PATERSON GROUP

Phase II – Environmental Site Assessment

1925 Merivale Road
Ottawa, Ontario

Prepared for: Peter Drummond and Son Ltd.

Report: PE6965-2
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EXECUTIVE SUMMARY

Assessment

A Phase II ESA was conducted for a portion of the property addressed 1925 Merivale Road, in the City of Ottawa, Ontario. The purpose of the Phase II ESA was to address potentially contaminating activities (PCAs) that were identified during the Phase I ESA and considered to result in areas of potential environmental concern (APECs) on the Phase II Property.

The Phase II ESA subsurface investigation consisted of drilling six boreholes on the Phase II Property. Five of the boreholes were constructed with groundwater monitoring wells. The general soil profile encountered during the field program is characterized by pavement structure consisting of asphalt over granular base, fill consisting of silty sand with gravel and crushed stone, followed by either native clay or sand, underlain by native silt.

Bedrock was not encountered in any of the boreholes. Groundwater levels were measured during the groundwater sampling event on April 10, 2025, using an electronic water level meter. Groundwater levels were recorded ranging from 3.88 to 4.91mbgs.

A total of 10 soil samples (including two duplicates) were submitted for laboratory analysis of benzene, toluene, ethylbenzene, xylenes (collectively known as BTEX), petroleum hydrocarbons (PHCs, F_1-F_4), metals (including As, Sb and Se), polycyclic aromatic hydrocarbons (PAHs), and volatile organic compounds (VOCs). BTEX, PHC, VOC, and PAH parameter concentrations were not detected above the laboratory detection limits. Metals parameters were identified in the soils samples analysed in compliance with the selected MECP Table 3 Industrial Standards.

Six groundwater samples (including one duplicate) from the monitoring wells installed in BH1-25, BH2-25, BH3-25, BH4-25, and BH5-25 were submitted for laboratory analysis of BTEX, PHCs (F1-F4) and VOCs. All groundwater results comply with the selected MECP Table 3 Standards, with the exception of chloroform which exceeded the selected standards in samples BH1-25, BH2-25, BH5-25, and DUP1 (duplicate of BH5-25). However, this exceedance is attributed to an unidentified leak of municipally distributed water.

Recommendations

<u>Soil</u>

All soil that requires removal from the Phase II Property for construction purposes must be handled in accordance with Ontario Regulation 406/19: On-Site and Excess Soil

Management. Further information regarding O. Reg 406/19 can be provided upon request.

Groundwater

It is recommended that the monitoring wells be maintained for future sampling purposes. The monitoring wells will be registered with the MECP under Ontario Regulation 903 (Ontario Water Resources Act). At such a time that the monitoring wells are no longer required, they must be decommissioned in accordance with O.Reg. 903.

1.0 INTRODUCTION

At the request of Peter Drummond and Son Ltd., Paterson Group (Paterson) carried out a Phase II Environmental Site Assessment for 1925 Merivale Road, in the City of Ottawa, Ontario. The purpose of this Phase II ESA has been to address areas of potential environmental concern (APECs) identified on the Phase II Property, during the Phase I ESA conducted by Paterson Group.

1.1 Site Description

Address:	1925 Merivale Road, Ottawa, Ontario.
Legal Description:	Part of Lot 27, Township of Nepean, in the City of Ottawa.
Location:	The Phase I Property is situated on the northeast corner of the intersection of Merivale Road and Bongard Avenue in the City of Ottawa, Ontario. The Phase I Property occupies the western two thirds of the property addressed 1925 Merivale Road. For the purposes of this report Merivale Road is considered to run in a north-south direction. Refer to Figure 1 – Key Plan, for the site location context.
Latitude and Longitude:	45° 19’ 47.1" N, 75° 43' 14.0" W

Site Description:

Configuration:	Irregular
Area:	0.7ha (approximate)
Zoning:	IG – General Industrial Zone
Current Use:	The Phase I Property is currently used as a retail fuel outlet.
Services:	The Phase II Property is located in a municipally serviced area.

1.2 Property Ownership

Paterson was engaged to conduct this Phase II-ESA by Mr. Russell Drummond with Peter Drummond and Son Ltd. Mr. Drummond can be reached by telephone at (613)-226-4444.

1.3 Current and Proposed Future Uses

The Phase II Property is currently occupied by a one-storey retail fuel kiosk with associated landscaped and asphalt parking areas. It is our understanding that the Phase II Property will be redeveloped with a new retail fuel outlet including a larger convenience store. It is expected that the proposed building will be municipally serviced by the City of Ottawa.

1.4 Applicable Site Condition Standard

The site condition standards for the property were obtained from Table 3 of the document entitled “Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act”, prepared by the Ontario Ministry of Environment, Conservation and Parks (MECP), April 2011. The selected MECP Table 3 Standards are based on the following considerations:

- ❒ Coarse-grained soil conditions
- ❒ Full depth generic site conditions
- ❒ Non-potable groundwater conditions
- ❒ Commercial land use

Section 35 of O.Reg. 153/04 does apply to the Phase II Property in that properties within the Phase I Study Area rely upon municipal drinking water.

Section 41 of O.Reg. 153/04 does not apply to the Phase II Property, as the property is not within 30m of an environmentally sensitive area.

Section 43.1 of O.Reg. 153/04 does not apply to the Phase II Property in that the property is not a Shallow Soil property and the property is not within 30m of a water body.

The commercial standards were selected based on the proposed future use of the Phase II Property. Coarse-grained soil standards were chosen as a conservative approach. Grain size analysis was not completed.

2.0 BACKGROUND INFORMATION

2.1 Physical Setting

The Phase II Property is located in the northeast quadrant of the Merivale Road and Bongard Avenue intersection, in the City of Ottawa, Ontario. According to the City of Ottawa website, the Phase II Property is situated in a general industrial zone with surrounding properties consisting of commercial and industrial use.

The Phase II Property is currently occupied by a retail fuel outlet with associated landscaped and asphalt parking areas.

The Phase II Property is considered to be at grade with respect to the adjacent roadways. The site topography is relatively flat. The regional topography slopes down to the east in the general direction of the Rideau River.

Water drainage on the Phase II Property occurs via infiltration and surface runoff to catch basins. Groundwater within the Phase I Study Area is generally expected to flow towards the east towards the Rideau River.

2.2 Previous Investigations

Paterson reviewed a report detailing one previous investigation. This investigation, a limited Phase II, was carried out to investigate the potential for contamination following a UST removal from the Phase II Property.

This 2019 limited Phase II investigation identified no BTEX or PHC concentrations in the vicinity of the UST that was removed.

3.0 SCOPE OF INVESTIGATION

3.1 Overview of Site Investigation

The subsurface investigation was conducted on March 27th and 28th, 2025. The field program consisted of drilling six boreholes on the Phase II Property. Five of the boreholes were instrumented with groundwater monitoring wells. Boreholes were drilled to a maximum depth of 7.47m below the existing ground surface (mbgs).

The borehole and associated monitoring well locations installed as part of this Phase II ESA are shown on Drawing PE6965-3 – Test Hole Location Plan, appended to this report.

3.2 Media Investigated

During the subsurface investigation, soil samples and groundwater samples were obtained and submitted for laboratory analysis. The rationale for sampling and analyzing these media is based on the Contaminants of Potential Concern identified in the 2025 Phase I ESA.

3.3 Phase I Conceptual Site Model

Geological and Hydrogeological Setting

Based on information from the Geological Survey of Canada and the available mapping information, the bedrock beneath the Phase I Property generally consists of interbedded dolomite and sandstone of the March Formation. Overburden soils consist of offshore marine sediments and the drift thickness on the site is expected to range between 10 and 15m. Hydrogeological conditions are considered to mimic the topographic setting; as a result, groundwater is expected to flow east in the direction of the Rideau River.

Fill Placement

Based on the historical review of aerial photographs and the interview with the Phase I Property owner, fill material is not expected to have been placed on the Phase I Property, aside from engineered fill related to building construction and pavement areas.

Water Bodies and Areas of Natural Significance

No water bodies or areas of natural and scientific interest are present on the Phase I Property.

The nearest named water body with respect to the Phase I Property is the Rideau River, located approximately 1.5km to the east.

Potable Water Wells

An MECP well record search was conducted on April 25, 2025, for all drilled wells within the Phase II Study Area. Two potable supply well records were identified for properties within the Phase II Study Area. However, based on their ages (1960 & 1963) as well as houses no longer existing in the area depicted in the well record, these wells are not considered to be in active use. As a result, no potable wells are considered to be in active use within the Phase II Study Area.

Monitoring Wells

A search of the MECPs website was conducted on April 25, 2025, for all drilled well records within a 250 m radius of the Phase II Property. No well records were identified for the Phase II Property.

A total of 32 well records which pertain to groundwater monitoring and industrial uses were identified for surrounding properties within the Phase II Study Area. Wells installed for industrial uses were installed between 1951 and 1972. Monitoring well records and abandonment records are dated between 2006 and 2021. The well records identified for surrounding properties within the Phase II Study Area are not considered to be indicative of an environmental concern with the potential to impact the Phase II Property.

No well records were identified on the Phase I Property. Other records within the Phase I Study Area identify the stratigraphy to consist of approximately 7.5m of compact sand followed by approximately 7m of sand and boulders, underlain by a limestone bedrock encountered at approximately 14.5mbgs.

Existing Buildings and Structures

The Phase II Property is occupied by a single storey building which was the point-of-sale location for the retail fuel outlet. This single storey building has a poured concrete foundation, stone and sheet metal siding and a modified bitumen style roof. This building is heated electrically.

No other buildings or permanent structures are present on the Phase II Property.

Subsurface Structures and Utilities

Underground services on the Phase I Property include electrical, communication, and water and sanitary services.

Neighbouring Land Use

The surrounding lands within the Phase I Study Area consist of a mix of commercial and industrial use properties. Current land use is depicted on Drawing PE6965-2 – Surrounding Land Use Plan, in the Figures section of this report.

Potentially Contaminating Activities and Areas of Potential Environmental Concern

Based on the findings of the Phase I ESA, three potentially contaminating activities (PCAs) were identified on the Phase I Property and two additional

PCAs were identified on neighbouring properties which result in Areas of Potential Environmental Concern (APECs) on the Phase I Property.

A total of 25 off-site PCAs were identified within the Phase I Study Area, 23 of which were not considered to result in an APEC on the Phase I Property. These PCAs pertain to a combination of offsite manufacturing activities, chemical storage, spills, automotive service garages, autobody shops, fuel storage, commercial printing businesses, and pesticide use.

Site features and surrounding land use can be seen on Drawing PE6965-1 – Site Plan and Drawing PE6965-2 – Surrounding Land Use, respectively.

As per Section 7.1 of this report, three on-site PCAs and two off-site PCAs are considered to result in five APECs on the Phase I Property. The PCAs, APECs and associated CPCs are summarized in Table 3.

Areas of Potential Environmental Concern

Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern with respect to Phase I-ESA Property	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil, and/or Sediment)
APEC 1 Underground Fuel Storage Tanks	West portion of the Phase I Property	*"Item 28 – Gasoline and associated products storage in fixed tanks"*	On-site	BTEX, PHCs, VOCs, PAHs	Soil Groundwater
APEC 2 Aboveground Fuel Storage Tank	East portion of the Phase I Property	*"Item 28 – Gasoline and associated products storage in fixed tanks"*	On-site	BTEX, PHCs, VOCs	Soil Groundwater
APEC 3[1] Application of Road Salt	Across the Phase I Property	*"Item N/A: Application of road salt for the safety of vehicular or pedestrian traffic under conditions of snow or ice"*	On-site	Electrical Conductivity (EC) Sodium Adsorption Ratio (SAR)	Soil
APEC 4 Mechanical Equipment Maintenance Garage	Northeast portion of the Phase I Property	*"Item N/A – Operation of a maintenance garage for rental equipment"*	Off-site	BTEX, PHCs, VOCs	Soil Groundwater
APEC 5 Aboveground Fuel Storage Tanks	Southern portion of the Phase I Property	*"Item 28 – Gasoline and associated products storage in fixed tanks"*	Off-site	BTEX, PHCs, VOCs	Groundwater

Areas of Potential Environmental Concern					
Area of Potential Environmental Concern	**Location of Area of Potential Environmental Concern with respect to Phase I-ESA Property**	**Potentially Contaminating Activity**	**Location of PCA (on-site or off-site)**	**Contaminants of Potential Concern**	**Media Potentially Impacted (Groundwater, Soil, and/or Sediment)**
1 – In accordance with Section 49.1 of O.Reg. 153/04 standards are deemed to be met if an applicable site condition standard is exceeded at a property solely because the qualified person has determined that a substance has been applied to surfaces for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both. The exemption outlined in Section 49.1 is being relied up with respect to the Phase I Property.					

Two of the off-site PCAs identified within the Phase I Study Area are considered to result in APECs on the Phase I Property due to their proximity to the Phase I Property.

The remaining 23 off-site PCAs (existing or historical) identified within the Phase I Study Area are not considered to result in APECs on the Phase I Property due to their separation distance and/or their down/cross-gradient orientation with respect to the Phase I Property.

As per Section 7.1 of this report, all APECs are outlined on Drawing PE6965-1 – Site Plan, while PCAs identified within the Phase I Study Area are presented on Drawing PE6965-2 – Surrounding Land Use Plan in the Figures section of this report, following the text.

Contaminants of Potential Concern

As per Section 7.1 of this report, the contaminants of potential concern for the soil and/or groundwater on the Phase I Property include the following:

- Petroleum Hydrocarbons, fractions 1 – 4 (PHCs F_1-F_4);
- Benzene, Toluene, Ethylbenzene, Xylenes (BTEX);
- Volatile Organic Compounds
- Metals by ICP
- Polycyclic Aromatic Hydrocarbons (PAHs)

These CPCs have the potential to be present in the soil matrix and/or groundwater situated beneath the Phase I Property.

Assessment of Uncertainty and/or Absence of Information

The information available for review as part of the preparation of this Phase I-ESA is considered to be sufficient to conclude that there are three on-site PCAs that have resulted in APECs on the Phase I Property. Two additional off-site PCAs identified within the Phase I Study Area are considered to represent APECs on the Phase II Property based on their proximity to the Phase I Property.

A variety of independent sources were consulted as part of this assessment, and as such, the conclusions of this report are not affected by uncertainty which may be present with respect to the individual sources.

3.4 Deviations from Sampling and Analysis Plan

The Sampling and Analysis Plan for this project is included in Appendix 1 of this report. No deviations from the sampling and analysis plan were identified during the Phase II ESA.

3.5 Impediments

No physical impediments, aside from the utilities, underground fuel tanks and distribution lines were encountered during the Phase II ESA program.

4.0 INVESTIGATION METHOD

4.1 Subsurface Investigation

The subsurface investigation was conducted on March 27 and 28, 2025. The field program consisted of drilling six boreholes across the Phase II Property, five of which were instrumented with groundwater monitoring wells. The boreholes were drilled to a maximum depth of 7.47m below ground surface (mbgs) and terminated within the underlying native silt.

The boreholes were placed to address the aforementioned APECs identified in the 2025 Phase I ESA.

The boreholes were drilled with a truck mounted drill rig operated by George Downing Estate Drilling of Hawkesbury, Ontario, under full-time supervision of Paterson personnel.

The locations of the boreholes are illustrated on Drawing PE6965-3 - Test Hole Location Plan, appended to this report.

4.2 Soil Sampling

Soil sampling protocols were followed using the MECP document entitled, *"Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario"*, dated May 1996.

The samples were recovered using a stainless-steel split spoon while wearing protective gloves (changed after each sample) and immediately placed into plastic bags. If significant contamination was encountered, the samples were instead placed into glass jars. Sampling equipment was routinely washed in soapy water and rinsed with methylhydrate after each split spoon to prevent any cross contamination of the samples. The samples were also stored in coolers to reduce analyte volatilization during transportation.

A total of 57 soil samples were obtained from the boreholes by means of grab sampling from auger flights/auger samples and split spoon sampling. Split spoon samples were taken at approximate 0.76m intervals.

The depths at which auger and split spoon samples were obtained from the boreholes are shown as "**AU**" and "**SS**", respectively, on the Soil Profile and Test Data Sheets.

The borehole profiles generally consist of asphalt underlain by a fill material consisting of gravel and silty sand, followed by either native sand or native clay, underlain by silt. Bedrock was not encountered in any of the boreholes.

Specific details of the soil profile at each test hole location are presented on the Soil Profile and Test Data Sheets provided in Appendix 1.

4.3 Field Screening Measurements

Soil samples recovered at the time of sampling were placed immediately into airtight plastic bags with nominal headspace. All lumps of soil inside the bags were broken by hand, and the soil was allowed to come to room temperature prior to conducting the vapour survey. Allowing the samples to stabilize to room temperature ensures consistency of readings between samples.

To measure the soil vapours, the analyser probe is inserted into the nominal headspace above the soil sample. A photo ionization detector (PID) or Gastech was used to measure the volatile organic vapour concentrations. The sample is agitated/manipulated gently as the measurement is taken. The peak reading registered within the first 15 seconds is recorded as the vapour measurement.

The maximum PID vapour reading in the recovered soil samples was 10.7ppm. The maximum gastech reading recovered in the soil samples was 130ppm. The vapour readings are not considered to be indicative of significant levels of volatile petroleum hydrocarbon contamination. No visual or olfactory indications of potential hydrocarbons, or visual indications of deleterious fill material or metal impacts, were identified in the soil samples. Vapour readings are noted on the Soil Profile and Test Data Sheets in Appendix 1.

4.4 Groundwater Monitoring Well Installation

Five groundwater monitoring wells were installed on the Phase II Property as part of the subsurface investigation. The monitoring wells were constructed using 50 mm diameter Schedule 40 threaded PVC risers and screens. A summary of the monitoring well construction details are listed in Table 1: Test Hole Summary Details and in the Soil Profile and Test Data Sheets, appended to this report.

4.5 Field Measurement of Water Quality Parameters

A groundwater sampling event was conducted on April 10, 2025, from the five monitoring wells installed as part of the current investigation (BH1-25, BH2-25, BH3-25, BH4-25 and BH5-25). Water quality parameters were measured in the field using a multi-parameter analyzer. Parameters measured in the field included temperature, pH, and electrical conductivity.

Field parameters were measured after each well volume purged. Wells were purged prior to sampling until at least three well volumes had been removed, the field parameters were relatively stable, or the well was dry. Stabilized field parameter values are summarized in Table 2: Stabilized Water Quality Parameters, appended to this report.

4.6 Groundwater Sampling

Groundwater sampling was conducted on April 10, 2025. Groundwater sampling protocols were followed using the MECP document entitled “Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario”, dated May 1996. Groundwater samples were obtained from each monitoring well, using dedicated sampling equipment. Standing water was purged from each well prior to sampling. Samples were stored in coolers to reduce analyte volatilization during transportation. Details of our standard operating procedure for groundwater sampling are provided in the Sampling and Analysis Plan in Appendix 1.

4.7 Analytical Testing

Based on the guidelines outlined in the Sampling and Analysis Plan, soil samples were submitted for analysis of the parameters listed in Table 3: Soil Testing Summary, appended to this report.

Based on the guidelines outlined in the Sampling and Analysis Plan, groundwater samples were submitted for analysis of the parameters listed in Table 4: Groundwater Testing Summary, appended to this report.

Paracel Laboratories (Paracel), of Ottawa, Ontario, performed the laboratory analysis on the samples submitted for analytical testing. Paracel is a member of the Standards Council of Canada/Canadian Association for Laboratory Accreditation (SCC/CALA) and is accredited and certified by the SCC/CALA for specific tests registered with the association.

4.8 Residue Management

All soil cuttings, purge water and fluids from equipment cleaning were retained on-site.

4.9 Elevation Surveying

The ground surface elevations at each borehole location were surveyed using a GPS device by Paterson personnel and referenced to a geodetic datum.

4.10 Quality Assurance and Quality Control Measures

A summary of quality assurance and quality control (QA/QC) measures, including sampling containers, preservation, labelling, handling, and custody, equipment cleaning procedures, and field quality control measurements is provided in the Sampling and Analysis Plan in Appendix 1.

5.0 REVIEW AND EVALUATION

5.1 Geology

Stratigraphy at the Phase II Property generally consists of the following:

- **Asphalt** was identified at ground surface in each borehole and extended to a maximum depth of 0.1mbgs.

- **Fill Material** generally consisting of brown silty sand with gravel and crushed stone was encountered in every borehole beneath the asphalt and extended to depths ranging between 0.56mbgs and 3.51mbgs.
- **Native Sand** was encountered in BH1-25, BH4-25, BH5-25 and BH6-25 at depths ranging from 0.91 to 4.50mbgs. Groundwater was encountered in this layer in BH4-25.
- **Native Brown Clay** was encountered in BH3-25, BH4-25 and BH6-25 at depths ranging from 0.56 to 2.97mbgs.
- **Native Silt** was encountered in each borehole at depths ranging from 1.45 to 7.47mbgs. Each borehole was terminated within this layer of native silt. Groundwater was encountered in this layer in BH1-25, BH3-25, and BH5-25.

The stratigraphy of the Phase II-ESA Property, from ground surface to the deepest aquifer or aquitard investigated, is provided in the Soil Profile and Test Data Sheets, appended to this report.

5.2 Groundwater Elevations, Flow Direction, and Hydraulic Gradient

Groundwater levels were measured during the groundwater sampling event on April 10, 2025, using an electronic water level meter. Groundwater levels were recorded from the monitoring wells installed in BH1-25, BH2-25, BH3-25, BH4-25 and BH5-25. The groundwater levels are summarized in Table 5: Groundwater Levels, appended to this report.

The groundwater at the Phase II ESA Property was encountered within the overburden at depths ranging from approximately 3.88 to 4.91m below the existing ground surface.

Using the groundwater elevations recorded during the April 10, 2025, sampling event, groundwater contour mapping was completed as part of this assessment. Groundwater contours are shown on Drawing PE6965-3 – Test Hole Location Plan, appended to this report. Based on the contour mapping, groundwater flow at the Phase II Property is in a northeasterly direction. It should be noted that groundwater levels are expected to fluctuate throughout the year with seasonal variations.

A horizontal hydraulic gradient of approximately 0.01m/m was calculated.

5.3 Fine-Coarse Soil Texture

Grain size analysis was not completed as part of this investigation. Coarse grained soil standards were chosen as a conservative approach.

5.4 Soil: Field Screening

Field screening of the soil samples collected during drilling resulted in vapour readings ranging from 0.6ppm (PID) to 130ppm (gastech). No obvious visual or olfactory indications of potential environmental concerns were identified in the soil samples. The field screening results of each individual soil sample are provided on the Soil Profile and Test Data Sheets appended to this report.

5.5 Soil Quality

A total of ten soil samples (including two duplicates) were submitted for laboratory analysis of BTEX, PHCs (F_1-F_4), metals, PAHs, and/or VOCs. Two soil samples from the 2019 limited Phase II were also submitted for analysis of BTEX and PHCs. The results of the analytical testing are presented in Table 6: Soil Analytical Test Results, as well as on the laboratory certificates of analysis, appended to this report.

BTEX

All BTEX parameters were non-detect in the soil samples analyzed as part of this Phase II-ESA and comply with the MECP Table 3 Industrial Standards. BTEX was also non-detect in the 2019 limited Phase II samples analysed. The analytical results for the tested soil are shown on Drawing PE6965-4 – Analytical Testing Plan – Soil.

PHCs (F1-F4)

All PHC parameters were non-detect in the soil samples analysed as part of this Phase II-ESA and comply with the selected MECP Table 3 Industrial Standards. PHCs were also non-detect in the 2019 limited Phase II samples analysed. The analytical results for the tested soil are shown on Drawing PE6965-4 – Analytical Testing Plan – Soil.

Metals (including arsenic (As), antimony (Sb) and selenium (Se))

All metals parameters identified in each of the soil samples analyzed as part of this Phase II-ESA comply with the MECP Table 3 Industrial Standards. The

analytical results for the tested soil are shown on Drawing PE6965-4 – Analytical Testing Plan – Soil.

Volatile Organic Compounds (VOCs)

All VOC parameters were non-detect in the soil samples analyzed as part of this Phase II-ESA and comply with the MECP Table 3 Industrial Standards. The analytical results for the tested soil are shown on Drawing PE6965-4 – Analytical Testing Plan – Soil.

Polycyclic Aromatic Hydrocarbons (PAHs)

All PAH parameters were non-detect in the soil samples analyzed as part of this Phase II-ESA and comply with the MECP Table 3 Industrial Standards. The analytical results for the tested soil are shown on Drawing PE6965-4 – Analytical Testing Plan – Soil.

Maximum Soil Parameter Concentrations

The maximum concentrations of each parameter identified in soil samples analyzed on the Phase II Property are presented in Table 6A: Maximum Concentrations - Soil, appended to this report.

5.6 Groundwater Quality

Six groundwater samples (including one duplicate) were recovered from the monitoring wells installed in Boreholes BH1-25, BH2-25, BH3-25, BH4-25, and BH5-25 on April 10, 2025, and submitted for laboratory analysis of VOCs, BTEX, and PHCs (F1-F4).

The results of the analytical testing are presented in Table 7: Groundwater Analytical Test Results, as well as on the laboratory certificates of analysis, appended to this report.

VOCs

All VOC parameters were non-detect in the groundwater samples analyzed as part of this Phase II-ESA with the exception of chloroform which was identified and exceeded the selected MECP Table 3 standards in Samples BH1-25-GW1, BH2-25-GW1, BH5-25-GW1 and DUP1 (duplicate of BH5-25-GW1). Bromodichloromethane was also identified in sample DUP1 and complied with the selected MECP Table 3 Standards. There are no known sources of these VOCs from the Phase I Property or the neighbouring properties. As a result, the presence of chloroform and bromodichloromethane in these samples is

considered to be the result of impacts from a leaking municipal water main or service. Therefore, it is our opinion that these VOCs are not contaminants. The analytical results for the tested groundwater are shown on Drawing PE6965-5 – Analytical Testing Plan – Groundwater, appended to this report.

BTEX and PHCs (F_1-F_4)

All BTEX and PHC parameters were non-detect in the groundwater samples analyzed as part of this Phase II-ESA and comply with the MECP Table 3 Industrial Standards. The analytical results for the tested groundwater are shown on Drawing PE6965-5 – Analytical Testing Plan – Groundwater, appended to this report.

Maximum Groundwater Parameter Concentrations

The maximum concentration of each parameter identified in groundwater samples analyzed on the Phase II Property are presented in Table 7A: Maximum Concentrations - Groundwater, appended to this report.

5.7 Quality Assurance and Quality Control Results

All samples submitted as part of the March and April 2025 sampling event were handled in accordance with the Analytical Protocol with respect to preservation method, storage requirement, and container type. As per Subsection 47(3) of O.Reg. 153/04, as amended, under the Environmental Protection Act, a Certificate of Analysis has been received for each sample submitted for analysis and all Certificates of Analysis are appended to this report.

5.8 Phase II Conceptual Site Model

The following section has been prepared in accordance with the requirements of O.Reg. 153/04, as amended by the Environmental Protection Act. Conclusions and recommendations are discussed in a subsequent section.

Site Description

Potentially Contaminating Activity and Areas of Potential Environmental Concern

Based on the results of the Phase I ESA completed for the subject property, three on-site PCAs and two off-site PCA were identified, which represent APECs on the Phase II Property. The APECs on the Phase II Property are as follows:

- ❒ PCA 28 – Gasoline and Associated Products Storage in Fixed Tanks – this PCA is associated with the existing retail fuel outlet at 1925 Merivale Road and the associated UST nest resulting in an APEC on the western side of the Phase II Property (APEC 1)

- ❒ PCA 28 – Gasoline and Associated Products Storage in Fixed Tanks – this PCA is associated with the existing retail fuel outlet at 1925 Merivale Road and the associated AST resulting in an APEC on the eastern side of the Phase II Property (APEC 2)

- ❒ PCA N/A – Application of road salt – this PCA is associated with the application of road salt across the Phase II Property for the purpose of vehicular and pedestrian traffic (APEC 3)

- ❒ PCA N/A – Mechanical equipment maintenance garage – this PCA is associated with the repair and servicing of rental equipment in the maintenance garage located at 1905 Merivale Road, resulting in an APEC on the northeastern portion of the Phase II Property (APEC 4)

- ❒ PCA 28 – Gasoline and Associated Products Storage in Fixed Tanks – this PCA is associated with the existing fuel distribution terminal at 1961 Merivale Road which results in an APEC in the southern portion of the Phase II Property (APEC 5)

Based on the findings of the Phase I ESA, it is considered likely that road salt was historically applied to the surface of the Phase II Property for the safety of vehicular and pedestrian traffic under conditions of ice and/or snow. Although not defined as a specific PCA under Column A of Table 2 of O.Reg. 153/04, the use of salt for safety purposes is considered to result in an APEC on the Phase II Property (APEC 3).

According to Section 49.1 of O.Reg. 153/04, if an applicable site condition standard is exceeded at a property solely because of the following reason, the applicable site condition standard is deemed not to be exceeded for the purpose of Part XV.1 of the Act: “The qualified person has determined, based on a phase one environmental site assessment or a phase two environmental site assessment, that a substance has been applied to surfaces for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both.”

In accordance with Section 49.1 of O.Reg. 153/04, any EC and SAR concentrations on the Phase II Property that exceed the MECP Table 3 Industrial Standards for industrial land use are deemed not to be exceeded for the purpose of Part XV.1 of the Act. This exemption is being relied on for APEC 3.

Twenty-five off-site PCAs (existing or historical) identified within the Phase I Study Area are not considered to result in APECs on the Phase II Property due to their separation distance and/or their down/cross-gradient orientation with respect to the Phase II Property.

All APECs are outlined on Drawing PE6965-1 – Site Plan, while all PCAs identified within the Phase I Study Area are presented on Drawing PE6965-2 – Surrounding Land Use Plan in the Figures section of this report, following the text.

Contaminants of Potential Concern

As per Section 7.1 of this report, the contaminants of potential concern for the soil and/or groundwater on the Phase II Property include the following:

- ❒ Petroleum Hydrocarbons, fractions 1 – 4 (PHCs F_1-F_4);
- ❒ Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX);
- ❒ Metals by ICP;
- ❒ Volatile Organic Compounds (VOCs)
- ❒ Polycyclic aromatic hydrocarbons (PAHs);

These CPCs have the potential to be present in the soil matrix and/or groundwater situated beneath the Phase II Property.

Subsurface Structures and Utilities

Based on subsurface utility locates completed for the Phase II Property, underground utilities identified on the Phase II Property include electrical, bell, water, sanitary and sewer services.

A subsurface fuel storage tank nest with associated distribution lines from USTs to fuel pumps was also identified on the western portion of the Phase I Property.

No other subsurface structures were identified on the Phase II Property.

Physical Setting

Site Stratigraphy

The stratigraphy of the Phase II Property generally consists of:

- **Asphalt** was identified at ground surface in each borehole and extended to a maximum depth of 0.1mbgs.
- **Fill Material** generally consisting of brown silty sand with gravel and crushed stone was encountered in every borehole beneath the asphalt and extended to depths ranging between 0.56mbgs and 3.51mbgs.
- **Native Sand** was encountered in BH1-25, BH4-25, BH5-25 and BH6-25 at depths ranging from 0.91 to 4.50mbgs. Groundwater was encountered in this layer in BH4-25.
- **Native Brown Clay** was encountered in BH3-25, BH4-25 and BH6-25 at depths ranging from 0.56 to 2.97mbgs.
- **Native Silt** was encountered in each borehole at depths ranging from 1.45 to 7.47mbgs. Each borehole was terminated within this layer of native silt. Groundwater was encountered in this layer in BH1-25, BH3-25, and BH5-25.

The stratigraphy of the Phase II-ESA Property, from ground surface to the deepest aquifer or aquitard investigated, is provided in the Soil Profile and Test Data Sheets, appended to this report.

Hydrogeological Characteristics

Groundwater was encountered within the overburden at depths ranging from approximately 3.88 to 4.91m below the existing ground surface. Based on the groundwater monitoring event, groundwater flow was measured in a northerly direction with a hydraulic gradient of 0.01m/m.

It should be noted that groundwater levels are expected to fluctuate throughout the year with seasonal variations. Groundwater contours are shown on Drawing PE6965-3 – Test Hole Location Plan.

Approximate Depth to Bedrock

Bedrock was not encountered in any of the boreholes on the Phase II Property.

Approximate Depth to Water Table

The depth to the water table at the Phase II-ESA Property varies between approximately 3.88 to 4.91m below the existing ground surface.

Sections 41 and 43.1 of the Regulation

Section 41 of O.Reg. 153/04 does not apply to the Phase II Property, as the property is not within 30m of an environmentally sensitive area.

Section 43.1 of O.Reg. 153/04 does not apply to the Phase II Property in that the property is not a Shallow Soil property and the property is not within 30m of a water body.

Fill Placement

Fill material generally consisting of brown silty sand with gravel and crushed stone was identified in each borehole on the Phase II Property, ranging in depth from 0.08 to 3.51m below ground surface.

Existing Buildings and Structures

The Phase II Property is currently occupied by a retail fuel outlet with an associated convenience store kiosk with associated asphalt parking areas, and landscaped spaces.

The convenience store kiosk is finished on the exterior with stone blocks and metal siding, with a flat style roof. The kiosk is constructed with a poured concrete foundation and is currently heated via electrical means.

No other buildings or permanent structures are present on the Phase II Property.

Proposed Buildings and Other Structures

It is our understanding that the Phase II Property will be developed with a retail fuel outlet. It is expected that the proposed building will be municipally serviced by the City of Ottawa.

Areas of Natural Scientific Interest and Water Bodies

No water bodies or areas of natural and scientific interest are present on the Phase I Property.

The nearest named water body with respect to the Phase I Property is the Rideau River, located approximately 1.5km to the east.

Environmental Condition

Areas Where Contaminants are Present

Based on the findings of this Phase II-ESA, no impacted soil was identified on the Phase II Property.

Based on the findings of this Phase II-ESA, groundwater influenced by treated water originating from the City of Ottawa water main infrastructure was identified on the Phase II Property in the vicinity of BH1-25, BH2-25 and BH5-25.

Types of Contaminants

Based on the findings of this Phase II-ESA, there are no contaminants of concern on the Phase II Property with the exception of chloroform in the groundwater.

Contaminated Media

Based on the findings of this Phase II-ESA, no impacted soil was identified on the Phase II Property.

Based on the findings of this Phase II-ESA, groundwater containing chloroform was identified in samples BH1-25-GW1, BH2-25-GW1 and BH5-25-GW1 in the area of the Phase II Property surrounding the retail fuel outlet pump island.

What Is Known About Areas Where Contaminants Are Present

The groundwater with elevated chloroform concentrations identified in BH1-25, BH2-25 and BH5-25 is interpreted to be a result of leaking water from a watermain in the vicinity of the Phase I Property.

Distribution and Migration of Contaminants

Based on the findings of this Phase II ESA, the groundwater in the area of BH1-25, BH2-25 and BH5-25 is impacted with chloroform. Based on the observations made during the field program, in conjunction with analytical test results, it is expected that the impacted material is limited to the groundwater on the southwestern portion of the Phase II Property.

Discharge of Contaminants

Based on the analytical test results, the chloroform impacted groundwater identified in BH1-25, BH2-25 and BH5-25 is suspected to be the result of the leaking from the City of Ottawa water main distribution system.

Climatic and Meteorological Conditions

In general, climatic and meteorological conditions have the potential to affect contaminant distribution. Two ways by which climatic and meteorological conditions may affect contaminant distribution include the downward leaching of contaminants via the infiltration of precipitation, and the migration of contaminants via groundwater levels and/or flow, which may fluctuate seasonally.

Based on the results of the Phase II ESA, the migration of contaminants via groundwater does not appear to have affected contaminant distribution at the Phase II Property.

Potential for Vapour Intrusion

Given the nature of the contaminants there is no potential for any current or future vapour intrusion on the Phase II Property.

6.0 CONCLUSIONS

Assessment

A Phase II ESA was conducted for a portion of the property addressed 1925 Merivale Road, in the City of Ottawa, Ontario. The purpose of the Phase II ESA was to address potentially contaminating activities (PCAs) that were identified during the Phase I ESA and considered to result in areas of potential environmental concern (APECs) on the Phase II Property.

The Phase II ESA subsurface investigation consisted of drilling six boreholes on the Phase II Property. Five of the boreholes were constructed with groundwater monitoring wells. The general soil profile encountered during the field program is characterized by pavement structure consisting of asphalt over granular base, fill consisting of silty sand with gravel and crushed stone, followed by either native clay or sand, underlain by native silt.

Bedrock was not encountered in any of the boreholes. Groundwater levels were measured during the groundwater sampling event on April 10, 2025, using an electronic water level meter. Groundwater levels were recorded ranging from 3.88 to 4.91mbgs.

A total of 10 soil samples (including two duplicates) were submitted for laboratory analysis of benzene, toluene, ethylbenzene, xylenes (collectively known as BTEX), petroleum hydrocarbons (PHCs, F_1-F_4), metals (including As, Sb and Se), polycyclic aromatic hydrocarbons (PAHs), and volatile organic compounds (VOCs). BTEX, PHC, VOC, and PAH parameter concentrations were not detected above the laboratory detection limits. Metals parameters were identified in the soils samples analysed in compliance with the selected MECP Table 3 Industrial Standards.

Six groundwater samples (including one duplicate) from the monitoring wells installed in BH1-25, BH2-25, BH3-25, BH4-25, and BH5-25 were submitted for laboratory analysis of BTEX, PHCs (F1-F4) and VOCs. All groundwater results comply with the selected MECP Table 3 Standards, with the exception of chloroform which exceeded the selected standards in samples BH1-25, BH2-25, BH5-25, and DUP1 (duplicate of BH5-25). However, this exceedance is attributed to an unidentified leak of municipally distributed water.

Recommendations

Soil

All soil that requires removal from the Phase II Property for construction purposes must be handled in accordance with Ontario Regulation 406/19: On-Site and Excess Soil Management. Further information regarding O. Reg 406/19 can be provided upon request.

Groundwater

It is recommended that the monitoring wells be maintained for future sampling purposes. The monitoring wells will be registered with the MECP under Ontario Regulation 903 (Ontario Water Resources Act). At such a time that the monitoring wells are no longer required, they must be decommissioned in accordance with O.Reg. 903.

7.0 STATEMENT OF LIMITATIONS

This Phase II - Environmental Site Assessment report has been prepared under the supervision of a Qualified Person, in general accordance with O. Reg 153/04. The conclusions presented herein are based on information gathered from a limited sampling and testing program. The test results represent conditions at specific test locations at the time of the field program.

The client should be aware that any information pertaining to soils and all test hole logs are furnished as a matter of general information only and test hole descriptions or logs are not to be interpreted as descriptive of conditions at locations other than those of the test holes themselves.

Should any conditions be encountered at the subject site and/or historical information that differ from our findings, we request that we be notified immediately in order to allow for a reassessment.

This report was prepared for the sole use of Peter Drummond and Son Limited. Notification from Peter Drummond and Son Limited and Paterson Group will be required to release this report to any other party.

Paterson Group Inc.

Mark Bujaki, B.Sc., MBA

Mark D'Arcy, P.Eng., Q.P.ESA

Report Distribution:

- ❒ Peter Drummond and Son Ltd.
- ❒ Paterson Group

FIGURES

FIGURE 1 – KEY PLAN

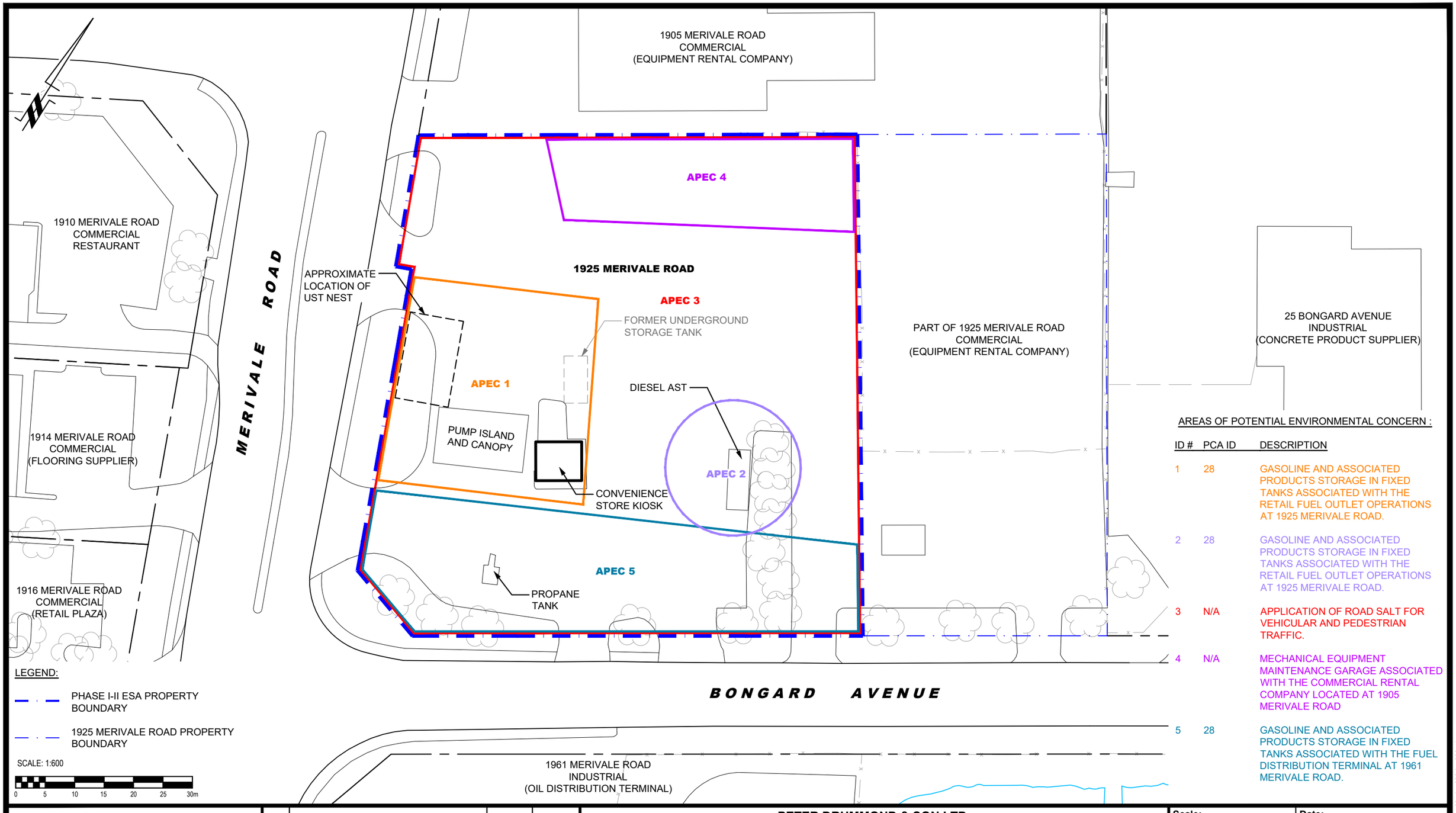
DRAWING PE6965-1 – SITE PLAN

DRAWING PE6965-2 – SURROUNDING LAND USE PLAN

DRAWING PE6965-3 – TEST HOLE LOCATION PLAN

DRAWING PE6965-4 – ANALYTICAL TESTING PLAN – SOIL

DRAWING PE6965-5 – ANALYTICAL TESTING PLAN – GROUNDWATER



LEGEND:

PHASE I-II ESA PROPERTY BOUNDARY

1925 MERIVALE ROAD PROPERTY BOUNDARY

SCALE: 1:600

0 5 10 15 20 25 30m

AREAS OF POTENTIAL ENVIRONMENTAL CONCERN :

ID #	PCA ID	DESCRIPTION
1	28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS ASSOCIATED WITH THE RETAIL FUEL OUTLET OPERATIONS AT 1925 MERIVALE ROAD.
2	28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS ASSOCIATED WITH THE RETAIL FUEL OUTLET OPERATIONS AT 1925 MERIVALE ROAD.
3	N/A	APPLICATION OF ROAD SALT FOR VEHICULAR AND PEDESTRIAN TRAFFIC.
4	N/A	MECHANICAL EQUIPMENT MAINTENANCE GARAGE ASSOCIATED WITH THE COMMERCIAL RENTAL COMPANY LOCATED AT 1905 MERIVALE ROAD
5	28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS ASSOCIATED WITH THE FUEL DISTRIBUTION TERMINAL AT 1961 MERIVALE ROAD.

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NO.	REVISIONS	DATE	INITIAL

PETER DRUMMOND & SON LTD.

PHASE I - ENVIRONMENTAL SITE ASSESSMENT
1925 MERIVALE ROAD

OTTAWA, ONTARIO

Title:

SITE PLAN

Scale: 1:600	Date: 05/2025
Drawn by: ZS	Report No.: PE6965-1
Checked by: MSWB	Dwg. No.: PE6965-1
Approved by: MSD	Revision No.:

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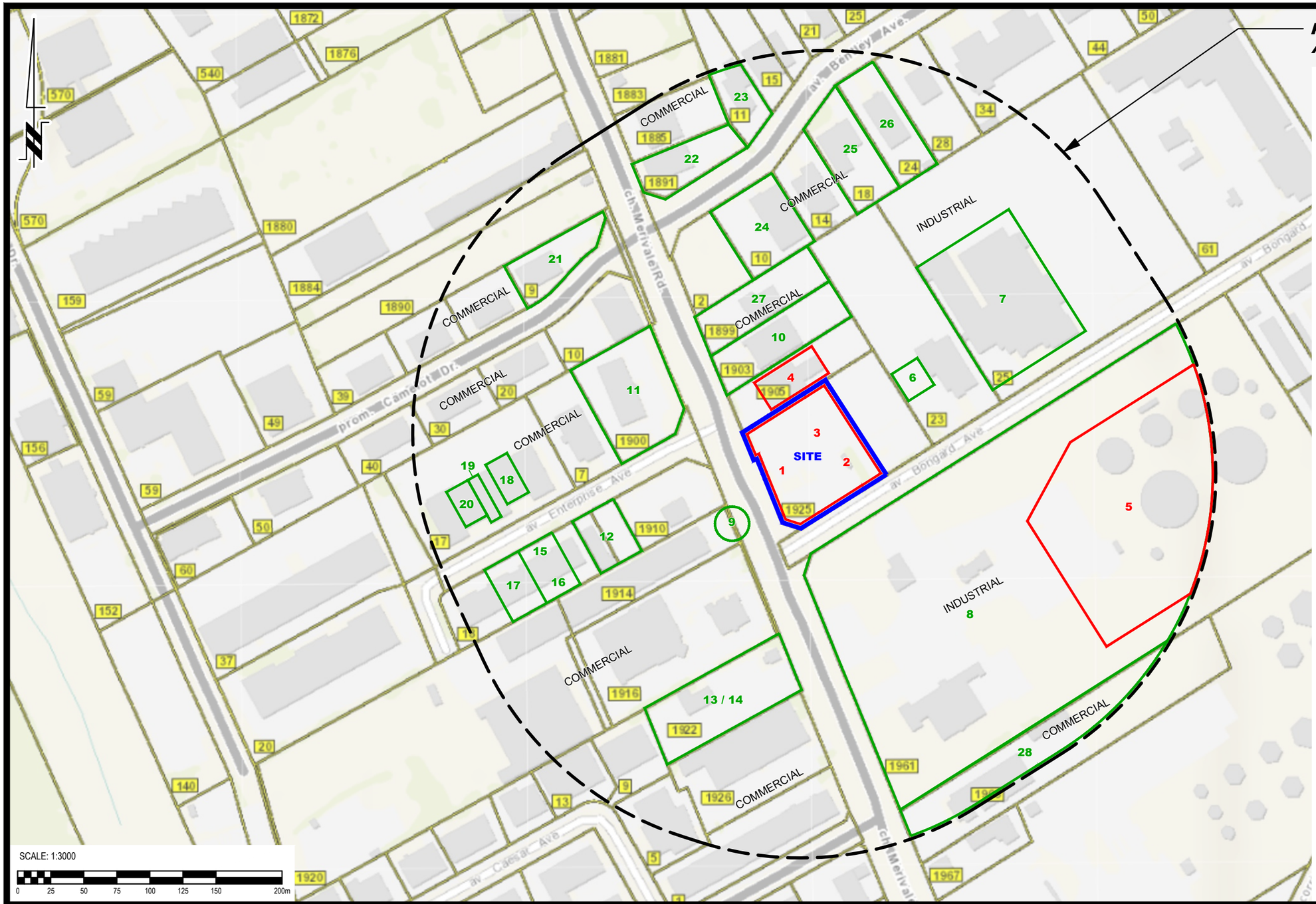

POTENTIALLY CONTAMINATING ACTIVITIES :

ID #	PCA ID	DESCRIPTION
1	28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS ASSOCIATED WITH THE RETAIL FUEL OUTLET OPERATIONS AT 1925 MERIVALE ROAD.
2	28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS ASSOCIATED WITH THE RETAIL FUEL OUTLET OPERATIONS AT 1925 MERIVALE ROAD.
3	N/A	APPLICATION OF ROAD SALT FOR VEHICULAR AND PEDESTRIAN TRAFFIC.
4	N/A	MECHANICAL EQUIPMENT MAINTENANCE GARAGE ASSOCIATED WITH THE COMMERCIAL RENTAL COMPANY LOCATED AT 1905 MERIVALE ROAD.
5	28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS ASSOCIATED WITH THE FUEL DISTRIBUTION TERMINAL AT 1961 MERIVALE ROAD.
6	28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS ASSOCIATED WITH 23 BONGARD AVENUE .
7	12	CONCRETE MANUFACTURING AT 23 AND 25 BONGARD AVENEU
8	40	USE OF HALOGENATED PERTICIDES AT 1961 MERIVALE ROAD.
9	55	TRANSFORMER USE ASSOCIATED WITH THE SPILL OF 1000L OF NON-PCB TRANSFORMER OIL AT 1914 MERIVALE ROAD.
10	43	PLASTICS MANUFACTURING AT 1903 MERIVALE ROAD.
11	31	INK BULK STORAGE ASSOCIATED WITH A FORMER PRINTING SHOP AT 1900 MERIVALE ROAD.
12	52	AUTOMOTIVE REPAIR SHOP LOCATED AT 16 ENTERPRISE AVENUE.
13	52	AUTOMOTIVE REPAIR SHOP LOCATED AT 1922 MERIVALE ROAD.
14	28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS ASSOCIATED WITH THE FORMER RETAIL FUEL OUTLET AT 1922 MERIVALE ROAD.
15	10	AUTOBODY REPAIR ASSOCIATED WITH FIVES INDUSTRIAL PAINTING AND AUTOBODY AT 18-I ENTERPRISE AVENUE.
16	39	INDUSTRIAL PAINTING ASSOCIATED WITH A FORMER PAINT SHOP AT 18-I ENTERPRISE AVENUE.
17	33	FORMER METAL TREATMENT COATING PLATING AND FINISHING AT 18A ENTERPRISE AVENUE.
18	31	INK BULK STORAGE ASSOCIATED WITH A FORMER PRINTING SHOP AT 17G ENTERPRISE DRIVE.
19	33/34	METAL TREATMENT, COATING, PLATING, FINISHING, AND FABRICATION ASSOCIATED WITH THE COMMERCIAL METALS MANUFACTURER LOCATED AT 17E ENTERPRISE AVENUE.
20	23	FIRE RETARDANT BULK STORAGE ASSOCIATED WITH THE FIRE EQUIPMENT STORE LOCATED AT 17D ENTERPRISE AVENUE.
21	31	INK BULK STORAGE ASSOCIATED WITH A FORMER NEWSPAPER PUBLISHER AT 9 CAMELOT DRIVE.
22	28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS ASSOCIATED WITH THE RETAIL FUEL OUTLET OPERATIONS AT 1891 MERIVALE ROAD.
23	52	COMMERCIAL AUTOMOTIVE REPAIR SHOP LOCATED AT 11 BENTLEY AVENUE.
24	10	AUTOBODY REPAIR SHOP LOCATED AT 10 BENTLEY AVENUE.
25	31	FORMER PRINTING SHOP AT 18 BENTLEY AVENUE.
26	52	COMMERCIAL AUTOMOTIVE REPAIR SHOP LOCATED AT 24D BENTLEY AVENUE.
27	10	AUTOBODY SHOP LOCATED AT 1899 MERIVALE ROAD
28	58	WASTE DISPOSAL AND WASTE MANAGEMENT ASSOCIATED WITH A FORMER SCRAP YARD AT 1963 MERIVALE ROAD

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NO.	REVISIONS	DATE	INITIAL

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PHASE I - ENVIRONMENTAL SITE ASSESSMENT
1925 MERIVALE ROAD
OTTAWA, ONTARIO

Title:

SURROUNDING LAND USE PLAN

Scale: 1:3000	Date: 05/2025
Drawn by: ZS	Report No.: PE6965-1
Checked by: MSWB	Dwg. No.: PE6965-2
Approved by: MSD	Revision No.:

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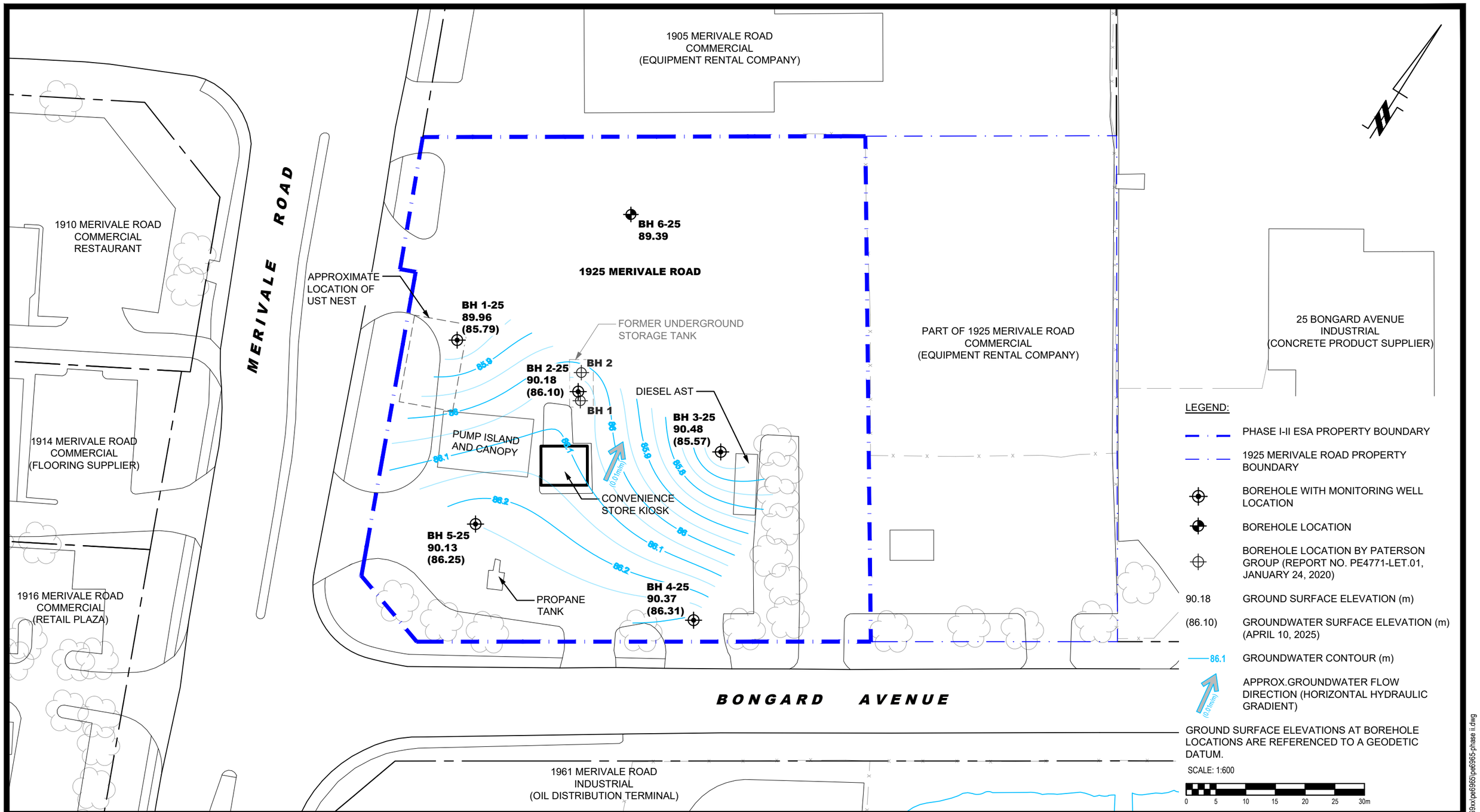

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NO.	REVISIONS	DATE	INITIAL

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PHASE II - ENVIRONMENTAL SITE ASSESSMENT
1925 MERIVALE ROAD
OTTAWA, ONTARIO

Title:

TEST HOLE LOCATION PLAN

Scale: 1:600	Date: 05/2025
Drawn by: ZS	Report No.: PE6965-2
Checked by: MSWB	Dwg. No.: PE6965-3
Approved by: MSD	Revision No.:

11x17

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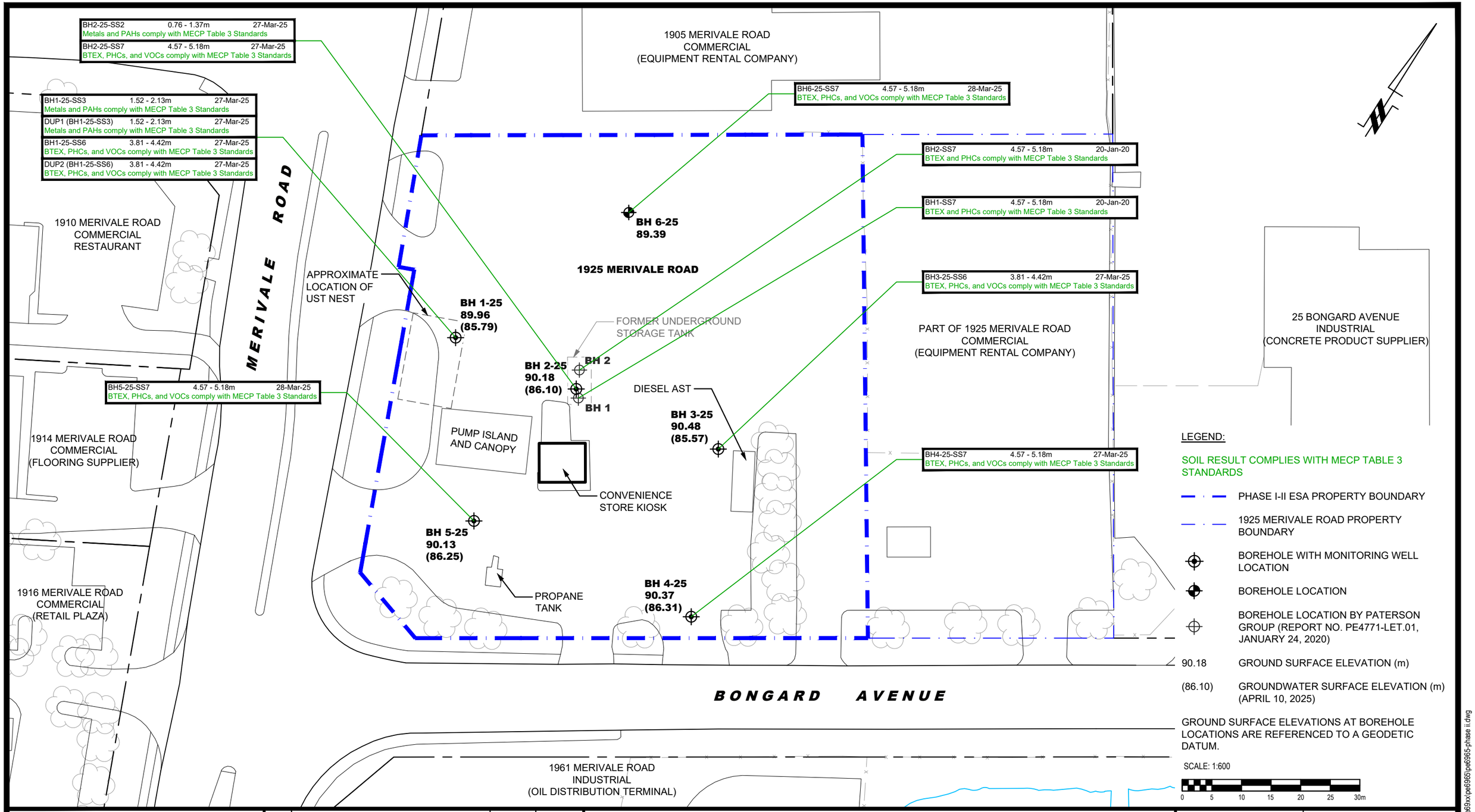

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PHASE II - ENVIRONMENTAL SITE ASSESSMENT
1925 MERIVALE ROAD

OTTAWA, ONTARIO

Title:

ANALYTICAL TESTING PLAN - SOIL

Scale: 1:600	Date: 05/2025
Drawn by: ZS	Report No.: PE6965-2
Checked by: MSWB	Dwg. No.: PE6965-4
Approved by: MSD	Revision No.:

11x17

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BH2-25-GW1	3.51 - 6.55m	10-Apr-25
Parameter	Results (µg/L)	Standard (µg/L)
Chloroform	3.8	2.4
BTEX, PHCs, and remaining VOCs comply with MECP Table 3 Standards		

BH1-25-GW1	3.05 - 6.10m	10-Apr-25
Parameter	Results (µg/L)	Standard (µg/L)
Chloroform	3.7	2.4
BTEX, PHCs, and remaining VOCs comply with MECP Table 3 Standards		

BH5-25-GW1	3.05 - 6.10m	10-Apr-25
Parameter	Results (µg/L)	Standard (µg/L)
Chloroform	5.3	2.4
BTEX, PHCs, and remaining VOCs comply with MECP Table 3 Standards		

DUP1 (BH5-25-GW1)	3.05 - 6.10m	10-Apr-25
Parameter	Results (µg/L)	Standard (µg/L)
Chloroform	5.2	2.4
BTEX, PHCs, and remaining VOCs comply with MECP Table 3 Standards		

BH3-25-GW1	3.81 - 6.86m	10-Apr-25
BTEX, PHCs, and VOCs comply with MECP Table 3 Standards		

BH4-25-GW1	3.81 - 6.86m	10-Apr-25
BTEX, PHCs, and VOCs comply with MECP Table 3 Standards		

1905 MERIVALE ROAD
COMMERCIAL
(EQUIPMENT RENTAL COMPANY)

1910 MERIVALE ROAD
COMMERCIAL
RESTAURANT

MERIVALE ROAD

BH 6-25
89.39

1925 MERIVALE ROAD

APPROXIMATE
LOCATION OF
UST NEST

BH 1-25
89.96
(85.79)

FORMER UNDERGROUND
STORAGE TANK

BH 2-25
90.18
(86.10)

BH 2

BH 1

PUMP ISLAND
AND CANOPY

DIESEL AST

BH 3-25
90.48
(85.57)

CONVENIENCE
STORE KIOSK

BH 5-25
90.13
(86.25)

PROPANE
TANK

BH 4-25
90.37
(86.31)

PART OF 1925 MERIVALE ROAD
COMMERCIAL
(EQUIPMENT RENTAL COMPANY)

25 BONGARD AVENUE
INDUSTRIAL
(CONCRETE PRODUCT SUPPLIER)

1916 MERIVALE ROAD
COMMERCIAL
(RETAIL PLAZA)

BONGARD AVENUE

1961 MERIVALE ROAD
INDUSTRIAL
(OIL DISTRIBUTION TERMINAL)

LEGEND:

GROUNDWATER RESULT COMPLIES WITH MECP TABLE 3 STANDARDS

GROUNDWATER RESULT EXCEEDS MECP TABLE 3 STANDARDS

PHASE I-II ESA PROPERTY BOUNDARY

1925 MERIVALE ROAD PROPERTY BOUNDARY

BOREHOLE WITH MONITORING WELL LOCATION

BOREHOLE LOCATION

BOREHOLE LOCATION BY PATERSON GROUP (REPORT NO. PE4771-LET.01, JANUARY 24, 2020)

90.18 GROUND SURFACE ELEVATION (m)

(86.10) GROUNDWATER SURFACE ELEVATION (m) (APRIL 10, 2025)

GROUND SURFACE ELEVATIONS AT BOREHOLE LOCATIONS ARE REFERENCED TO A GEODETIC DATUM.

SCALE: 1:600

0 5 10 15 20 25 30m

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PHASE II - ENVIRONMENTAL SITE ASSESSMENT
1925 MERIVALE ROAD

OTTAWA, ONTARIO

Title:

ANALYTICAL TESTING PLAN - GROUNDWATER

Scale: 1:600	Date: 05/2025
Drawn by: ZS	Report No.: PE6965-2
Checked by: MSWB	Dwg. No.: PE6965-5
Approved by: MSD	Revision No.:

11x17

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APPENDIX 1

SAMPLING AND ANALYSIS PLAN

SOIL PROFILE AND TEST DATA SHEETS

SYMBOLS AND TERMS

ANALYTICAL TEST RESULTS TABLES

LABORATORY CERTIFICATES OF ANALYSIS

PATERSON GROUP

Sampling and Analysis Plan

1925 Merivale Road, Ottawa

Prepared for: Peter Drummond and Son Ltd.

Report: PE6965-SAP
Date: March 25, 2025

TABLE OF CONTENTS

1.0 SAMPLING PROGRAM

Paterson Group Inc. (Paterson) was commissioned by Peter Drummond and Son Ltd., to conduct a Phase II – Environmental Site Assessment (Phase II-ESA) at 1925 Merivale Road, in the City of Ottawa, Ontario.

Based on the findings of the Phase I-ESA, the following subsurface investigation program was developed.

Borehole/Test Pit	Location & Rationale	Proposed Depth & Rationale
BH1-25	Place on the western edge of the Phase II Property to assess the potential soil and groundwater impacts resulting from the presence of underground fuel storage tanks.	6-8 m; Drill to intercept water table for monitoring well installation.
BH2-25	Place in the central portion of the Phase II Property to assess the potential soil and groundwater impacts resulting from the presence of underground fuel storage tanks.	6-8 m; Drill to intercept water table for monitoring well installation.
BH3-25	Place on the eastern side of the Phase II Property to assess the potential soil and groundwater impacts resulting from the presence of an aboveground fuel storage tank.	6-8 m; Drill to intercept water table for monitoring well installation.
BH4-25	Place in the southern portion of the Phase II Property to assess the potential soil and groundwater impacts resulting from the presence of fuel storage tanks on the property addressed 1961 Merivale Road.	6-8 m; Drill to intercept water table for monitoring well installation.
BH5-25	Place in the southeastern portion of the Phase II Property to assess the potential soil and groundwater impacts resulting from the presence of fuel storage tanks and pump islands on the property addressed 1961 Merivale Road and the presence of USTs on the Phase II Property.	6-8 m; Drill to intercept water table for monitoring well installation.
BH6-25	Place in the northern portion of the Phase II Property to assess the potential soil impacts resulting from the presence of a mechanical equipment maintenance garage located at 1905 Merivale Road.	To 6-8 m or practical auger refusal on inferred bedrock.

Borehole locations are shown on Drawing PE6965-3 – Test Hole Location Plan, appended to the main report.

At each borehole, split-spoon samples of the overburden soils will be obtained at 0.76 m (2’6”) intervals until practical refusal to augering or until the borehole has extended to a depth beyond the requirements of the geotechnical and environmental investigations. All soil samples will be retained, and samples will be selected for submission following a preliminary screening analysis. Following the borehole drilling, groundwater monitoring wells will be installed in boreholes (BH1-25, BH2-25, BH3-25, BH4-25 and BH5-25) for the collection of groundwater samples.

2.0 ANALYTICAL TESTING PROGRAM

The analytical testing program for soil at the subject site is based on the following general considerations:

- ❒ At least one sample from each borehole should be submitted, in order to delineate the horizontal extent of contamination across the site.

- ❒ At least one sample from each stratigraphic unit should be submitted, in order to delineate the vertical extent of contamination at the site.

- ❒ In boreholes where there is visual or olfactory evidence of contamination, or where organic vapour meter or photoionization detector readings indicate the presence of contamination, the 'worst-case' sample from each borehole should be submitted for comparison with MECP site condition standards.

- ❒ In boreholes with evidence of contamination as described above, a sample should be submitted from the stratigraphic unit below the 'worst-case' sample to determine whether the contaminant(s) have migrated downward.

- ❒ Parameters analyzed should be consistent with the Contaminants of Potential Concern identified in the Phase I ESA.

The analytical testing program for groundwater at the subject site is based on the following general considerations:

- ❒ Groundwater monitoring wells should be installed in all boreholes with visual or olfactory evidence of soil contamination, in stratigraphic units where soil contamination was encountered, where those stratigraphic units are at or below the water table (i.e. a water sample can be obtained).

- ❒ Groundwater monitoring well screens should straddle the water table at sites where the contaminants of concern are suspected to be LNAPLs.

- ❒ At least one groundwater monitoring well should be installed in a stratigraphic unit below the suspected contamination, where said stratigraphic unit is water-bearing.

- ❒ Parameters analyzed should be consistent with the Contaminants of Concern identified in the Phase I ESA and with the contaminants identified in the soil samples.

3.0 STANDARD OPERATING PROCEDURES

3.1 Environmental Drilling Procedure

Purpose

The purpose of environmental boreholes is to identify and/or delineate contamination within the soil and/or to install groundwater monitoring wells in order to identify contamination within the groundwater.

Equipment

The following is a list of equipment that is in addition to regular drilling equipment stated in the geotechnical drilling SOP:

- ❒ Glass soil sample jars
- ❒ two buckets
- ❒ cleaning brush
- ❒ dish detergent
- ❒ methyl hydrate
- ❒ water (if not available on site - water jugs available in trailer)
- ❒ latex or nitrile gloves (depending on suspected contaminant)
- ❒ RKI Eagle organic vapour meter or MiniRae photoionization detector (depending on contamination suspected)

Determining Borehole Locations

If conditions on site are not as suspected, and planned borehole locations cannot be drilled, **call the office to discuss**. Alternative borehole locations will be determined in conversation with the field technician and supervising engineer.

After drilling is completed a plan with the borehole locations must be provided. Distances and orientations of boreholes with respect to site features (buildings, roadways, etc.) must be provided. Distances should be measured using a measuring tape or wheel rather than paced off. Ground surface elevations at each borehole should be surveyed relative to a geodetic benchmark, if one is available, or a temporary site benchmark which can be tied in at a later date if necessary.

Drilling Procedure

The actual drilling procedure for environmental boreholes is the same as geotechnical boreholes (see SOP for drilling and sampling) with a few exceptions as follows:

- ❒ Continuous split spoon samples (every 0.6 m or 2') or semi-continuous (every 0.76 m or 2'6") are required.
- ❒ Make sure samples are well sealed in plastic bags with no holes prior to screening and are kept cool but unfrozen.
- ❒ If sampling for VOCs, BTEX, or PHCs F_1, a soil core from each soil sample, which may be analyzed, must be taken and placed in the laboratory-provided methanol vial.
- ❒ Note all and any odours or discolouration of samples.
- ❒ Split spoon samplers must be washed between samples.
- ❒ If obvious contamination is encountered, continue sampling until vertical extent of contamination is delineated.
- ❒ As a general rule, environmental boreholes should be deep enough to intercept the groundwater table (unless this is impossible/impractical - call project manager to discuss).
- ❒ If at all possible, soil samples should be submitted to a preliminary screening procedure on site, either using a RKI Eagle, PID, etc. depending on type of suspected contamination.

Spoon Washing Procedure

All sampling equipment (spilt spoons, etc.) must be washed between samples in order to prevent cross contamination of soil samples.

- ❒ Obtain two buckets of water (preferably hot if available)
- ❒ Add a small amount of dish soap to one bucket
- ❒ Scrub spoons with brush in soapy water, inside and out, including tip
- ❒ Rinse in clean water
- ❒ Apply a small amount of methyl hydrate to the inside of the spoon. (A spray bottle or water bottle with a small hole in the cap works well)
- ❒ Allow to dry (takes seconds)
- ❒ Rinse with distilled water, a spray bottle works well.

The methyl hydrate eliminates any soap residue that may be on the spoon and is especially important when dealing with suspected VOCs.

Screening Procedure

The RKI Eagle is used to screen most soil samples, particularly where petroleum hydrocarbon contamination is suspected. The MiniRae is used when VOCs are suspected, however it also can be useful for detecting petroleum. These tools are for screening purposes only and cannot be used in place of laboratory testing. Vapour results obtained from the RKI Eagle and the PID are relative and must be interpreted.

Screening equipment should be calibrated on an approximately monthly basis, more frequently if heavily used.

- ❒ Samples should be brought to room temperature; this is specifically important in colder weather. Soil must not be frozen.
- ❒ Turn instrument on and allow to come to zero - calibrate if necessary
- ❒ If using RKI Eagle, ensure instrument is in methane elimination mode unless otherwise directed.
- ❒ Ensure measurement units are ppm (parts per million) initially. RKI Eagle will automatically switch to %LEL (lower explosive limit) if higher concentrations are encountered.
- ❒ Break up large lumps of soil in the sample bag, taking care not to puncture bag.
- ❒ Insert probe into soil bag, creating a seal with your hand around the opening.
- ❒ Gently manipulate soil in bag while observing instrument readings.
- ❒ Record the highest value obtained in the first 15 to 25 seconds
- ❒ Make sure to indicate scale (ppm or LEL); also note which instrument was used (RKI Eagle 1 or 2, or MiniRae).
- ❒ Jar samples and refrigerate as per Sampling and Analysis Plan.

3.2 Monitoring Well Installation Procedure

Equipment

- ❒ 5’ x 2” threaded sections of Schedule 40 PVC slotted well screen (5’ x 1 ¼” if installing in cored hole in bedrock)
- ❒ 5’ x 2” threaded sections of Schedule 40 PVC riser pipe (5’ x 1 ¼” if installing in cored hole in bedrock)
- ❒ Threaded end-cap
- ❒ Slip-cap or J-plug
- ❒ Asphalt cold patch or concrete
- ❒ Silica Sand
- ❒ Bentonite chips (Holeplug)
- ❒ Steel flushmount casing

Procedure

- ❒ Drill borehole to required depth, using drilling and sampling procedures described above.
- ❒ If borehole is deeper than required monitoring well, backfill with bentonite chips to required depth. This should only be done on wells where contamination is not suspected, in order to prevent downward migration of contamination.
- ❒ Only one monitoring well should be installed per borehole.
- ❒ Monitoring wells should not be screened across more than one stratigraphic unit to prevent potential migration of contaminants between units.
- ❒ Where LNAPLs are the suspected contaminants of concern, monitoring wells should be screened straddling the water table in order to capture any free product floating on top of the water table.
- ❒ Thread the end cap onto a section of screen. Thread second section of screen if required. Thread risers onto screen. Lower into borehole to required depth. Ensure slip-cap or J-plug is inserted to prevent backfill materials entering well.
- ❒ As drillers remove augers, backfill borehole annulus with silica sand until the level of sand is approximately 0.3 m above the top of the screen.
- ❒ Backfill with holeplug until at least 0.3 m of holeplug is present above the top of the silica sand.
- ❒ Backfill remainder of borehole with holeplug or with auger cuttings (if contamination is not suspected).
- ❒ Install flushmount casing. Seal space between flushmount and borehole annulus with concrete, cold patch, or holeplug to match surrounding ground surface.

3.3 Monitoring Well Sampling Procedure

Equipment

- ❒ Water level metre or interface probe on hydrocarbon/LNAPL sites
- ❒ Spray bottles containing water and methanol to clean water level tape or interface probe
- ❒ Peristaltic pump
- ❒ Polyethylene tubing for peristaltic pump
- ❒ Flexible tubing for peristaltic pump
- ❒ Latex or nitrile gloves (depending on suspected contaminant)
- ❒ Allen keys and/or 9/16” socket wrench to remove well caps
- ❒ Graduated bucket with volume measurements
- ❒ pH/Temperature/Conductivity combo pen
- ❒ Laboratory-supplied sample bottles

Sampling Procedure

- ❒ Locate well and use socket wrench or Allan key to open metal flush mount protector cap. Remove plastic well cap.
- ❒ Measure water level, with respect to existing ground surface, using water level meter or interface probe. If using interface probe on suspected NAPL site, measure the thickness of free product.
- ❒ Measure total depth of well.
- ❒ Clean water level tape or interface probe using methanol and water. Change gloves between wells.
- ❒ Calculate volume of standing water within well and record.
- ❒ Insert polyethylene tubing into well and attach to peristaltic pump. Turn on peristaltic pump and purge into graduated bucket. Purge at least three well volumes of water from the well. Measure and record field chemistry. Continue to purge, measuring field chemistry after every well volume purged, until appearance or field chemistry stabilizes.
- ❒ Note appearance of purge water, including colour, opacity (clear, cloudy, silty), sheen, presence of LNAPL, and odour. Note any other unusual features (particulate matter, effervescence (bubbling) of dissolved gas, etc.).
- ❒ Fill required sample bottles. If sampling for metals, attach 75-micron filter to discharge tube and filter metals sample. If sampling for VOCs, use low flow rate to ensure continuous stream of non-turbulent flow into sample bottles. Ensure no headspace is present in VOC vials.
- ❒ Replace well cap and flushmount casing cap.

4.0 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

The QA/QC program for this Phase II-ESA is as follows:

- ❒ All non-dedicated sampling equipment (split spoons) will be decontaminated according to the SOPs listed above.

- ❒ All groundwater sampling equipment is dedicated (polyethylene and flexible peristaltic tubing is replaced for each well).

- ❒ Where groundwater samples are to be analyzed for VOCs, one laboratory-provided trip blank will be submitted for analysis with every laboratory submission.

- ❒ Approximately one (1) field duplicate will be submitted for every ten (10) samples submitted for laboratory analysis. A minimum of one (1) field duplicate per project will be submitted. Field duplicates will be submitted for soil and groundwater samples.

- ❒ Where combo pens are used to measure field chemistry, they will be calibrated on an approximately monthly basis, according to frequency of use.

5.0 DATA QUALITY OBJECTIVES

The purpose of setting data quality objectives (DQOs) is to ensure that the level of uncertainty in data collected during the Phase II ESA is low enough that decision-making is not affected, and that the overall objectives of the investigation are met.

The quality of data is assessed by comparing field duplicates with original samples. If the relative percent difference (RPD) between the duplicate and the sample is within 20%, the data are considered to be of sufficient quality so as not to affect decision-making. The RPD is calculated as follows:

$$RPD = \left| \frac{x_1 - x_2}{(x_1 + x_2)/2} \right| \times 100\%$$

Where x_1 is the concentration of a given parameter in an original sample and x_2 is the concentration of that same parameter in the field duplicate sample.

For the purpose of calculating the RPD, it is desirable to select field duplicates from samples for which parameters are present in concentrations above laboratory detection limits, i.e. samples which are expected to be contaminated. If parameters are below laboratory detection limits for selected samples or duplicates, the RPD may be calculated using a concentration equal to one half the laboratory detection limit.

It is also important to consider data quality in the overall context of the project. For example, if the DQOs are not met for a given sample, yet the concentrations of contaminants in both the sample and the duplicate exceed the MOE site remediation standards by a large margin, the decision-making usefulness of the sample may not be considered to be impaired. The proximity of other samples which meet the DQOs must also be considered in developing the Phase II Conceptual Site Model; often there are enough data available to produce a reliable Phase II Conceptual Site Model even if DQOs are not met for certain individual samples.

These considerations are discussed in the body of the report.

6.0 PHYSICAL IMPEDIMENTS TO SAMPLING & ANALYSIS PLAN

Physical impediments to the Sampling and Analysis plan may include:

- ❒ The location of underground utilities
- ❒ Poor recovery of split-spoon soil samples
- ❒ Insufficient groundwater volume for groundwater samples
- ❒ Breakage of sampling containers following sampling or while in transit to the laboratory
- ❒ Elevated detection limits due to matrix interference (generally related to soil colour or presence of organic material)
- ❒ Elevated detection limits due to high concentrations of certain parameters, necessitating dilution of samples in laboratory
- ❒ Drill rig breakdowns
- ❒ Winter conditions
- ❒ Other site-specific impediments

Site-specific impediments to the Sampling and Analysis plan are discussed in the body of the Phase II-ESA report.

SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

1925 Merivale Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 365873.20 **NORTHING:** 5021384.00 **ELEVATION:** 89.96

PROJECT: Proposed Commercial Development

ADVANCED BY: Truck Mounted Drill Rig

REMARKS:

DATE: March 27, 2025

FILE NO. : PE6965

HOLE NO. : BH 1-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) / PID (ppm) / PID (% LEL)	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
ASPHALT 0.08m [89.88m]									
FILL: Gravel and crushed stone, with silty sand 0.33m [89.63m]									
FILL: Brown silty sand, some gravel and crushed stone - Trace clay and brick by 0.7 m depth 1.83m [88.13m]		1	AU 1						
			SS 2	71	7-8-8-7 16		▲0.6		89
FILL: Brown silty sand, some clay, occasional gravel 3.51m [86.45m]		2	SS 3	83	5-7-8-6 15		▲0.6		88
			SS 4	67	2-3-2-3 5		▲0.6		
		3	SS 5	62	3-2-3-4 5		▲0.8		87
Loose, brown **SAND**, some silt 4.11m [85.85m]								3.05m	
		4	SS 6	71	5-6-4-3 10		▲2.4 ▲4.0	4.17 m 2025-04-10	86
Compact, grey **SILT**, with sand 6.71m [83.25m]		5	SS 7	67	8-8-8-9 16		▲0.8		85
			SS 8	67	7-10-9-9 19		▲0.6		
		6	SS 9	67	9-8-10-9 18		▲0.6	6.10m	84
End of Borehole (GWL at 4.17 m depth - April 10, 2025)		7							83
		8							82

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

1925 Merivale Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 365895.07 **NORTHING:** 5021387.50 **ELEVATION:** 90.18

PROJECT: Proposed Commercial Development

ADVANCED BY: Truck Mounted Drill Rig

REMARKS:

DATE: March 27, 2025

FILE NO. : PE6965

HOLE NO. : BH 2-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) / PID (ppm) / PID (% LEL)	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE							50 100 150 200 / 20 40 60 80		
ASPHALT 0.10m [90.08m]			AU 1				1.2		90
FILL: Gravel, with crushed stone and silty sand 0.28m [89.90m]									
FILL: Brown silty sand, some gravel and crushed stone		1	SS 2	62	12-12-10-7 22		0.6		89
		2	SS 3	54	5-4-5-5 9		0.6		88
			SS 4	37	6-5-6-5 11		0.7		
3.20m [86.98m]		3					1.1		87
FILL: Brown silty sand			SS 5	79	4-2-2-2 4		0.7	3.51m	
4.37m [85.81m]		4	SS 6	67	2-2-2-6 4		0.8	4.08 m 2025-04-10	86
Compact to dense, grey **SILT**, with sand							0.6		
		5	SS 7	62	4-14-15-14 29		1.2		
			SS 8	62	5-9-15-6 24		0.9		85
		6					0.7		
			SS 9	71	7-14-17-19 31		0.8	6.55m	84
		7	SS 10	71	5-9-17-15 26		0.6		83
7.47m [82.71m]									
End of Borehole (GWL at 4.08 m depth - April 10, 2025)		8							

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

1925 Merivale Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 365920.79 **NORTHING:** 5021391.69 **ELEVATION:** 90.48

PROJECT: Proposed Commercial Development

ADVANCED BY: Truck Mounted Drill Rig

REMARKS:

DATE: March 27, 2025

FILE NO. : PE6965

HOLE NO. : BH 3-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) / PID (ppm) / PID (% LEL)	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
ASPHALT 0.10m [90.39m]									
FILL: Gravel, with crushed stone and silty sand 0.61m [89.88m]									
FILL: Dark brown silty clay, trace topsoil, organics and sand 1.83m [88.66m]		1	AU 1				1.8		90
			SS 2	42	6-3-4-5 7		10.7		
		2	SS 3	19	7-6-10-10 16		1.1		89
Very stiff to hard, brown to dark brown **SILTY CLAY** 2.29m [88.19m]			SS 4	100	P		1.2		88
Compact, brown **SILT**, trace sand and clay 3.20m [87.28m]		3	SS 5	105	3-9-12-12 21		0.9		87
Compact to dense, brown **SILT**, with sand, trace clay		4	SS 6	71	5-12-12-17 24		1.0	3.81m	86
		5	SS 7	67	7-15-17-18 32		1.1	4.91 m 2025-04-10	
			SS 8	62	7-11-11-13 22		1.0		85
		6	SS 9	67	8-13-13-25 26		1.5		84
- Grey by 6.8 m depth		7	SS 10	67	11-17-19-13 36		0.8	6.86m	83
7.47m [83.02m]									
End of Borehole (GWL at 4.91 m depth - April 10, 2025)		8							

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

1925 Merivale Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 365932.02 **NORTHING:** 5021365.26 **ELEVATION:** 90.37

PROJECT: Proposed Commercial Development

ADVANCED BY: Truck Mounted Drill Rig

REMARKS:

DATE: March 27, 2025

FILE NO. : PE6965

HOLE NO. : BH 4-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) / PID (ppm) / PID (% LEL)	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
ASPHALT 0.10m [90.27m]									
FILL: Gravel, with crushed stone and silty sand 0.66m [89.71m]			AU 1				0.6		90
FILL: Dark brown silty clay, trace organics and topsoil 1.45m [88.92m]		1	SS 2	67	5-4-7-7 11		1.4		89
Very stiff to hard, brown to grey **SILTY CLAY**, trace sand, occasional organics 2.21m [88.16m]		2	SS 3	100	5-5-6-9 11		0.6		
Stiff, grey **CLAY**, with silt, trace sand 2.97m [87.40m]			SS 4	100	3-2-2-2 4		0.6		88
Very dense, light brown **SILTY SAND** 4.50m [85.87m]		3	SS 5	87	10-21-27-27 48		0.7		87
Dense to compact, brown **SILT**, with sand 7.47m [82.90m]		4	SS 6	87	9-21-23-12 44		0.7	3.81m 4.06 m 2025-04-10	86
		5	SS 7	67	10-19-24-19 43		0.8		85
		6	SS 8	71	9-11-13-15 24		0.8		
			SS 9	67	11-13-15-18 28		0.7		84
		7	SS 10	67	4-9-9-9 18		0.7	6.86m	83
End of Borehole (GWL at 4.06 m depth - April 10, 2025)		8							

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

1925 Merivale Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 365892.31 **NORTHING:** 5021359.42 **ELEVATION:** 90.13

PROJECT: Proposed Commercial Development

ADVANCED BY: Truck Mounted Drill Rig

REMARKS:

DATE: March 28, 2025

FILE NO. : PE6965

HOLE NO. : BH 5-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) / PID (ppm) / PID (% LEL)	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
ASPHALT 0.10m [90.03m]									
FILL: Gravel, with crushed stone and silty sand 0.33m [89.80m]									
FILL: Brown silty sand, with gravel and crushed stone 0.91m [89.22m]									
Compact, brown **SAND**, with clay, some silt 1.45m [88.68m]		1	AU 1				25		90
			SS 2	79	2-5-6-7 11		30		
Compact, brown **SILT**, with sand 2.21m [87.92m]		2	SS 3	67	7-8-12-13 20		25		89
							30		
Compact, brown **SAND**, with silt 3.73m [86.40m]		3	SS 4	71	4-7-7-8 14		60		88
			SS 5	71	2-7-6-7 13		55	3.05m	87
Compact to dense, brown **SILT**, with sand, trace clay 6.48m [83.65m]		4	SS 6	67	9-11-10-16 21		65	3.88 m 2025-04-10	86
		5	SS 7	71	8-18-21-21 39		130		85
		6	SS 8	71	10-12-15-17 27		80	6.10m	84
			SS 9	71	12-13-15-16 28		85		
Compact, grey **SILT**, with sand 6.71m [83.42m]		7					55		83
End of Borehole									
(GWL at 3.88 m depth - April 10, 2025)		8							

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

1925 Merivale Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 365886.70 **NORTHING:** 5021417.49 **ELEVATION:** 89.39

PROJECT: Proposed Commercial Development

ADVANCED BY: Truck Mounted Drill Rig

REMARKS:

DATE: March 28, 2025

FILE NO. : PE6965

HOLE NO. : BH 6-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) / PID (ppm) / PID (% LEL)	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
ASPHALT 0.10m [89.29m]									
FILL: Gravel, with crushed stone and silty sand 0.56m [88.83m]									
Stiff, brown **SILTY CLAY** 1.45m [87.94m]		1	AU 1				40		89
			SS 2	33	5-4-5-4 9		50		
Dense to compact, brown **SAND**, with silt 2.21m [87.18m]		2	SS 3	75	6-13-24-28 37		60		88
Dense, brown **SILTY SAND** 3.73m [85.66m]		3	SS 4	79	9-22-24-24 46		80		87
			SS 5	100	15-19-24-22 43		75		86
Compact to dense, brown **SILT**, with sand 6.71m [82.68m]		4	SS 6	67	5-9-11-11 20		90		85
		5	SS 7	67	8-18-17-23 35		100		84
		6	SS 8	75	6-15-15-17 30		80		
			SS 9	58	3-12-14-15 26		60		83
End of Borehole		7							82
		8							

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SYMBOLS AND TERMS

SOIL DESCRIPTION

Behavioural properties, such as structure and strength, take precedence over particle gradation in describing soils. Terminology describing soil structure are as follows:

Desiccated	-	having visible signs of weathering by oxidation of clay minerals, shrinkage cracks, etc.
Fissured	-	having cracks, and hence a blocky structure.
Varved	-	composed of regular alternating layers of silt and clay.
Stratified	-	composed of alternating layers of different soil types, e.g. silt and sand or silt and clay.
Well-Graded	-	Having wide range in grain sizes and substantial amounts of all intermediate particle sizes (see Grain Size Distribution).
Uniformly-Graded	-	Predominantly of one grain size (see Grain Size Distribution).

The standard terminology to describe the relative strength of cohesionless soils is the compactness condition, usually inferred from the results of the Standard Penetration Test (SPT) 'N' value. The SPT N value is the number of blows of a 63.5 kg hammer, falling 760 mm, required to drive a 51 mm O.D. split spoon sampler 300 mm into the soil after an initial penetration of 150 mm. An SPT N value of "P" denotes that the split-spoon sampler was pushed 300 mm into the soil without the use of a falling hammer.

Compactness Condition	'N' Value	Relative Density %
Very Loose	<4	<15
Loose	4-10	15-35
Compact	10-30	35-65
Dense	30-50	65-85
Very Dense	>50	>85

The standard terminology to describe the strength of cohesive soils is the consistency, which is based on the undisturbed undrained shear strength as measured by the in situ or laboratory shear vane tests, unconfined compression tests, or occasionally by the Standard Penetration Test (SPT). Note that the typical correlations of undrained shear strength to SPT N value (tabulated below) tend to underestimate the consistency for sensitive silty clays, so Paterson reviews the applicable split spoon samples in the laboratory to provide a more representative consistency value based on tactile examination.

Consistency	Undrained Shear Strength (kPa)	'N' Value
Very Soft	<12	<2
Soft	12-25	2-4
Firm	25-50	4-8
Stiff	50-100	8-15
Very Stiff	100-200	15-30
Hard	>200	>30

SYMBOLS AND TERMS (continued)

SOIL DESCRIPTION (continued)

Cohesive soils can also be classified according to their "sensitivity". The sensitivity, S_t, is the ratio between the undisturbed undrained shear strength and the remoulded undrained shear strength of the soil. The classes of sensitivity may be defined as follows:

Low Sensitivity:	$S_t < 2$
Medium Sensitivity:	$2 < S_t < 4$
Sensitive:	$4 < S_t < 8$
Extra Sensitive:	$8 < S_t < 16$
Quick Clay:	$S_t > 16$

ROCK DESCRIPTION

The structural description of the bedrock mass is based on the Rock Quality Designation (RQD).

The RQD classification is based on a modified core recovery percentage in which all pieces of sound core over 100 mm long are counted as recovery. The smaller pieces are considered to be a result of closely-spaced discontinuities (resulting from shearing, jointing, faulting, or weathering) in the rock mass and are not counted. RQD is ideally determined from NQ or larger size core. However, it can be used on smaller core sizes, such as BQ, if the bulk of the fractures caused by drilling stresses (called "mechanical breaks") are easily distinguishable from the normal in situ fractures.

RQD %	**ROCK QUALITY**
90-100	Excellent, intact, very sound
75-90	Good, massive, moderately jointed or sound
50-75	Fair, blocky and seamy, fractured
25-50	Poor, shattered and very seamy or blocky, severely fractured
0-25	Very poor, crushed, very severely fractured

SAMPLE TYPES

SS	-	Split spoon sample (obtained in conjunction with the performing of the Standard Penetration Test (SPT))
TW	-	Thin wall tube or Shelby tube, generally recovered using a piston sampler
G	-	"Grab" sample from test pit or surface materials
AU	-	Auger sample or bulk sample
WS	-	Wash sample
RC	-	Rock core sample (Core bit size BQ, NQ, HQ, etc.). Rock core samples are obtained with the use of standard diamond drilling bits.

SYMBOLS AND TERMS (continued)

PLASTICITY LIMITS AND GRAIN SIZE DISTRIBUTION

WC%	-	Natural water content or water content of sample, %
LL	-	Liquid Limit, % (water content above which soil behaves as a liquid)
PL	-	Plastic Limit, % (water content above which soil behaves plastically)
PI	-	Plasticity Index, % (difference between LL and PL)
Dxx	-	Grain size at which xx% of the soil, by weight, is of finer grain sizes These grain size descriptions are not used below 0.075 mm grain size
D10	-	Grain size at which 10% of the soil is finer (effective grain size)
D60	-	Grain size at which 60% of the soil is finer
Cc	-	Concavity coefficient = $(D30)^2$ / (D10 x D60)
Cu	-	Uniformity coefficient = D60 / D10

Cc and Cu are used to assess the grading of sands and gravels:
Well-graded gravels have: $1 < Cc < 3$ and $Cu > 4$
Well-graded sands have: $1 < Cc < 3$ and $Cu > 6$
Sands and gravels not meeting the above requirements are poorly-graded or uniformly-graded.
Cc and Cu are not applicable for the description of soils with more than 10% silt and clay
(more than 10% finer than 0.075 mm or the #200 sieve)

CONSOLIDATION TEST

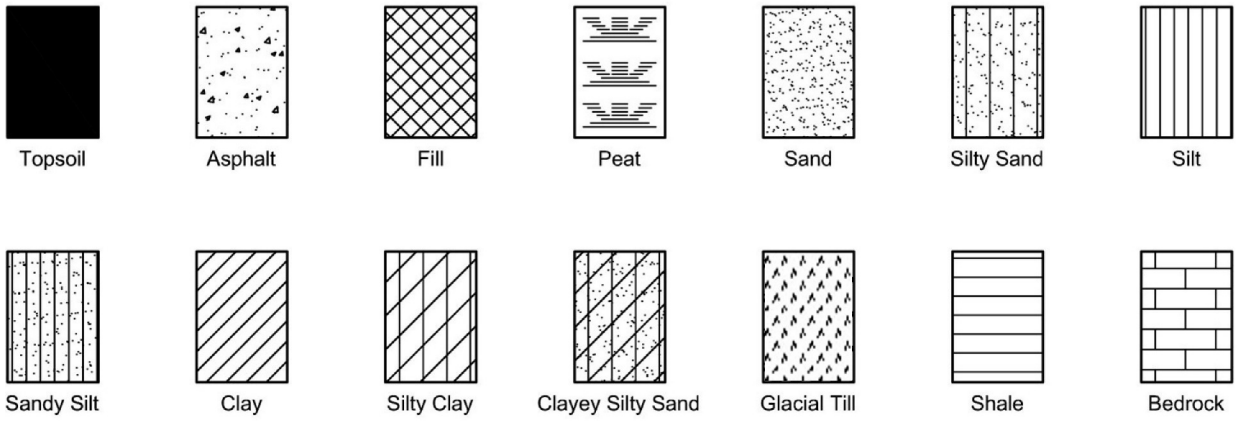
p'_o	-	Present effective overburden pressure at sample depth
p'_c	-	Preconsolidation pressure of (maximum past pressure on) sample
Ccr	-	Recompression index (in effect at pressures below p'_c)
Cc	-	Compression index (in effect at pressures above p'_c)
OC Ratio		Overconsolidaton ratio = p'_c / p'_o
Void Ratio		Initial sample void ratio = volume of voids / volume of solids
Wo	-	Initial water content (at start of consolidation test)

PERMEABILITY TEST

k	-	Coefficient of permeability or hydraulic conductivity is a measure of the ability of water to flow through the sample. The value of k is measured at a specified unit weight for (remoulded) cohesionless soil samples, because its value will vary with the unit weight or density of the sample during the test.

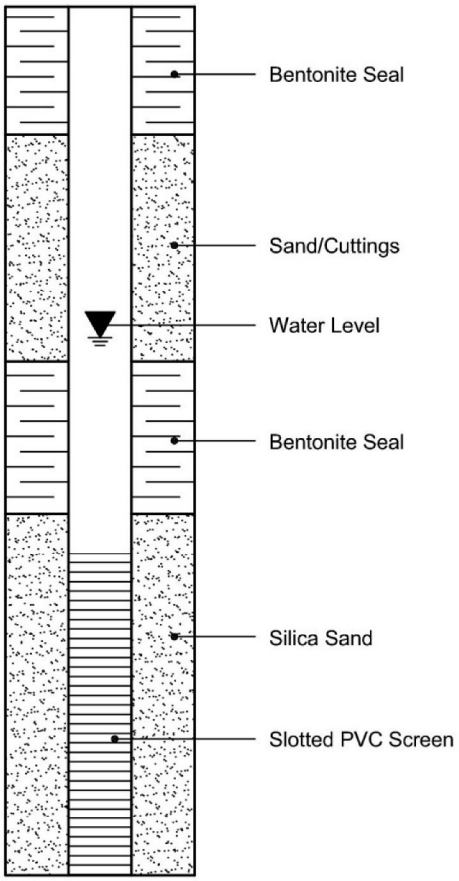
SYMBOLS AND TERMS (continued)

STRATA PLOT



MONITORING WELL AND PIEZOMETER CONSTRUCTION

MONITORING WELL CONSTRUCTION



PIEZOMETER CONSTRUCTION

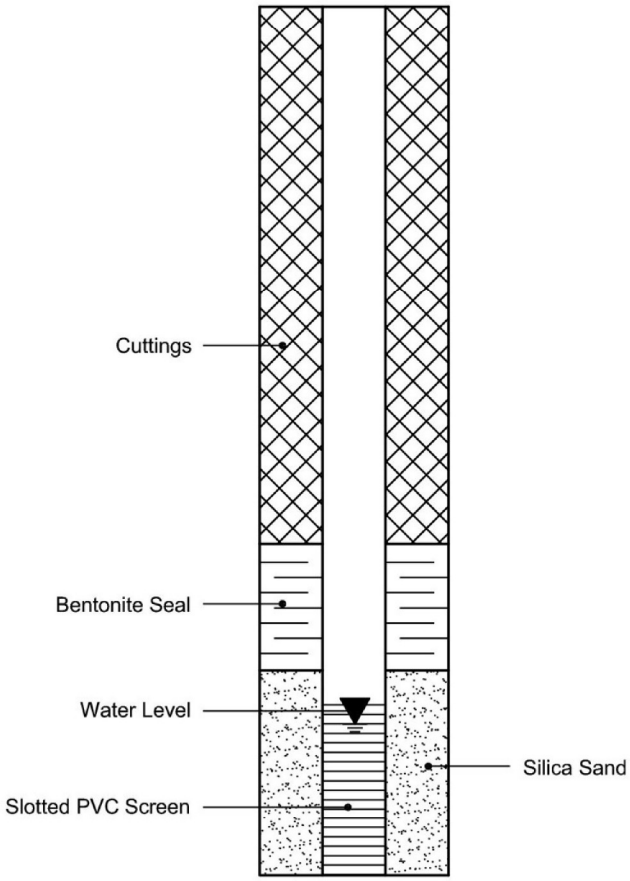


Table 1: Test Hole Summary Details

Test Hole ID	Date of Construction	Well Diameter (mm)	Ground Surface Elevation (masl)	Test Hole Depth (m)	Test Hole Bottom Elevation (masl)	Well Screen Length (m)	Well Screen Interval (mbgs)	Well Screen Interval (masl)	Geologic Media Intercepted by Well Screen
BH1-25	27-Mar-2025	50	89.96	6.71	83.25	3.05	3.66 - 6.71	86.3 - 83.25	Fill, Sand, Silt
BH2-25	27-Mar-2025	50	90.18	7.47	82.71	3.05	4.42 - 7.47	85.76 - 82.71	Fill, Silt
BH3-25	27-Mar-2025	50	90.48	7.47	83.01	3.05	4.42 - 7.47	86.06 - 83.01	Silt
BH4-25	27-Mar-2025	50	90.37	7.47	82.9	3.05	4.42 - 7.47	85.95 - 82.9	Silt Sand, Silt
BH5-25	27-Mar-2025	50	90.13	6.71	83.42	3.05	3.66 - 6.71	86.47 - 83.42	Sand, Silt
BH6-25	27-Mar-2025	N/A	89.39	6.71	82.68	N/A	N/A	N/A	N/A

Table 2: Stabilized Water Quality Parameters

Test Hole ID	Temperature (˚C)	Conductivity (µS)	pH	Date of Measurement
BH1-25	8.2	1069	6.85	10-Apr-2025
BH2-25	9.4	1092	6.43	10-Apr-2025
BH3-25	10.2	7800	6.35	10-Apr-2025
BH4-25	11.0	1153	6.90	10-Apr-2025
BH5-25	10.4	6580	7.27	10-Apr-2025

Table 3: Soil Testing Summary

Sample ID and Laboratory ID	Sample Depth (mbgs)	Sampling Date	Rationale	PID Vapour Reading (ppm)	Parameter Groups Analyzed									
					PHCs	BTEX	VOCs	PAHs	PCBs	Metals	Hg	pH	EC	SAR
BH1-25-SS3 2514079-01	1.52 - 2.13	27-Mar-2025	To assess soil in the vacinity of the UST nest (APEC 1)	0.6				✓		✓				
BH1-25-SS6 2514079-02	3.81 - 4.42	27-Mar-2025	To assess soil in the vacinity of the UST nest (APEC 1)	2.4 / 4.0	✓	✓	✓							
BH2-25-SS2 2514079-03	0.76 - 1.37	27-Mar-2025	To assess soil in the vacinity of the UST nest (APEC 1)	0.6				✓		✓		✓		
BH2-25-SS7 2514079-04	4.57 - 5.18	27-Mar-2025	To assess soil in the vacinity of the UST nest (APEC 1)	1.2 / 0.9	✓	✓	✓					✓		
BH3-25-SS6 2514079-05	3.81 - 4.42	27-Mar-2025	To assess soil in the vacinity of the deisel AST (APEC 2)	1	✓	✓	✓							
BH4-25-SS7 2514079-06	4.57 - 5.18	27-Mar-2025	To assess soil in the vacinity of the fuel transfer terminal at 1961 Merivale Road (APEC 5)	0.8	✓	✓	✓							
BH5-25-SS7 2514079-07	4.57 - 5.18	27-Mar-2025	To assess soil in the vacinity of the fuel transfer terminal at 1961 Merivale Road (APEC 5)	130	✓	✓	✓							
BH6-25-SS7 2514079-08	4.57 - 5.18	27-Mar-2025	To assess soil in the vicinity of the mechanical equipment maintenance garage at 1905 Merivale Road (APEC 4)	100	✓	✓	✓							
DUP1 (BH1-25 SS3) 2514079-09	1.52 - 2.13	27-Mar-2025	To assess for QA / QC purposes	0.6				✓		✓				
DUP2 (BH1-25 SS6) 2514079-10	3.81 - 4.42	27-Mar-2025	To assess for QA / QC purposes	2.4-4.0	✓	✓	✓							

Table 4: Groundwater Testing Summary

Sample ID and Laboratory ID	Sample Depth (mbgs)	Sampling Date	Rationale	Parameter Groups Analyzed							
				PHCs	BTEX	VOCs	PAHs	PCBs	Metals	Hg	Cr^{VI}
BH1-25-GW1 2515599-01	3.05 - 6.10	10-Apr-2025	To assess groundwater in the location of the existing UST nest (APEC 1)	✓	✓	✓					
BH2-25-GW1 2515599-02	3.51 - 6.55	10-Apr-2025	To assess groundwater beneath the existing diesel AST location (APEC 1)	✓	✓	✓					
BH3-25-GW1 2515599-03	3.81 - 6.86	10-Apr-2025	To assess groundwater beneath the existing diesel AST location (APEC 2)	✓	✓	✓					
BH4-25-GW1 2515599-04	3.81 - 6.86	10-Apr-2025	To assess potential groundwater impacts as a result of the fuel distribution at 1961 Merivale Road (APEC 5)	✓	✓	✓					
BH5-25-GW1 2515599-05	3.05 - 6.10	10-Apr-2025	To assess potential groundwater impacts as a result of the fuel distribution at 1961 Merivale Road (APEC 5)	✓	✓	✓					
DUP1 (BH5-25-GW1) 2515599-06	3.05 - 6.10	10-Apr-2025	QA / QC purposes	✓	✓	✓					

Table 5: Groundwater Levels

Test Hole ID	Ground Surface Elevation (masl)	Water Level Depth (mbgs)	Water Level Elevation (masl)	Date of Measurement
BH1-25	89.96	4.17	85.79	10-Apr-2025
BH2-25	90.18	4.08	86.10	10-Apr-2025
BH3-25	90.48	4.91	85.57	10-Apr-2025
BH4-25	90.37	4.06	86.31	10-Apr-2025
BH5-25	90.13	3.88	86.25	10-Apr-2025

Table 6: Soil Analytical Test Results

Parameter	Units	Regulation	BH1-25-SS3 2514079-01	BH1-25-SS6 2514079-02	BH2-25-SS2 2514079-03	BH2-25-SS7 2514079-04	BH3-25-SS6 2514079-05	BH4-25-SS7 2514079-06	BH5-25-SS7 2514079-07	BH6-25-SS7 2514079-08	DUP1 2514079-09	DUP2 2514079-10
Sample Depth (m)		**Reg 153/04 - Table 1 Agricultural**	**1.52 - 2.13**	**3.81 - 4.42**	**0.76 - 1.37**	**4.57 - 5.18**	**3.81 - 4.42**	**4.57 - 5.18**	**4.57 - 5.18**	**4.57 - 5.18**	**1.52 - 2.13**	**3.81 - 4.42**
Sample Date			**27-Mar-2025**	**27-Mar-2025**	**27-Mar-2025**	**27-Mar-2025**	**27-Mar-2025**	**27-Mar-2025**	**28-Mar-2025**	**28-Mar-2025**	**27-Mar-2025**	**27-Mar-2025**
Physical Characteristics												
% Solids	% by Wt.		89	80.6	95.2	88.2	81.9	81.8	83.3	81.8	90.7	81.6
General Inorganics												
pH	N/A	5-9 (surf); 5-11 (subsurf)	N/A	N/A	7.86	7.89	N/A	N/A	N/A	N/A	N/A	N/A
Metals												
Antimony	ug/g dry	1.0	ND (1.0)	N/A	ND (1.0)	N/A	N/A	N/A	N/A	N/A	ND (1.0)	N/A
Arsenic	ug/g dry	11	1.5	N/A	2	N/A	N/A	N/A	N/A	N/A	1.4	N/A
Barium	ug/g dry	210	54.4	N/A	51.6	N/A	N/A	N/A	N/A	N/A	59	N/A
Beryllium	ug/g dry	2.5	ND (0.5)	N/A	ND (0.5)	N/A	N/A	N/A	N/A	N/A	ND (0.5)	N/A
Boron	ug/g dry	36	ND (5.0)	N/A	6.4	N/A	N/A	N/A	N/A	N/A	ND (5.0)	N/A
Cadmium	ug/g dry	1.0	ND (0.5)	N/A	ND (0.5)	N/A	N/A	N/A	N/A	N/A	ND (0.5)	N/A
Chromium	ug/g dry	67	12.1	N/A	11.9	N/A	N/A	N/A	N/A	N/A	13.9	N/A
Cobalt	ug/g dry	19	3.9	N/A	5.2	N/A	N/A	N/A	N/A	N/A	4.5	N/A
Copper	ug/g dry	62	7.9	N/A	10.9	N/A	N/A	N/A	N/A	N/A	8.5	N/A
Lead	ug/g dry	45	3.7	N/A	3.7	N/A	N/A	N/A	N/A	N/A	5	N/A
Molybdenum	ug/g dry	2.0	ND (1.0)	N/A	ND (1.0)	N/A	N/A	N/A	N/A	N/A	ND (1.0)	N/A
Nickel	ug/g dry	37	7.3	N/A	8.8	N/A	N/A	N/A	N/A	N/A	8.3	N/A
Selenium	ug/g dry	1.2	ND (1.0)	N/A	ND (1.0)	N/A	N/A	N/A	N/A	N/A	ND (1.0)	N/A
Silver	ug/g dry	0.5	ND (0.3)	N/A	ND (0.3)	N/A	N/A	N/A	N/A	N/A	ND (0.3)	N/A
Thallium	ug/g dry	1.0	ND (1.0)	N/A	ND (1.0)	N/A	N/A	N/A	N/A	N/A	ND (1.0)	N/A
Uranium	ug/g dry	1.9	ND (1.0)	N/A	ND (1.0)	N/A	N/A	N/A	N/A	N/A	ND (1.0)	N/A
Vanadium	ug/g dry	86	20.8	N/A	21.2	N/A	N/A	N/A	N/A	N/A	22.9	N/A
Zinc	ug/g dry	290	23.2	N/A	ND (20.0)	N/A	N/A	N/A	N/A	N/A	26.2	N/A
Volatiles												
Acetone	ug/g dry	0.5	N/A	ND (0.50)	N/A	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	N/A	ND (0.50)
Benzene	ug/g dry	0.02	N/A	ND (0.02)	N/A	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)
Bromodichloromethane	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Bromoform	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Bromomethane	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Carbon Tetrachloride	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Chlorobenzene	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Chloroform	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Dibromochloromethane	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Dichlorodifluoromethane	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
1,2-Dichlorobenzene	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
1,3-Dichlorobenzene	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
1,4-Dichlorobenzene	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
1,1-Dichloroethane	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
1,2-Dichloroethane	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
1,1-Dichloroethylene	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
cis-1,2-Dichloroethylene	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
trans-1,2-Dichloroethylene	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
1,2-Dichloropropane	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
cis-1,3-Dichloropropylene	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
trans-1,3-Dichloropropylene	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
1,3-Dichloropropene, total	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Ethylbenzene	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Ethylene dibromide (dibromoethane,	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Hexane	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Methyl Ethyl Ketone (2-Butanone)	ug/g dry	0.5	N/A	ND (0.50)	N/A	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	N/A	ND (0.50)
Methyl Isobutyl Ketone	ug/g dry	0.5	N/A	ND (0.50)	N/A	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	N/A	ND (0.50)
Methyl tert-butyl ether	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Methylene Chloride	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Styrene	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
1,1,1,2-Tetrachloroethane	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
1,1,2,2-Tetrachloroethane	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Tetrachloroethylene	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Toluene	ug/g dry	0.2	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
1,1,1-Trichloroethane	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
1,1,2-Trichloroethane	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Trichloroethylene	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Trichlorofluoromethane	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Vinyl Chloride	ug/g dry	0.02	N/A	ND (0.02)	N/A	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)
m/p-Xylene	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
o-Xylene	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Xylenes, total	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
BTEX												
Benzene	ug/g dry	0.02	N/A	ND (0.02)	N/A	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)
Ethylbenzene	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Toluene	ug/g dry	0.2	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
m/p-Xylene	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
o-Xylene	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Xylenes, total	ug/g dry	0.05	N/A	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)
Hydrocarbons												
F1 PHCs (C6-C10)	ug/g dry	17	N/A	ND (7)	N/A	ND (7)	ND (7)	ND (7)	ND (7)	ND (7)	N/A	ND (7)
F2 PHCs (C10-C16)	ug/g dry	10	N/A	ND (4)	N/A	ND (4)	ND (4)	ND (4)	ND (4)	ND (4)	N/A	ND (4)
F3 PHCs (C16-C34)	ug/g dry	240	N/A	ND (8)	N/A	ND (8)	ND (8)	ND (8)	ND (8)	ND (8)	N/A	ND (8)
F4 PHCs (C34-C50)	ug/g dry	120	N/A	ND (6)	N/A	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	N/A	ND (6)
Semi-Volatiles												
Acenaphthene	ug/g dry	0.05	ND (0.02)	N/A	ND (0.02)	N/A	N/A	N/A	N/A	N/A	ND (0.02)	N/A
Acenaphthylene	ug/g dry	0.093	ND (0.02)	N/A	ND (0.02)	N/A	N/A	N/A	N/A	N/A	ND (0.02)	N/A
Anthracene	ug/g dry	0.05	ND (0.02)	N/A	ND (0.02)	N/A	N/A	N/A	N/A	N/A	ND (0.02)	N/A
Benzo[a]anthracene	ug/g dry	0.095	ND (0.02)	N/A	ND (0.02)	N/A	N/A	N/A	N/A	N/A	ND (0.02)	N/A
Benzo[a]pyrene	ug/g dry	0.05	ND (0.02)	N/A	ND (0.02)	N/A	N/A	N/A	N/A	N/A	ND (0.02)	N/A
Benzo[b]fluoranthene	ug/g dry	0.3	ND (0.02)	N/A	ND (0.02)	N/A	N/A	N/A	N/A	N/A	ND (0.02)	N/A
Benzo[g,h,i]perylene	ug/g dry	0.2	ND (0.02)	N/A	ND (0.02)	N/A	N/A	N/A	N/A	N/A	ND (0.02)	N/A
Benzo[k]fluoranthene	ug/g dry	0.05	ND (0.02)	N/A	ND (0.02)	N/A	N/A	N/A	N/A	N/A	ND (0.02)	N/A
Chrysene	ug/g dry	0.18	ND (0.02)	N/A	ND (0.02)	N/A	N/A	N/A	N/A	N/A	ND (0.02)	N/A
Dibenzo[a,h]anthracene	ug/g dry	0.1	ND (0.02)	N/A	ND (0.02)	N/A	N/A	N/A	N/A	N/A	ND (0.02)	N/A
Fluoranthene	ug/g dry	0.24	ND (0.02)	N/A	ND (0.02)	N/A	N/A	N/A	N/A	N/A	ND (0.02)	N/A
Fluorene	ug/g dry	0.05	ND (0.02)	N/A	ND (0.02)	N/A	N/A	N/A	N/A	N/A	ND (0.02)	N/A
Indeno [1,2,3-cd] pyrene	ug/g dry	0.11	ND (0.02)	N/A	ND (0.02)	N/A	N/A	N/A	N/A	N/A	ND (0.02)	N/A
1-Methylnaphthalene	ug/g dry	0.05	ND (0.02)	N/A	ND (0.02)	N/A	N/A	N/A	N/A	N/A	ND (0.02)	N/A
2-Methylnaphthalene	ug/g dry	0.05	ND (0.02)	N/A	ND (0.02)	N/A	N/A	N/A	N/A	N/A	ND (0.02)	N/A
Methylnaphthalene (1&2)	ug/g dry	0.05	ND (0.04)	N/A	ND (0.04)	N/A	N/A	N/A	N/A	N/A	ND (0.04)	N/A
Naphthalene	ug/g dry	0.05	ND (0.01)	N/A	ND (0.01)	N/A	N/A	N/A	N/A	N/A	ND (0.01)	N/A
Phenanthrene	ug/g dry	0.19	ND (0.02)	N/A	ND (0.02)	N/A	N/A	N/A	N/A	N/A	ND (0.02)	N/A
Pyrene	ug/g dry	0.19	ND (0.02)	N/A	ND (0.02)	N/A	N/A	N/A	N/A	N/A	ND (0.02)	N/A

2.00 Result exceeds Reg 153/04 - Table 1 Agricultural Standards
ND (0.2) MDL exceeds Reg 153/04 - Table 1 Agricultural Standards
ND (0.2) No concentrations identified above the MDL
N/A Parameter not analysed
NV No value given for indicated parameter

Table 6A: Maximum Concentrations
Soil

Parameter	Sample ID / Depth (m)	Units	Reg 153/04 - Table 1 Agricultural Standards	Concentration
pH	BH2-25-SS7 2514079-04 - 4.57 - 5.18	N/A	5-9 (surf); 5-11 (subsurf)	7.89
Antimony	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	1.0	ND (1.0)
Arsenic	BH2-25-SS2 2514079-03 - 0.76 - 1.37	ug/g dry	11	2
Barium	DUP1 2514079-09 - 1.52 - 2.13	ug/g dry	210	59
Beryllium	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	2.5	ND (0.5)
Boron	BH2-25-SS2 2514079-03 - 0.76 - 1.37	ug/g dry	36	6.4
Cadmium	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	1.0	ND (0.5)
Chromium	DUP1 2514079-09 - 1.52 - 2.13	ug/g dry	67	13.9
Cobalt	BH2-25-SS2 2514079-03 - 0.76 - 1.37	ug/g dry	19	5.2
Copper	BH2-25-SS2 2514079-03 - 0.76 - 1.37	ug/g dry	62	10.9
Lead	DUP1 2514079-09 - 1.52 - 2.13	ug/g dry	45	5
Molybdenum	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	2.0	ND (1.0)
Nickel	BH2-25-SS2 2514079-03 - 0.76 - 1.37	ug/g dry	37	8.8
Selenium	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	1.2	ND (1.0)
Silver	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.5	ND (0.3)
Thallium	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	1.0	ND (1.0)
Uranium	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	1.9	ND (1.0)
Vanadium	DUP1 2514079-09 - 1.52 - 2.13	ug/g dry	86	22.9
Zinc	DUP1 2514079-09 - 1.52 - 2.13	ug/g dry	290	26.2
Acetone	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.5	ND (0.50)
Benzene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.02	ND (0.02)
Bromodichloromethane	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Bromoform	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Bromomethane	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Carbon Tetrachloride	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Chlorobenzene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Chloroform	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Dibromochloromethane	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Dichlorodifluoromethane	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
1,2-Dichlorobenzene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
1,3-Dichlorobenzene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
1,4-Dichlorobenzene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
1,1-Dichloroethane	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
1,2-Dichloroethane	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
1,1-Dichloroethylene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
cis-1,2-Dichloroethylene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
trans-1,2-Dichloroethylene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
1,2-Dichloropropane	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
cis-1,3-Dichloropropylene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
trans-1,3-Dichloropropylene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
1,3-Dichloropropene, total	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Ethylbenzene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Ethylene dibromide (dibromoethane, 1,2-)	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Hexane	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Methyl Ethyl Ketone (2-Butanone)	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.5	ND (0.50)
Methyl Isobutyl Ketone	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.5	ND (0.50)
Methyl tert-butyl ether	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Methylene Chloride	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Styrene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
1,1,1,2-Tetrachloroethane	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
1,1,2,2-Tetrachloroethane	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Tetrachloroethylene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Toluene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.2	ND (0.05)
1,1,1-Trichloroethane	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
1,1,2-Trichloroethane	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Trichloroethylene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Trichlorofluoromethane	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Vinyl Chloride	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.02	ND (0.02)
m/p-Xylene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
o-Xylene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Xylenes, total	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Benzene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.02	ND (0.02)
Ethylbenzene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Toluene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.2	ND (0.05)
m/p-Xylene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
o-Xylene	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
Xylenes, total	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	0.05	ND (0.05)
F1 PHCs (C6-C10)	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	17	ND (7)
F2 PHCs (C10-C16)	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	10	ND (4)
F3 PHCs (C16-C34)	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	240	ND (8)
F4 PHCs (C34-C50)	BH1-25-SS6 2514079-02 - 3.81 - 4.42	ug/g dry	120	ND (6)
Acenaphthene	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.05	ND (0.02)
Acenaphthylene	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.093	ND (0.02)
Anthracene	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.05	ND (0.02)
Benzo[a]anthracene	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.095	ND (0.02)
Benzo[a]pyrene	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.05	ND (0.02)
Benzo[b]fluoranthene	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.3	ND (0.02)
Benzo[g,h,i]perylene	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.2	ND (0.02)
Benzo[k]fluoranthene	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.05	ND (0.02)
Chrysene	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.18	ND (0.02)
Dibenzo[a,h]anthracene	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.1	ND (0.02)
Fluoranthene	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.24	ND (0.02)
Fluorene	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.05	ND (0.02)
Indeno [1,2,3-cd] pyrene	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.11	ND (0.02)
1-Methylnaphthalene	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.05	ND (0.02)
2-Methylnaphthalene	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.05	ND (0.02)
Methylnaphthalene (1&2)	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.05	ND (0.04)
Naphthalene	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.05	ND (0.01)
Phenanthrene	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.19	ND (0.02)
Pyrene	BH1-25-SS3 2514079-01 - 1.52 - 2.13	ug/g dry	0.19	ND (0.02)
Note: ND (x) = parameter analysed was reported non-detect				

Table 7: Groundwater Analytical Test Results

Parameter	Units	Regulation	BH1-25-GW1 2515599-01	BH2-25-GW1 2515599-02	BH3-25-GW1 2515599-03	BH4-25-GW1 2515599-04	BH5-25-GW1 2515599-05	DUP1 (BH5-25-GW1) 2515599-06
Sample Depth (m)		Reg 153/04 - Table 3 Non-Potable Groundwater, coarse	3.05 - 6.10	3.51 - 6.55	3.81 - 6.86	3.81 - 6.86	3.05 - 6.10	3.05 - 6.10
Sample Date			10-Apr-2025	10-Apr-2025	10-Apr-2025	10-Apr-2025	10-Apr-2025	10-Apr-2025
Volatiles								
Acetone	ug/L	130000	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Benzene	ug/L	44	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromodichloromethane	ug/L	85000	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	1.1
Bromoform	ug/L	380	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromomethane	ug/L	5.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon Tetrachloride	ug/L	0.79	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Chlorobenzene	ug/L	630	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroform	ug/L	2.4	3.7	3.8	ND (0.5)	ND (0.5)	5.3	5.2
Dibromochloromethane	ug/L	82000	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	ug/L	4400	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2-Dichlorobenzene	ug/L	4600	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichlorobenzene	ug/L	9600	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ug/L	8.0	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethane	ug/L	320	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	ug/L	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethylene	ug/L	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethylene	ug/L	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,2-Dichloroethylene	ug/L	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	ug/L	16	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropylene	ug/L	5.2	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropylene	ug/L	5.2	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichloropropene, total	ug/L	5.2	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ug/L	2300	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylene dibromide (dibromoethane, 1	ug/L	0.25	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Hexane	ug/L	51	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Methyl Ethyl Ketone (2-Butanone)	ug/L	470000	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Methyl Isobutyl Ketone	ug/L	140000	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Methyl tert-butyl ether	ug/L	190	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Methylene Chloride	ug/L	610	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Styrene	ug/L	1300	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1,2-Tetrachloroethane	ug/L	3.3	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	ug/L	3.2	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Tetrachloroethylene	ug/L	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	ug/L	18000	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	ug/L	640	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ug/L	4.7	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichloroethylene	ug/L	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichlorofluoromethane	ug/L	2500	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl Chloride	ug/L	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
m/p-Xylene	ug/L	4200	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
o-Xylene	ug/L	4200	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Xylenes, total	ug/L	4200	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
BTEX								
Benzene	ug/L	44	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ug/L	2300	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	ug/L	18000	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
m/p-Xylene	ug/L	4200	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
o-Xylene	ug/L	4200	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Xylenes, total	ug/L	4200	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Hydrocarbons								
F1 PHCs (C6-C10)	ug/L	750	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)
F2 PHCs (C10-C16)	ug/L	150	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)
F3 PHCs (C16-C34)	ug/L	500	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)
F4 PHCs (C34-C50)	ug/L	500	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)

2.00	Result exceeds Reg 153/04 - Table 3 Non-Potable Groundwater, coarse Standards
ND (0.2)	MDL exceeds Reg 153/04 - Table 3 Non-Potable Groundwater, coarse Standards
ND (0.2)	No concentrations identified above the MDL
N/A	Parameter not analysed
NV	No value given for indicated parameter

Table 7A: Maximum Concentrations
Groundwater

Parameter	Sample ID / Screen Interval (m)	Units	Reg 153/04 - Table 3 Non-Potable Groundwater, coarse Standards	Concentration
Acetone	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	130000	ND (5.0)
Benzene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	44	ND (0.5)
Bromodichloromethane	DUP1 (BH5-25-GW1) 2515599-06 - 3.05 - 6.10	ug/L	85000	1.1
Bromoform	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	380	ND (0.5)
Bromomethane	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	5.6	ND (0.5)
Carbon Tetrachloride	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	0.79	ND (0.2)
Chlorobenzene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	630	ND (0.5)
Chloroform	BH5-25-GW1 2515599-05 - 3.05 - 6.10	ug/L	2.4	5.3
Dibromochloromethane	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	82000	ND (0.5)
Dichlorodifluoromethane	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	4400	ND (1.0)
1,2-Dichlorobenzene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	4600	ND (0.5)
1,3-Dichlorobenzene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	9600	ND (0.5)
1,4-Dichlorobenzene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	8.0	ND (0.5)
1,1-Dichloroethane	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	320	ND (0.5)
1,2-Dichloroethane	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	1.6	ND (0.5)
1,1-Dichloroethylene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	1.6	ND (0.5)
cis-1,2-Dichloroethylene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	1.6	ND (0.5)
trans-1,2-Dichloroethylene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	1.6	ND (0.5)
1,2-Dichloropropane	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	16	ND (0.5)
cis-1,3-Dichloropropylene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	5.2	ND (0.5)
trans-1,3-Dichloropropylene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	5.2	ND (0.5)
1,3-Dichloropropene, total	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	5.2	ND (0.5)
Ethylbenzene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	2300	ND (0.5)
Ethylene dibromide (dibromoe	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	0.25	ND (0.2)
Hexane	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	51	ND (1.0)
Methyl Ethyl Ketone (2-Butanc	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	470000	ND (5.0)
Methyl Isobutyl Ketone	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	140000	ND (5.0)
Methyl tert-butyl ether	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	190	ND (2.0)
Methylene Chloride	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	610	ND (5.0)
Styrene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	1300	ND (0.5)
1,1,1,2-Tetrachloroethane	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	3.3	ND (0.5)
1,1,2,2-Tetrachloroethane	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	3.2	ND (0.5)
Tetrachloroethylene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	1.6	ND (0.5)
Toluene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	18000	ND (0.5)
1,1,1-Trichloroethane	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	640	ND (0.5)
1,1,2-Trichloroethane	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	4.7	ND (0.5)
Trichloroethylene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	1.6	ND (0.5)
Trichlorofluoromethane	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	2500	ND (1.0)
Vinyl Chloride	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	0.5	ND (0.5)
m/p-Xylene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	4200	ND (0.5)
o-Xylene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	4200	ND (0.5)
Xylenes, total	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	4200	ND (0.5)
Benzene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	44	ND (0.5)
Ethylbenzene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	2300	ND (0.5)
Toluene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	18000	ND (0.5)
m/p-Xylene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	4200	ND (0.5)
o-Xylene	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	4200	ND (0.5)
Xylenes, total	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	4200	ND (0.5)
F1 PHCs (C6-C10)	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	750	ND (25)
F2 PHCs (C10-C16)	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	150	ND (100)
F3 PHCs (C16-C34)	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	500	ND (100)
F4 PHCs (C34-C50)	BH1-25-GW1 2515599-01 - 3.05 - 6.10	ug/L	500	ND (100)
Note: ND (x) = parameter analysed was reported non-detect.				

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Certificate of Analysis

Paterson Group Consulting Engineers (Ottawa)
9 Auriga Drive
Ottawa, ON K2E 7T9
Attn: Mark D'Arcy

Client PO: 62706
Project: PE6965
Custody:

Report Date: 3-Apr-2025
Order Date: 31-Mar-2025

Order #: 2514079

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

Paracel ID	Client ID
2514079-01	BH1-25-SS3
2514079-02	BH1-25-SS6
2514079-03	BH2-25-SS2
2514079-04	BH2-25-SS7
2514079-05	BH3-25-SS6
2514079-06	BH4-25-SS7
2514079-07	BH5-25-SS7
2514079-08	BH6-25-SS7
2514079-09	DUP1
2514079-10	DUP2

Approved By:

Mark Foto, M.Sc.

Laboratory Director

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	1-Apr-25	1-Apr-25
PHC F1	CWS Tier 1 - P&T GC-FID	1-Apr-25	1-Apr-25
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	1-Apr-25	1-Apr-25
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	1-Apr-25	1-Apr-25
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	1-Apr-25	2-Apr-25
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	1-Apr-25	1-Apr-25
Solids, %	CWS Tier 1 - Gravimetric	31-Mar-25	1-Apr-25

Certificate of Analysis

Report Date: 03-Apr-2025

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 31-Mar-2025

Client PO: 62706

Project Description: PE6965

	Client ID:	BH1-25-SS3	BH1-25-SS6	BH2-25-SS2	BH2-25-SS7	-	-
	Sample Date:	27-Mar-25 09:00	27-Mar-25 09:00	27-Mar-25 09:00	27-Mar-25 09:00		
	Sample ID:	2514079-01	2514079-02	2514079-03	2514079-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	89.0	80.6	95.2	88.2	-	-
General Inorganics							
pH	0.05 pH Units	-	-	7.86	7.89	-	-
Metals							
Antimony	1.0 ug/g	<1.0	-	<1.0	-	-	-
Arsenic	1.0 ug/g	1.5	-	2.0	-	-	-
Barium	1.0 ug/g	54.4	-	51.6	-	-	-
Beryllium	0.5 ug/g	<0.5	-	<0.5	-	-	-
Boron	5.0 ug/g	<5.0	-	6.4	-	-	-
Cadmium	0.5 ug/g	<0.5	-	<0.5	-	-	-
Chromium	5.0 ug/g	12.1	-	11.9	-	-	-
Cobalt	1.0 ug/g	3.9	-	5.2	-	-	-
Copper	5.0 ug/g	7.9	-	10.9	-	-	-
Lead	1.0 ug/g	3.7	-	3.7	-	-	-
Molybdenum	1.0 ug/g	<1.0	-	<1.0	-	-	-
Nickel	5.0 ug/g	7.3	-	8.8	-	-	-
Selenium	1.0 ug/g	<1.0	-	<1.0	-	-	-
Silver	0.3 ug/g	<0.3	-	<0.3	-	-	-
Thallium	1.0 ug/g	<1.0	-	<1.0	-	-	-
Uranium	1.0 ug/g	<1.0	-	<1.0	-	-	-
Vanadium	10.0 ug/g	20.8	-	21.2	-	-	-
Zinc	20.0 ug/g	23.2	-	<20.0	-	-	-
Volatiles							
Acetone	0.50 ug/g	-	<0.50	-	<0.50	-	-
Benzene	0.02 ug/g	-	<0.02	-	<0.02	-	-

	Client ID:	BH1-25-SS3	BH1-25-SS6	BH2-25-SS2	BH2-25-SS7	-	-
	Sample Date:	27-Mar-25 09:00	27-Mar-25 09:00	27-Mar-25 09:00	27-Mar-25 09:00		
	Sample ID:	2514079-01	2514079-02	2514079-03	2514079-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Bromodichloromethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
Bromoform	0.05 ug/g	-	<0.05	-	<0.05	-	-
Bromomethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
Carbon Tetrachloride	0.05 ug/g	-	<0.05	-	<0.05	-	-
Chlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	-	-
Chloroform	0.05 ug/g	-	<0.05	-	<0.05	-	-
Dibromochloromethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
Dichlorodifluoromethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,2-Dichlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,3-Dichlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,4-Dichlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,1-Dichloroethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,2-Dichloroethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,1-Dichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	-	-
cis-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	-	-
trans-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,2-Dichloropropane	0.05 ug/g	-	<0.05	-	<0.05	-	-
cis-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	<0.05	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,3-Dichloropropene, total	0.05 ug/g	-	<0.05	-	<0.05	-	-
Ethylbenzene	0.05 ug/g	-	<0.05	-	<0.05	-	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	-	<0.05	-	<0.05	-	-
Hexane	0.05 ug/g	-	<0.05	-	<0.05	-	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	-	<0.50	-	<0.50	-	-
Methyl Isobutyl Ketone	0.50 ug/g	-	<0.50	-	<0.50	-	-

Certificate of Analysis

Report Date: 03-Apr-2025

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 31-Mar-2025

Client PO: **62706**

Project Description: PE6965

	Client ID:	BH1-25-SS3	BH1-25-SS6	BH2-25-SS2	BH2-25-SS7	-	-
	Sample Date:	27-Mar-25 09:00	27-Mar-25 09:00	27-Mar-25 09:00	27-Mar-25 09:00		
	Sample ID:	2514079-01	2514079-02	2514079-03	2514079-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Methyl tert-butyl ether	0.05 ug/g	-	<0.05	-	<0.05	-	-
Methylene Chloride	0.05 ug/g	-	<0.05	-	<0.05	-	-
Styrene	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
Tetrachloroethylene	0.05 ug/g	-	<0.05	-	<0.05	-	-
Toluene	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,1,1-Trichloroethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,1,2-Trichloroethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
Trichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	-	-
Trichlorofluoromethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
Vinyl chloride	0.02 ug/g	-	<0.02	-	<0.02	-	-
m,p-Xylenes	0.05 ug/g	-	<0.05	-	<0.05	-	-
o-Xylene	0.05 ug/g	-	<0.05	-	<0.05	-	-
Xylenes, total	0.05 ug/g	-	<0.05	-	<0.05	-	-
4-Bromofluorobenzene	Surrogate	-	119%	-	113%	-	-
Toluene-d8	Surrogate	-	132%	-	131%	-	-
Dibromofluoromethane	Surrogate	-	78.2%	-	78.4%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	-	<7	-	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	-	<4	-	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	-	<8	-	<8	-	-
F4 PHCs (C34-C50)	6 ug/g	-	<6	-	<6	-	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	-	<0.02	-	-	-

	Client ID:	BH1-25-SS3	BH1-25-SS6	BH2-25-SS2	BH2-25-SS7	-	-
	Sample Date:	27-Mar-25 09:00	27-Mar-25 09:00	27-Mar-25 09:00	27-Mar-25 09:00		
	Sample ID:	2514079-01	2514079-02	2514079-03	2514079-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Semi-Volatiles							
Acenaphthylene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Anthracene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Benzo [a] anthracene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Benzo [a] pyrene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Benzo [b] fluoranthene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Benzo [k] fluoranthene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Chrysene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Fluoranthene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Fluorene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	-	<0.02	-	-	-
1-Methylnaphthalene	0.02 ug/g	<0.02	-	<0.02	-	-	-
2-Methylnaphthalene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g	<0.04	-	<0.04	-	-	-
Naphthalene	0.01 ug/g	<0.01	-	<0.01	-	-	-
Phenanthrene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Pyrene	0.02 ug/g	<0.02	-	<0.02	-	-	-
2-Fluorobiphenyl	Surrogate	73.4%	-	79.9%	-	-	-
Terphenyl-d14	Surrogate	78.2%	-	85.7%	-	-	-

Certificate of Analysis

Report Date: 03-Apr-2025

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 31-Mar-2025

Client PO: **62706**

Project Description: **PE6965**

	Client ID:	BH3-25-SS6	BH4-25-SS7	BH5-25-SS7	BH6-25-SS7	-	-
	Sample Date:	27-Mar-25 09:00	27-Mar-25 09:00	28-Mar-25 09:00	28-Mar-25 09:00		
	Sample ID:	2514079-05	2514079-06	2514079-07	2514079-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	81.9	81.8	83.3	81.8	-	-
Volatiles							
Acetone	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	-	-
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Bromodichloromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Bromoform	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Bromomethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Carbon Tetrachloride	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Chlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Chloroform	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Dibromochloromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Dichlorodifluoromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,2-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,3-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,4-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,1-Dichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,2-Dichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,1-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,2-Dichloropropane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,3-Dichloropropene, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-

	Client ID:	BH3-25-SS6	BH4-25-SS7	BH5-25-SS7	BH6-25-SS7	-	-
	Sample Date:	27-Mar-25 09:00	27-Mar-25 09:00	28-Mar-25 09:00	28-Mar-25 09:00		
	Sample ID:	2514079-05	2514079-06	2514079-07	2514079-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Hexane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	-	-
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	-	-
Methyl tert-butyl ether	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Methylene Chloride	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Styrene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Tetrachloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,1,1-Trichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,1,2-Trichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Trichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Trichlorofluoromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Vinyl chloride	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
4-Bromofluorobenzene	Surrogate	118%	120%	116%	119%	-	-
Dibromofluoromethane	Surrogate	97.0%	82.7%	80.9%	82.2%	-	-
Toluene-d8	Surrogate	136%	134%	133%	133%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	-	-

	Client ID:	BH3-25-SS6	BH4-25-SS7	BH5-25-SS7	BH6-25-SS7	-	-
	Sample Date:	27-Mar-25 09:00	27-Mar-25 09:00	28-Mar-25 09:00	28-Mar-25 09:00		
	Sample ID:	2514079-05	2514079-06	2514079-07	2514079-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Hydrocarbons							
F3 PHCs (C16-C34)	8 ug/g	<8	<8	<8	<8	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	<6	<6	<6	-	-

	Client ID:	DUP1	DUP2			-	-
	Sample Date:	27-Mar-25 09:00	27-Mar-25 09:00				
	Sample ID:	2514079-09	2514079-10				
	Matrix:	Soil	Soil				
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	90.7	81.6	-	-	-	-
Metals							
Antimony	1.0 ug/g	<1.0	-	-	-	-	-
Arsenic	1.0 ug/g	1.4	-	-	-	-	-
Barium	1.0 ug/g	59.0	-	-	-	-	-
Beryllium	0.5 ug/g	<0.5	-	-	-	-	-
Boron	5.0 ug/g	<5.0	-	-	-	-	-
Cadmium	0.5 ug/g	<0.5	-	-	-	-	-
Chromium	5.0 ug/g	13.9	-	-	-	-	-
Cobalt	1.0 ug/g	4.5	-	-	-	-	-
Copper	5.0 ug/g	8.5	-	-	-	-	-
Lead	1.0 ug/g	5.0	-	-	-	-	-
Molybdenum	1.0 ug/g	<1.0	-	-	-	-	-
Nickel	5.0 ug/g	8.3	-	-	-	-	-
Selenium	1.0 ug/g	<1.0	-	-	-	-	-
Silver	0.3 ug/g	<0.3	-	-	-	-	-
Thallium	1.0 ug/g	<1.0	-	-	-	-	-
Uranium	1.0 ug/g	<1.0	-	-	-	-	-
Vanadium	10.0 ug/g	22.9	-	-	-	-	-
Zinc	20.0 ug/g	26.2	-	-	-	-	-
Volatiles							
Acetone	0.50 ug/g	-	<0.50	-	-	-	-
Benzene	0.02 ug/g	-	<0.02	-	-	-	-
Bromodichloromethane	0.05 ug/g	-	<0.05	-	-	-	-
Bromoform	0.05 ug/g	-	<0.05	-	-	-	-

	Client ID:	DUP1	DUP2			-	-
	Sample Date:	27-Mar-25 09:00	27-Mar-25 09:00				
	Sample ID:	2514079-09	2514079-10				
	Matrix:	Soil	Soil				
	MDL/Units						
Volatiles							
Bromomethane	0.05 ug/g	-	<0.05	-	-	-	-
Carbon Tetrachloride	0.05 ug/g	-	<0.05	-	-	-	-
Chlorobenzene	0.05 ug/g	-	<0.05	-	-	-	-
Chloroform	0.05 ug/g	-	<0.05	-	-	-	-
Dibromochloromethane	0.05 ug/g	-	<0.05	-	-	-	-
Dichlorodifluoromethane	0.05 ug/g	-	<0.05	-	-	-	-
1,2-Dichlorobenzene	0.05 ug/g	-	<0.05	-	-	-	-
1,3-Dichlorobenzene	0.05 ug/g	-	<0.05	-	-	-	-
1,4-Dichlorobenzene	0.05 ug/g	-	<0.05	-	-	-	-
1,1-Dichloroethane	0.05 ug/g	-	<0.05	-	-	-	-
1,2-Dichloroethane	0.05 ug/g	-	<0.05	-	-	-	-
1,1-Dichloroethylene	0.05 ug/g	-	<0.05	-	-	-	-
cis-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	-	-	-
trans-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	-	-	-
1,2-Dichloropropane	0.05 ug/g	-	<0.05	-	-	-	-
cis-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	-	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	-	-	-
1,3-Dichloropropene, total	0.05 ug/g	-	<0.05	-	-	-	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	-	<0.05	-	-	-	-
Ethylbenzene	0.05 ug/g	-	<0.05	-	-	-	-
Hexane	0.05 ug/g	-	<0.05	-	-	-	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	-	<0.50	-	-	-	-
Methyl Isobutyl Ketone	0.50 ug/g	-	<0.50	-	-	-	-
Methyl tert-butyl ether	0.05 ug/g	-	<0.05	-	-	-	-
Methylene Chloride	0.05 ug/g	-	<0.05	-	-	-	-

	Client ID:	DUP1	DUP2			-	-
	Sample Date:	27-Mar-25 09:00	27-Mar-25 09:00				
	Sample ID:	2514079-09	2514079-10				
	Matrix:	Soil	Soil				
	MDL/Units						
Volatiles							
Styrene	0.05 ug/g	-	<0.05	-	-	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	-	-	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	-	-	-
Tetrachloroethylene	0.05 ug/g	-	<0.05	-	-	-	-
Toluene	0.05 ug/g	-	<0.05	-	-	-	-
1,1,1-Trichloroethane	0.05 ug/g	-	<0.05	-	-	-	-
1,1,2-Trichloroethane	0.05 ug/g	-	<0.05	-	-	-	-
Trichloroethylene	0.05 ug/g	-	<0.05	-	-	-	-
Trichlorofluoromethane	0.05 ug/g	-	<0.05	-	-	-	-
Vinyl chloride	0.02 ug/g	-	<0.02	-	-	-	-
m,p-Xylenes	0.05 ug/g	-	<0.05	-	-	-	-
o-Xylene	0.05 ug/g	-	<0.05	-	-	-	-
Xylenes, total	0.05 ug/g	-	<0.05	-	-	-	-
Toluene-d8	Surrogate	-	134%	-	-	-	-
4-Bromofluorobenzene	Surrogate	-	119%	-	-	-	-
Dibromofluoromethane	Surrogate	-	83.2%	-	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	-	<7	-	-	-	-
F2 PHCs (C10-C16)	4 ug/g	-	<4	-	-	-	-
F3 PHCs (C16-C34)	8 ug/g	-	<8	-	-	-	-
F4 PHCs (C34-C50)	6 ug/g	-	<6	-	-	-	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	-	-	-	-	-
Acenaphthylene	0.02 ug/g	<0.02	-	-	-	-	-
Anthracene	0.02 ug/g	<0.02	-	-	-	-	-

	Client ID:	DUP1	DUP2			-	-
	Sample Date:	27-Mar-25 09:00	27-Mar-25 09:00				
	Sample ID:	2514079-09	2514079-10				
	Matrix:	Soil	Soil				
	MDL/Units						
Semi-Volatiles							
Benzo [a] anthracene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [a] pyrene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [b] fluoranthene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [k] fluoranthene	0.02 ug/g	<0.02	-	-	-	-	-
Chrysene	0.02 ug/g	<0.02	-	-	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	-	-	-	-	-
Fluoranthene	0.02 ug/g	<0.02	-	-	-	-	-
Fluorene	0.02 ug/g	<0.02	-	-	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	-	-	-	-	-
1-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	-	-
2-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g	<0.04	-	-	-	-	-
Naphthalene	0.01 ug/g	<0.01	-	-	-	-	-
Phenanthrene	0.02 ug/g	<0.02	-	-	-	-	-
Pyrene	0.02 ug/g	<0.02	-	-	-	-	-
2-Fluorobiphenyl	Surrogate	92.6%	-	-	-	-	-
Terphenyl-d14	Surrogate	94.2%	-	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
Metals								
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
Semi-Volatiles								
Acenaphthene	ND	0.02	ug/g					
Acenaphthylene	ND	0.02	ug/g					
Anthracene	ND	0.02	ug/g					
Benzo [a] anthracene	ND	0.02	ug/g					
Benzo [a] pyrene	ND	0.02	ug/g					
Benzo [b] fluoranthene	ND	0.02	ug/g					
Benzo [g,h,i] perylene	ND	0.02	ug/g					
Benzo [k] fluoranthene	ND	0.02	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Chrysene	ND	0.02	ug/g					
Dibenzo [a,h] anthracene	ND	0.02	ug/g					
Fluoranthene	ND	0.02	ug/g					
Fluorene	ND	0.02	ug/g					
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g					
1-Methylnaphthalene	ND	0.02	ug/g					
2-Methylnaphthalene	ND	0.02	ug/g					
Methylnaphthalene (1&2)	ND	0.04	ug/g					
Naphthalene	ND	0.01	ug/g					
Phenanthrene	ND	0.02	ug/g					
Pyrene	ND	0.02	ug/g					
Surrogate: 2-Fluorobiphenyl	*1.35*		*%*	*101*	*50-140*			
Surrogate: Terphenyl-d14	*1.42*		*%*	*106*	*50-140*			
Volatiles								
Acetone	ND	0.50	ug/g					
Benzene	ND	0.02	ug/g					
Bromodichloromethane	ND	0.05	ug/g					
Bromoform	ND	0.05	ug/g					
Bromomethane	ND	0.05	ug/g					
Carbon Tetrachloride	ND	0.05	ug/g					
Chlorobenzene	ND	0.05	ug/g					
Chloroform	ND	0.05	ug/g					
Dibromochloromethane	ND	0.05	ug/g					
Dichlorodifluoromethane	ND	0.05	ug/g					
1,2-Dichlorobenzene	ND	0.05	ug/g					
1,3-Dichlorobenzene	ND	0.05	ug/g					
1,4-Dichlorobenzene	ND	0.05	ug/g					
1,1-Dichloroethane	ND	0.05	ug/g					
1,2-Dichloroethane	ND	0.05	ug/g					
1,1-Dichloroethylene	ND	0.05	ug/g					
cis-1,2-Dichloroethylene	ND	0.05	ug/g					
trans-1,2-Dichloroethylene	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
1,2-Dichloropropane	ND	0.05	ug/g					
cis-1,3-Dichloropropylene	ND	0.05	ug/g					
trans-1,3-Dichloropropylene	ND	0.05	ug/g					
1,3-Dichloropropene, total	ND	0.05	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g					
Hexane	ND	0.05	ug/g					
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g					
Methyl Isobutyl Ketone	ND	0.50	ug/g					
Methyl tert-butyl ether	ND	0.05	ug/g					
Methylene Chloride	ND	0.05	ug/g					
Styrene	ND	0.05	ug/g					
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g					
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g					
Tetrachloroethylene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
1,1,1-Trichloroethane	ND	0.05	ug/g					
1,1,2-Trichloroethane	ND	0.05	ug/g					
Trichloroethylene	ND	0.05	ug/g					
Trichlorofluoromethane	ND	0.05	ug/g					
Vinyl chloride	ND	0.02	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: 4-Bromofluorobenzene	*9.01*		*%*	*113*	*50-140*			
Surrogate: Dibromofluoromethane	*5.42*		*%*	*67.8*	*50-140*			
Surrogate: Toluene-d8	*7.91*		*%*	*98.9*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
pH	7.67	0.05	pH Units	7.80			1.7	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g	ND			NC	30	
F3 PHCs (C16-C34)	ND	8	ug/g	ND			NC	30	
F4 PHCs (C34-C50)	ND	6	ug/g	ND			NC	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	5.7	1.0	ug/g	4.9			14.4	30	
Barium	161	1.0	ug/g	142			12.5	30	
Beryllium	3.2	0.5	ug/g	2.8			15.5	30	
Boron	39.8	5.0	ug/g	33.1			18.5	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium	7.2	5.0	ug/g	5.8			22.1	30	
Cobalt	3.2	1.0	ug/g	2.8			12.8	30	
Copper	7.9	5.0	ug/g	7.1			10.9	30	
Lead	2.3	1.0	ug/g	2.1			6.9	30	
Molybdenum	1.8	1.0	ug/g	1.5			18.8	30	
Nickel	ND	5.0	ug/g	ND			NC	30	
Selenium	1.3	1.0	ug/g	1.2			14.6	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	1.9	1.0	ug/g	1.6			19.1	30	
Vanadium	26.7	10.0	ug/g	21.8			20.0	30	
Zinc	ND	20.0	ug/g	ND			NC	30	
Physical Characteristics									
% Solids	86.1	0.1	% by Wt.	85.9			0.3	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g	ND			NC	40	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] pyrene	ND	0.02	ug/g	ND			NC	40	
Benzo [b] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g	ND			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Chrysene	ND	0.02	ug/g	ND			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g	ND			NC	40	
Fluoranthene	ND	0.02	ug/g	ND			NC	40	
Fluorene	ND	0.02	ug/g	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	ND			NC	40	
Phenanthrene	ND	0.02	ug/g	ND			NC	40	
Pyrene	ND	0.02	ug/g	ND			NC	40	
Surrogate: 2-Fluorobiphenyl	*1.18*		*%*		*81.5*	*50-140*			
Surrogate: Terphenyl-d14	*1.26*		*%*		*86.5*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	*9.42*		*%*		*111*	*50-140*			
Surrogate: Dibromofluoromethane	*6.12*		*%*		*72.5*	*50-140*			
Surrogate: Toluene-d8	*8.76*		*%*		*104*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	184	7	ug/g	ND	107	85-115			
F2 PHCs (C10-C16)	92	4	ug/g	ND	93.0	60-140			
F3 PHCs (C16-C34)	260	8	ug/g	ND	107	60-140			
F4 PHCs (C34-C50)	146	6	ug/g	ND	95.1	60-140			
Metals									
Arsenic	58.5	1.0	ug/g	2.0	113	70-130			
Barium	120	1.0	ug/g	56.8	127	70-130			
Beryllium	60.0	0.5	ug/g	1.1	118	70-130			
Boron	63.9	5.0	ug/g	13.2	101	70-130			
Cadmium	56.0	0.5	ug/g	ND	112	70-130			
Chromium	65.5	5.0	ug/g	ND	126	70-130			
Cobalt	60.6	1.0	ug/g	1.1	119	70-130			
Copper	59.9	5.0	ug/g	ND	114	70-130			
Lead	55.6	1.0	ug/g	ND	110	70-130			
Molybdenum	56.7	1.0	ug/g	ND	112	70-130			
Nickel	59.6	5.0	ug/g	ND	116	70-130			
Selenium	54.2	1.0	ug/g	ND	107	70-130			
Silver	49.8	0.3	ug/g	ND	99.6	70-130			
Thallium	52.7	1.0	ug/g	ND	105	70-130			
Uranium	55.6	1.0	ug/g	ND	110	70-130			
Vanadium	73.0	10.0	ug/g	ND	128	70-130			
Zinc	58.1	20.0	ug/g	ND	108	70-130			
Semi-Volatiles									
Acenaphthene	0.169	0.02	ug/g	ND	93.2	50-140			
Acenaphthylene	0.172	0.02	ug/g	ND	94.8	50-140			
Anthracene	0.190	0.02	ug/g	ND	104	50-140			
Benzo [a] anthracene	0.158	0.02	ug/g	ND	87.0	50-140			
Benzo [a] pyrene	0.194	0.02	ug/g	ND	107	50-140			
Benzo [b] fluoranthene	0.182	0.02	ug/g	ND	100	50-140			
Benzo [g,h,i] perylene	0.183	0.02	ug/g	ND	100	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [k] fluoranthene	0.172	0.02	ug/g	ND	94.9	50-140			
Chrysene	0.162	0.02	ug/g	ND	89.2	50-140			
Dibenzo [a,h] anthracene	0.187	0.02	ug/g	ND	103	50-140			
Fluoranthene	0.209	0.02	ug/g	ND	115	50-140			
Fluorene	0.172	0.02	ug/g	ND	94.6	50-140			
Indeno [1,2,3-cd] pyrene	0.194	0.02	ug/g	ND	107	50-140			
1-Methylnaphthalene	0.155	0.02	ug/g	ND	85.2	50-140			
2-Methylnaphthalene	0.173	0.02	ug/g	ND	95.3	50-140			
Naphthalene	0.157	0.01	ug/g	ND	86.3	50-140			
Phenanthrene	0.193	0.02	ug/g	ND	106	50-140			
Pyrene	0.180	0.02	ug/g	ND	99.2	50-140			
Surrogate: 2-Fluorobiphenyl	*1.28*		*%*		*88.2*	*50-140*			
Surrogate: Terphenyl-d14	*1.33*		*%*		*91.2*	*50-140*			
Volatiles									
Acetone	8.24	0.50	ug/g	ND	82.4	50-140			
Benzene	4.30	0.02	ug/g	ND	107	60-130			
Bromodichloromethane	3.03	0.05	ug/g	ND	75.7	60-130			
Bromoform	3.50	0.05	ug/g	ND	87.6	60-130			
Bromomethane	3.06	0.05	ug/g	ND	76.4	50-140			
Carbon Tetrachloride	2.77	0.05	ug/g	ND	69.2	60-130			
Chlorobenzene	4.53	0.05	ug/g	ND	113	60-130			
Chloroform	3.24	0.05	ug/g	ND	81.0	60-130			
Dibromochloromethane	3.38	0.05	ug/g	ND	84.6	60-130			
Dichlorodifluoromethane	2.47	0.05	ug/g	ND	61.8	50-140			
1,2-Dichlorobenzene	3.42	0.05	ug/g	ND	85.4	60-130			
1,3-Dichlorobenzene	3.42	0.05	ug/g	ND	85.4	60-130			
1,4-Dichlorobenzene	3.52	0.05	ug/g	ND	87.9	60-130			
1,1-Dichloroethane	4.09	0.05	ug/g	ND	102	60-130			
1,2-Dichloroethane	3.21	0.05	ug/g	ND	80.2	60-130			
1,1-Dichloroethylene	3.07	0.05	ug/g	ND	76.7	60-130			
cis-1,2-Dichloroethylene	3.27	0.05	ug/g	ND	81.8	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
trans-1,2-Dichloroethylene	3.26	0.05	ug/g	ND	81.6	60-130			
1,2-Dichloropropane	3.63	0.05	ug/g	ND	90.6	60-130			
cis-1,3-Dichloropropylene	3.60	0.05	ug/g	ND	90.0	60-130			
trans-1,3-Dichloropropylene	3.48	0.05	ug/g	ND	86.9	60-130			
Ethylbenzene	4.35	0.05	ug/g	ND	109	60-130			
Ethylene dibromide (dibromoethane, 1,2-)	3.47	0.05	ug/g	ND	86.7	60-130			
Hexane	4.44	0.05	ug/g	ND	111	60-130			
Methyl Ethyl Ketone (2-Butanone)	7.94	0.50	ug/g	ND	79.4	50-140			
Methyl Isobutyl Ketone	7.75	0.50	ug/g	ND	77.5	50-140			
Methyl tert-butyl ether	10.3	0.05	ug/g	ND	103	50-140			
Methylene Chloride	3.31	0.05	ug/g	ND	82.9	60-130			
Styrene	4.14	0.05	ug/g	ND	103	60-130			
1,1,1,2-Tetrachloroethane	3.52	0.05	ug/g	ND	88.0	60-130			
1,1,2,2-Tetrachloroethane	3.36	0.05	ug/g	ND	84.1	60-130			
Tetrachloroethylene	3.61	0.05	ug/g	ND	90.2	60-130			
Toluene	4.91	0.05	ug/g	ND	123	60-130			
1,1,1-Trichloroethane	3.17	0.05	ug/g	ND	79.2	60-130			
1,1,2-Trichloroethane	3.07	0.05	ug/g	ND	76.9	60-130			
Trichloroethylene	2.93	0.05	ug/g	ND	73.3	60-130			
Trichlorofluoromethane	2.75	0.05	ug/g	ND	68.9	50-140			
Vinyl chloride	2.71	0.02	ug/g	ND	67.6	50-140			
m,p-Xylenes	8.88	0.05	ug/g	ND	111	60-130			
o-Xylene	4.50	0.05	ug/g	ND	113	60-130			
Surrogate: 4-Bromofluorobenzene	*7.11*		*%*		*88.9*	*50-140*			
Surrogate: Dibromofluoromethane	*6.05*		*%*		*75.6*	*50-140*			
Surrogate: Toluene-d8	*7.25*		*%*		*90.6*	*50-140*			

Qualifier Notes:

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

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.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

PARACEL LABORATORIES LTD.

Paracel ID: 2514079

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2514079	

Client Name: Paterson Group	Project Ref: PE6965	Page 1 of 1	
Contact Name: Mark D'Arcy	Quote #:		
Address: 9 Auriga Drive, Ottawa, ON K2E 7T9	PO #: 62706	Turnaround Time: ☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular	
Telephone: 613-226-7381	E-mail: mdarcy@patersongroup.ca, dlandry@patersongroup.ca, idillonsullivan@patersongroup.ca	Date Required:	

☐ REG 153/04 ☑ REG 406/19

☐ Table 1 ☐ Agri/Other ☐ Med/Fine
☐ Table 2 ☐ Res/Park ☐ Coarse
☐ Table 3 ☐ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☐ No

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

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

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Required Analysis: PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	pH			
1	BH1-25-SS3	S	-	1		Mar 27, 2025	-			X	X							
2	BH1-25-SS6	S	-	2		Mar 27, 2025	-	X	X									
3	BH2-25-SS2	S	-	1		Mar 27, 2025	-			X	X				X			
4	BH2-25-SS7	S	-	2		Mar 27, 2025	-	X	X						X			
5	BH3-25-SS6	S	-	2		Mar 27, 2025	-	X	X									
6	BH4-25-SS7	S	-	2		Mar 27, 2025	-	X	X									
7	BH5-25-SS7	S	-	2		Mar 28, 2025	-	X	X									
8	BH6-25-SS7	S	-	2		Mar 28, 2025	-	X	X									
9	DUP1	S	-	1		Mar 27, 2025	-			X	X							
10	DUP2	S	-	2		Mar 27, 2025	-	X	X									

Comments:

Method of Delivery: PARACEL COURIER

Relinquished By (Sign):	Received at Depot:	Received at Lab: LTJ	Verified By: SO
Relinquished By (Print): Isabelle Dillon-Sullivan	Date/Time:	Date/Time: 31/03/25-03:19PM	Date/Time: Mar 31, 2025 3:47pm
Date/Time: Mar 31, 2025 2pm	Temperature: °C	Temperature: 9.2°C	pH Verified: ☐ By:

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Certificate of Analysis

Paterson Group Consulting Engineers (Ottawa)
9 Auriga Drive
Ottawa, ON K2E 7T9
Attn: Mark Bujaki

Client PO: 62840
Project: PE6965
Custody:

Report Date: 16-Apr-2025
Order Date: 11-Apr-2025

Order #: 2515599

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

Paracel ID	Client ID
2515599-01	BH1-25-GW1
2515599-02	BH2-25-GW1
2515599-03	BH3-25-GW1
2515599-04	BH4-25-GW1
2515599-05	BH5-25-GW1
2515599-06	DUP1

Approved By:

Mark Foto

Mark Foto, M.Sc.
Laboratory Director

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
PHC F1	CWS Tier 1 - P&T GC-FID	14-Apr-25	15-Apr-25
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	14-Apr-25	15-Apr-25
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	14-Apr-25	15-Apr-25

Certificate of Analysis

Report Date: 16-Apr-2025

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 11-Apr-2025

Client PO: **62840**

Project Description: **PE6965**

	Client ID:	BH1-25-GW1	BH2-25-GW1	BH3-25-GW1	BH4-25-GW1	-	-
	Sample Date:	10-Apr-25 17:20	10-Apr-25 16:30	10-Apr-25 15:30	10-Apr-25 14:25		
	Sample ID:	2515599-01	2515599-02	2515599-03	2515599-04		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
Volatiles							
Acetone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	-	-
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	-	-
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Chloroform	0.5 ug/L	3.7	3.8	<0.5	<0.5	-	-
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Ethylene dibromide (dibromoethane,	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	-	-
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	-	-

	Client ID:	BH1-25-GW1	BH2-25-GW1	BH3-25-GW1	BH4-25-GW1	-	-
	Sample Date:	10-Apr-25 17:20	10-Apr-25 16:30	10-Apr-25 15:30	10-Apr-25 14:25		
	Sample ID:	2515599-01	2515599-02	2515599-03	2515599-04		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
Volatiles							
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	<2.0	-	-
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	-	-
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	-	-
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Toluene-d8	Surrogate	93.8%	93.8%	93.6%	94.0%	-	-
Dibromofluoromethane	Surrogate	131%	125%	130%	126%	-	-
4-Bromofluorobenzene	Surrogate	112%	111%	107%	108%	-	-
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	-	-

	Client ID:	BH5-25-GW1	DUP1			-	-
	Sample Date:	10-Apr-25 13:15	10-Apr-25 00:00				
	Sample ID:	2515599-05	2515599-06				
	Matrix:	Ground Water	Ground Water				
	MDL/Units						
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	1.1	-	-	-	-
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	5.3	5.2	-	-	-	-
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 (dibromoethane,	0.2 ug/L	<0.2	<0.2	-	-	-	-
Hexane	1.0 ug/L	<1.0	<1.0	-	-	-	-

	Client ID:	BH5-25-GW1	DUP1			-	-
	Sample Date:	10-Apr-25 13:15	10-Apr-25 00:00				
	Sample ID:	2515599-05	2515599-06				
	Matrix:	Ground Water	Ground Water				
	MDL/Units						
Volatiles							
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	-	-	-	-
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	109%	111%	-	-	-	-
Toluene-d8	Surrogate	96.0%	94.8%	-	-	-	-
Dibromofluoromethane	Surrogate	108%	111%	-	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	25 ug/L	<25	<25	-	-	-	-
F2 PHCs (C10-C16)	100 ug/L	<100	<100	-	-	-	-
F3 PHCs (C16-C34)	100 ug/L	<100	<100	-	-	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	<100	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons								
F1 PHCs (C6-C10)	ND	25	ug/L					
F2 PHCs (C10-C16)	ND	100	ug/L					
F3 PHCs (C16-C34)	ND	100	ug/L					
F4 PHCs (C34-C50)	ND	100	ug/L					
Volatiles								
Acetone	ND	5.0	ug/L					
Benzene	ND	0.5	ug/L					
Bromodichloromethane	ND	0.5	ug/L					
Bromoform	ND	0.5	ug/L					
Bromomethane	ND	0.5	ug/L					
Carbon Tetrachloride	ND	0.2	ug/L					
Chlorobenzene	ND	0.5	ug/L					
Chloroform	ND	0.5	ug/L					
Dibromochloromethane	ND	0.5	ug/L					
Dichlorodifluoromethane	ND	1.0	ug/L					
1,2-Dichlorobenzene	ND	0.5	ug/L					
1,3-Dichlorobenzene	ND	0.5	ug/L					
1,4-Dichlorobenzene	ND	0.5	ug/L					
1,1-Dichloroethane	ND	0.5	ug/L					
1,2-Dichloroethane	ND	0.5	ug/L					
1,1-Dichloroethylene	ND	0.5	ug/L					
cis-1,2-Dichloroethylene	ND	0.5	ug/L					
trans-1,2-Dichloroethylene	ND	0.5	ug/L					
1,2-Dichloropropane	ND	0.5	ug/L					
cis-1,3-Dichloropropylene	ND	0.5	ug/L					
trans-1,3-Dichloropropylene	ND	0.5	ug/L					
1,3-Dichloropropene, total	ND	0.5	ug/L					
Ethylbenzene	ND	0.5	ug/L					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.2	ug/L					
Hexane	ND	1.0	ug/L					
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L					
Methyl Isobutyl Ketone	ND	5.0	ug/L					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
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*		*%*	*108*	*50-140*			
Surrogate: Dibromofluoromethane	*74.2*		*%*	*92.8*	*50-140*			
Surrogate: Toluene-d8	*77.3*		*%*	*96.7*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	ND			NC	30	
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	*89.5*		*%*		*112*	*50-140*			
Surrogate: Dibromofluoromethane	*90.8*		*%*		*114*	*50-140*			
Surrogate: Toluene-d8	*75.7*		*%*		*94.6*	*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)	1980	25	ug/L	ND	115	85-115			
F2 PHCs (C10-C16)	1510	100	ug/L	ND	94.6	60-140			
F3 PHCs (C16-C34)	4040	100	ug/L	ND	103	60-140			
F4 PHCs (C34-C50)	2350	100	ug/L	ND	94.7	60-140			
Volatiles									
Acetone	84.5	5.0	ug/L	ND	84.5	50-140			
Benzene	38.1	0.5	ug/L	ND	95.4	60-130			
Bromodichloromethane	33.1	0.5	ug/L	ND	82.8	60-130			
Bromoform	31.3	0.5	ug/L	ND	78.3	60-130			
Bromomethane	26.9	0.5	ug/L	ND	67.2	50-140			
Carbon Tetrachloride	30.6	0.2	ug/L	ND	76.4	60-130			
Chlorobenzene	34.0	0.5	ug/L	ND	85.1	60-130			
Chloroform	40.9	0.5	ug/L	ND	102	60-130			
Dibromochloromethane	34.1	0.5	ug/L	ND	85.2	60-130			
Dichlorodifluoromethane	47.8	1.0	ug/L	ND	120	50-140			
1,2-Dichlorobenzene	32.3	0.5	ug/L	ND	80.8	60-130			
1,3-Dichlorobenzene	32.8	0.5	ug/L	ND	82.1	60-130			
1,4-Dichlorobenzene	31.8	0.5	ug/L	ND	79.6	60-130			
1,1-Dichloroethane	32.4	0.5	ug/L	ND	81.0	60-130			
1,2-Dichloroethane	29.2	0.5	ug/L	ND	73.0	60-130			
1,1-Dichloroethylene	32.5	0.5	ug/L	ND	81.3	60-130			
cis-1,2-Dichloroethylene	35.4	0.5	ug/L	ND	88.4	60-130			
trans-1,2-Dichloroethylene	38.9	0.5	ug/L	ND	97.4	60-130			
1,2-Dichloropropane	37.8	0.5	ug/L	ND	94.6	60-130			
cis-1,3-Dichloropropylene	39.9	0.5	ug/L	ND	99.7	60-130			
trans-1,3-Dichloropropylene	30.1	0.5	ug/L	ND	75.4	60-130			
Ethylbenzene	33.2	0.5	ug/L	ND	83.0	60-130			
Ethylene dibromide (dibromoethane, 1,2-)	33.4	0.2	ug/L	ND	83.6	60-130			
Hexane	38.5	1.0	ug/L	ND	96.2	60-130			
Methyl Ethyl Ketone (2-Butanone)	75.0	5.0	ug/L	ND	75.0	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Methyl Isobutyl Ketone	129	5.0	ug/L	ND	129	50-140			
Methyl tert-butyl ether	69.4	2.0	ug/L	ND	69.4	50-140			
Methylene Chloride	32.3	5.0	ug/L	ND	80.8	60-130			
Styrene	32.8	0.5	ug/L	ND	82.0	60-130			
1,1,1,2-Tetrachloroethane	30.7	0.5	ug/L	ND	76.7	60-130			
1,1,2,2-Tetrachloroethane	36.0	0.5	ug/L	ND	90.1	60-130			
Tetrachloroethylene	32.2	0.5	ug/L	ND	80.4	60-130			
Toluene	33.4	0.5	ug/L	ND	83.6	60-130			
1,1,1-Trichloroethane	30.2	0.5	ug/L	ND	75.6	60-130			
1,1,2-Trichloroethane	37.2	0.5	ug/L	ND	93.0	60-130			
Trichloroethylene	35.8	0.5	ug/L	ND	89.4	60-130			
Trichlorofluoromethane	30.2	1.0	ug/L	ND	75.4	60-130			
Vinyl chloride	41.7	0.5	ug/L	ND	104	50-140			
m,p-Xylenes	64.0	0.5	ug/L	ND	79.9	60-130			
o-Xylene	33.3	0.5	ug/L	ND	83.3	60-130			
Surrogate: 4-Bromofluorobenzene	*86.5*		*%*		*108*	*50-140*			
Surrogate: Dibromofluoromethane	*92.5*		*%*		*116*	*50-140*			
Surrogate: Toluene-d8	*78.8*		*%*		*98.5*	*50-140*			

Qualifier Notes:

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

PARACEL LABORATORIES LTD.

Paracel ID: 2515599

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2515599	

Client Name: Paterson Group	Project Ref: PE6965	Page 1 of 1
Contact Name: Mark Bujaki	Quote #:	Turnaround Time
Address: 9 Auriga Drive, Ottawa ON K2E 7T9	PO #: 62840	☐ 1 day ☐ 3 day
Telephone: 613 226 7381	E-mail: mdarcy@patersongroup.ca mbujaki@patersongroupca idillonsullivan@patersongroup.ca	☐ 2 day ☒ Regular
		Date Required:

☒ REG 153/04 ☐ REG 406/19

☐ Table 1 ☐ Agri/Other ☐ Med/Fine
☐ Table 2 ☐ Res/Park ☐ Coarse
☐ Table 3 ☐ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☐ No

Other Regulation

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

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

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)				
1	BH1-25-GW1	GW	–	3		Apr 10, 2025	5:20pm	X	X									
2	BH2-25-GW1						4:30pm	X	X									
3	BH3-25-GW1						3:30pm	X	X									
4	BH4-25-GW1						2:15pm	X	X									
5	BH5-25-GW1						1:15pm	X	X									
6	DUP1						–	X	X									
7																		
8																		
9																		
10																		

Required Analysis

Comments:

Method of Delivery: Paracel Courier

Relinquished By (Sign):	Received at Depot:	Received at Lab: SO	Verified By:
Relinquished By (Print): Isabelle Dillon-Sullivan	Date/Time:	Date/Time: Apr 11, 2025 4:30p	Date/Time: Apr 12 8:1
Date/Time: Apr 11, 2025 12pm	Temperature: °C	Temperature: 14.6	pH Verified: ☐ By: