hydrocarbons (PHC) and Metals (ICP).

VOC parameters analysed were not detected in any of the samples submitted for analysis. Petroleum hydrocarbon parameters PHC F3 and PHC F4 were detected in select samples submitted, however the levels were below the applicable provincial site condition standards, as were select metal parameters. The laboratory analysis of the soil samples has indicated that although waste and debris was encountered, the soil does not appear to be impacted with levels in excess of the applicable provincial SCS.

The following recommendations were made:

- It is recommended that during the proposed construction activities on the Site, any buried waste encountered shall be disposed of accordingly off Site at a licence waste disposal facility in accordance with O. Reg. 347, as amended;
- It is recommended that the concrete and soil piles at the eastern portion of the Site be removed and disposed of accordingly. Confirmatory sampling should be carried out from beneath the piles once they are removed to confirm the impacts to the underlying soils;
- It is recommended that a Phase II Environmental Site Assessment be conducted to address the potential for environmental concern related to the former bulk petroleum facility (UCO Petroleum) and associated UST and AST located at 4836 Bank Street; and
- If renovations or demolition actives are planned, it is recommended that a Designated Substance Survey be conducted in accordance with O. Reg. 490/09 to determine whether designated substances are present so they can be addressed accordingly.

3 SCOPE OF THE INVESTIGATION

3.1 Overview of Site Investigation

The purpose of this Phase II ESA is to determine if the areas of potential environmental concern (APECs) associated with current and past Site activities and neighbouring properties have negatively impacted the soil and groundwater quality of the Site. Such an assessment provides information regarding the nature and extent of potential contamination to assist in making informed business decisions about the property.

The potential environmental concerns identified that require investigation are:

Potential Environmental Concern	Location	Comments	Contaminants of Potential Concern	Media Potentially Impacted
Bulk Petroleum Facility with Petroleum Storage Tanks	4836 Bank Street. Approximately 40 m south-west of the Site, across Bank Street.	Identified in the Phase I ESA; consists of a former bulk petroleum facility with one (1) above-ground storage tank and one (1) underground storage tank. It was reported that the tanks were removed in 1994 and subsurface impacts were identified.	PHC VOC	Soil Groundwater

PHC: Petroleum Hydrocarbon Compounds
VOC: Volatile Organic Compounds

The findings and conclusions presented in this report apply only to these recognized environmental conditions assessed.

3.2 Media Investigated

The Phase II ESA will establish the Site's subsurface geology and hydrogeological conditions. Soil and groundwater conditions will be evaluated with respect to the contaminants of concern in context of the current regulations and guidelines applicable to contaminated sites.

3.3 Scope and Methodology

Primary objective of this Phase II ESA was to evaluate current conditions of the Site in context of the applicable legislative and regulatory requirements. LRL's scope of work was as follows:

- Drill four (4) boreholes at strategic locations based on potential areas of environmental concern identified in the Phase I ESA, to allow for soil sampling;
- Complete four (4) of the boreholes as monitoring wells to assess hydrogeological conditions and facilitate groundwater sampling;
- Submit representative soil and groundwater samples to an accredited laboratory for analysis of suspected parameters of concern; and
- Interpret results in relation to current provincial standards to determine subsurface soil and groundwater quality.

This report will present results of Site activities carried out between September 23 and 30, 2019.

4 INVESTIGATION METHOD

4.1 Field Preparation

Locations of all buried and overhead services were obtained by LRL prior to initiation of any subsurface investigation.

4.2 Drilling

An intrusive investigation was carried out on September 23 and 24, 2019 in conjunction with a geotechnical investigation. Four (4) boreholes were advanced across the Site for environmental purposes and were completed as monitoring wells (MW):

Borehole/ Monitoring Well	Location	Rational
BH19-1, BH19-2 and BH19-3	Western extent of the Site	To establish the potential soil and groundwater impacts associated with the bulk petroleum facility southeast of the Site.
BH19-5	Northeast portion of the Site	To aid in determining subsurface geology and hydrogeological conditions.

Boreholes could not be advanced in the southwest corner of the Site due to the presence of overhead hydro lines and trees. Borehole and monitoring well locations are presented in **Figure 2**.

4.3 Borehole Drilling

Boreholes were advanced to depths between 3.3 and 6.0 m below ground surface (bgs) using a CME 55 track-mounted drill rig equipped with 203 mm diameter hollow stem augers. The drilling contractor was CCC Group of Ottawa, Ontario, under LRL field staff supervision. Soil samples were collected at continuous intervals using a split-spoon sampler of 0.6 m in length. Between each spoon, the sampling equipment was thoroughly cleaned.

Locations of the boreholes are presented in **Figure 2**. Details of the borehole drilling are provided in the borehole logs in **Appendix A**.

4.3 Soil Sampling and Field Screening

Representative soil samples from each soil stratum encountered or split sampler were collected and transferred immediately into sealed laboratory supplied glass jars and polyethylene freezer bags. Samples were examined for soil type, colour, staining/discoloration and odours. Samples were logged, labelled and stored on-Site in a cooler chilled with ice to prevent evaporation of potential volatile organic compounds. Soil samples stored in bags were screened for CSV presence using a Mini Rae 3000 Photoionization Detector (PID).

4.4 Monitoring Well Installation

The four (4) environmental boreholes were completed as monitoring wells: BH19-1, BH19-2, BH19-3 and BH19-5 (herein referred to as MW19-1, MW19-2, MW19-3 and MW19-5). Monitoring wells were constructed within the 203 mm diameter boreholes with a 51 mm slotted PVC piezometer placed bisecting the groundwater table. Top of the screen was extended to the ground

surface using a solid riser pipe. Annular space around the slotted portion of the piezometer was backfilled with pre-washed and graded silica sand up to 300 mm above the top of the screen. A bentonite seal of at least 0.3 m was placed above the sand pack. Remaining back fill in boreholes consisted of soil cuttings and/or additional sand. Monitoring wells were finished at the surface with a flush-mount aluminum casing.

Details of monitoring wells are provided in borehole logs in **Appendix A**.

4.5 Elevation Surveying

Ground surface elevations and tops of all monitoring well risers were surveyed and referenced to a temporary benchmark. Subsequent measurements of water elevations were made in reference to top of well risers. This benchmark was established as the north rim of the hydrant valve in the central south portion of the Site. It was given an arbitrary elevation of 100.00 m.

4.6 Groundwater Monitoring and Sampling

Headspace vapour measurements for volatile organic compounds (VOC) were measured in each monitoring well immediately after removing the cap, prior to purging and sampling. VOC concentrations were measured by placing the combustible soil vapour nozzle at least 15 cm below the top of the casing and recording the peak VOC reading.

Newly installed wells were instrumented with dedicated LDPE tubing to facilitate well development, purging and sampling requirements. Prior to sampling, water levels were measured using an electronic water level meter and reduced to static elevations based on monitoring well survey data. Each well was purged (three well volumes) using dedicated LDPE tubing and foot valve. Purge water was observed for color, sheens or odour. Using a dedicated bailer, groundwater was transferred into laboratory supplied water bottles. Samples were logged, labelled and stored on site in a cooler chilled with ice.

4.7 Analytical Testing

Representative soil and groundwater samples collected during the investigation were submitted for laboratory analysis. Samples were submitted to Paracel Laboratories Ltd., Ottawa, ON for the following contaminants of concern: Volatile Organic Compounds (VOC), namely Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) for select samples, and PHC fractions F1 (C6 – C10), F2 (>C11 – C16), F3 (>C16 – C34) and F4 (>C34).

Potential Environmental Concern	Soil		Groundwater	
	Sample No.	Analysis	Sample No.	Analysis
Bulk Petroleum Facility with Petroleum Storage Tanks	BH19-1-6 BH19-2-15 BH19-3-39 BH19-5-49	PHC BTEX	MW19-1 MW19-2 MW19-3 MW19-5	PHC VOC (or BTEX)

Laboratory Certificates of Analysis are included in **Appendix B**. All remaining samples not analyzed will be kept in storage for a period of one (1) month following submission of this report at which time they shall be disposed of unless a written or verbal notice is received, stating otherwise.

4.8 QA/QC Protocols

Quality assurance/quality control (QA/QC) protocols were followed during the borehole drilling and sampling to ensure that representative samples were obtained. The protocols were generally performed in accordance with the following;

- Ontario Ministry of the Environment (MOE) *"Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario",* revised February 1997.
- Ontario Ministry of the Environment (MOE) *"Guide for Completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04",* June 2011.

Field protocols that were employed include:

- All field-screening devices, such as a combustible gas detector, were calibrated prior to use, to ensure accuracy and reliability of readings;
- Thorough decontamination of all drilling and sampling equipment. Dedicated sampling equipment was used when possible;
- Soil and groundwater samples collected were placed in laboratory supplied glass sample jars and bottles;
- Thorough documentation of all field activities and sample handling practices including field notes, chain of custody forms, memos to files, etc.; and
- Samples were submitted to a laboratory which is certified by the Canadian Association for Laboratory Accreditation (CALA).

Due to the small number of soil and groundwater samples collected for investigation, field duplicates were not incorporated into the work program. Other QA/QC procedures conducted by LRL are outlined in the methodologies detailed below.

5 REVIEW & EVALUATION

5.1 Geology

Subsurface soil conditions in the area investigated on the Site generally consist of topsoil to depths between 0.05 and 0.1 m bgs followed by fill to depths between 1.2 and 1.5 m bgs. Generally, this material consisted of a brown silty to sandy material. Following the fill material was native silt and sand till to depths between 3.3 and 6.0 m bgs where the boreholes were terminated due to refusal upon inferred bedrock. Fill was not encountered in the borehole advanced in the northeast portion of the Site (BH/MW19-5).

Detailed borehole logs of all borings are presented in **Appendix A**.

5.2 Groundwater Elevations & Flow Direction

Static groundwater elevations measured at each monitoring well are summarized in **Table 1**. Groundwater depth measurements were between 1.87 and 2.48 m bgs, which corresponded to elevations between 96.04 and 97.78 m. Groundwater contours are shown in **Figure 3**. Based on these elevations the groundwater flow direction on the Site is interpreted to be toward the east-northeast.

5.3 Soil: Field Screening

No olfactory or visual (i.e. staining or free phase) evidence of petroleum hydrocarbon impacts were observed in any of the soil samples collected.

Observations were confirmed through CSV concentrations measured. CSV concentrations of soil samples collected ranged between non-detect (<0.1 ppm) and 0.8 ppm. CSV measurements are summarized in the borehole logs in **Appendix A**.

5.4 Soil Texture

Native subsurface soil was observed to consist of silty till which is considered coarse-grained.

5.5 Soil Quality

Results of soil analysis and respective MECP SCSs are presented in **Table 2**. At least one soil sample from each borehole, considered worst case based on CSV reading or proximity to the water table, was submitted for chemical analysis.

BTEX and PHC parameters analysed were not detected in the soil samples submitted for analysis.

5.6 Groundwater Quality

Headspace VOC levels ranged between 0.4 ppm and 1.1 ppm in the monitoring wells. An organic film and sheen were observed in the water purged from MW19-2 and MW19-3.

Groundwater analysis results and respective MECP SCSs are summarized in **Table 3**. VOC and PHC parameters were not detected in any wells.

6 CONCLUSIONS AND RECOMMENDATIONS

Based on our Site visit, results of soil and groundwater sampling and laboratory analytical programs, LRL offers the following conclusions regarding environmental conditions of the subject Site:

- The Site under investigation is the institutional property located at 4835 Bank Street in Ottawa, Ontario. The Site's location is presented in **Figure 1**. The property has a rectangular shape with an approximate area of 40,000 m^2 (9.8 acres), frontage being Bank Street. The Site contains a Heritage Centre, located in the central portion of the western extent of the Site, and a detached garage located northeast of the Centre. The Centre is serviced by municipal water, natural gas and two septic systems located north and south of the building. The topography of the Site is generally flat with a gentle slope towards the west in the west portion of the Site.
- The Phase I ESA and Subsurface Investigation conducted in June 2017 identified a former bulk petroleum facility with petroleum storage tanks approximately 40 m southeast of the Site across Bank Street. A Phase II ESA was recommended to determine whether the facility has impacted the soil and groundwater onsite. Test pits were advanced to determine the impact of identified buried waste. PHC, VOC and metals parameters analysed were below the applicable standards.
- Regulatory requirements for assessing environmental conditions of a site are established by Ontario Regulation 153/04 – *Records of Site Conditions, Part XV.1 of the Environmental Protection Act* (O. Reg. 153/04). Site condition standards are set out in MECP's '*Soil, Ground Water and Sediment Standards for Use Under Part IV.1 of the Environmental Protection Act*, *April 15, 2011'*. The applicable SCS used was Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for institutional property use and coarse-textured soils;

- Four (4) boreholes were advanced as part of this investigation to allow for soil sampling across the Site. All four (4) of these boreholes were completed as monitoring wells to assess hydrogeological conditions and facilitate groundwater sampling;
- Subsurface soil conditions in the area investigated on the Site generally consist of topsoil to depths between 0.05 and 0.1 m bgs followed by fill to depths between 1.2 and 1.5 m bgs and native silt till to depths between 3.3 and 6.0 m bgs where the boreholes were terminated due to refusal upon inferred bedrock. Fill was not encountered in BH/MW19-5 in the northeast portion of the Site;
- The groundwater flow direction is interpreted to be toward east-northeast;
- No olfactory or visual (i.e. staining or free phase) evidence of petroleum hydrocarbon impacts were observed in any of the soil samples collected. Observations were confirmed through CSV concentrations measured. CSV concentrations ranged between non-detect (<0.1 ppm) and 0.8 ppm. BTEX and PHC parameters analysed were not detected in the samples submitted for analysis; and
- In the monitoring wells, headspace VOC levels ranged between 0.4 ppm and 1.1 ppm. An organic film and sheen were observed in MW19-2 and MW19-3. VOC and PHC parameters were not detected in the samples submitted.

Based on our observations during drilling activities complemented with sample screening and laboratory analysis, no evidence of contamination associated with identified areas of concern was encountered in soil or groundwater onsite. The organic film and sheen noted in the groundwater from MW19-2 and MW19-3 is anticipated to be caused by the nearby septic system.

It is recommended that if groundwater monitoring wells are not required for future monitoring purposes, they should be decommissioned in accordance with O. Reg. 903.

7 LIMITATIONS AND USE OF REPORT

Results of this Phase II ESA should not be considered a warranty that the subject property is free from any and all contaminants from former and current practices, other than those noted in this report, nor that all compliance issues have been addressed.

Findings contained in this report are based on data and information collected during the Phase II ESA of the subject property conducted by LRL Associates Ltd. Conclusions and recommendations are based solely on Site conditions encountered during fieldwork completed between September 23 and 30, 2019. No assurance is made regarding changes in conditions subsequent to the time of this investigation. If additional information is discovered or obtained, LRL Associates Ltd. should be requested to re-evaluate conclusions presented in this report and to provide amendments as required.

In evaluating the subject property, LRL Associates Ltd. has relied in good faith on information provided by individuals as noted in this report. We assume that information provided is factual and accurate. We accept no responsibility for any deficiencies, misstatements or inaccuracies contained in this report as a result of omissions, misinterpretation or fraudulent acts of the persons contacted.

This report is intended for sole use of the Hindu Temple of Ottawa Carleton Inc. and their authorized agents. LRL Associates Ltd. will not be responsible for any use of the information contained within this report by any third party.

In addition, LRL Associates Ltd. will not be responsible for the real or perceived decrease in property value, its saleability or ability to gain financing, through reporting of factual information.

Yours truly,
LRL Associates Ltd.

Geneviève Marcoux
Environmental Technician

Matthew Whitney, P.Eng.

LICENSED PROFESSIONAL ENGINEER
M. P. WHITNEY
100110298
2019/11/22
PROVINCE OF ONTARIO

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8 REFERENCE

Canadian Standards Association, *Phase II Environmental Site Assessment CAN/CSA-Z769-00*, March 2000.

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LRL Associates Ltd., Phase I Environmental Site Assessment and Subsurface Investigation, The Hindu Temple of Ottawa Carleton, 4835 Bank Street, Ottawa, Ontario, June 13, 2017, revised February 8, 2018.

LRL Associates Ltd., Terrain Analysis and Private Sewage Disposal System Impact Assessment – Proposed Assembly Hall, The Hindu Temple of Ottawa Carleton, 4835 Bank Street, Ottawa, Ontario, June 22, 2017, revised February 14, 2018.

Ontario Regulation 903, made under the Water Resources Act of the Environmental Protection Act, *Wells*, R.R.O. 1990.

St-Onge, D.A. (compilation), 2009: Surficial geology, lower Ottawa valley, Ontario-Quebec; Geological Survey of Canada, Map 2140A, scale 1:125 000.

FIGURES

LRJ
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PROJECT

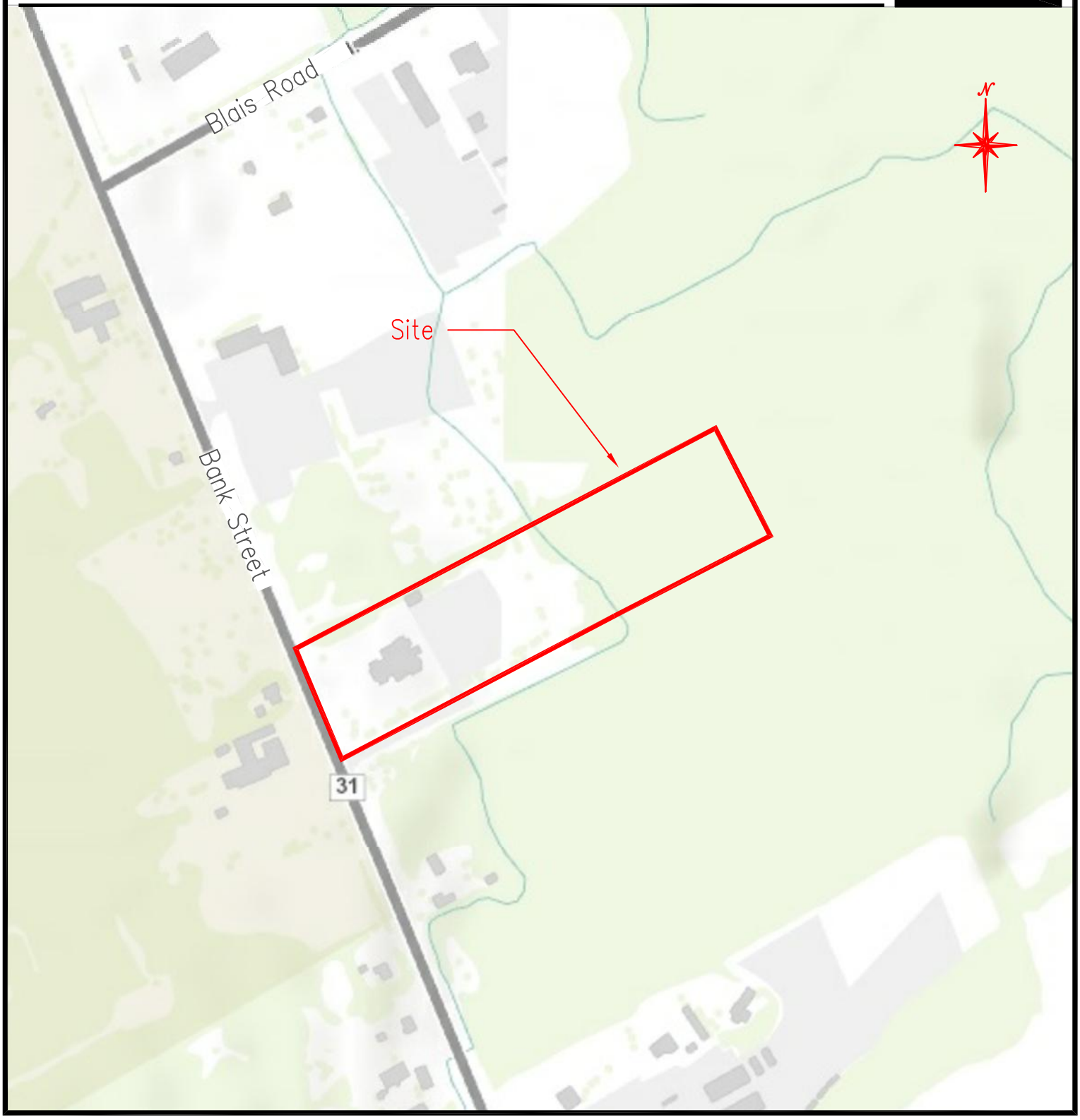
PHASE II
ENVIRONMENTAL SITE ASSESSMENT
4835 BANK STREET
OTTAWA, ONTARIO

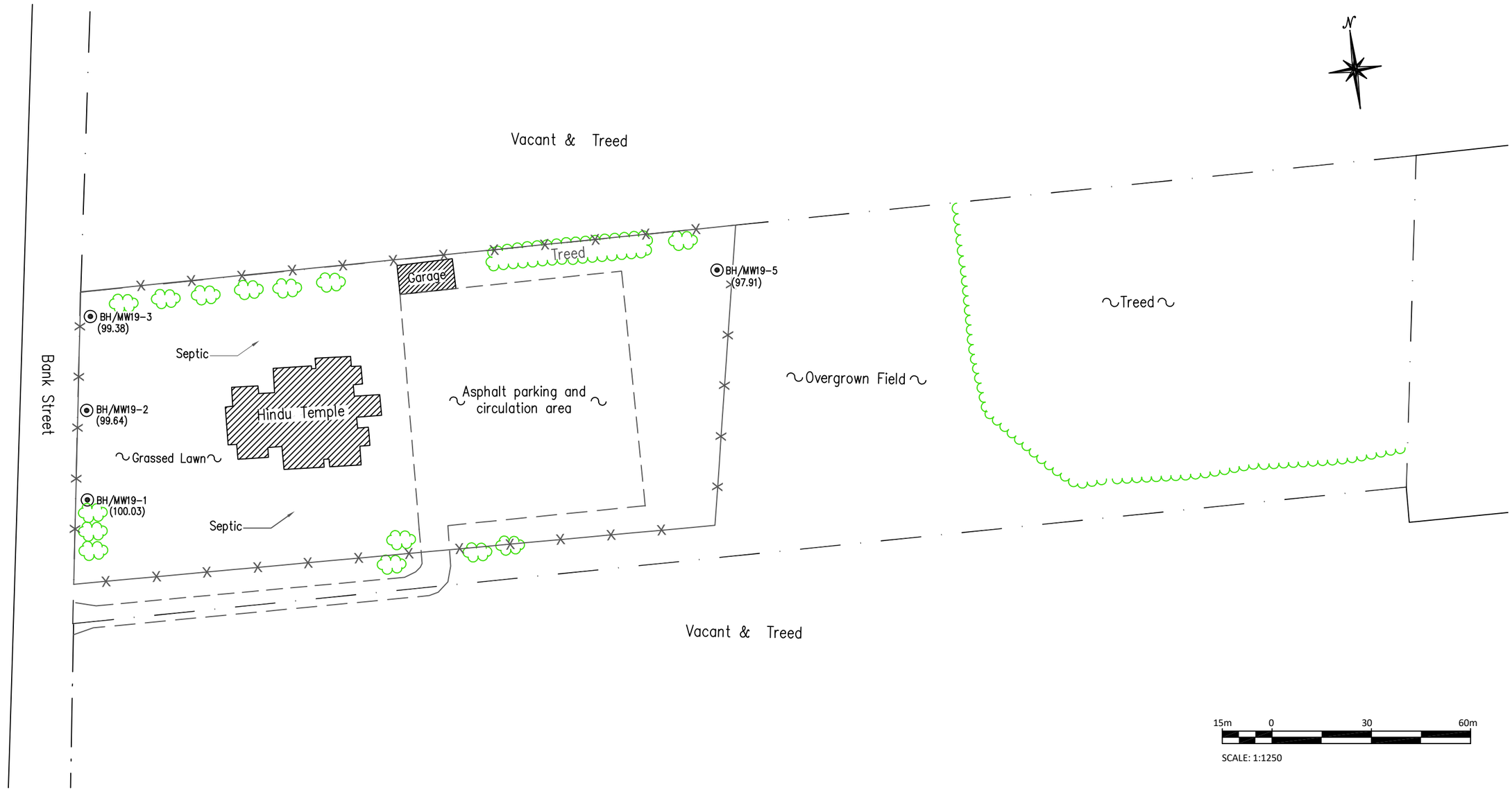
DRAWING TITLE

SITE LOCATION
(NOT TO SCALE)
SOURCE: GeoOttawa

CLIENT	DATE	PROJECT
HINDU TEMPLE OF OTTAWA-CARLETON INC.	NOVEMBER 2019	170132

FIGURE 1





LEGEND

- Existing Building
- Division amongst surface materials
- Fenceline
- Property Line
- Tree Line
- Tree
- BH/MW19-99 — Monitoring Well
- (99.99) — Ground Surface Elevation

No.	REVISIONS	BY	DATE
01	ISSUED FOR REVIEW	G.M.	11/10/19

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CLIENT
HINDU TEMPLE OF
OTTAWA-CARLETON INC.

DESIGNED BY:	DRAWN BY:	APPROVED BY:
--	G.M.	M.W

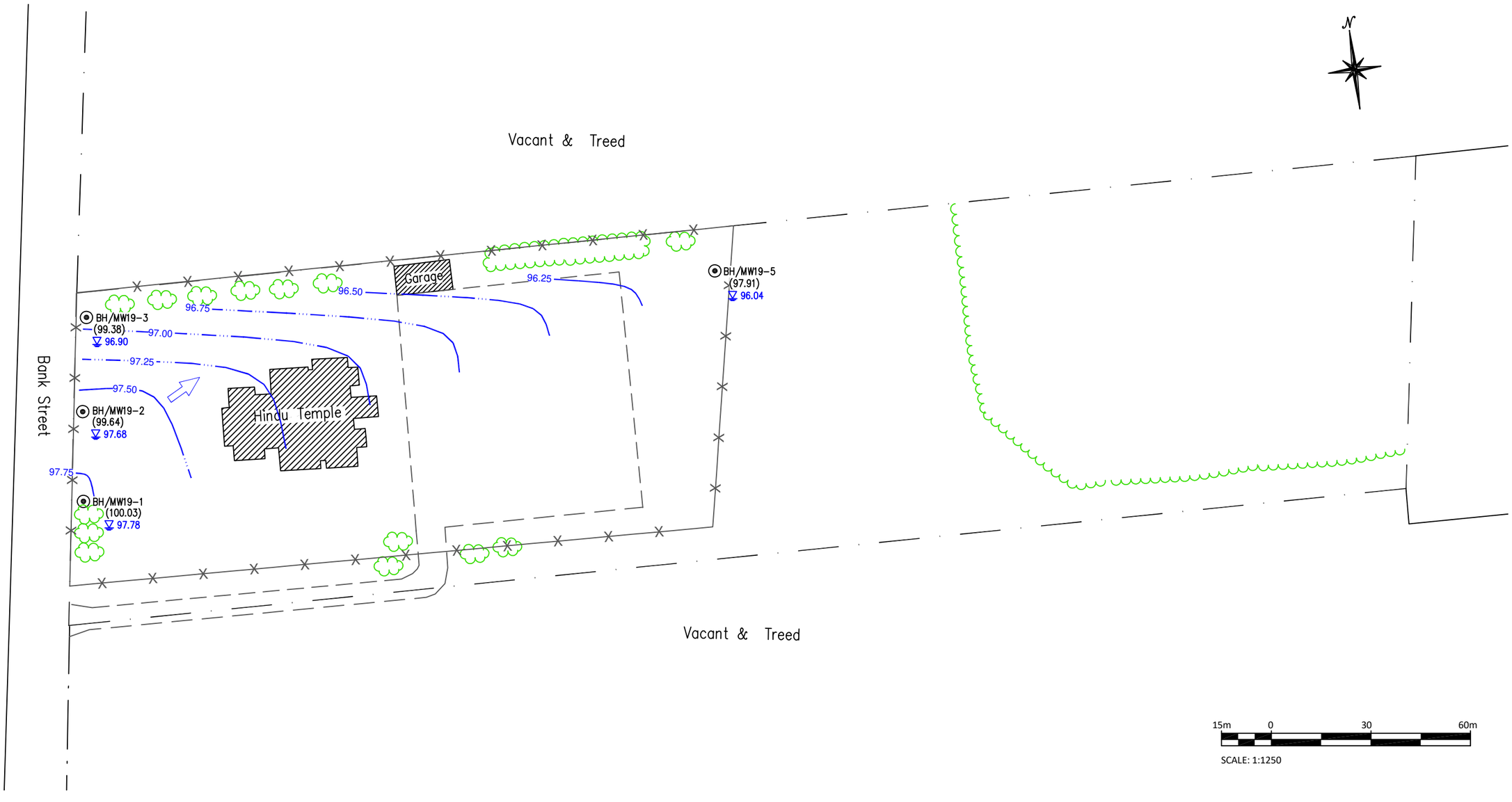
PROJECT
PHASE II
ENVIRONMENTAL SITE ASSESSMENT
4835 BANK STREET
OTTAWA, ONTARIO

DRAWING TITLE
SITE PLAN -
BOREHOLE/MONITORING WELL
LOCATIONS

PROJECT NO.
170132

DATE
NOVEMBER 2019

FIGURE 2



LEGEND

- Existing Building
- Division amongst surface materials
- Fenceline
- Property Line
- Tree Line
- Tree
- BH/MW19-99 — Monitoring Well
- (99.99) — Ground Surface Elevation
- 99.99 — Groundwater Elevation
- Inferred Groundwater Flow Direction
- Groundwater Contour

No.	REVISIONS	BY	DATE
01	ISSUED FOR REVIEW	G.M.	11/10/19

LRL
ENGINEERING | INGÉNIERIE
5430 Canotek Road | Ottawa, ON, K1J 9G2
www.lrl.ca | (613) 842-3434

CLIENT
HINDU TEMPLE OF
OTTAWA-CARLETON INC.

DESIGNED BY:	DRAWN BY:	APPROVED BY:
--	G.M.	M.W

PROJECT
PHASE II
ENVIRONMENTAL SITE ASSESSMENT
4835 BANK STREET
OTTAWA, ONTARIO

DRAWING TITLE
GROUNDWATER ELEVATIONS
AND CONTOURS

PROJECT NO.
170132

DATE
NOVEMBER 2019

FIGURE 3

TABLES

Table 1
Summary of Ground Surface and Groundwater Elevations (September 30, 2019)
Phase II Environmental Site Assessment
4835 Brank Street, Ottawa, Ontario
LRL File: 170132

Monitoring Well	Ground Surface Elevation[1] (m)	Reference Elevation[2] (m)	Depth To Water Table (m)		Groundwater Elevation (m)
			Ground Surface	Reference Point	
BH/MW19-1	100.03	100.01	2.25	2.23	97.78
BH/MW19-2	99.64	99.62	1.95	1.94	97.68
BH/MW19-3	99.38	99.32	2.48	2.42	96.90
BH/MW19-5	97.91	97.87	1.87	1.83	96.04

NOTES

[1] Elevations measured from the north rim of the hydrant valve in the central south portion of the Site (100.00 m).

[2] Reference elevation is top of PVC riser.

Table 2
Summary of Soil PHC and BTEX Analysis
Phase II Environmental Site Assessment
4835 Bank Street, Ottawa, Ontario
LRL File: 170132

Parameter	Units	MDL	O. Reg. 153/04[1] Table 7[2] Institutional Property Use Coarse Textured Soil	Sample BH19-1-6	Sample BH19-2-15	Sample BH19-3-39	Sample BH19-5-49
Sample Date (d/m/y)			--	23/09/2019	23/09/2019	23/09/2019	23/09/2019
Depth	m		--	1.8 - 2.0	0.8 - 1.0	2.4 - 3.0	1.8 - 2.4
CSV Readings[3]	ppm	5	--	0.1	1.5	0.2	0.1
Physical Characteristics							
% Solids	% by wt.	0.1	--	85.7	82.9	93.9	91.3
General Inorganics							
pH	pH units	0.05	--	--	--	7.50	--
Volatile Organic Compounds (VOC)							
Benzene	µg/g dry	0.02	0.21	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	µg/g dry	0.05	2	<0.05	<0.05	<0.05	<0.05
Toluene	µg/g dry	0.05	2.3	<0.05	<0.05	<0.05	<0.05
m/p-Xylene	µg/g dry	0.05	--	<0.05	<0.05	<0.05	<0.05
o-Xylene	µg/g dry	0.05	--	<0.05	<0.05	<0.05	<0.05
Xylenes, total	µg/L dry	0.05	3.1	<0.05	<0.05	<0.05	<0.05
Petroleum Hydrocarbon Compounds (PHC)							
F1 PHCs (C6-C10)	µg/g dry	7	55	<7	<7	<7	<7
F2 PHCs (C10-C16)	µg/g dry	4	98	<4	<4	<4	<4
F3 PHCs (C16-C34)	µg/g dry	8	300	<8	<8	<8	<8
F4 PHCs (C34-C50)	µg/L dry	6	2800	<6	<6	<6	<6

NOTES:

[1] MECP's *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011*

[2] Table 2: Full Depth Generic Site Condition Standards in a Potable Groundwater Condition, residential property use.

[3] Combustible soil vapour concentrations measured with a MiniRAE 3000 PID

MDL Method Detection Limit

-- No Value/Not Analysed

PHC Petroleum Hydrocarbon Compounds

Table 3
Summary of Groundwater PHC and VOC Analysis
Phase II Environmental Site Assessment
4835 Bank Street, Ottawa, Ontario
LRL File: 170132

Parameter	Units	MDL	O. Reg. 153/04[1] Table 7[2] Institutional Property Use Coarse Textured Soil	Sample MW19-1	MW19-2	MW19-3	MW19-5
Sample Date (d/m/y)				30/09/2019	30/09/2019	30/09/2019	30/09/2019
Headspace VOC Readings[3]	ppm	0.1		0.8	0.4	0.5	1.1
Evidence of free product?	--	--	[4]	No	No	No	No
Volatile Organic Compounds (VOC)							
Acetone	µg/L	5.0	100000	--	<5.0	<5.0	--
Benzene	µg/L	0.5	0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	µg/L	0.5	67000	--	<0.5	<0.5	--
Bromoform	µg/L	0.5	5	--	<0.5	<0.5	--
Bromomethane	µg/L	0.5	0.89	--	<0.5	<0.5	--
Carbon Tetrachloride	µg/L	0.2	0.2	--	<0.2	<0.2	--
Chlorobenzene	µg/L	0.5	140	--	<0.5	<0.5	--
Chloroform	µg/L	0.5	2	--	<0.5	<0.5	--
Dibromochloromethane	µg/L	0.5	65000	--	<0.5	<0.5	--
Dichlorodifluoromethane	µg/L	1.0	3500	--	<1.0	<1.0	--
1,2-Dichlorobenzene	µg/L	0.5	150	--	<0.5	<0.5	--
1,3-Dichlorobenzene	µg/L	0.5	7600	--	<0.5	<0.5	--
1,4-Dichlorobenzene	µg/L	0.5	0.5	--	<0.5	<0.5	--
1,1-Dichloroethane	µg/L	0.5	11	--	<0.5	<0.5	--
1,2-Dichloroethane	µg/L	0.5	0.5	--	<0.5	<0.5	--
1,1-Dichloroethylene	µg/L	0.5	0.5	--	<0.5	<0.5	--
cis-1,2-Dichloroethylene	µg/L	0.5	1.6	--	<0.5	<0.5	--
trans-1,2-Dichloroethylene	µg/L	0.5	1.6	--	<0.5	<0.5	--
1,2-Dichloropropane	µg/L	0.5	0.58	--	<0.5	<0.5	--
cis-1,3-Dichloropropylene	µg/L	0.5	--	--	<0.5	<0.5	--
trans-1,3-Dichloropropylene	µg/L	0.5	--	--	<0.5	<0.5	--
1,3-Dichloropropene, total	µg/L	0.5	0.5	--	<0.5	<0.5	--
Ethylbenzene	µg/L	0.5	54	<0.5	<0.5	<0.5	<0.5
Ethylene Dibromide (Dibromoethane, 1,2-)	µg/L	0.2	0.2	--	<0.2	<0.2	--
Hexane	µg/L	1.0	5	--	<1.0	<1.0	--
Methyl Ethyl Ketone (2-Butanone)	µg/L	5.0	21000	--	<5.0	<5.0	--
Methyl Isobutyl Ketone	µg/L	5.0	5200	--	<5.0	<5.0	--
Methyl tert-Butyl Ether (MTBE)	µg/L	2.0	15	--	<2.0	<2.0	--
Methylene Chloride	µg/L	5.0	26	--	<5.0	<5.0	--
Styrene	µg/L	0.5	43	--	<0.5	<0.5	--
1,1,1,2-Tetrachloroethane	µg/L	0.5	1.1	--	<0.5	<0.5	--
1,1,2,2-Tetrachloroethane	µg/L	0.5	0.5	--	<0.5	<0.5	--
Tetrachloroethylene	µg/L	0.5	0.5	--	<0.5	<0.5	--
Toluene	µg/L	0.5	320	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	0.5	23	--	<0.5	<0.5	--
1,1,2-Trichloroethane	µg/L	0.5	0.5	--	<0.5	<0.5	--
Trichloroethylene	µg/L	0.5	0.5	--	<0.5	<0.5	--
Trichlorofluoromethane	µg/L	1.0	2000	--	<1.0	<1.0	--
Vinyl Chloride	µg/L	0.5	0.5	--	<0.5	<0.5	--
m/p-Xylene	µg/L	0.5	--	<0.5	<0.5	<0.5	<0.5
o-Xylene	µg/L	0.5	--	<0.5	<0.5	<0.5	<0.5
Xylenes, total	µg/L	0.5	72	<0.5	<0.5	<0.5	<0.5
Petroleum Hydrocarbon Compounds (PHC)							
F1 PHCs (C6-C10)	µg/L	25	420	<25	<25	<25	<25
F2 PHCs (C10-C16)	µg/L	100	150	<100	<100	<100	<100
F3 PHCs (C16-C34)	µg/L	100	500	<100	<100	<100	<100
F4 PHCs (C34-C50)	µg/L	100	500	<100	<100	<100	<100

NOTES:

[1] MECP's *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011*

[2] Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, institutional property use.

[3] Headspace values measured with a MiniRAE 3000 PID

[4] To meet the standard there must be no evidence of free product including film or sheen.

MDL Method Detection Limit

-- No Value/Not Analysed

PHC Petroleum Hydrocarbon Compounds

APPENDIX A

Borehole Logs

Borehole Log: BH/MW19-1

Project No.: 170132 **Project:** Phase II Environmental Site Assessment

Client: Hindu Heritage Centre of Ottawa Carleton **Location:** 4835 Bank Street, Ottawa, Ontario

Date: September 23, 2019 **Field Personnel:** GM

Driller: CCC Group **Drilling Equipment:** Truck mounted CME 75 **Drilling Method:** Hollow-Stem Auger

Depth (ft)	Depth (m)	Soil Description	Elev./Depth (m)	Lithology	Type	Sample Number	N or RQD (%)	Recovery (%)	Lab Analysis	Combustible Soil Vapours (ppm)	Combustible Soil Vapours (% LEL)
		Ground Surface	100.03								
0.0	0.0	**FILL** 75 mm of topsoil followed by sand and gravel fill with some stones and asphalt, dry.	0.00			1	14	73		<0.1	
3.0	1.0					3	20	38		0.1	
4.0		**SILT TILL** Brown to grey silt till with sand, gravel and crushed stone, trace clay and stones, moist to saturated from 2.7 to 3.0 m bgs. Organic from 1.2 to 1.5 m bgs.	98.83 1.20			4,5	5	52		0.1	
6.0	2.0					6	51	52	BTEX, PHC	<0.1	
9.0	3.0					7	45	67		0.1	
11.0						8,9	32	73		0.2	
12.0		Refusal upon inferred bedrock at 4.0 m bgs.								0.1	
13.0	4.0	End of Borehole	96.07 3.96			10	50+	21		0.1	
20.0	6.0										

Monitoring Well Details: 2.25 m bgs (September 30, 2019)

Easting: 0454965 **Northing:** 5017541

Site Datum: North rim of hydrant valve in the center south portion of the Site (100.00 m)

Groundsurface Elevation: 100.03 m **Top of Riser Elev.:** 100.01 m

Hole Diameter: 203 mm **Monitoring Well Diameter:** 51 mm

NOTES

Groundwater sample collected September 30, 2019 and submitted for Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) and Petroleum Hydrocarbons (PHC).

BGS - Below Ground Surface

Borehole Log: BH/MW19-2

Project No.: 170132 **Project:** Phase II Environmental Site Assessment

Client: Hindu Heritage Centre of Ottawa Carleton **Location:** 4835 Bank Street, Ottawa, Ontario

Date: September 23, 2019 **Field Personnel:** GM

Driller: CCC Group **Drilling Equipment:** Truck mounted CME 75 **Drilling Method:** Hollow-Stem Auger

Depth (ft / m)	Soil Description	Elev./Depth (m)	Lithology	Type	Sample Number	N or RQD (%)	Recovery (%)	Lab Analysis	Combustible Soil Vapours (ppm / % LEL)
0.0 / 0.0	Ground Surface	99.64							
0.0 – 3.0 / 0.0 – 1.0	**FILL** 50 mm of topsoil over layers of sand, crushed stone, gravel and clay fill, dry.	0.00			11, 12, 13	10	71		<0.1, <0.1, <0.1
					14, 15, 16	40	67	BTEX, PHC	1.1, 1.5, <0.1
4.0 – 6.0 / 1.0 – 2.0	**SILT TILL** Brown to grey silt till with sand, gravel and stones, trace clay, saturated at 1.2 m bgs. Peat from 1.5 to 1.8 m bgs.	98.44 1.20			17, 18	2	79		0.1, 0.2
6.0 – 9.0 / 2.0 – 3.0					19, 20	6	96		<0.1, 0.1
9.0 – 10.0 / 3.0					21, 22, 23, 24	32	83		0.5, 0.2, 0.1, 0.2
10.0 – 12.0 / 3.0 – 4.0					25	50+	44		0.2
12.0 – 14.0 / 4.0					26, 27	53	67		0.4, 0.1
14.0 – 16.0 / 4.0 – 5.0					28	29	75		0.1, 0.2
16.0 – 18.0 / 5.0					29, 30	91	100		0.1
18.0 – 19.0 / 5.0 – 6.0	Refusal upon inferred bedrock at 6.0 m bgs.				31	58			0.1
20.0 / 6.0	End of Borehole	93.64 6.00							

Monitoring Well Details: 1.95 m bgs (September 30, 2019)

Easting: 0454953 **Northing:** 5017565

Site Datum: North rim of hydrant valve in the center south portion of the Site (100.00 m)

Groundsurface Elevation: 99.64 m **Top of Riser Elev.:** 99.62 m

Hole Diameter: 203 mm **Monitoring Well Diameter:** 51 mm

NOTES

Groundwater sample collected September 30, 2019 and submitted for Volatile Organic Compounds (VOC) and Petroleum Hydrocarbons (PHC).

BGS - Below Ground Surface
BTEX - Benzene, Toluene, Ethylbenzene, Xylenes

Borehole Log: BH/MW19-3

Project No.: 170132 **Project:** Phase II Environmental Site Assessment

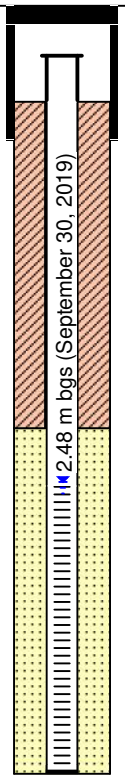
Client: Hindu Heritage Centre of Ottawa Carleton **Location:** 4835 Bank Street, Ottawa, Ontario

Date: September 23, 2019 **Field Personnel:** GM

Driller: CCC Group **Drilling Equipment:** Truck mounted CME 75 **Drilling Method:** Hollow-Stem Auger

Depth (ft / m)	Soil Description	Elev./Depth (m)	Lithology	Type	Sample Number	N or RQD (%)	Recovery (%)	Lab Analysis	Combustible Soil Vapours (ppm / % LEL)
0.0 / 0.0	Ground Surface	99.38							
0.0 – 5.0 / 0.0 – 1.5	**FILL** 115 mm of topsoil over sand, silt and gravel fill with some crushed stone, dry. Organic from 1.3 to 1.5 m bgs.	0.00			32	14	75		<0.1
					33				0.1
					34	39	63		0.1
					35				0.1
5.0 – 10.0 / 1.5 – 3.0	**SILT TILL** Brown to grey silt till with sand, gravel and stones, some crushed stone, clayey with oxidation to 2.1 m bgs, moist from 1.8 to 3.0 m bgs, dry beneath.	97.88 1.50			36	9	58		0.1
					37				<0.1
					38	48	88		0.1
					39	80+	75	BTEX, PHC	0.2
					40				0.1
					41	70	96		0.1
10.0 – 13.0 / 3.0 – 4.0	Refusal upon inferred bedrock at 4.0 m bgs.				42	83+	63		0.8
13.0 / 4.0	End of Borehole	95.34 4.04							

Monitoring Well Details



Easting: 0454942 **Northing:** 5017594

Site Datum: North rim of hydrant valve in the center south portion of the Site (100.00 m)

Groundsurface Elevation: 99.38 m **Top of Riser Elev.:** 99.32 m

Hole Diameter: 203 mm **Monitoring Well Diameter:** 51 mm

NOTES

Groundwater sample collected September 30, 2019 and submitted for Volatile Organic Compounds (VOC) and Petroleum Hydrocarbons (PHC).

BGS - Below Ground Surface
BTEX - Benzene, Toluene, Ethylbenzene, Xylenes

Borehole Log: BH/MW19-5

Project No.: 170132 **Project:** Phase II Environmental Site Assessment

Client: Hindu Heritage Centre of Ottawa Carleton **Location:** 4835 Bank Street, Ottawa, Ontario

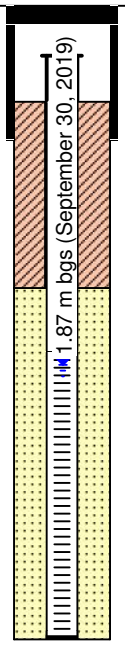
Date: September 23, 2019 **Field Personnel:** GM

Driller: CCC Group **Drilling Equipment:** Truck mounted CME 75 **Drilling Method:** Hollow-Stem Auger

Depth (ft)	Depth (m)	Soil Description	Elev./Depth (m)	Lithology	Type	Sample Number	N or RQD (%)	Recovery (%)	Lab Analysis	Combustible Soil Vapours (ppm)
		Ground Surface	97.91							
0.0	0.0	**TOPSOIL** 100 mm of topsoil, dry.	0.00							
1.0		**SILT TILL** Brown silt till with crushed stone; sand, gravel and stones with depth, trace oxidation at 0.7 m bgs, moist from 0.6 m and saturated at 2.4 m bgs.				46	11	58		<0.1
2.0										
3.0	1.0					47	20	81		0.1
4.0										
5.0						48	47	92		<0.1
6.0	2.0									
7.0						49	43	92	BTEX, PHC	0.1
8.0										
9.0						50	73	83		0.1
10.0	3.0	Refusal upon inferred bedrock at 3.3 m bgs.								0.2
			94.61			54	70+	50		
11.0		End of Borehole	3.30							
12.0										
13.0	4.0									
14.0										
15.0										
16.0	5.0									
17.0										
18.0										
19.0										
20.0	6.0									

Combustible Soil Vapours: ppm 20 40 60 80; % LEL 10 20 30 40 50 60 70 80 90

Monitoring Well Details



Easting: 0454103 **Northing:** 5017655

Site Datum: North rim of hydrant valve in the center south portion of the Site (100.00 m)

Groundsurface Elevation: 97.91 m **Top of Riser Elev.:** 97.87 m

Hole Diameter: 203 mm **Monitoring Well Diameter:** 51 mm

NOTES

Groundwater sample collected September 30, 2019 and submitted for Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) and Petroleum Hydrocarbons (PHC).

BGS - Below Ground Surface

APPENDIX B

Laboratory Certificates of Analysis

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Certificate of Analysis

LRL Associates Ltd.

5430 Canotek Road
Ottawa, ON K1J 9G2
Attn: Genevieve Marcoux

Client PO:
Project: 170132
Custody: 123271

Report Date: 3-Oct-2019
Order Date: 27-Sep-2019

Order #: 1939625

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

Paracel ID	Client ID
1939625-01	BH19-1-6
1939625-02	BH19-2-15
1939625-03	BH19-3-39
1939625-04	BH19-5-49

Approved By:

Dale Robertson, BSc
Laboratory Director

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 03-Oct-2019
Order Date: 27-Sep-2019
Project Description: 170132

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	2-Oct-19	2-Oct-19
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	1-Oct-19	1-Oct-19
PHC F1	CWS Tier 1 - P&T GC-FID	2-Oct-19	2-Oct-19
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	30-Sep-19	1-Oct-19
Solids, %	Gravimetric, calculation	27-Sep-19	27-Sep-19

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 03-Oct-2019
Order Date: 27-Sep-2019
Project Description: 170132

	Client ID:	BH19-1-6	BH19-2-15	BH19-3-39	BH19-5-49
	Sample Date:	23-Sep-19 09:00	23-Sep-19 09:00	23-Sep-19 09:00	23-Sep-19 12:00
	Sample ID:	1939625-01	1939625-02	1939625-03	1939625-04
	MDL/Units	Soil	Soil	Soil	Soil
Physical Characteristics					
% Solids	0.1 % by Wt.	85.7	82.9	93.3	91.3
General Inorganics					
pH	0.05 pH Units	-	-	7.50	-
Volatiles					
Benzene	0.02 ug/g dry	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Toluene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
m,p-Xylenes	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
o-Xylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Xylenes, total	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Toluene-d8	Surrogate	107%	105%	114%	109%
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	<7	<7	<7
F2 PHCs (C10-C16)	4 ug/g dry	<4	<4	<4	<4
F3 PHCs (C16-C34)	8 ug/g dry	<8	<8	<8	<8
F4 PHCs (C34-C50)	6 ug/g dry	<6	<6	<6	<6

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 03-Oct-2019
Order Date: 27-Sep-2019
Project Description: 170132

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
Volatiles									
Benzene	ND	0.02	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: Toluene-d8	*3.33*		*ug/g*		*104*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
pH	7.50	0.05	pH Units	7.50			0.0	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g dry	ND				40	
F2 PHCs (C10-C16)	ND	4	ug/g dry	ND				30	
F3 PHCs (C16-C34)	ND	8	ug/g dry	ND				30	
F4 PHCs (C34-C50)	ND	6	ug/g dry	ND				30	
Physical Characteristics									
% Solids	81.3	0.1	% by Wt.	80.8			0.6	25	
Volatiles									
Benzene	ND	0.02	ug/g dry	ND				50	
Ethylbenzene	ND	0.05	ug/g dry	ND				50	
Toluene	ND	0.05	ug/g dry	ND				50	
m,p-Xylenes	ND	0.05	ug/g dry	ND				50	
o-Xylene	ND	0.05	ug/g dry	ND				50	
Surrogate: Toluene-d8	*4.09*		*ug/g dry*		*109*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	191	7	ug/g		95.4	80-120			
F2 PHCs (C10-C16)	93	4	ug/g	ND	110	60-140			
F3 PHCs (C16-C34)	234	8	ug/g	ND	112	60-140			
F4 PHCs (C34-C50)	140	6	ug/g	ND	107	60-140			
Volatiles									
Benzene	2.65	0.02	ug/g		66.2	60-130			
Ethylbenzene	3.40	0.05	ug/g		85.0	60-130			
Toluene	3.78	0.05	ug/g		94.6	60-130			
m,p-Xylenes	7.32	0.05	ug/g		91.6	60-130			
o-Xylene	3.70	0.05	ug/g		92.5	60-130			
Surrogate: Toluene-d8	*2.71*		*ug/g*		*84.6*	*50-140*			

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

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

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

CCME PHC additional information:

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

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Certificate of Analysis

LRL Associates Ltd.

5430 Canotek Road
Ottawa, ON K1J 9G2
Attn: Genevieve Marcoux

Client PO:
Project: 170132
Custody: 123277

Report Date: 7-Oct-2019
Order Date: 30-Sep-2019

Order #: 1940080

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

Paracel ID	Client ID
1940080-01	MW19-1
1940080-02	MW19-2
1940080-03	MW19-3
1940080-04	MW19-5

Approved By:

Dale Robertson, BSc
Laboratory Director

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 07-Oct-2019
Order Date: 30-Sep-2019
Project Description: 170132

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 624 - P&T GC-MS	4-Oct-19	4-Oct-19
PHC F1	CWS Tier 1 - P&T GC-FID	3-Oct-19	4-Oct-19
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	3-Oct-19	4-Oct-19
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	3-Oct-19	4-Oct-19

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 07-Oct-2019
Order Date: 30-Sep-2019
Project Description: 170132

	Client ID:	MW19-1	MW19-2	MW19-3	MW19-5
	Sample Date:	30-Sep-19 09:00	30-Sep-19 12:00	30-Sep-19 12:00	30-Sep-19 12:00
	Sample ID:	1940080-01	1940080-02	1940080-03	1940080-04
	MDL/Units	Water	Water	Water	Water
Volatiles					
Acetone	5.0 ug/L	-	<5.0	<5.0	-
Benzene	0.5 ug/L	-	<0.5	<0.5	-
Bromodichloromethane	0.5 ug/L	-	<0.5	<0.5	-
Bromoform	0.5 ug/L	-	<0.5	<0.5	-
Bromomethane	0.5 ug/L	-	<0.5	<0.5	-
Carbon Tetrachloride	0.2 ug/L	-	<0.2	<0.2	-
Chlorobenzene	0.5 ug/L	-	<0.5	<0.5	-
Chloroform	0.5 ug/L	-	<0.5	<0.5	-
Dibromochloromethane	0.5 ug/L	-	<0.5	<0.5	-
Dichlorodifluoromethane	1.0 ug/L	-	<1.0	<1.0	-
1,2-Dichlorobenzene	0.5 ug/L	-	<0.5	<0.5	-
1,3-Dichlorobenzene	0.5 ug/L	-	<0.5	<0.5	-
1,4-Dichlorobenzene	0.5 ug/L	-	<0.5	<0.5	-
1,1-Dichloroethane	0.5 ug/L	-	<0.5	<0.5	-
1,2-Dichloroethane	0.5 ug/L	-	<0.5	<0.5	-
1,1-Dichloroethylene	0.5 ug/L	-	<0.5	<0.5	-
cis-1,2-Dichloroethylene	0.5 ug/L	-	<0.5	<0.5	-
trans-1,2-Dichloroethylene	0.5 ug/L	-	<0.5	<0.5	-
1,2-Dichloropropane	0.5 ug/L	-	<0.5	<0.5	-
cis-1,3-Dichloropropylene	0.5 ug/L	-	<0.5	<0.5	-
trans-1,3-Dichloropropylene	0.5 ug/L	-	<0.5	<0.5	-
1,3-Dichloropropene, total	0.5 ug/L	-	<0.5	<0.5	-
Ethylbenzene	0.5 ug/L	-	<0.5	<0.5	-
Ethylene dibromide (dibromoethan	0.2 ug/L	-	<0.2	<0.2	-
Hexane	1.0 ug/L	-	<1.0	<1.0	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	-	<5.0	<5.0	-
Methyl Isobutyl Ketone	5.0 ug/L	-	<5.0	<5.0	-
Methyl tert-butyl ether	2.0 ug/L	-	<2.0	<2.0	-
Methylene Chloride	5.0 ug/L	-	<5.0	<5.0	-
Styrene	0.5 ug/L	-	<0.5	<0.5	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	-	<0.5	<0.5	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	-	<0.5	<0.5	-
Tetrachloroethylene	0.5 ug/L	-	<0.5	<0.5	-
Toluene	0.5 ug/L	-	<0.5	<0.5	-
1,1,1-Trichloroethane	0.5 ug/L	-	<0.5	<0.5	-

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 07-Oct-2019
Order Date: 30-Sep-2019
Project Description: 170132

	Client ID:	MW19-1	MW19-2	MW19-3	MW19-5
	Sample Date:	30-Sep-19 09:00	30-Sep-19 12:00	30-Sep-19 12:00	30-Sep-19 12:00
	Sample ID:	1940080-01	1940080-02	1940080-03	1940080-04
	MDL/Units	Water	Water	Water	Water
1,1,2-Trichloroethane	0.5 ug/L	-	<0.5	<0.5	-
Trichloroethylene	0.5 ug/L	-	<0.5	<0.5	-
Trichlorofluoromethane	1.0 ug/L	-	<1.0	<1.0	-
Vinyl chloride	0.5 ug/L	-	<0.5	<0.5	-
m,p-Xylenes	0.5 ug/L	-	<0.5	<0.5	-
o-Xylene	0.5 ug/L	-	<0.5	<0.5	-
Xylenes, total	0.5 ug/L	-	<0.5	<0.5	-
4-Bromofluorobenzene	Surrogate	-	115%	110%	-
Dibromofluoromethane	Surrogate	-	93.8%	91.2%	-
Toluene-d8	Surrogate	-	99.1%	98.5%	-
Benzene	0.5 ug/L	<0.5	-	-	<0.5
Ethylbenzene	0.5 ug/L	<0.5	-	-	<0.5
Toluene	0.5 ug/L	<0.5	-	-	<0.5
m,p-Xylenes	0.5 ug/L	<0.5	-	-	<0.5
o-Xylene	0.5 ug/L	<0.5	-	-	<0.5
Xylenes, total	0.5 ug/L	<0.5	-	-	<0.5
Toluene-d8	Surrogate	99.0%	-	-	99.0%
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	<25
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100	<100
F3 PHCs (C16-C34)	100 ug/L	<100	<100	<100	<100
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	<100

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	*86.0*		*ug/L*		*108*	*50-140*			
Surrogate: Dibromofluoromethane	*73.9*		*ug/L*		*92.4*	*50-140*			
Surrogate: Toluene-d8	*79.0*		*ug/L*		*98.8*	*50-140*			
Benzene	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: Toluene-d8	*79.0*		*ug/L*		*98.8*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND				30	
Volatiles									
Acetone	ND	5.0	ug/L	ND				30	
Benzene	ND	0.5	ug/L	ND				30	
Bromodichloromethane	ND	0.5	ug/L	ND				30	
Bromoform	ND	0.5	ug/L	ND				30	
Bromomethane	ND	0.5	ug/L	ND				30	
Carbon Tetrachloride	ND	0.2	ug/L	ND				30	
Chlorobenzene	ND	0.5	ug/L	ND				30	
Chloroform	ND	0.5	ug/L	ND				30	
Dibromochloromethane	ND	0.5	ug/L	ND				30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND				30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,1-Dichloroethane	ND	0.5	ug/L	ND				30	
1,2-Dichloroethane	ND	0.5	ug/L	ND				30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND				30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
1,2-Dichloropropane	ND	0.5	ug/L	ND				30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Ethylene dibromide (dibromoethane	ND	0.2	ug/L	ND				30	
Hexane	ND	1.0	ug/L	ND				30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND				30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND				30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND				30	
Methylene Chloride	ND	5.0	ug/L	ND				30	
Styrene	ND	0.5	ug/L	ND				30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
Tetrachloroethylene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND				30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND				30	
Trichloroethylene	ND	0.5	ug/L	ND				30	
Trichlorofluoromethane	ND	1.0	ug/L	ND				30	
Vinyl chloride	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: 4-Bromofluorobenzene	*85.1*		*ug/L*		*106*	*50-140*			
Surrogate: Dibromofluoromethane	*71.3*		*ug/L*		*89.2*	*50-140*			
Surrogate: Toluene-d8	*79.7*		*ug/L*		*99.6*	*50-140*			
Benzene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: Toluene-d8	*79.7*		*ug/L*		*99.6*	*50-140*			

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 07-Oct-2019
Order Date: 30-Sep-2019
Project Description: 170132

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	2050	25	ug/L		102	68-117			
F2 PHCs (C10-C16)	1450	100	ug/L		90.4	60-140			
F3 PHCs (C16-C34)	3880	100	ug/L		98.9	60-140			
F4 PHCs (C34-C50)	2270	100	ug/L		91.7	60-140			
Volatiles									
Acetone	64.5	5.0	ug/L		64.5	50-140			
Benzene	36.5	0.5	ug/L		91.2	60-130			
Bromodichloromethane	31.2	0.5	ug/L		78.0	60-130			
Bromoform	36.3	0.5	ug/L		90.6	60-130			
Bromomethane	34.9	0.5	ug/L		87.3	50-140			
Carbon Tetrachloride	29.6	0.2	ug/L		74.0	60-130			
Chlorobenzene	39.3	0.5	ug/L		98.2	60-130			
Chloroform	39.1	0.5	ug/L		97.8	60-130			
Dibromochloromethane	35.7	0.5	ug/L		89.2	60-130			
Dichlorodifluoromethane	39.3	1.0	ug/L		98.4	50-140			
1,2-Dichlorobenzene	38.4	0.5	ug/L		96.0	60-130			
1,3-Dichlorobenzene	36.9	0.5	ug/L		92.3	60-130			
1,4-Dichlorobenzene	39.0	0.5	ug/L		97.4	60-130			
1,1-Dichloroethane	42.4	0.5	ug/L		106	60-130			
1,2-Dichloroethane	28.8	0.5	ug/L		72.0	60-130			
1,1-Dichloroethylene	38.5	0.5	ug/L		96.2	60-130			
cis-1,2-Dichloroethylene	42.4	0.5	ug/L		106	60-130			
trans-1,2-Dichloroethylene	42.3	0.5	ug/L		106	60-130			
1,2-Dichloropropane	37.9	0.5	ug/L		94.8	60-130			
cis-1,3-Dichloropropylene	30.8	0.5	ug/L		77.0	60-130			
trans-1,3-Dichloropropylene	33.3	0.5	ug/L		83.3	60-130			
Ethylbenzene	35.5	0.5	ug/L		88.7	60-130			
Ethylene dibromide (dibromoethane	37.9	0.2	ug/L		94.8	60-130			
Hexane	36.6	1.0	ug/L		91.5	60-130			
Methyl Ethyl Ketone (2-Butanone)	117	5.0	ug/L		117	50-140			
Methyl Isobutyl Ketone	92.8	5.0	ug/L		92.8	50-140			
Methyl tert-butyl ether	85.0	2.0	ug/L		85.0	50-140			
Methylene Chloride	40.4	5.0	ug/L		101	60-130			
Styrene	35.8	0.5	ug/L		89.6	60-130			
1,1,1,2-Tetrachloroethane	35.7	0.5	ug/L		89.3	60-130			
1,1,2,2-Tetrachloroethane	52.0	0.5	ug/L		130	60-130			
Tetrachloroethylene	35.5	0.5	ug/L		88.8	60-130			
Toluene	38.0	0.5	ug/L		95.0	60-130			
1,1,1-Trichloroethane	28.8	0.5	ug/L		72.1	60-130			
1,1,2-Trichloroethane	39.0	0.5	ug/L		97.6	60-130			
Trichloroethylene	28.7	0.5	ug/L		71.7	60-130			
Trichlorofluoromethane	29.0	1.0	ug/L		72.4	60-130			
Vinyl chloride	28.8	0.5	ug/L		72.0	50-140			
m,p-Xylenes	78.9	0.5	ug/L		98.6	60-130			
o-Xylene	37.8	0.5	ug/L		94.4	60-130			
Surrogate: 4-Bromofluorobenzene	*77.6*		*ug/L*		*97.0*	*50-140*			
Benzene	36.5	0.5	ug/L		91.2	60-130			
Ethylbenzene	35.5	0.5	ug/L		88.7	60-130			
Toluene	38.0	0.5	ug/L		95.0	60-130			
m,p-Xylenes	78.9	0.5	ug/L		98.6	60-130			
o-Xylene	37.8	0.5	ug/L		94.4	60-130			

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

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

CCME PHC additional information:

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