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Phase Two Environmental Site Assessment (ESA)

12148 Albion Vaughan Road, Caledon, ON

Project #

1604603

Prepared For

12148 Albion Vaughan Inc.

April 3, 2023

12148 Albion Vaughan Inc.
April 3, 2023

Michael Liburdi
12148 Albion Vaughan Inc.
27 Fenton Way
Brampton, ON L6P 0P4

Dear Michael:

Re: Phase Two Environmental Site Assessment (ESA)
Project #: 1604603

We are pleased to present our Phase Two Environmental Site Assessment (ESA) report for the above-noted property. The scope of this Phase Two ESA conforms to the requirements outlined in Ontario Regulation 153/04 and 407/19. The purpose of this Phase Two ESA to support a development approval application with the Town of Caledon and may be required to support filing of a Record of Site Condition (RSC) with the Ministry of the Environment, Conservation and Parks (MECP).

The report provides information from Palmer's site reconnaissance, drilling activities, soil and ground water sampling, review of laboratory certificate of analysis, and our conclusions for your consideration.

We trust that this report will be satisfactory for your current needs. If you have any questions or require further information, please contact our office at your convenience.

Yours truly,

Palmer™

DRAFT

Sarah Sipak, B.Sc., P.Geo (limited), QP_{ESA}
Environmental Geoscience Team Lead

Executive Summary

Palmer is pleased to provide this Phase Two Environmental Site Assessment (ESA) report to 12148 Albion Vaughan Inc. The Phase Two ESA was prepared for the parcel of land located at 12148 Albion-Vaughan Road, Caledon, Ontario (hereafter collectively referred to as the “Phase Two Property”).

It is Palmer’s understanding that the purpose of this Phase Two ESA is to support a development approval application with the Town of Caledon and may be required to support filing of a Record of Site Condition (RSC) with the Ministry of the Environment, Conservation and Parks (MECP). The Phase Two Property (also referred to as the "Subject Property" or "Site") is contemplated for residential redevelopment with two adjoining towers (6 and 7 storeys) comprising 265 apartment units following demolition of the existing building. This Phase Two ESA Report has been prepared in accordance with Schedule E of Ontario Regulation 407/19 (amending Ontario Regulation 153/04) under the Environmental Protection Act (EPA).

The Phase Two Property is a 1.49 hectare, irregular shaped, parcel of land located on the east side of Highway 50 and west side of Albion-Vaughan Road, in Caledon, Ontario. Building structures on the Site include a 190 m², single storey residential building (with a full 1 level basement) which is currently vacant, and a 42 m² two-storey garage/ barn. Two (2) aboveground storage tanks (ASTs) are present in the basement of the residential dwelling, one (1) AST is present in the eastern portion of the Phase Two Property along the east exterior wall of the dwelling, and a stockpile of fill material of unknown quality is present in the southern portion. The remaining parts of the Site comprise grass and gravel surfaced areas.

Based on the findings of our recently completed Phase One ESA, the Phase One Study Area (“surrounding area”) covers land uses within a 250 metre (m) radius of the Phase Two Property. The Phase One Study Area is developed with residential, commercial, and industrial land uses, including a gasoline service station located approximately 50 m west of the Phase Two Property at 12182 Highway 50, an RV sale and rental shop at 12275 Highway 50, a truck and trailer repair center at 12249 Highway 50, a helicopter training and repair center at 11339 Albion-Vaughan Road, a Kia dealership at 12080 Albion-Vaughan road, a Toyota dealership at 12050 Albion-Vaughan Road, and Bulk Transfer Systems, Gold Freight, and Best Choice Express located at 11339 Albion-Vaughan Road.

A reach of the headwater tributary Robinson Creek transects the northwest portion of the Phase Two Property. This tributary has been historically altered and realigned by previous site owners. The tributary ultimately flows into the Humber River, which flows southward to Lake Ontario. Lake Ontario is located approximately 32 km south of the Phase Two Property. There are no areas of natural significance on the Phase Two Property or within the Phase One Study Area.

Historically, the Phase Two Property was first developed between 1954 and 1960 with a residential dwelling and a barn/ garage addition structure constructed between 1960 and 1970. A structure is present south of the residential dwelling between the years of 2005 and 2017, at which point a fill mound is visible in its place. In 2018, the fill mound is redistributed to smaller fill mounds. Between 1999 and 2017, a structure is present to the east of the existing barn/ garage. Tenants of the building have been residential through its entirety.

Based on the findings of the historical records review, Site reconnaissance, and personal interviews, it was concluded that seven (7) potentially contaminating activities (PCAs) were identified either on the Phase Two Property or within the Phase One Study Area. These PCAs were deemed to be contributing to seven (7) areas of potential environmental concern (APECs) on the Phase Two Property. The identified PCAs and APECs are as follows:

Table A. Summary of APECs and PCAs

APEC	Location of APEC on the Phase One Property	PCA	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern (COPC)	Media Potentially Impacted (Ground Water, Soil and/or Sediment)
APEC #1- Existing Interior Heating Oil Aboveground Storage Tanks (ASTs)	Eastern portion of the Phase One Property	#28. Gasoline and Associated Products Storage in Fixed Tanks	On-Site – Two (2) 909 L heating oil ASTs located in the basement of the residential dwelling	Petroleum Hydrocarbons (PHCs) Benzene, Toluene, Ethylbenzene, Xylene (BTEX)	Soil and Ground water
APEC #2- Existing Exterior Heating Oil AST	Eastern portion of the Phase One Property along the east exterior wall of the dwelling	#28. Gasoline and Associated Products Storage in Fixed Tanks	On-Site – One (1) 909-L heating oil AST located along the exterior west wall of the residential dwelling	PHCs BTEX	Soil and Ground water
APEC #3- Existing Hazardous Material Storage Likely Used for Equipment Maintenance	Eastern portion of the Phase One Property in the vicinity of the garage/barn structure	#52. Storage, Maintenance, Fueling, and Repair of Equipment, Vehicles, and Material Used to Maintain Transportation Systems	On-Site – Storage of unknown liquids (likely oil, lubricant, or degreaser) potentially used for equipment maintenance in garage/barn structure where evidence of surficial staining was observed on the ground surface	PHCs Volatile Organic Compounds (VOCs)	Soil and Ground water
APEC #4- Fill Stockpile	Southern portion of the Phase One Property	#30. Importation of Fill Material of Unknown Quality	On-Site – A stockpile of fill material of unknown quality	Metals, As, Sb, Se, and inorganic parameters (Na, B-HWS, Cl-, CN-, Cr(VI), Hg, low or high pH, EC and SAR).	Soil and Ground water
APEC #5- Existing diesel AST	Northern portion of the Phase One Property	#28. Gasoline and Associated Products Storage in Fixed Tanks	Off-Site – Existing exterior diesel AST located at 12190 Albion Vaughan Road	PHCs BTEX	Soil and Ground water

APEC	Location of APEC on the Phase One Property	PCA	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern (COPC)	Media Potentially Impacted (Ground Water, Soil and/or Sediment)
APEC #6- Existing Truck and Trailer Repair Center, historic metal fabrication	Northern portion of Phase One Property	#52. Storage, Maintenance, Fueling, and Repair of Equipment, Vehicles, and Material Used to Maintain Transportation Systems #34. Metal Fabrication	Off-Site – Existing <i>A.Z Repair Garage</i> truck and trailer repair garage in operating after 2000 and Historic <i>Leaside Sheet Metal and Room-Tal Mechanical</i> metal fabricating after 2000 located at 12249 Highway 50	PHCs VOCs Metals	Ground water
APEC #7- RV Repair Center with Fuel Underground Storage Tank (UST)	Northern portion of Phase One Property	#52. Storage, Maintenance, Fueling, and Repair of Equipment, Vehicles, and Material Used to Maintain Transportation Systems #28. Gasoline and Associated Products Storage in Fixed Tanks	Off-Site – Existing <i>Cruise Canada RV Rental and Sales</i> centre at 12275 Highway 50	PHCs VOCs Metals	Ground water

A Phase Two ESA was recommended to assess potential subsurface impacts as a result of the aforementioned PCAs and APECs.

The Phase Two ESA entailed the drilling of a total of four (4) boreholes to a maximum depth of 12.78 metres below ground surface (mbgs), and hand augured one (1) additional boreholes to refusal (a depth of 0.10 mbgs), at strategically selected and accessible locations on the Phase Two Property. In addition, three (3) soil samples were collected from the stockpiled fill material on the Phase Two Property. Ground water monitoring wells were also installed in all four (4) boreholes.

The observed soil stratigraphy generally comprised topsoil overlying silty clay and clayey silt fill, which was underlain by a stratum of clayey silt till. The soil across the property is considered to be fine-medium textured for the purpose of this assessment.

Fieldwork for this investigation began on March 2, 2021, by soil sampling from a total of four (4) exterior boreholes drilled to depths of 12.78 m below existing grade with the installation of four (4) monitoring wells, and hand augured one (1) additional borehole to refusal (a depth of 0.10 mbgs). In addition, three (3) soil samples were collected from the stockpiled fill material on the Phase Two Property. The stabilized ground water levels were measured at depths between 8.53 to 10.04 m below existing grade. No free-product was measured in any of the monitoring wells.

Based on the site topography and ground water level measurements, the ground water flow is interpreted to flow across the Site in a northerly direction. The results of the ground water monitoring also indicate that the primary near surface water table resides within the native clayey silt (till) layer.

Eleven (11) soil samples (representative of fill and native soils) and five (5) ground water samples were collected and submitted for laboratory analyses.

In comparison with the new (2011) Ontario *Soil, Ground Water, and Sediment Standards for Use Under Part XV.1 of the EPA criteria*, the results of laboratory analyses revealed Petroleum Hydrocarbon (PHC) exceedances in soil within the garage structure on the Phase Two Property, and Metal (Cadmium and Lead) exceedances in the stockpiled soil on the southwestern portion of the Phase Two Property in comparison to Table 3 criteria for residential/parkland/institutional (RPI) property uses with fine-medium textured soils in a non-potable ground water condition.

The aforementioned soil exceedances are likely a result from automotive repair activities within the garage structure, and the importation of fill materials in the southern portion of the Site.

Two (2) areas of impacted soil (PHC and Metals) have been identified on the Phase Two Property. These soil contaminants are located in the upper fill materials in the garage structure and within a stockpile of soil located on the southwestern portion of the property.

As the soil analytical results exceeded the Table 3 RPI standards in two (2) areas on the Phase Two Property, remedial activities were conducted to remove all of the PHC impacted upper fill materials within the garage. Stockpiled fill impacted with Cadmium and Lead should be disposed of off-site prior to land clearing and grading activities for the proposed redevelopment of the Site. Palmer has assumed that stockpiled material will be removed off-Site during the regrading of the Phase Two Property. Soil verification samples collected during the soil excavation in the garage structure were below the Table 3 RPI standards, thus the formerly identified area of PHC contamination was successfully remediated on the Phase Two Property.

The statements made in this Executive Summary are subject to the same limitations as contained in the report and should be read in conjunction with the entire report.

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1. Introduction

Palmer is pleased to provide this Phase Two Environmental Site Assessment (ESA) report to 12148 Albion Vaughan Inc. The Phase Two ESA was prepared for the parcel of land located at 12148 Albion-Vaughan Road, Caledon, Ontario (hereafter collectively referred to as the “Phase Two Property”), as shown in **Drawing 1**.

It is Palmer’s understanding that the purpose of this Phase Two ESA is to support a development approval application with the Town of Caledon and may be required to support filing of a Record of Site Condition (RSC) with the Ministry of the Environment, Conservation and Parks (MECP). The Phase Two Property (also referred to as the “Subject Property” or “Site”) is contemplated for residential redevelopment with two a six-storey and seven-storey condo tower, and two levels of underground parking following demolition of the existing building. This Phase Two ESA Report has been prepared in accordance with Schedule E of Ontario Regulation 407/19 (amending Ontario Regulation 153/04) under the Environmental Protection Act (EPA).

The assessment consisted of drilling, sampling, laboratory analysis and evaluation of results which characterized the subsurface conditions beneath the Site to establish any environmental contamination affecting the Site.

Conditions noted in this report are general in nature. This report presents the results of the investigation and the conclusions we have drawn regarding the possible impact of the conditions observed.

Phase Two Property Description

The Phase Two Property is a 1.49 hectare, irregular shaped, parcel of land located on the east side of Highway 50 and west side of Albion-Vaughan Road, in Caledon, Ontario. Building structures on the Site include a 190 m², single storey residential building (with a full basement) which is currently vacant, and a 42 m² two-storey garage/ barn. Two (2) Aboveground Storage Tanks (ASTs) are present in the basement of the residential dwelling, one (1) AST is present in the eastern portion of the Phase Two Property along the east exterior wall of the dwelling, and a stockpile of fill material of unknown quality is present in the southern portion. The remaining parts of the Site comprise grass and gravel surfaced areas.

The subject property is located west of Albion Vaughan Road and east of Highway 50, as shown in **Drawing 1** and the photograph appendix. The municipal address is 12148 Albion Vaughan Road with Property Identification Number (PIN) 14351-0058 (LT).

The legal description of the Phase Two Property is Part of Lot 1, Concession 7 Albion, in the Town of Caledon, Province of Ontario.

The center of the Phase Two Property is located in UTM Zone 17, with approximate coordinates of Easting 604588 m and Northing 4856267 m.

Property Ownership

At the time of the investigation, the Phase Two Property was owned and occupied by 12148 Albion Vaughan Inc. The authorization for Palmer to proceed with the Phase Two ESA was given by Mr. Michael Liburdi, Director of 12148 Albion Vaughan Inc. The contact information for the proponent is provided below:

Company Name: 12148 Albion Vaughan Inc.
Company Address: 27 Fenton Way, Brampton, ON L6P 0P4
Contact Name: Michael Liburdi
Contact email: mike@aztecrestoration.com

Current and Proposed Future Uses

Historically, the Phase Two Property was first developed between 1954 and 1960 with a residential dwelling and a barn/ garage addition structure constructed between 1960 and 1970. A structure is present south of the residential dwelling between the years of 2005 and 2017, at which point a fill mound is visible in its place. In 2018, the fill found is redistributed to smaller fill mounds. Between 1999 and 2017, a structure is present to the east of the existing barn/ garage. Tenants of the building have been residential through its entirety.

The current and proposed land uses are as follows:

Current or Proposed	Description of Property Use
Current	Residential– Existing residential dwelling and garage structure are vacant, and will be demolished.
Proposed	Residential – A six-storey and a seven-storey condo tower, and two levels of underground parking

Applicable Site Condition Standards

Ontario Regulation 153/04 – Records of Site Condition, Part XV.1 of the Environmental Protection Act as amended – “O.Reg. 153/04, as amended” – establishes the legislative and regulatory requirements for contaminated sites in Ontario. The Ministry of Environment, Conservation and Parks (MECP) document “Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act,” dated April 15, 2011 sets out the prescribed contaminants and applicable Site Condition Standards (SCS) for those contaminants for the purposes of O. Reg. 153/04, as amended. The MECP SCS are set out in Tables 1 to 9 criteria applicable for various site conditions.

The selection of the appropriate MECP SCS for a Phase Two ESA is dependent upon several site-specific conditions, such as the existing/proposed property use, the existing/potential ground water use, the depth of clean-up, soil texture, depth to bedrock and proximity to the nearest body of water.

The MECP SCS applicable to the Site have been evaluated on the basis of the following rationale:

Site Sensitivity:

- The site does not include, nor is there evidence to suggest it could have an adverse effect on a sensitive environment.
- The borehole drilling program revealed that the bedrock is deeper than 12.78 metres (m) below existing grade across the Site;
- The glacially-derived native clayey silt materials are of limited permeability to depths up to at least 12.78 m below ground surface; and
- The subsurface soil pH values are between 7.55 and 7.79. Three (3) soil samples (including one (1) duplicate sample) were collected on March 2 and 3, 2021, from BH21-4 and BH21-2, at depths of between the surface and 4.57 m below existing grade, to determine the soil pH for the Phase Two Property.

Land Use:

- The subject site is currently developed with a building to support residential land uses. Proposed residential redevelopment is anticipated.

Ground Water Use:

- The site is and will continue to be serviced by a municipal drinking water supply derived from Lake Ontario.

Depth and Soil Texture:

- For the purpose of the report, the assessment criteria corresponding to the full depth option will be used for comparison to the laboratory analytical results.
- One soil sample was collected on March 2, 2021 at the location of BH21-5 between 3.81 and 4.57 m below existing grade, to determine the soil grain size for the Phase Two Property.
- Based upon field observations, and soil grain size analyses conducted by ALS Environmental, the site stratigraphy generally comprises 29.6% silt and 47.8% clay. Therefore, for the purpose of this report, the assessment criteria corresponding to fine textured soils were selected for comparison in laboratory analytical results.
- The selected soil texture is applicable to at least one-third of the Site being assessed. Therefore, the fine-medium textured soil SCS can be used, as per Ontario Regulation 153/04, s.42 (1).

Based on the above information, the applicable EPA site assessment criteria selected for use at this Site is the Full Depth Generic SCS in a Non-Potable Ground Water Condition (Table 3) criteria for residential/parkland/institutional land uses with fine-medium textured soils.

2. Background Information

The environmental investigation conducted at the Site and the details of our findings are outlined in **Section 3**. The Phase Two ESA was conducted at the Site to address the APECs identified by the Palmer November 30, 2020, Phase One ESA for the Site.

Physical Setting

The Phase Two Property is located at a topographic elevation of approximately 230 m above mean sea level. Topography at and in the general vicinity of the Site is relatively flat with a minor local drop in elevation to towards Robinson Creek within the northwest portion of the Property, as shown in **Figure 8.2.1**.

The Phase Two Property is located within the northern limit of the broad physiographic region known as the Peel Plain (Chapman and Putnam, 1984). This region is a level-to-undulating tract of clay soils. This region stretches across the central portions of the Regional Municipalities of York, Peel, and Halton.

Local surficial geologic mapping (The Ontario Geological Survey, 2003) of the Caledon area indicates that clay to silt-textured till derived from glaciolacustrine deposits or shale of the Halton Till formation, underlie the Phase Two Property.

Bedrock geologic mapping of Ontario (The Ontario Geological Survey, 1990) indicates that the glacially derived overburden soil at the Phase Two Property is underlain by shale, limestone, dolostone, and siltstone of the Georgian Bay/Collingwood/Billings Formations.

A reach of the headwater tributary Robinson Creek transects the western portion of the Property. This feature has been historically realigned and altered, and is surmised to flow southeastwards ultimately discharging into the Humber River. Regional ground water flow is expected to be southeastwards towards Lake Ontario. The static ground water level in the vicinity of the Phase Two Property is noted to be between 21.9 and 54.8 m below existing grade based on well records in the vicinity of the Phase Two Property.

There are no areas of natural significance on the Phase Two Property or in the Phase One Study Area.

There are no well-head protection areas or other designation identified by the Municipality in its official plan for the protection of ground water on the Phase Two Property or within the Phase One Study Area.

The Phase Two Property is serviced by a municipal drinking water system with potable water derived from Lake Ontario. However, there are twenty-three (23) well records within a 250 m search radius. These records relate to domestic wells in the Phase One Study Area. The observed domestic water wells in the Phase One Study Area are noted to be abandoned and no longer in use, as the properties have been demolished or redeveloped, and are connected to the municipal drinking water system.

Past Investigations

One (1) report relating to the environmental conditions at the Phase Two Property were provided by the Client and reviewed by Palmer. A summary of the description of relevant report data, analysis and findings relevant to the Phase Two ESA, including the presence of a contaminant on, in or under the Phase Two Property or the existence of an area of potential environmental concern, is as follows:

Report Title: Phase One Environmental Site Assessment 12148 Albion Vaughan Road, Caledon, Ontario

Date: November 30, 2020

Prepared by: Palmer

Prepared for: 12148 Albion Vaughan Inc

Based on the findings of the historical records review, site reconnaissance, and interviews; PCAs and APECs were identified in association with the Phase One Property and/or Phase One Study Area. Refer to Table A in the Executive Summary.

A Phase Two ESA was recommended to assess potential subsurface impacts as a result of the PCAs and APECs identified in the Phase One ESA.

3. Scope of the Investigation

This Phase Two ESA Report has been prepared in accordance with Schedule E of Ontario Regulation 407/19 (amending Ontario Regulation 153/04) under the Environmental Protection Act (EPA). It is Palmer's understanding that the purpose of this Phase Two ESA is to support a development approval application with the Town of Caledon and may be required to support filing of an RSC with the MECP. The Phase Two Property (also referred to as the "Subject Property" or "Site") is contemplated for residential redevelopment with two (2) adjoining towers (6 and 7 storeys) comprising 265 apartment units following demolition of the existing building.

3.1 Overview of Site Investigation

To address the APECs identified in the Palmer 2021 Phase One ESA, Palmer conducted a Phase Two ESA consisting of drilling boreholes, installing monitoring wells, and sampling and chemical testing of soil and Ground water samples during the Phase Two ESA investigation.

Four (4) boreholes (BH21-1, BH21-2, BH21-4, and BH21-5), one (1) shallow hand augured borehole (BH21-3), and three (3) stockpile soil samples were advanced across the Site. Four (4) of the boreholes, BH21-1, BH21-2, BH21-4, and BH21-5, were completed as monitoring wells.

The rationale for the selection of borehole/monitoring well locations is shown on **Table 1** below:

Table 1. APEC Locations and Associated Boreholes and Monitoring Wells

Areas of Potential Environmental Concern	Location on Site	Sample Location / Sample ID
APEC #1- Existing Interior Heating Oil Aboveground Storage Tanks (ASTs)	Southeastern portion of the Phase One Property, east side of residential dwelling	BH21-4
APEC #2- Existing Exterior Heating Oil AST	Southeastern portion of the Phase One Property, west side of residential dwelling	BH21-5
APEC #3- Existing Hazardous Material Storage Likely Used for Equipment Maintenance	Central portion of the Phase One Property, in the vicinity of the garage/barn	BH21-3
APEC #4- Fill Stockpile	Southwestern portion of the Phase One Property	BH21-6, BH21-7, BH21-8
APEC #5- Existing diesel AST	Northern portion of the Phase One Property, adjacent to 12190 Albion Vaughan Road	BH21-2
APEC #6- Existing Truck and Trailer Repair Center, historic metal fabrication	Northern portion of the Phase One Property	BH21-1
APEC #7- RV Repair Center with Fuel Underground Storage Tank (UST)	Northern portion of the Phase One Property	BH21-1

The scope of work for this Phase Two ESA included the following tasks:

- Planned a site investigation through the preparation of a Sampling and Analysis Plan (refer to **Appendix A1**).
- Acquired utility locates: Prior to the advancement of the boreholes, arranging for the location of underground and overhead utilities including electrical (hydro), natural gas, water supply, sanitary and storm sewer, telephone, cable and communication. Underground utilities were marked by local utility locates company representatives, and a private locator, All Clear Locates, was retained to clear the borehole locations prior to drilling of the boreholes.
- Mobilized, drilled, and logged four (4) boreholes to a depth of 12.78 m, and one (1) hand augured boreholes to a depth of 0.10 metres below ground surface (mbgs).
- Collected three (3) stockpile soil samples.
- Installed 50-mm diameter perforated polyvinyl chloride (PVC) ground water monitoring wells in four (4) of the boreholes. All ground water monitoring wells were installed with 3.05 m of slotted PVC intake screen.
- Screened soil sample head-space for soil vapours using a portable photo ionization detector (PID) *Thermo 580B*.
- Measured the static ground water levels in the four (4) monitoring wells.
- Completed an elevation survey of the four (4) monitoring wells to obtain a ground water elevation measurement to confirm ground water flow direction at the Site at the time of the field investigation.
- Purged three (3) well casing volumes from each monitoring well or until each well was dry and collected ground water samples from the four (4) monitoring wells.
- Submitted soil and ground water samples under Chain of Custody protocol to an accredited laboratory to carry out chemical analysis for contaminants of potential concern in accordance with O.Reg. 153/04 – “Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the *Environmental Protection Act*” published by the MECP and dated March 9, 2004, as amended by O. Reg. 511/09, s. 22 (“Analytical Protocol”).
- Reviewed and interpreted laboratory results of chemical analysis data and observations made during the site investigation.
- Completed an evaluation of the information from the above and preparing a Phase Two Conceptual Site Model (CSM) to identify locations and concentrations of contaminants (if any) above the applicable SCS at the Site.
- Prepared a Phase Two ESA report of the investigation findings, conclusions, and recommendations.

Media Investigated

The Phase Two ESA included the investigation of soil and ground water at the Site.

Soil and ground water samples were selected for chemical analysis to determine whether any contaminants of potential concern (COPCs) were present in the soil and ground water in the locations of the APECs, outlined in the Palmer November 30, 2020 Phase One ESA.

A total of eleven (11) soil samples, including three (3) duplicate soil samples, and six (6) ground water samples, including one (1) duplicate ground water sample and one (1) trip blank sample, were submitted to ALS Environmental, for analysis of various COPCs to investigate the soil and ground water quality related to the aforementioned APECs. These COPC included PHCs, VOCs, BTEX, metals, As, Sb, Se, and inorganic parameters (Na, B-HWS, Cl-, CN-, Cr(VI), Hg, low or high pH, EC and SAR). Borehole and monitoring well locations are presented in **Drawing 2**.

Sediment sampling of the portion of Robinson Creek present on the Phase Two Property was not conducted during this investigation.

Phase One Conceptual Site Model

Site Description

The Phase Two Property is a 1.49 hectare (3.7 acre), irregular shaped, parcel of land comprising a 190 m², single storey, residential building (with a full basement), and a 42 m², two storey garage/ barn, both of which are currently vacant. Two (2) ASTs are present in the basement of the residential dwelling, one AST is present in the eastern portion of the Phase Two Property along the east exterior wall of the dwelling.

Historically, the Phase Two Property was first developed between 1954 and 1960 with a residential dwelling, and a barn/ garage addition structure constructed between 1960 and 1970. A structure is present south of the residential dwelling between the years of 2005 and 2017, at which point a fill mound is visible in its place. In 2018, the fill found is redistributed to smaller fill mounds. Between 1999 and 2017, a structure is present to the east of the existing barn/ garage. Tenants of the building have been residential through its entirety.

The remaining parts of the Site comprise grassland and gravel surfaced areas. A stockpile of fill material of unknown quality is present in the southern portion of the Phase Two Property.

Water Bodies / Areas of Natural Significance

Robinson Creek is present on the western portion of the Phase Two Property, adjacent to Highway 50. Robinson Creek is a tributary of Humber River, which flows southeastwards to Lake Ontario. This creek has been historically realigned and altered on-Site.

There are no Areas of Natural Significance on the Phase Two Property or within the Phase One Study Area.

Drinking Water Wells

There is one (1) drinking water well record for the Phase Two Property and twenty-three (23) well records within a 250 m search radius. These records relate to abandoned, domestic, or monitoring wells in the vicinity of the Phase Two Property. A record exists for an abandoned domestic water supply well, however, it was not observed during Palmer's Site Visit

Neighboring Land Use

The Phase One Study Area is developed with residential, commercial, and industrial land uses, including one gasoline service station located at 12182 Highway 50, an RV sale and rental shop at 12275 Highway 50, a truck and trailer repair center at 12249 Highway 50, a helicopter training and repair center at 11339 Albion-Vaughan Road, a Kia dealership at 12080 Albion-Vaughan road, and a Toyota dealership at 12050 Albion-Vaughan Road, and Bulk Transfer Systems, Gold Freight, and Best Choice Express located at 11339 Albion-Vaughan Road as presented in **Drawing 2**.

Areas of Potential Environmental Concerns (APECs)

Based on the findings of the historical record review, Site reconnaissance, and interviews, any APECs located on the Phase One Property and within the Phase One Study Area are labeled and located, as shown in **Drawing 4**. The following Potentially Contaminating Activities (PCAs) were found to be associated with the current or historical land uses of the Phase One Property and/or Phase One Study Area:

APEC	Location of APEC on the Phase One Property	PCA	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern (COPC)	Media Potentially Impacted (Ground Water, Soil and/or Sediment)
APEC #1- Existing Interior Heating Oil Aboveground Storage Tanks (ASTs)	Eastern portion of the Phase One Property	#28. Gasoline and Associated Products Storage in Fixed Tanks	On-Site	Petroleum Hydrocarbons (PHCs) Benzene, Toluene, Ethylbenzene, Xylene (BTEX)	Soil and Ground water
APEC #2- Existing Exterior Heating Oil AST	Eastern portion of the Phase One Property along the east exterior wall of the dwelling	#28. Gasoline and Associated Products Storage in Fixed Tanks	On-Site – One (1) 909-L heating oil AST located along the exterior west wall of the residential dwelling	PHCs BTEX	Soil and Ground water
APEC #3- Existing Hazardous Material Storage Likely Used for Equipment Maintenance	Eastern portion of the Phase One Property in the vicinity of the garage/barn structure	#52. Storage, Maintenance, Fueling, and Repair of Equipment, Vehicles, and Material Used to Maintain Transportation Systems	On-Site – Storage of unknown liquids (likely oil, lubricant, or degreaser) potentially used for equipment maintenance in garage/barn structure where evidence of surficial staining was observed on the ground surface	PHCs Volatile Organic Compounds (VOCs)	Soil and Ground water
APEC #4- Fill Stockpile	Southern portion of the Phase One Property	#30. Importation of Fill Material of Unknown Quality	On-Site – A stockpile of fill material of unknown quality	Metals, As, Sb, Se, and inorganic parameters (Na, B-HWS, Cl-, CN-, Cr(VI), Hg, low or high pH, EC and SAR).	Soil and Ground water

APEC	Location of APEC on the Phase One Property	PCA	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern (COPC)	Media Potentially Impacted (Ground Water, Soil and/or Sediment)
APEC #5- Existing diesel AST	Northern portion of the Phase One Property	#28. Gasoline and Associated Products Storage in Fixed Tanks	Off-Site – Existing exterior diesel AST located at 12190 Albion Vaughan Road	PHCs BTEX	Soil and Ground water
APEC #6- Existing Truck and Trailer Repair Center, historic metal fabrication	Northern portion of Phase One Property	#52. Storage, Maintenance, Fueling, and Repair of Equipment, Vehicles, and Material Used to Maintain Transportation Systems #34. Metal Fabrication	Off-Site – Existing <i>A.Z Repair Garage</i> truck and trailer repair garage in operating after 2000 and Historic <i>Leaside Sheet Metal</i> and <i>Room-Tal Mechanical</i> metal fabricating after 2000 located at 12249 Highway 50.	PHCs VOCs Metals	Ground water
APEC #7- RV Repair Center with Fuel Underground Storage Tank (UST)	Northern portion of Phase One Property	#52. Storage, Maintenance, Fueling, and Repair of Equipment, Vehicles, and Material Used to Maintain Transportation Systems #28. Gasoline and Associated Products Storage in Fixed Tanks	Off-Site – Existing <i>Cruise Canada RV Rental and Sales</i> centre at 12275 Highway 50	PHCs VOCs Metals	Ground water

Additional PCAs that were identified in association with the Phase One Study Area that are **not** of concern include:

APEC	Location of APEC on the Phase One Property	PCA	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern (COPC)	Media Potentially Impacted (Ground Water, Soil and/or Sediment)
APEC #8- Kia dealership located at 12080 Albion-Vaughan Road	N/A Property is inferred to be located hydraulically down-gradient from the Phase One Property	#10. Commercial Autobody Shops	Off-Site	PHCs BTEX VOCs	N/A Property is inferred to be located hydraulically down-gradient from the Phase One Property
APEC #9- Toyota dealership located at	N/A	#10. Commercial Autobody Shops	Off-Site	PHCs	N/A

APEC	Location of APEC on the Phase One Property	PCA	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern (COPC)	Media Potentially Impacted (Ground Water, Soil and/or Sediment)
12050 Albion-Vaughan Road	Property is inferred to be located hydraulically down-gradient from the Phase One Property			BTEX VOCs	Property is inferred to be located hydraulically down-gradient from the Phase One Property
APEC #10- Bulk Transfer Systems, Gold Freight, National Helicopters, and Tank Truck Transport operate shipping container storage and truck repair at 11339 Albion-Vaughan Road	N/A Property is inferred to be located hydraulically down-gradient from the Phase One Property	#52. Storage, Maintenance, Fueling, and Repair of Equipment, Vehicles, and Material Used to Maintain Transportation Systems #11. Commercial Trucking and Container Terminals	Off-Site	PHCs BTEX VOCs	N/A Property is inferred to be located hydraulically down-gradient from the Phase One Property
APEC #11- 100 Agropcorp Exports Ltd operating a trucking terminal at 100 AgriCorp Road	N/A Property is inferred to be located hydraulically down-gradient from the Phase One Property	#11. Commercial Trucking and Container Terminals	Off-Site	PHCs BTEX	N/A Property is inferred to be located hydraulically down-gradient from the Phase One Property
APEC #12- Roopa Knitting Mills Ltd operates a textile manufacturing at 77 Pillsworth Road	N/A Property is inferred to be located hydraulically down-gradient from the Phase One Property	#54. Textile Manufacturing and Processing	Off-Site	PHCs VOCs	N/A Property is inferred to be located hydraulically down-gradient from the Phase One Property
APEC #13- 12275 Highway 50 (United Lumber Home Hardware) – this record pertains to a Vendor License. These records are not considered to pose an environmental concern to the Phase One Property due to	N/A Property is inferred to be located hydraulically down-gradient from the Phase One Property	# 40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and	Off-Site	Organochlorine Pesticides	N/A Property is inferred to be located hydraulically down-gradient from the Phase One Property

APEC	Location of APEC on the Phase One Property	PCA	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern (COPC)	Media Potentially Impacted (Ground Water, Soil and/or Sediment)
being a small commercial operation, without large storage quantities.		Large-Scale Applications			
APEC #14- Existing Gasoline Service Station	N/A Property is inferred to be located hydraulically down-gradient from the Phase One Property	#28. Gasoline and Associated Products Storage in Fixed Tanks	Off-Site – Existing <i>Shell</i> gasoline service station in operation since 2017 located at 12182 Highway 50	PHCs BTEX Metals	N/A Property is inferred to be located hydraulically down-gradient from the Phase One Property
APEC #15- Spray paint booth, Inert inorganic waste generation registry	N/A Property is inferred to be located hydraulically down-gradient from the Phase One Property	#39. Paints Manufacturing, Processing and Bulk Storage #8. Chemical Manufacturing, Processing and Bulk Storage	Off-Site – Existing <i>Nor Galaxy Group</i> spray paint booth and <i>Premier Stone Ltd.</i> at 21 Parr Boulevard	VOCs	N/A Property is inferred to be located hydraulically down-gradient from the Phase One Property

Description of Assessment

PCAs with known or potential to affect the Phase One Property are as follows:

PCA Location	Location of APEC on the Phase One Property	Contaminants of Concern	Impact to Phase One Property (Known or Potential)
Furnace room of basement of dwelling on Phase One Property	Central portion of the Phase One Property, under existing residential dwelling	Petroleum Hydrocarbons (PHCs) Benzene, Toluene, Ethylbenzene, Xylene (BTEX)	Potential
Exterior, adjacent to the wall facing Highway 50	Central portion of the Phase One Property	PHCs BTEX	Potential
On main floor garage/ barn structure on the Phase One Property	Central portion of the Phase One Property	PHCs Volatile Organic Compounds (VOCs)	Potential
In the southern portion of the Phase One Property	Southern portion of the Phase One Property	Metals, As, Sb, Se, and inorganic parameters (Na, B-HWS, Cl-, CN-, Cr(VI), Hg, low or high pH, EC and SAR).	Potential
12190 Albion-Vaughan Road	Northwest boundary of the Phase One Property	PHCs BTEX	Potential
12182 Highway 50	Western corner of the Phase One Property	PHCs BTEX Metals	Potential
12275 Highway 50	Northern boundary of the Phase One Property	PHCs VOCs	Potential

PCA Location	Location of APEC on the Phase One Property	Contaminants of Concern	Impact to Phase One Property (Known or Potential)
		Metals	

Additional PCAs that **do not** affect the Phase One Property are as follows:

PCA Location	Location of APEC on the Phase One Property	Contaminants of Concern	Impact to Phase One Property (Known or Potential)
12080 Albion-Vaughan Road	<p>N/A</p> <p>Properties are inferred to be located hydraulically down-gradient from the Phase One Property</p> <p>N/A</p> <p>Small commercial operation, insufficient quantity</p>	PHCs BTEX VOCs	<p>N/A</p> <p>Properties are inferred to be located hydraulically cross-gradient and/or down-gradient from the Phase One Property</p>
12050 Albion-Vaughan Road		PHCs BTEX VOCs	
11339 Albion-Vaughan Road		PHCs BTEX VOCs PCBs Organochlorine (OC) Pesticides Metals	
100 Agrocrop Road		PHCs BTEX	
77 Pillsworth Road		PHCs VOCs	
12275 Highway 50		OC Pesticides	
12182 Highway 50		PHCs, BTEX	
21 Parr Boulevard		VOCs	

Underground utilities are expected to be present on the subject property (sanitary sewer, city water, telephone, electricity) and could potentially act as preferential pathways.

Local surficial geologic mapping (The Ontario Geological Survey, 2003) of the Caledon area indicates that clay to silt-textured till derived from glaciolacustrine deposits or shale of the Halton Till formation, underlie the Phase One Property.

A reach of the headwater tributary Robinson Creek transects the northwest portion of the Phase One Property. This tributary flows into Humber River, which flows southeastward to Lake Ontario. The local hydrogeology is controlled by this waterbody, the underlying geology, and the topography, and local ground water flow is expected to be northward. The regional ground water flow is expected to be southeastward towards Lake Ontario.

The exemption set out in Section 49.1 of Ontario Regulation 407/19 is not being relied upon.

It is not expected that any uncertainty or absence of information would affect the validity of the Conceptual Site Model (CSM).

Deviations from Sampling and Analysis Plan

The field investigation and sampling program was carried out following the requirements of the Sampling and Analysis Plan (SAP) (shown in **Appendix A1**).

Impediments

There were no impediments at the Site during the Phase Two ESA on-site investigation.

4. Investigation Method

Fieldwork for this investigation began on March 2, 2021, by soil sampling from a total of four (4) boreholes to a maximum depth of 12.78 metres below ground surface (mbgs), hand augured one (1) additional borehole to refusal (a depth of 0.10 mbgs), and collected three (3) soil samples from the stockpiled fill material at strategically selected and accessible locations on the Phase Two Property, at the locations shown in **Figure 8.2.2**. The boreholes on the Phase Two Property were strategically placed to address the PCAs and APECs identified in Table A.

General

This section of the report describes the various investigation methods used in the Phase Two ESA, including drilling, soil sampling, monitoring well installation, ground water sampling and analytical testing.

The Phase Two ESA was carried out in accordance with Palmer's SAP (**Appendix A1**).

The borehole locations were established in the field by Palmer staff prior to drilling. *Ontario One-Call* was contracted to locate and clear buried utility lines including telephone cables, natural gas mains, and hydro power lines. All the detected underground lines were identified on the ground by marking paints of various colours, as shown in **Drawing 2**.

Soil

Representative soil samples were recovered at each of the borehole locations. The soil stratigraphy was logged during drilling as soil samples were collected with dedicated dual tubes. Visual observations of any foreign materials or odours were also logged. The Finalized Field Logs are presented in **Appendix A2**.

Soil samples were split into portions that were collected into a plastic bag and a sample jar. Head space vapour concentrations were determined by allowing the bags to warm up to ambient temperature, probing into partially opened bags using a monitoring probe, and measuring the sample head space with a PID. Selected samples were placed in laboratory-supplied glass jars or vials and stored in a cooler during transport to the laboratory.

Ground Water

Upon completion of drilling, a 50-mm diameter PVC monitoring well was installed in four (4) boreholes for ground water monitoring. Initial ground water levels were measured and a dedicated length of low-density polyethylene (LDPE) tubing was inserted into the wells.

The wells were purged to waste in sealed drums and fresh ground water samples were drawn for chemical analyses using a low-flow peristaltic pump. Samples were also placed in laboratory-supplied glass bottles or vials and stored in a cooler on ice during transport to the laboratory.

Drilling and Excavating

Boreholes were advanced by using a CME 75 mounted on a track equipped with augers and split spoons, supplied and operated by Profile Drilling under the direction of Palmer staff. Disposable nitrile gloves were used and replaced between the handling of samples and all soil sampling equipment (stainless steel trowels, spatulas, etc.) was thoroughly decontaminated between soil sample locations to prevent potential cross-contamination. Decontamination activities included physical removal of any adhered debris, wash/scrub in “Alconox” soap solution, distilled water rinse, methanol rinse, and air dry.

Samples were collected continuously from the split spoons. Samples submitted to the laboratory were based on visual observations, results of headspace screening, and identified APECs and associated parameters of concern.

Soil: Sampling

All soil samples were collected in accordance with strict environmental sampling protocols to ensure reliable results. The equipment used to collect the soil samples was previously discussed in Section 4.0, 4.1, and 4.2.

The observed soil stratigraphy generally comprised topsoil overlaying silty clay and clayey silt fill with rootlets, which was underlain by a stratum of clayey silt till, as described in **Table 2** below. The Finalized Field Logs are provided in **Appendix A2**.

Table 2. Soil Stratigraphy Summary

Borehole/ Monitoring Well ID	Soil Stratigraphy	Depth (m)	Observations
BH21-1	Silty clay fill, brown with organics	0.00-0.30	No staining or odour observed in this stratum
	Clayey silt fill, brown, with trace sand	0.30-2.10	No staining or odour observed in this stratum
	Clayey silt till, grey	2.10-6.10	No staining or odour observed in this stratum
BH21-2	Silty clay fill, brown with organics	0.00-0.30	No staining or odour observed in this stratum
	Clayey silt fill, brown, with trace sand	0.30-2.10	No staining or odour observed in this stratum
	Clayey silt till, grey	2.10-6.10	No staining or odour observed in this stratum
BH21-3	Sandy gravel fill	0.00-0.10	Staining and petroleum odour
BH21-4	Silty clay fill, brown, with organics	0.00-0.60	No staining or odour observed in this stratum
	Clayey silt fill, brown, with trace sand	0.60-2.30	No staining or odour observed in this stratum

	Clayey silt till, grey, with trace gravel	2.30-6.10	No staining or odour observed in this stratum
BH21-5	Silty clay fill, brown with organics	0.00-0.30	No staining or odour observed in this stratum
	Clayey silt fill, brown, with trace sand	0.30-1.90	No staining or odour observed in this stratum
	Clayey silt till, grey, with trace gravel	1.90-6.10	No staining or odour observed in this stratum

Soil: Field Screening Methods

All soil samples were screened in the field for evidence of staining and odours. Soil sample headspace screening was also performed to facilitate sample selections for laboratory analysis and to provide an assessment of the vertical contaminant distributions at each borehole location.

The soil sample headspace screening was conducted with a PID Thermo 580B calibrated to a known isobutylene gas. The PID readings were recorded in parts per million (ppm), as shown in the Finalized Field Logs in **Appendix A2**.

Ground Water: Monitoring Well Installations

Upon completion of drilling, a 50-mm diameter, flush-joint threaded PVC monitoring well was installed in four (4) of the boreholes for ground water monitoring by Profile Drilling under the direction of Palmer staff.

The monitoring wells included a 3.05 m length of slotted PVC intake screen. The wells were then extended from the top of the intake screen to the ground surface using solid PVC riser pipe. A silica sand filter pack was placed between the intake screen and the wall of the borehole. The filter pack was extended approximately 0.6 m above the top of the well screen to allow for settlement of the sand packs and to accommodate expansion of the overlying well seals. A bentonite seal was placed above the sand pack and extended to approximately 0.3 mbgs. Monument well casings were installed above the ground surface. No glue was used in the construction of the monitoring well.

Elevations and associated monitoring well construction details are shown in **Table 8.1.1**. The location of the monitoring wells are shown in **Figure 8.2.3**, and the well completion diagrams are also shown on the Finalized Field Logs in **Appendix A2**.

All ground water monitoring wells installed at the Phase Two Property were instrumented with sufficient lengths of LDPE tubing to facilitate well development and purging requirements. Following the initial installation, depths to the static water level were measured and each monitoring well was developed by purging either three (3) well casing volumes or until the well went dry at least once. The well development occurred in order to remove any fluids that may have been introduced into the well during drilling, to remove particulates that may have become entrained in the well and filter pack, to stabilize and grade the filter pack, improve connectivity between the well and the formation, and restore ground water that may have been disturbed or altered during the drilling process to ensure the samples to be representative of true formation waters. The purging activities were carried out using the dedicated LDPE tubing and a low-flow peristaltic pump.

Purging of the four installed monitoring wells was completed on March 3 and 4, 2021 and was as follows:

Table 3. Monitoring Well Development Details

Monitoring Well ID	Date of Development/Purging	Time of Development/Purging	Volume of Fluid Removed from Well (L)
BH21-1	March 4, 2021	10am	20.3
BH21-2	March 4, 2021	12pm	15.8
BH21-4	March 3, 2021	10am	13.1
BH21-5	March 3, 2021	2pm	14.1

The development was completed on the aforementioned date as all four (4) monitoring wells were purged of a minimum of three (3) well volumes.

Ground Water: Field Measurement of Ground water Quality Parameters

On March 3, and 4, 2021, after the monitoring wells were purged of a minimum of three well casings of water, the following water quality field parameters were measured using a Quanta multi-probe prior to sampling:

Table 4. Ground Water Quality Parameters

Monitoring Well ID	pH (pH units)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	Temperature (°C)
BH21-1	6.80	0.679	12.46	8.33
BH21-2	6.11	0.410	15.36	8.78
BH21-4	5.93	0.872	12.60	9.04
BH21-5	5.94	0.548	12.26	8.29

Ground Water: Sampling

All ground water samples were collected in accordance with strict environmental sampling protocols to ensure reliable results. Any equipment used to collect the ground water samples are previously discussed in *Section 4.0, 4.1, and 4.2.*

The wells were purged to waste in sealed drums and fresh ground water samples were drawn for chemical analyses. During the sampling round, ground water samples were collected using a low-flow peristaltic pump, with dedicated tubing installed in each of the monitoring wells. This method minimizes the velocity of the formation water entering the well screen, as the drawdown is kept to a minimum (i.e., less than 10 cm) by adjusting the pumping rate. The samples were placed in laboratory-supplied glass bottles or vials and stored in a cooler on ice during transport to the laboratory.

Ground water monitoring, including measuring the depth to the stabilized water level, was conducted on March 3 and 4, 2021. Measurements of ground water depth were made using an electronic oil water interface probe. Ground water level measurements are shown in **Table 8.1.2.**

In addition, the ground water was screened in the field (during all monitoring events) for evidence of free product including presence of liquid petroleum hydrocarbons (LPH), sheen (iridescence), odour and colour, as summarized in **Table 8.1.3**.

Sediment: Sampling

Sediment sampling of the portion of Robinson Creek present on the Phase Two Property was not conducted during this investigation.

Analytical Testing

ALS Environmental (ALS) performed chemical analysis on soil and ground water samples collected from boreholes/monitoring wells at the Site. ALS is an accredited laboratory under the Standards Council of Canada (SCC) and the Canadian Association for Laboratory Accreditation (CALA), in accordance with the international standard ISO/IE 17025:2005 – General Requirements for the Competence of Testing and Calibration. ALS is accredited for all parameters required under Ontario Regulation 153/04 – Record of Site Condition, as outlined in MECP Technical Update entitled “Laboratory Accreditation Requirements under the New Records of Site Condition Regulation (O. Reg. 153/04).

Based on visual observations, results of headspace screening, and identified APECs and associated parameters of concern, eleven (11) selected soil samples (representative of fill materials and native soils), and six (6) ground water samples were submitted to ALS Environmental, for the following analyses:

- PHCs on five (5) soil and five (5) ground water samples (including one (1) QA/QC samples for soil and one (1) QA/QC samples for ground water);
- BTEX on four (4) soil and three (3) ground water samples (including one (1) QA/QC sample for soil and one (1) QA/QC sample for ground water);
- VOCs on one (1) soil and four (4) ground water samples (including one (1) QA/QC sample for soil and two (2) Q/QC samples for ground water, including one (1) trip blank);
- Metals, As, Sb, Se, and Inorganics on four (4) soil samples (including one (1) QA/QC sample); and
- Metals, As, Sb, and Se on three (3) ground water samples (including one (1) QA/QC sample)

The Laboratory Certificate of Analyses and Analytical Reports are reproduced in **Appendix A3**.

Residue Management Procedures

All soil cuttings from the borehole drilling activities, water from the well development and purging, and all fluids from equipment cleaning were stored in secure containers on the Phase Two Property, and disposed of during the completion of remediation activities.

Elevation Surveying

The ground surface elevation of borehole and monitoring wells was surveyed by Palmer personnel. The elevations were surveyed based on a marked local benchmark. The benchmark is at Station 20220110017, located on the roof of 1050 Stacey Court, Mississauga, ON. The elevation at this point is understood to be at Ellipsoidal Elev. 120.138 metres.

A legal survey of the Phase Two Property can be seen in **Appendix A5**.

Quality Assurance and Quality Control Measures

A Quality Assurance and Quality Control (QA/QC) program, developed as part of the SAP, was followed by Palmer to ensure the integrity of all soil and ground water samples was maintained and that they were representative of the Site conditions. The QA/QC program was developed in accordance with the Analytical Protocol.

The jars and preservatives (where applicable) used in the collection of soil and ground water samples were supplied by ALS Environmental. The soil samples intended to be submitted for analysis of VOCs and PHC F1 were immediately preserved in laboratory provided methanol vials to sequester the volatile compounds.

The soil samples from the boreholes which were advanced using solid stem augers were collected with split spoon samplers which were decontaminated after the extraction of each sample.

The soil and ground water samples were labelled as they were collected. Samples were stored in ice-packed coolers, until the samples were transported to the laboratory for chemical analysis.

The soil and ground water samples were handed over to the laboratory by Palmer staff. Chains of Custody of the samples were logged with Chain of Custody Forms.

As discussed in Section 4.4 above, the monitoring wells were installed by direct drilling with solid stem augers. All drilling equipment arrived at the Site in a pre-cleaned condition. The augers were cleaned with a brush and washed between monitoring well locations.

The stainless-steel sampling tool (trowel) was decontaminated between sampling locations in the following sequence: cleaned with a brush to remove adhered soil and/or debris, rinsed with distilled water and allowed to air dry.

Field duplicate samples for both soil and ground water were submitted to ALS for chemical analysis for QA/QC purposes.

For soil samples, three (3) duplicate samples (21-4-4D, duplicate of soil sample 21-4-4, 21-2-6D, duplicate soil sample of 21-2-6, and 21-8D, duplicate of soil sample 21-8) were submitted to ALS for analysis.

For ground water samples, one (1) duplicate ground water sample (21-2D, duplicate of ground water sample 21-2) and one (1) trip blank were submitted to ALS for analysis.

The laboratory quality assurance program included the analysis of laboratory duplicate samples, methods blanks, matrix spikes and samples of reference materials, in accordance with the Analytical Protocol.

5. Review and Evaluation

Geology

The subsurface profiles and associated below grade elevations encountered at the Phase Two Property are described in the Finalized Field Logs in **Appendix A2**.

The estimated thickness range of each geologic unit is as follows:

Table 5. Summary of Geology

	Geologic Unit	Range Depth (m)
Surface	Silty clay	0.00 to 0.60
Fill Strata	Clayey silt fill	0.30 to 2.30
Till Strata	Clayey silt till, grey, with occasional cobbles	1.90 to 6.10
Bedrock	Not encountered	

The soil across the property is considered to be fine-textured for the purpose of this ESA.

Ground Water: Elevations and Flow Direction

Ground water levels were measured in the monitoring wells on March 3 and 4, 2021, using a Solinst Interface Probe. Ground water levels and measured elevations are presented on the borehole logs and are summarized below:

Table 6. Summary of Ground Water Conditions

Monitoring Well ID	Date	Ground Surface Elevation (mAMSL)	Depth to GW (mbgs)	GW Elevation (mAMSL)	Observations
BH21-1	March 4, 2021	229.00	8.53	220.47	None
BH21-2	March 3, 2021	229.56	8.99	220.57	None
	March 4, 2021		10.04	219.52	None
BH21-4	March 3, 2021	230.05	9.67	220.38	None
	March 4, 2021		9.78	220.87	None
BH21-5	March 3, 2021	229.90	9.53	220.03	None
	March 4, 2021		9.61	220.29	None

The results of the ground water monitoring indicated that the primary near surface water table resides within the clayey silt native (till) layer.

As summarized in **Table 8.1.3**, no free-product was observed in any of the monitoring wells monitored on the Phase Two Property.

Based on the overburden ground water elevations, the ground water is interpreted to flow across the Site in a northerly direction. The ground water elevations and interpreted flow direction is presented in **Figure 8.2.3**.

Temporal variability in the ground water flow direction could not be assessed during this Phase Two investigation since ground water elevations were obtained during one (1) filed visit in March 2021 and no historical ground water data is available.

Ground water Hydraulic Gradients

The horizontal hydraulic gradient was estimated for the water table based on the March 4, 2021 ground water elevations.

The horizontal hydraulic gradient is calculated using the following equation:

$$i = \Delta h / \Delta s$$

Where,

i = horizontal hydraulic gradient

Δh (m) = Ground water elevation difference; and,

Δs (m) = separation distance.

The following horizontal hydraulic gradient calculations (as shown in **Figure 8.2.3**) using ground water monitoring data across the site revealed the following hydraulic gradients on the Phase Two Property:

		Horizontal Hydraulic Gradient in Native (Till) Unit (m/m)
Horizontal	Average	0.02005
	Minimum	0.03733
	Maximum	0.03845

It should be noted that vertical hydraulic gradients were not evaluated for the Site and ground water impacts were not vertically distributed at the depths investigated at the Phase Two Property.

The hydraulic conductivity of the clayey silt Till unit was derived by using Puckett's formula, which uses the percentage of clay or percentage of the sample finer than 0.002 mm by weight (refer to laboratory grain size analyses provided in **Appendix A3**). Based on grain size analysis testing, the hydraulic conductivity of the native till is on the order of 7.11×10^{-8} m/s. Therefore, the soil's ability to transmit water across the site (in the native till materials) is slow and verifies that the potential for vertical migration of contamination is limited on the Phase Two Property. Furthermore, a hydraulic conductivity of 7.11×10^{-8} m/s is consistent with an unconsolidated deposit of glacial till with silt and loess (Freeze and Cherry, 1979) and represents a moderately impermeable aquitard unit.

Fine-Medium Soil Texture

Fine-medium soil texture was used for this investigation, as soil grain size analyses conducted by ALS Environmental on one (1) soil sample collected from the native till unit (BH109-4), revealed clayey silt till, which resembles fine-medium textured soils, as previously discussed in *Section 1.4*.

Soil: Field Screening

Sample headspace screening with the PID yielded readings from non-detect to 0.3ppm, as shown in the Finalized Field Logs in **Appendix A2**.

These readings and any field observations (staining, odours, etc.) were considered when selecting soil samples for laboratory analyses.

Soil Quality

In accordance with the scope of work, chemical analyses were performed on selected soil samples recovered from the boreholes. The selection of representative “worst case” soil samples was based on visual and/or olfactory evidence of impacts, known historical contamination and the presence of potential water bearing zones. The results of the soil sample analyses, and their respective Table 3 SCS, are summarized in **Table Series 8.1.4**. Measured contaminant concentration exceedances in soil can be seen in **Figures 8.2.4**.

A total of nine (9) soil samples including two (2) duplicate soil samples were submitted to ALS for analysis of various COPC to investigate the soil quality related to the APECs. These COPC included PHCs, BTEX, Metals, As, Sb, Se, and inorganic parameters (Na, B-HWS, Cl-, CN-, Cr(VI), Hg, low or high pH, EC and SAR).

Table 7 lists the exceedances in the analysed soil samples collected during Palmer’s investigation.

Table 7. Soil Exceedances of MECP Table 3 Criteria

Sample ID	Borehole ID	Depth (mbgs)	Exceeding Parameters	Concentration	Unit	MECP Table 3 RPI SCS
BH21-3-1	BH21-3	0.00-0.10	PHC F3	13,100	ug/g	1,300
21-8	21-8	0.00-0.30	Cadmium	3.06	ug/g	1.2
21-8	21-8	0.00-0.30	Lead	146	ug/g	120
21-8D	21-8	0.00-0.30	Cadmium	3.06	ug/g	1.2

Based on current soil sampling results, PHC exceedances in soil have been identified in one (1) location on the Phase Two Property, as shown in **Figures 8.2.4**. The location of the PHC exceedance is inside a garage located on the Phase Two property, where staining was observed on unpaved surfaces adjacent to a drum of unknown liquid. The Lead and Cadmium exceedances were identified within the stockpiled soil observed in the southwest portion of the Phase Two Property, and are associated with importation of fill of unknown quality.

Furthermore, soil maximum concentration data can be seen in **Table Series 8.1.7**.

Ground Water Quality

On March 3 and 4, 2021, four (4) ground water samples, one (1) duplicate and one (1) trip blank were collected from monitoring wells BH21-1, BH21-2, BH21-3, and BH21-4, to assess ground water quality at the Site. The results of the ground water sample analyses, and their respective Table 3 SCS, are summarized in **Table Series 8.1.5**.

No evidence of free product (i.e., visible film or sheen), or odour was observed during well purging and ground water sampling from the newly installed wells and existing wells. Ground water samples that were analyzed for metal parameters were field filtered at the time of collection.

The samples collected were analysed for one or more of the COPCs, including PHCs, VOCs, Metals, As, Sb, Se, and inorganic parameters (Na, B-HWS, Cl⁻, CN⁻, Cr(VI), Hg, low or high pH, EC and SAR).

The concentrations of the COPCs in the tested ground water samples were in compliance with the MECP Table 3 SCS.

Ground water maximum concentration data can also be seen in **Table Series 8.1.7**.

Sediment Quality

Sediment sampling was not part of this investigation, as previously discussed in *Section 4.8* and **Table 8.1.6**.

Quality Assurance and Quality Control Results

The QA/QC samples for this Phase Two ESA investigation included field duplicates for soil and ground water, and a trip blank for QA/QC purposes. The trip blank was submitted with ground water samples for analysis of VOCs.

The purpose of the duplicate samples is to measure the precision or reproducibility of the field and laboratory methodology used in the collection and analysis of the samples. The precision is evaluated in terms of the relative percent difference (RPD). The RPDs of the primary and duplicate samples were not calculated in situations where the concentrations of both primary and duplicate samples were at least 5 times less than the laboratory Reporting Detection Limits (RDLs) for the parameters analyzed.

Laboratory quality control limits for duplicate, method blank, method blank spike, matrix spike and surrogate recoveries were within the acceptable limits.

No tested parameters were detected in the trip blank.

All of the samples were handled in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (Analytical Protocol) with respect to preservation methods, storage requirements, or container type without any exception. Holding times were met for all samples.

The RPDs for all remaining reported concentrations were not calculated considering that the results were below the laboratory minimum detection limits or less than 5 times of the method detection limit in both samples. No other QA/QC concerns were noted.

Based on the review of QA/QC sample results of soil and ground water, it is certified that:

- All Certificates of Analysis or analytical reports received pursuant to clause 47 (2) (b) of the regulation comply with subsection 47 (3);
- A Certificate of Analysis report has been received for each sample submitted for analysis; and
- All Certificates of Analysis or analytical reports received have been included in full in **Appendix A3** of this Phase Two ESA report.

ALS has certified that the analytical methods and data meet the requirements of the Analytical Protocol and that holding times were met for all samples.

Laboratory quality control limits for duplicate, method blank, method blank spike, matrix spike and surrogate recoveries were within the acceptable limits.

The sampling program was carried out in accordance with the SAP. All requirements of the Analytical Protocol were met.

In summary, decision making was not affected by the quality of the data obtained and the overall objectives of the assessment were met.

Phase Two Conceptual Site Model

Section i. A description and assessment of the Phase Two Property:

The Phase Two Property is a residential parcel of land that currently comprises a vacant residential dwelling, a garage/ shed, and overgrown vegetation. The Phase Two Property is currently vacant Two (2) interior heating oil aboveground storage tanks, one (1) exterior aboveground storage tank, surficial staining in the garage, and imported fill materials were observed at the Phase One Property.

A. Potentially Contaminating Activities (PCAs)	There are four (4) PCAs (1-4) on the Phase Two Property and three (3) PCAs (5-7) within the Phase One Study Area.		
	PCA 1 (Item #28)	On-Site	Existing Interior Heating Oil Aboveground Storage Tanks (ASTs) installed at maximum depth of 1.5 mbgs.
	PCA 2 (Item #28)	On-Site	Existing Exterior Heating Oil AST installed on exposed ground
	PCA 3 (Item #52)	On-Site	Existing Hazardous Material Storage Likely Used for Equipment Maintenance

	PCA 4 (Item #30)	On-Site	Fill Stockpile of unknown quality
	PCA 5 (Item #28)	Off-Site- 12190 Albion Vaughan Road	Existing diesel AST installed on exposed ground
	PCA 6 (Items #52, #34)	Off-Site- 12249 Highway 50	Existing Truck and Trailer Repair Center, historic metal fabrication
	PCA 7 (Items #52, #28)	Off-Site- 12275 Highway 50	Repair Center with Fuel Underground Storage Tank (UST)
	Refer to Drawing 3 .		
B. Areas of Potential Environmental Concerns (APECs)	There are seven (7) APECs on the Phase Two Property where PCAs (both on-Site and off-Site) may have affected the soil and/or ground water at the Phase Two Property:		
	APEC 1	On-Site – Two (2) 909 L heating oil ASTs located in the basement of the residential dwelling. Maximum contaminant concentrations are expected between 1.5 to 2 mbgs in soil.	
	APEC 2	On-Site – One (1) 909-L heating oil AST located along the exterior west wall of the residential dwelling. Maximum contaminant concentrations are expected between 0.75 and 1.5 mbgs in soil.	
	APEC 3	On-Site – Storage of unknown liquids (likely oil, lubricant, or degreaser) potentially used for equipment maintenance in garage/barn structure where evidence of surficial staining was observed on the ground surface. Maximum concentrations are expected between the ground surface and 0.75 mbgs.	
	APEC 4	On-Site – A stockpile of fill material of unknown quality	
	APEC 5	Off-Site – Existing exterior diesel AST located at 12190 Albion Vaughan Road	
	APEC 6	Off-Site – Existing <i>A.Z Repair Garage</i> truck and trailer repair garage in operating after 2000 and Historic <i>Leaside Sheet Metal</i> and <i>Room-Tal Mechanical</i> metal fabricating after 2000 located at 12249 Highway 50.	
	APEC 7	Off-Site – Existing <i>Cruise Canada RV Rental and Sales</i> centre at 12275 Highway 50	
	Refer to Drawing 3 and Drawing 4 .		

	COPC associated with the abovementioned APECs include the following:			
	APEC	COPC	Media Potentially Impacted	Borehole/ Monitoring Well Location Sampled for COPC
	1	Petroleum Hydrocarbons (PHCs) Benzene, Toluene, Ethylbenzene, Xylene (BTEX)	Soil and Ground water	BH21-4
	2	PHCs, BTEX	Soil and Ground water	BH21-5
	3	PHCs Volatile Organic Compounds (VOCs)	Soil and Ground water	BH21-3
	4	Metals, As, Sb, Se, and inorganic parameters (Na, B-HWS, Cl-, CN-, Cr(VI), Hg, low or high pH, EC and SAR).	Soil	BH21-6, BH231-7, BH21-8
	5	PHCs, BTEX	Soil and Ground water	BH21-2
	6	PHCs, VOCs Metals	Ground water	BH21-1
	7	PHCs, VOCs, Metals	Ground water	BH21-1
	Soil samples associated with APECs 1, 2, and 3 were collected at depths between 1.5 and 2 mbgs, 0.75 and 1.5 mbgs, and ground surface and 0.75 mbgs, respectively, in relation to the former AST locations being installed at ground surface and within the basement of the dwelling.			
	Refer to Cross-Sections A-A' and B-B' .			
C. Any subsurface structures and utilities on, in, or under the Phase Two Property	Subsurface structures identified on, in, or under the Phase Two Property include a partial basement associated with the residential building located on the eastern portion of the Site.			
	Subsurface utilities identified on, in, or under the Phase Two Property include municipal water, street lighting, hydro, and Bell Canada.			

	<p>Refer to Drawing 2.</p> <p>Site-wide, subsurface structures and utilities are generally installed above the ground water table at the site.</p>
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Section ii. A description of the physical setting of the Phase Two Property:

<p>The Phase Two Property is a 1.49-hectare, irregular shaped, parcel of land located on the east side of Highway 50 and west side of Albion Vaughan Road, in Caledon, Ontario. Refer to Drawing 2.</p>																
<p>A. Stratigraphy from ground surface to the deepest aquifer or aquitard investigated</p>	<p>The observed soil stratigraphy comprised:</p> <table border="1" style="margin-left: 40px;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 55%;">Geologic Unit</th> <th style="width: 30%;">Depth Range (m)</th> </tr> </thead> <tbody> <tr> <td>Surface</td> <td>Silty clay</td> <td>0.00 to 0.60</td> </tr> <tr> <td>Fill Strata</td> <td>Clayey silt fill</td> <td>0.30 to 2.30</td> </tr> <tr> <td>Till Strata</td> <td>Clayey silt till, grey, with occasional cobbles</td> <td>1.90 to 6.10</td> </tr> <tr> <td>Bedrock</td> <td colspan="2">Not Encountered.</td> </tr> </tbody> </table> <p>Fill strata was identified between 0.30 and 1.90 m below existing grade; minor debris (brick) was observed at two (2) borehole locations, at a depth of between 0.61 to 0.91 mbgs. No evidence of any waste or debris was observed in the strata. Therefore, the observed fill material is considered to be reworked native materials.</p> <p>Refer to Cross-Sections A-A' and B-B'.</p> <p>One (1) soil sample was collected in the till strata between 3.81 and 4.57 mbgs to determine the soil grain size for the Phase Two Property. Soil grain size analyses conducted by the laboratory classified the soil as silty sand and clay comprising approximately 29.6% silt and 47.8% clay. Since more than 50% of the particles were smaller than 75 micrometres in diameter, the assessment criteria corresponding to medium-fine textured soils were selected for comparison in laboratory analytical results.</p>		Geologic Unit	Depth Range (m)	Surface	Silty clay	0.00 to 0.60	Fill Strata	Clayey silt fill	0.30 to 2.30	Till Strata	Clayey silt till, grey, with occasional cobbles	1.90 to 6.10	Bedrock	Not Encountered.	
	Geologic Unit	Depth Range (m)														
Surface	Silty clay	0.00 to 0.60														
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Till Strata	Clayey silt till, grey, with occasional cobbles	1.90 to 6.10														
Bedrock	Not Encountered.															
<p>B. Hydrogeological characteristics</p>	<p>The results of the ground water monitoring indicated that the primary near surface water table resides within the clayey silt native (till) layer.</p> <p>Ground water flow is interpreted to flow across the Site in a northerly direction. Refer to Figure 8.2.3.</p>															

	<p>The following horizontal hydraulic gradient calculations using ground water monitoring data across the site revealed the following on the Phase Two Property:</p> <table border="1" data-bbox="643 342 1255 533"> <thead> <tr> <th colspan="2"></th> <th>Native (Till) Unit</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Horizontal</td> <td>Average</td> <td>0.02005 m/m</td> </tr> <tr> <td>Maximum</td> <td>0.03733 m/m</td> </tr> <tr> <td>Minimum</td> <td>0.03845 m/m</td> </tr> </tbody> </table> <p>Based on grain size analysis testing, the hydraulic conductivity of the native till is 7.11×10^{-8} m/s. Therefore, the soil's ability to transmit water across the site (in the native till materials) is slow and verifies that the potential for migration of contamination is limited on the Phase Two Property. Furthermore, a hydraulic conductivity of 7.11×10^{-8} m/s is consistent with an unconsolidated deposit of glacial till with silt and loess (Freeze and Cherry, 1979) and represents a moderately impermeable aquitard unit.</p>			Native (Till) Unit	Horizontal	Average	0.02005 m/m	Maximum	0.03733 m/m	Minimum	0.03845 m/m
		Native (Till) Unit									
Horizontal	Average	0.02005 m/m									
	Maximum	0.03733 m/m									
	Minimum	0.03845 m/m									
<p>C. Approximate depth of bedrock</p>	<p>Bedrock was not encountered within the maximum extent (12.78 mbgs) of the borehole drilling investigation. Therefore, it is assumed that bedrock exists deeper than 12.78 mbgs across the Phase Two Property.</p> <p>Well records within the Phase One Study Area indicated that bedrock exists approximately 55.2 mbgs in the vicinity of the Phase Two Property.</p>										
<p>D. Approximate depth to water table</p>	<p>Ground water was observed between 8.53 to 10.04 mbgs in the lower native (till) unit.</p>										
<p>E. Any respect in which Section 35, 41, or 43.1 of the regulation applies to the property</p>	<p>Section 35, non-potable site condition standards, applies to the Phase Two Property based on the following:</p> <ul style="list-style-type: none"> • The property and all properties located within a 250 m radius of the property are supplied by a municipal drinking water system, as defined in the Safe Drinking Water Act, 2002 (shown in Drawing 3); • The proposed use of the Phase Two Property is residential use; • The property is not located in an area designated in the municipal official plan as a well-head protection area or other designation identified by the municipality for the protection of groundwater, and there are no wells on the property or within the Phase One Study Area used for human consumption or agriculture; and, • The local and regional municipality have consented in writing to the application of the non-potable site condition standards. <p>Section 41 and 43.1 do not apply to the Phase Two Property.</p>										
<p>F. Areas on, in, or under the Phase Two Property where excess soil is finally placed</p>	<p>Excess soil was not brought to the Site for backfilling and/or grading purposes.</p>										

<p>G. Approximate locations, if known, of any proposed buildings and other structures</p>	<p>The proposed redevelopment will be residential.</p> <p>Residential redevelopment will comprise two (2) adjoining towers (6 and 7 storeys) comprising 265 apartment units following the demolition of the existing building. The proposed building locations are shown in Drawing 4.</p>
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Section iii. Where a contaminant is present on, in, or under the Phase Two Property at a concentration greater than the applicable site condition standard, identification of:

<p>A. Each area where a contaminant is present on, in or under the Phase Two Property</p>	<p>The following limited areas of soil contamination were identified:</p> <p>1s. Central portion of the Phase Two Property; 2s. Southern portion of the Phase Two Property.</p> <p>Refer to Drawing 4.</p>
<p>B. The contaminants associated with each of the areas referred to in subparagraph A</p>	<p>Contaminants associated with the aforementioned areas are as follows:</p> <p>1s. Petroleum Hydrocarbons (PHCs) F3 2s. Lead and Cadmium</p>
<p>C. Each medium in which a contaminant associated with an area referred to in subparagraph is present</p>	<p>The aforementioned exceedances occurred in soil at depths of between 0.00 and 0.10 mbgs and within the stockpiled fill material, as noted above.</p>
<p>D. A description and assessment of what is known about each of the areas referred to in subparagraph A</p>	<p>Limited areas of soil contamination in the central portion of the Phase Two Property are associated with staining adjacent to a drum of unknown liquid, likely automotive in use. Areas of contamination in the southern portion of the Phase Two Property are associated with the importation of fill materials.</p>
<p>E. The distribution, in each of the areas referred to in subparagraph A</p>	<p>Drawing 4 shows the profile locations for Cross-Sections A-A' and B-B', and depict the horizontal and vertical distribution of the contaminants within the impacted areas.</p> <p>The soil contaminants were located in the upper fill materials within localized areas and exist on the eastern and southern portion of the property as a result of importing fill materials, as discussed above.</p>
<p>F. Anything known about the reason for the discharge of the contaminants present on, in or under the Phase Two Property at a concentration greater than the applicable site condition</p>	<p>See Item D.</p>

<p>standard into the natural environment</p>	
<p>G. Anything known about migration of the contaminants present on, in or under the Phase Two Property at a concentration greater than the applicable site condition standard away from any area of potential environmental concern, including the identification of any preferential pathways</p>	<p>Delineation boreholes were not advanced as a part of this investigation.</p> <p>Refer to Drawing 4.</p>
<p>H. Climatic or meteorological conditions that may have influenced distribution and migration of the contaminants</p>	<p>It is unlikely that meteorological conditions have influenced the distribution and migration of the contaminants under the Phase Two Property as the metal impacts have been identified in two (2) localized areas along the eastern portion of the Site. In addition, the impacted area is located above the saturated zone comprising the ground water table. Furthermore, the hydraulic conductivity revealed the soil's ability to transmit water across the site (in the native till materials) is slow and verifies that the potential for migration of contamination is limited on the Phase Two Property.</p> <p>Ground water data for the Site was not available to evaluate seasonal ground water levels due to climatic or meteorological conditions.</p>
<p>I. If applicable, information concerning soil vapour intrusion of the contaminants into building including, (1) relevant construction features of a building, such as a basement or crawl space, (2) building heating, ventilation and air conditioning design and operation, (3) subsurface utilities</p>	<p>Soil vapor samples were not collected as part of this Phase Two ESA as the residential dwelling is abandoned and will be demolished.</p>

Section iv. Where contamination is present on, in, or under the Phase Two Property at a concentration greater than the applicable site condition standard, one or more cross-sections:

Refer to **Cross-Sections A-A'**, and **B-B'**.

Section v. For each area where a contaminant is present on, in or under the property at a concentration greater than the applicable site condition standard for the contaminant, a diagram identifying the release mechanisms, contaminant transport pathway, the human and ecological receptors located on, in, or under the Phase Two Property, receptor exposure points, and routes of exposure:

Primary sources of concern on the Phase Two Property are related to Metal impacted soil due to the stockpiling of fill materials and observed staining within the garage structure at the Phase Two Property. No contaminants in ground water were identified. Exposure pathways related to the impacted soil, include ingestion, immersion, and/or dermal contact of soil, which may impact potential receptors including residents, indoor and/or outdoor workers, subsurface workers, mammals, birds, terrestrial invertebrates, and plants. Refer to **Drawing 5**.

Section vi. If a non-standard delineation was conducted in accordance with Section 7.1 of Schedule E as part of preparing the Phase Two ESA:

A non-standard delineation was not conducted as part of this Phase Two ESA.

Section vii. If the exemption set out in paragraph 1 or 2 of Section 49.1 is being relied upon:

The exemption set out in paragraph 1 of Section 49.1 of Ontario Regulation 153/04 is not being relied upon.

The exemption set out in paragraph 2 of Section 49.1 of Ontario Regulation 153/04 is not being relied upon as part of this Phase Two ESA.

Section viii. If the exemption set out in paragraph 3 of Section 49.1 is being relied upon:

The exemption set out in paragraph 3 of Section 49.1 of Ontario Regulation 153/04 is not being relied upon as part of this Phase Two ESA.

Summary of Remedial Activities:

Analytical results of the Phase Two ESA revealed the presence of PHC Fraction F3 impacted soil in the fill materials within the garage building, which exceeded the MECP Table 3 SCS for residential/ parkland/ institutional (RPI) property use with medium-fine textured soils in a non-potable ground water condition. The objective of the remediation project was to restore the property to the MECP Table 3 SCS for the proposed residential land use with medium-fine textured soils in a non-potable ground water condition. Ground water remediation was not required at the Phase Two Property, as all ground water analytical results met the MECP Table 3 SCS for all parameters analyzed during Palmer's Phase Two ESA. Therefore, Palmer's remediation program targeted the remediation of the PHC impacted soil.

Excavation activities were conducted by Nexxgen Environmental under the supervision of Palmer staff and commenced on October 15, 2021. All impacted soil was removed from the Phase Two Property by the excavating contractor and disposed of at Triple Waste Management Ltd. In Toronto, Ontario.

The remediation program consisted of an area 1.8m x 2.6m localized in the vicinity of BH21-3, as presented in **Drawing 7**. The excavation was advanced to a depth of 0.4 mbgs, and all PHC impacted soil was removed from the Site. Below the excavation depth of Area 1, there was no visual or olfactory evidence of contamination remaining on the Site. In total, 2 m³ of impacted soil was removed from the Phase Two Property.

Upon excavation and removal of impacted material based on the Phase Two ESA findings, Palmer monitored the excavated areas, including conducting visual and olfactory observations, and collected verification samples from both the floor (two samples) and walls (four samples) of the excavated area according to the number of samples required based on the area of the excavated pit, as per O.Reg. 153/04, Schedule E, Table 3. Wall verification samples were collected at depths of 0.3 to 0.4 mbgs. Floor verification samples were collected at depths of 0.4 mbgs. In total, six (6) samples, including one (1) QA/QC sample were submitted for to ALS Environmental for chemical analysis of PHCs and BTEX. The analytical results of the verification samples indicated no exceedances in comparison to the MECP Table 3 SCS for RPI property use with medium-fine textured soils in a non-potable ground water condition. Therefore, Palmer's verification sampling program was deemed complete.

The location of all verification samples that were taken from the impacted area is presented in **Drawing 7**. In addition, **Cross-Section B-B'** depict the horizontal and vertical distribution of the contaminants within the impacted area.

Excess soil was not imported to the Site for backfilling and/or regrading purposes due to future re-grading and construction of basement foundations at the Site for the proposed residential development.

6. Conclusions

In comparison with the (2011) *Ontario Soil, Ground Water, and Sediment Standards for Use Under Part XV.1 of the EPA* criteria, the results of the laboratory analyses revealed Petroleum Hydrocarbons (PHCs) exceedances in the soil in the central portion of the Phase Two Property, and Metal and Inorganic exceedances in the southern portion of the Phase Two Property in comparison to the Table 3 SCS for residential/parkland/institutional (RPI) property uses with fine-medium textured soils in a non-potable ground water condition.

Based on the findings of the Phase Two ESA and historical environmental investigations conducted on the Site, laboratory analyses revealed the following contaminant concentrations:

- PHC F3 on the central portion of the Phase Two Property at a depth of 0.00 to 0.10 mbgs, at a concentration of 13,100 µg/g compared to a regulatory criterion of 1,300 µg/g;
- Lead on the southern portion of the Phase Two Property within the stockpiled soil on the southwestern portion of the Phase Two Property, at a concentration of 146 µg/g compared to a regulatory criterion of 120 µg/g; and
- Cadmium on the southern portion of the Phase Two Property within the stockpiled soil on the southwestern portion of the Phase Two Property, at a concentration of 3.06 µg/g compared to a regulatory criterion of 1.2 µg/g;

The aforementioned PHC soil exceedances in the central portion of the Phase Two Property are likely associated with staining observed on the ground adjacent to a drum of unknown liquid. The Lead and Cadmium exceedances in the southern portion of the Phase Two Property are likely associated with the importation of fill of unknown quantity.

Two (2) areas of impacted soil (PHC and Metals) have been identified on the Phase Two Property. These soil contaminants are located in the upper fill materials in the garage structure and within a stockpile of soil located on the southwestern portion of the property.

As the soil analytical results exceeded the Table 3 RPI standards in two (2) areas on the Phase Two Property, remedial activities were conducted to remove all of the PHC impacted upper fill materials within the garage. Stockpiled fill impacted with Cadmium and Lead should be disposed of off-site prior to land clearing and grading activities for the proposed redevelopment of the Site. Palmer has assumed that stockpiled material will be removed off-Site during the regrading of the Phase Two Property. Soil verification samples collected during the soil excavation in the garage structure were below the Table 3 RPI standards, thus the formerly identified area of PHC contamination was successfully remediated on the Phase Two Property.

6.1 Limitations

This report was prepared by Palmer for the account of 12148 Albion Vaughan Inc. in accordance with the professional services agreement.

The conclusions and recommendations detailed in this report are based upon the information available at the time of preparation of the report. No investigative method eliminates the possibility of obtaining imprecise or incomplete information. Professional judgement was exercised in gathering and analyzing the information obtained and in the formulation of our conclusions and recommendations.

The nature of the sampling works makes it possible that contrary conditions may be identified in locations which were not sampled. However, it does suggest that the conditions will be localized and not extensive. The soil boundaries indicated on the borehole logs are inferred from non-continuous sampling and observations made during drilling and therefore should not be interpreted as exact planes of geological change.

The disclosure of any information contained in this report is the sole responsibility of the intended recipient. The material in it reflects Palmer's best judgement in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Palmer accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. This limitations statement is considered part of this report.

Unless stated otherwise in this report, provided that the report is still reliable, and less than 18 months old, Palmer may issue a third-party reliance letter to parties, client identifies in writing, upon payment of the then current fee for such letters. All third parties relying on Palmer's report, by such reliance agree to be bound by our proposal and Palmer's standard reliance letter. Palmer's standard reliance letter indicates that in no event shall Palmer be liable for any damages, howsoever arising, relating to third-party reliance on Palmer's report. No reliance by any party is permitted without such agreement. This report is not to be given over to any third party for any purpose whatsoever without the written permission of Palmer.

The original of the technology-based document sent herewith has been authenticated and will be retained by Palmer for a minimum of five years. Since the file transmitted is now out of Palmer's control and its integrity can no longer be ensured, no guarantee may be given with regards to any modifications made to this document.

Certification

This report was prepared by Samo Szakal, B.A., Ept. Who is currently an Environmental Scientist with Palmer in the Toronto Office. He has experience conducting numerous Phase I ESAs at various land use types, and conducting soil and ground water sampling procedures in accordance with Ontario Regulation 153/04 and 511/09 and the CSA Z768-01 and Z769-00 environmental protocols. Samo is a recognized Environmental Professional (in training) with Eco Canada.

This report was reviewed by Sarah Sipak, B.Sc., an Environmental Geoscience Team Lead in the Toronto office of Palmer. She has over 13 years' experience conducting Phase One and Two ESAs, soil and ground water sampling, and site remediation in accordance with Ontario Regulation 153/04 and 511/09, the CSA Z768-01 and Z769-00 environmental protocols, the Consulting Engineers of Ontario's Generally Accepted Standards for Environmental Investigations, and the Canadian Mortgage and Housing Corporation (CMHC) environmental site investigation procedures for mortgage loan insurance. The aforementioned ESAs have covered all land use types across Canada. Sarah also has numerous years of experience in preparing and

filing Record of Site Conditions (RSCs) with the Ministry of the Environment, Conservation and Parks (MECP). Sarah also has experience conducting Excess Soil Reuse Planning assessments in accordance with Ontario Regulation 406/19.

Prepared By: **DRAFT**

Samo Szakal, B.A., Ept
Environmental Scientist

Reviewed By: **DRAFT**

Sarah Sipak, B.Sc., P.Geo (limited), QP_{ESA}
Environmental Geoscience Team Lead

7. References

- Atlas of Canada, Topographic Maps;
 - <http://atlas.nrcan.gc.ca/Site/english/toporama/index.html>
- Chapman and Putnam, The Physiography of Southern Ontario, 1984;
- Freeze, Alan R. and Cherry, John A., Ground water, 1979;
- Google Earth, 2015.
- Phase One Environmental Site Assessment, 12148 Albion Vaughan Road, Caledon, Ontario, issued by Palmer (Project No.: 1604601);
- Terzaghi and Peck, Soil Mechanics in Engineering Practice, 1948;
- The Ontario Geological Survey, 1990; and,
- The Ontario Geological Survey, 2003.

8. Tables and Figures

Tables

8.1.1 Monitoring Well Installation

Monitoring Well ID	Ground Surface Elevation (mAMSL)	Monitoring Well Construction Details	Associated Elevations Below Grade (m)
BH21-1	229.00	50-mm PVC solid riser pipe	0.00-8.82
		50-mm PVC slotted intake screen	8.82-11.87
BH21-2	229.56	50-mm PVC solid riser pipe	0.00-8.75
		50-mm PVC slotted intake screen	8.75-11.80
BH21-4	230.05	50-mm PVC solid riser pipe	0.00-8.77
		50-mm PVC slotted intake screen	8.77-11.82
BH21-5	229.90	50-mm PVC solid riser pipe	0.00-8.80
		50-mm PVC slotted intake screen	8.80-11.85

8.1.2 Water Levels

Monitoring Well ID	Date	Ground Surface Elevation (mAMSL)	Depth to GW (mbgs)	GW Elevation (mAMSL)
BH21-1	March 4, 2021	229.00	8.53	220.47
BH21-2	March 3, 2021	229.56	8.99	220.57
	March 4, 2021		10.04	219.52
BH21-4	March 3, 2021	230.05	9.67	220.38
	March 4, 2021		9.78	220.87
BH21-5	March 3, 2021	229.90	9.53	220.03
	March 4, 2021		9.61	220.29

8.1.3 LNAPLs and DNAPLs

No light or dense non-aqueous phase liquid measurements were detected at the Phase Two Property, as discussed in Sections 4.7, 5.2, and 5.7.

8.1.4 Soil Data

8.1.4.1 PHCs with BTEX

Soil Analytical Results: Petroleum Hydrocarbons (PHCs) and Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)

				PHCs					BTEX			
				F1 (C6-C10)	F1 (C6-C10) - BTEX*	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	Benzene	Toluene	Ethylbenzene	Xylenes, Total (Xylene Mixture)
				µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g
O.Reg. 153/04 MOECC Guideline (2011), Res/Park/Inst Property Use, Medium-Fine Textured Soil, Non-Potable Ground Water Condition				65	65	150	1300	5600	0.17	6	15	25
Sample Location	Sample ID	Sample Interval (mbgs)	Sample Date									
BH21-2	21-2-2	0.76-1.52	03-Mar-21	<5.0	<5.0	<10	<50	<50	<0.0068	<0.018	<0.080	<0.050
BH21-3	21-3-1	0.00-0.10	02-Mar-21	<5.0	<5.0	44	13100	3880	<0.0068	<0.018	<0.080	<0.050
BH21-4	21-4-4	2.29-3.05	02-Mar-21	<5.0	<5.0	<10	<50	<50	<0.0068	<0.018	<0.080	<0.050
BH21-4	21-4-4D	2.29-3.05	02-Mar-21	<5.0	<5.0	<10	<50	<50	<0.0068	<0.018	<0.080	<0.050
BH21-5	21-5-2	0.76-1.52	02-Mar-21	<5.0	<5.0	<10	<50	<50	<0.0068	<0.018	<0.080	<0.050

Notes:

1. --- In guideline row(s) denotes no criteria for that parameter
2. --- In data row(s) denotes parameter not analyzed
3. mbgs Denotes metres below ground surface
4. **BOLD** Denotes entries exceed the criteria
5. Criteria is Ontario Regulation 153/04, Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use with Medium-Fine Textured Soils
6. * F1 fraction does not include BTEX; however, the proponent has the choice as to whether or not to subtract BTEX from the analytical result

8.1.4.2 Metals

Soil Analytical Results: Metals

				Metals																			
				Antimony	Arsenic	Barium	Beryllium	Boron (total)	Boron (Hot Water Soluble)**	Cadmium	Chromium Total	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g
O.Reg. 153/04 MOECC Guideline (2011), Res/Park/Inst Property Use, Medium-Fine Textured Soil, Non-Potable Ground Water Condition				7.5	18	390	5	120	1.5	1.2	160	22	180	120	6.9	130	2.4	25	---	1	23	86	340
Sample Location	Sample ID	Sample Interval (mbgs)	Sample Date																				
21-6	21-6	0.00-0.30	03-Mar-21	<1.0	4.6	59.3	<0.50	10	0.54	0.99	25.6	6.7	47	38.4	1.3	18.5	<1.0	0.41	8.49	<0.50	<1.0	25.6	251
21-7	21-7	0.00-0.30	03-Mar-21	<1.0	5.1	60.1	<0.50	9.7	0.4	0.66	19.9	6.8	31.8	24.5	<1.0	16.3	<1.0	<0.20	8.01	<0.50	<1.0	25.6	165
21-8	21-8	0.00-0.30	03-Mar-21	1.4	4.6	73.2	<0.50	10.9	0.82	3.06	26.9	7.7	110	146	1.7	22.1	<1.0	1.02	10.4	<0.50	<1.0	30.3	336
21-8	21-8D	0.00-0.30	03-Mar-21	1.3	5.4	72.7	<0.50	9.9	0.78	3.06	29.7	7.6	111	106	2.7	21.6	<1.0	1.06	9.27	<0.50	<1.0	28.5	329

Notes:

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2. --- In data row(s) denotes parameter not analyzed
3. mbgs Denotes metres below ground surface
4. **BOLD** Denotes entries exceed the criteria
5. Criteria is Ontario Regulation 153/04, Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use with Medium-Fine Textured Soils
6. * Denotes the boron standards are for hot water soluble extract for all surface soils. For subsurface soils the standards are for total boron (mixed strong acid digest), as ecological criteria are not considered

8.1.4.3 VOCs

Soil Analytical Results: Volatile Organic Compounds (VOCs)

				VOCs																																							
				Acetone	Benzene	Bromochloromethane	Bromoforn	Bromomethane	Carbon Tetrachloride	Chlorobenzene	Chloroform	Dibromochloromethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoromethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethylene	cis-1,2-Dichloroethylene	trans-1,2-Dichloroethylene	1,2-Dichloropropane	1,3-Dichloropropane (cis) + (trans)	Ethylbenzene	Ethylene Dibromide	Heptane (n)	Methyl Ethyl Ketone	Methyl Isobutyl Ketone	Methyl tert-Butyl Ether (MTBE)	Methylene Chloride	Styrene	1,1,1,2-Tetrahalomethane	1,1,2,2-Tetrahalomethane	Tetrachloroethylene	Toluene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethylene	Trichlorofluoromethane	Vinyl Chloride	Xylenes, Total (Xylene Mixture)		
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
O.Reg. 153-04 MOECU Guideline (2011), Res. Park, Inst Property Use, Medium-Fine Textured Soil, Non-Potable Ground Water Conditions				28	0.17	13	0.26	0.05	0.12	2.7	0.17	9.4	4.3	6	0.097	25	11	0.05	0.05	30	0.75	0.085	0.083	15	0.05	34	4	4.5	1.4	0.96	2.2	0.05	0.05	2.3	6	3.4	0.05	0.52	5.8	0.022	25		
Sample Location	Sample ID	Sample Interval (mbgs)	Sample Date																																								
BH21-3	21-3-1	0.00-0.10	02-Mar-21	<0.50	<0.0068	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.042	<0.018	<0.050	<0.50	<0.50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.080	<0.050	<0.050	<0.010	<0.050	<0.020	<0.050		

- Notes:
- 1. — In guideline row(s) denotes no criteria for that parameter
 - 2. — In data row(s) denotes parameter not analyzed
 - 3. mbgs Denotes meters below ground surface
 - 4. **BOLD** Denotes entries exceed the criteria
 - 5. Criteria is Ontario Regulation 153/04, Table 3 Full Depth General Site Condition Standard in a Non-Potable Ground Water Condition for Residential/Professional Property Use with Medium-Fine Textured Soils

8.1.5 Ground Water Data

8.1.5.1 PHCs with BTEX

Ground Water Analytical Results: Petroleum Hydrocarbons (PHCs) and Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)

			PHCs					BTEX			
			F1 (C6-C10)	F1-BTEX	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	Benzene	Toluene	Ethylbenzene	Xylenes (Total)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
O.Reg. 153/04 MECP Guideline (2011), All Types of Property Use, Medium-Fine Textured Soil, Non-Potable Ground Water Condition			750	750	150	500	500	430	18000	2300	4200
Sample Location	Sample ID	Sample Date									
BH21-1	21-1	04-Mar-21	<25	<25	<100	<250	<250	<0.50	<0.50	<0.50	<0.50
BH21-2	21-2	04-Mar-21	<25	<25	<100	<250	<250	<0.50	<0.50	<0.50	<0.50
BH21-2	21-2D	04-Mar-21	<25	<25	<100	<250	<250	<0.50	<0.50	<0.50	<0.50
BH21-4	21-4	03-Mar-21	<25	<25	<100	<250	<250	<0.50	<0.50	<0.50	<0.50
BH21-5	21-5	03-Mar-21	<25	<25	<100	<250	<250	<0.50	<0.50	<0.50	<0.50

Notes:

- In guideline row(s) denotes no criteria for that parameter
- In data row(s) denotes parameter not analyzed
- mbgs Denotes metres below ground surface
- BOLD** Denotes entries exceed the criteria
- Criteria is Ontario Regulation 153/04, Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for All Types of Property Uses with Medium-Fine Textured Soils
- * F1 fraction does not include BTEX; however, the proponent has the choice as to whether or not to subtract BTEX from the analytical result

8.1.5.2 Metals

Ground Water Analytical Results: Metals

			Metals																			
			Antimony (Sb)-Dissolved	Arsenic (As)-Dissolved	Barium (Ba)-Dissolved	Beryllium (Be)-Dissolved	Boron (B)-Dissolved	Cadmium (Cd)-Dissolved	Chromium (Cr)-Dissolved	Cobalt (Co)-Dissolved	Copper (Cu)-Dissolved	Lead (Pb)-Dissolved	Molybdenum (Mo)-Dissolved	Nickel (Ni)-Dissolved	Selenium (Se)-Dissolved	Silver (Ag)-Dissolved	Sodium (Na)-Dissolved	Thallium (Tl)-Dissolved	Uranium (U)-Dissolved	Vanadium (V)-Dissolved	Zinc (Zn)-Dissolved	
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
O.Reg. 153/04 MECP Guideline (2011), All Types of Property Use, Medium-Fine Textured Soil, Non-Potable Ground Water Condition			20000	1900	29000	67	45000	2.7	810	66	87	25	9200	490	63	1.5	2300000	510	420	250	1100	
Sample Location	Sample ID	Sample Date																				
21-1	21-1	04-Mar-21	0.11	0.72	122	<0.10	63	0.05	<0.50	2.4	0.46	0.07	1.08	3.27	0.137	<0.050	36300	0.01	1.89	<0.50	<1.0	
21-2	21-2	04-Mar-21	0.13	1	158	<0.10	59	0.29	<0.50	2.34	2.26	0.19	1	3.09	<0.050	<0.050	97500	0.04	3.05	<0.50	5.2	
21-2D	21-2D	04-Mar-21	0.13	0.93	184	<0.10	56	0.28	<0.50	2.52	1.03	0.14	1.09	3.25	<0.050	<0.050	91100	0.04	3	<0.50	3.3	

Notes:

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- In data row(s) denotes parameter not analyzed
- mbgs Denotes metres below ground surface
- BOLD** Denotes entries exceed the criteria
- Criteria is Ontario Regulation 153/04, Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for All Types of Property Uses with Medium-Fine Textured Soils

8.1.5.3 VOCs

Ground Water Analytical Results: Volatile Organic Compounds (VOCs)

			VOCs																																									
			Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Dibromochloromethane	Chloroform	1,2-Dibromomethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoromethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethylene	cis-1,2-Dichloroethylene	trans-1,2-Dichloroethylene	Methylene Chloride	1,2-Dichloropropane	1,3-Dichloropropane (cis & trans)	Ethylbenzene	n-Heptane	Methyl Ethyl Ketone	Methyl Isobutyl Ketone	MTBE	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethylene	Toluene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethylene	Trichlorofluoromethane	Vinyl chloride	o-Xylene				
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L				
O Reg 153/04 MECP Guideline (2011), All Types of Property Use, Medium-Fine Textured Soil, Non-Potable Ground Water Condition			130000	430	85000	770	56	8.4	630	82000	22	0.83	9600	9600	67	4400	3100	12	17	17	17	17	5500	140	45	2300	520	1500000	580000	1400	9100	28	15	17	18000	6700	30	17	2500	1.7	4200			
Sample Location	Sample ID	Sample Date																																										
BH21-1	21-1	04-Mar-21	<30	<0.50	<2.0	<5.0	<0.50	<0.20	<0.50	<2.0	<1.0	<0.20	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<20	<20	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
BH21-2	21-2	04-Mar-21	<30	<0.50	<2.0	<5.0	<0.50	<0.20	<0.50	<2.0	<1.0	<0.20	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<20	<20	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
BH21-2	21-2D	04-Mar-21	<30	<0.50	<2.0	<5.0	<0.50	<0.20	<0.50	<2.0	<1.0	<0.20	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<20	<20	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
-	Trip Blank	-	<30	<0.50	<2.0	<5.0	<0.50	<0.20	<0.50	<2.0	<1.0	<0.20	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<20	<20	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

- Notes:
1. *In guideline row(s) denotes no criteria for that parameter*
 2. *In data row(s) denotes parameter not analyzed*
 3. *mbs Denotes metres below ground surface*
 4. **BOLD** *Denotes entries exceed the criteria*
 5. *Criteria is Ontario Regulation 153/04, Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for All Types of Property Uses with Medium-Fine Textured Soils*

8.1.6 *Sediment Data*

Sediment sampling of the portion of Robinson Creek present on the Phase Two Property was not conducted during this investigation.

8.1.7 Soil and Ground Water Maximum Concentration Data

8.1.7.1 Soil Maximum Concentration Data

Parameter	MECP Table 3 RPI SCS (µg/g)	Maximum Soil Concentration (µg/g)	Location of Maximum Concentration	Sample Depth (m)
VOCs – BTEX				
Benzene	0.17	<0.0068	Multiple Locations	0.00-3.05
Ethylbenzene	6	<0.018	Multiple Locations	0.00-3.05
Toluene	15	<0.080	Multiple Locations	0.00-3.05
Xylene Mixture	25	<0.050	Multiple Locations	0.00-3.05
Metals				
Barium	390	73.2	21-8	0.00-0.30
Beryllium	5	<0.50	21-8	0.00-0.30
Boron (total)	5	10.9	21-8	0.00-0.30
Cadmium	1.2	3.06	21-8	0.00-0.30
Chromium Total	160	29.7	21-8D	0.00-0.30
Cobalt	22	7.7	21-8	0.00-0.30
Copper	180	110	21-8D	0.00-0.30
Lead	120	146	21-8	0.00-0.30
Molybdenum	6.9	2.7	21-8D	0.00-0.30
Nickel	130	22.1	21-8	0.00-0.30
Silver	25	1.06	21-8	0.00-0.30
Thallium	1	<0.50	21-8D	0.00-0.30
Uranium	23	<1.0	21-8	0.00-0.30
Vanadium	86	30.3	21-8	0.00-0.30
Zinc	340	336	21-8	0.00-0.30
Metals – Hydride Forming				
Antimony	7.5	1.4	21-8	0.00-0.30
Arsenic	18	5.4	21-8	0.00-0.30
Selenium	2.4	<1.0	Multiple locations	0.00-0.30
PHCs				
Petroleum Hydrocarbons F1	65	<5.0	Multiple locations	0.00-3.05
Petroleum Hydrocarbons F2	150	44	21-3	0.00-3.05
Petroleum Hydrocarbons F3	1300	13,000	21-3	0.00-3.05
Petroleum Hydrocarbons F4	5600	3880	21-3	0.00-3.05

Parameter	MECP Table 3 RPI SCS (µg/g)	Maximum Soil Concentration (µg/g)	Location of Maximum Concentration	Sample Depth (m)
VOCs				
Acetone	28	<0.50	BH21-3	0.00-0.10
Bromomethane	13	<0.50	BH21-3	0.00-0.10
Carbon Tetrachloride	0.12	<0.050	BH21-3	0.00-0.10
Chlorobenzene	2.7	<0.050	BH21-3	0.00-0.10
Chloroform	0.17	<0.050	BH21-3	0.00-0.10
Dichlorobenzene, 1,2-	4.3	<0.050	BH21-3	0.00-0.10
Dichlorobenzene, 1,3-	6	<0.050	BH21-3	0.00-0.10
Dichlorobenzene, 1,4-	0.1	<0.050	BH21-3	0.00-0.10
Dichlorodifluoromethane	25	<0.050	BH21-3	0.00-0.10
Dichloroethane, 1,1-	11	<0.050	BH21-3	0.00-0.10
Dichloroethane, 1,2-	0.05	<0.050	BH21-3	0.00-0.10
Dichloroethylene, 1,1-	0.05	<0.050	BH21-3	0.00-0.10
Dichloroethylene, 1,2-cis-	30	<0.050	BH21-3	0.00-0.10
Dichloroethylene, 1,2-trans-	0.75	<0.050	BH21-3	0.00-0.10
Dichloropropane, 1,2-	0.085	<0.050	BH21-3	0.00-0.10
Dichloropropene, 1,3-	0.083	<0.050	BH21-3	0.00-0.10
Ethylene Dibromide	0.05	<0.042	BH21-3	0.00-0.10
Hexane (n)	34	<0.018	BH21-3	0.00-0.10
Methyl Ethyl Ketone	44	<0.50	BH21-3	0.00-0.10
Methyl Isobutyl Ketone	4.3	<0.50	BH21-3	0.00-0.10
Methyl tert-Butyl Ether (MTBE)	1.4	<0.50	BH21-3	0.00-0.10
Methylene Chloride	0.96	<0.050	BH21-3	0.00-0.10
Styrene	2.2	<0.050	BH21-3	0.00-0.10
Tetrachloroethane, 1,1,1,2-	0.05	<0.050	BH21-3	0.00-0.10
Tetrachloroethane, 1,1,2,2-	0.05	<0.050	BH21-3	0.00-0.10
Tetrachloroethylene	2.3	<0.050	BH21-3	0.00-0.10
Trichloroethane, 1,1,1-	3.4	<0.050	BH21-3	0.00-0.10
Trichloroethane, 1,1,2-	0.05	<0.050	BH21-3	0.00-0.10
Trichloroethylene	0.52	<0.010	BH21-3	0.00-0.10
Trichlorofluoromethane	5.8	<0.50	BH21-3	0.00-0.10
Vinyl Chloride	0.022	<0.020	BH21-3	0.00-0.10
Other Regulated Parameters				

Parameter	MECP Table 3 RPI SCS (µg/g)	Maximum Soil Concentration (µg/g)	Location of Maximum Concentration	Sample Depth (m)
Chromium VI	10	0.25	21-8	0.00-0.30
Cyanide (CN-)	0.051	<0.050	Multiple locations	0.00-0.30
Electrical Conductivity	0.7	0.565	21-8	0.00-0.30
Sodium Adsorption Ratio (unitless)	5	0.30	21-8	0.00-0.30

Note:

1. ND represents Non-Detect.
2. Bold entries exceed the Criteria.
3. Criteria is Ontario Regulation 153/04, Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use with Medium-fine-Textured Soils.

8.1.7.2 Ground Water Maximum Concentration Data

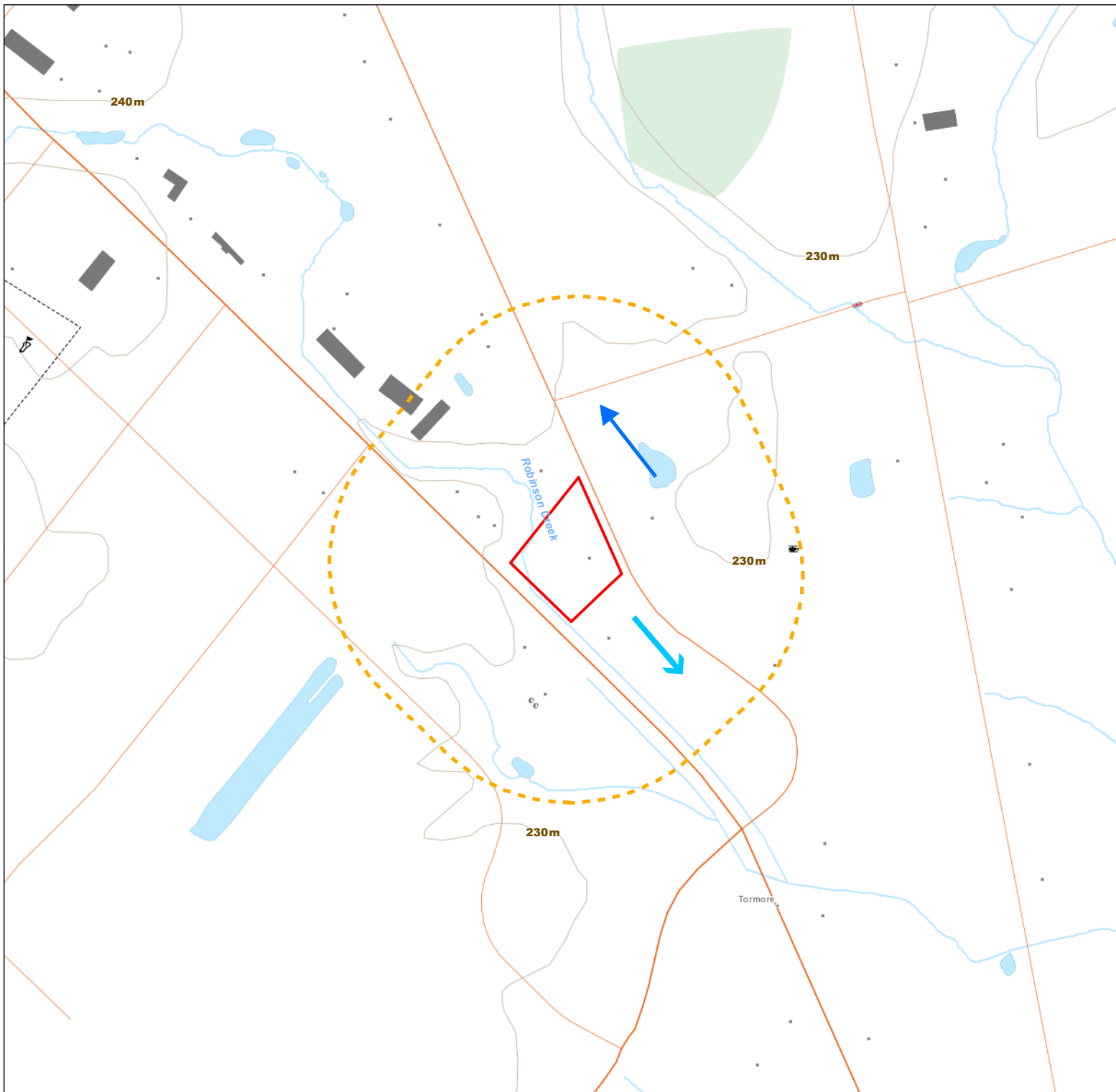
Parameter	MECP Table 3 RPI SCS (µg/L)	Maximum Ground Water Concentration (µg/L)	Location of Maximum Concentration
VOCs – BTEX			
Benzene	430	<0.50	Multiple locations
Ethylbenzene	18000	<2.0	Multiple locations
Toluene	2300	<5.0	Multiple locations
Xylene Mixture	4200	<0.50	Multiple locations
Metals			
Barium	29000	184	BH21-2
Beryllium	67	<0.10	Multiple locations
Boron (total)	45000	63	BH21-1
Cadmium	2.7	0.286	BH21-2
Chromium Total	810	<0.50	Multiple locations
Cobalt	66	2.52	BH21-2
Copper	87	2.26	BH21-2
Lead	25	0.188	BH21-2
Molybdenum	9200	1.09	BH21-2
Nickel	490	3.27	BH21-1
Silver	1.5	<0.50	Multiple locations
Thallium	510	0.036	BH21-2
Uranium	510	3.05	BH21-2
Vanadium	420	<0.50	Multiple locations
Zinc	250	5.2	BH21-2
Metals – Hydride Forming			
Antimony	20000	0.13	BH21-2
Arsenic	1900	1.00	BH21-2
Selenium	29000	0.137	BH21-1
Na Sodium			
Sodium	2,300,000	97500	BH21-2
PHCs			
Petroleum Hydrocarbons F1	750	<25	Multiple locations
Petroleum Hydrocarbons F2	150	<100	Multiple locations
Petroleum Hydrocarbons F3	500	<250	Multiple locations
Petroleum Hydrocarbons F4	500	<250	Multiple locations

Parameter	MECP Table 3 RPI SCS (µg/L)	Maximum Ground Water Concentration (µg/L)	Location of Maximum Concentration
VOCs – Trihalomethanes			
Bromodichloromethane	85,000	<2.0	Multiple locations
Bromoform	770	<5.0	Multiple locations
Dibromochloromethane	56	<0.50	Multiple locations
VOCs			
Acetone	130,000	<30	Multiple locations
Bromomethane	56	<0.50	Multiple locations
Carbon Tetrachloride	8.4	<0.20	Multiple locations
Chlorobenzene	630	<0.50	Multiple locations
Chloroform	22	<1.0	Multiple locations
Dichlorobenzene, 1,2-	0.83	<0.20	Multiple locations
Dichlorobenzene, 1,3-	9600	<0.50	Multiple locations
Dichlorobenzene, 1,4-	9600	<0.50	Multiple locations
Dichlorodifluoromethane	4400	<2.0	Multiple locations
Dichloroethane, 1,1-	3100	<0.50	Multiple locations
Dichloroethane, 1,2-	12	<0.50	Multiple locations
Dichloroethylene, 1,1-	17	<0.50	Multiple locations
Dichloroethylene, 1,2-cis-	17	<0.50	Multiple locations
Dichloroethylene, 1,2-trans-	17	<0.50	Multiple locations
Dichloropropane, 1,2-	140	<0.50	Multiple locations
Dichloropropene, 1,3-	-	<0.50	Multiple locations
Hexane (n)	520	<0.50	Multiple locations
Methyl Ethyl Ketone	15,000,000	<20	Multiple locations
Methyl Isobutyl Ketone	580,000	<20	Multiple locations
Methyl tert-Butyl Ether (MTBE)	1400	<2.0	Multiple locations
Styrene	9100	<2.0	Multiple locations
Tetrachloroethane, 1,1,1,2-	28	<0.50	Multiple locations
Tetrachloroethane, 1,1,2,2-	15	<0.50	Multiple locations
Tetrachloroethylene	17	<0.50	Multiple locations
Trichloroethane, 1,1,1-	6700	<0.50	Multiple locations
Trichloroethane, 1,1,2-	30	<0.50	Multiple locations
Trichloroethylene	17	<0.50	Multiple locations
Trichlorofluoromethane	1.7	<5.0	Multiple locations

Parameter	MECP Table 3 RPI SCS (µg/L)	Maximum Ground Water Concentration (µg/L)	Location of Maximum Concentration
Vinyl Chloride	1.7	<0.50	Multiple locations

Note:

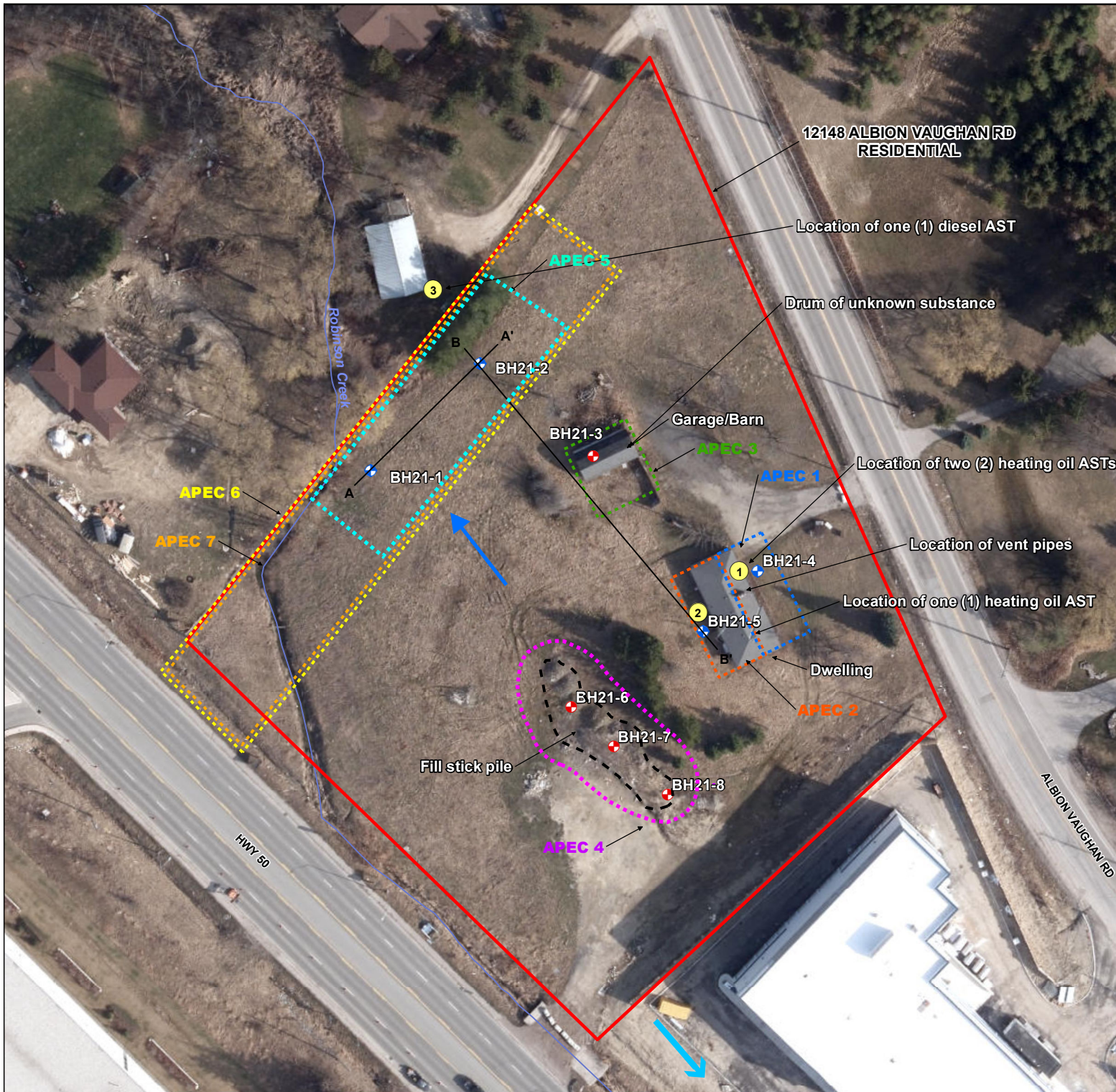
1. ND represents Non-Detect.
2. Bold entries exceed the Criteria.
3. Criteria is Ontario Regulation 153/04, Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use with All-Textured Soils.



- LEGEND:
- Phase Two Property
 - Phase One Study Area
 - ← Regional ground water flow direction
 - Local ground water flow direction

Basemap: Toporama webmap service.
Contains information licensed under the Open Government License - Canada

	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>PROJECT NO. 1604603</td> <td>REVISION: 1</td> </tr> <tr> <td>DATE: Mar 23, 2021</td> <td>SCALE: 1:7500</td> </tr> <tr> <td>DRAWN: CV</td> <td>DATUM: NAD 1983</td> </tr> <tr> <td>CHECKED: SSz</td> <td>PROJECTION: UTM zone 17</td> </tr> </table>	PROJECT NO. 1604603	REVISION: 1	DATE: Mar 23, 2021	SCALE: 1:7500	DRAWN: CV	DATUM: NAD 1983	CHECKED: SSz	PROJECTION: UTM zone 17
PROJECT NO. 1604603	REVISION: 1								
DATE: Mar 23, 2021	SCALE: 1:7500								
DRAWN: CV	DATUM: NAD 1983								
CHECKED: SSz	PROJECTION: UTM zone 17								
CLIENT:	PREPARED BY:								
12148 Albion Vaughan Inc	Palmer™								
PROJECT: 12148 Albion Vaughan Road									
TITLE: Areas of Natural Significance and Water Bodies									
Figure 8.2.1									



LEGEND:

- Monitoring well location
- Borehole Location
- Phase Two Property
- Watercourse (MNR)
- Regional ground water flow direction
- Local ground water flow direction
- Cross section location
- Storage Tank

APEC #1: Existing interior heating oil Aboveground Storage Tank (AST)
 APEC #2: Existing exterior heating oil AST
 APEC #3: Existing hazardous materials storage
 APEC #4: Fill stockpile
 APEC #5: Existing diesel AST
 APEC #6: Existing truck & trailer repair and historic metal fabrication
 APEC #7: RV repair venter with fuel underground storage tank

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0 20 40 metres

	PROJECT NO. 1604603	REVISION: 1
	DATE: Mar 23, 2021	SCALE: 1:1100
	DRAWN: CV	DATUM: NAD 1983
	CHECKED: SSz	PROJECTION: UTM zone 17

CLIENT: 12148 Albion Vaughan Inc

PREPARED BY: Palmer™

PROJECT: 12148 Albion Vaughan Road

TITLE: **Property Before Actions Taken to Reduce the Concentration of Contaminants**

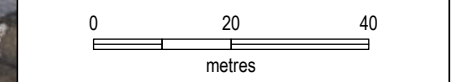


- LEGEND:
- Monitoring well location
 - Borehole Location
 - Phase Two Property
 - Watercourse (MNR)
 - Regional ground water flow direction
 - Local ground water flow direction
 - Inferred ground water elevation (masl)
 - 219.52* Measured ground water level (masl)

Hydraulic Lateral Gradients

Average	0 . 0 2 0 0 5	m/ m
Minimum	0 . 0 3 7 3 3	m/ m
Maximum	0 . 0 3 8 4 5	m/ m

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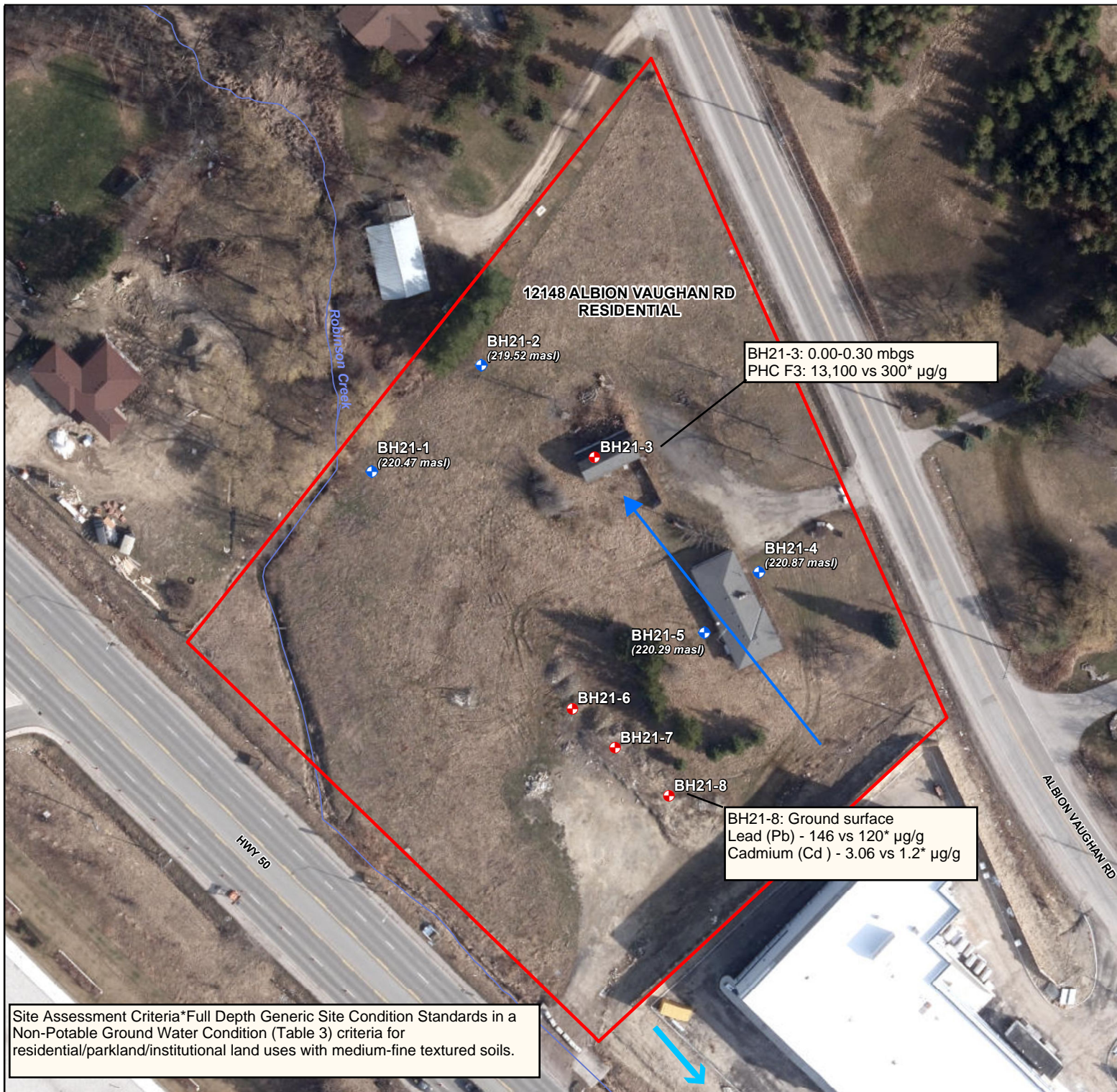
	PROJECT NO. 1604603	REVISION: 1
	DATE: Mar 23, 2021	SCALE: 1:1100
	DRAWN: CV	DATUM: NAD 1983
	CHECKED: SSz	PROJECTION: UTM zone 17

CLIENT:	PREPARED BY:
12148 Albion Vaughan Inc	Palmer™

PROJECT: 12148 Albion Vaughan Road

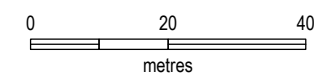
TITLE: **Interpreted Contours of Ground Water Elevations**

Figure 8.2.3



- LEGEND:
- Monitoring well location
 - Borehole Location
 - Phase Two Property
 - Watercourse (MNR)
 - Regional ground water flow direction
 - Local ground water flow direction

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	PROJECT NO: 1604603	REVISION: 1
	DATE: Mar 23, 2021	SCALE: 1:1100
	DRAWN: CV	DATUM: NAD 1983
	CHECKED: SSz	PROJECTION: UTM zone 17

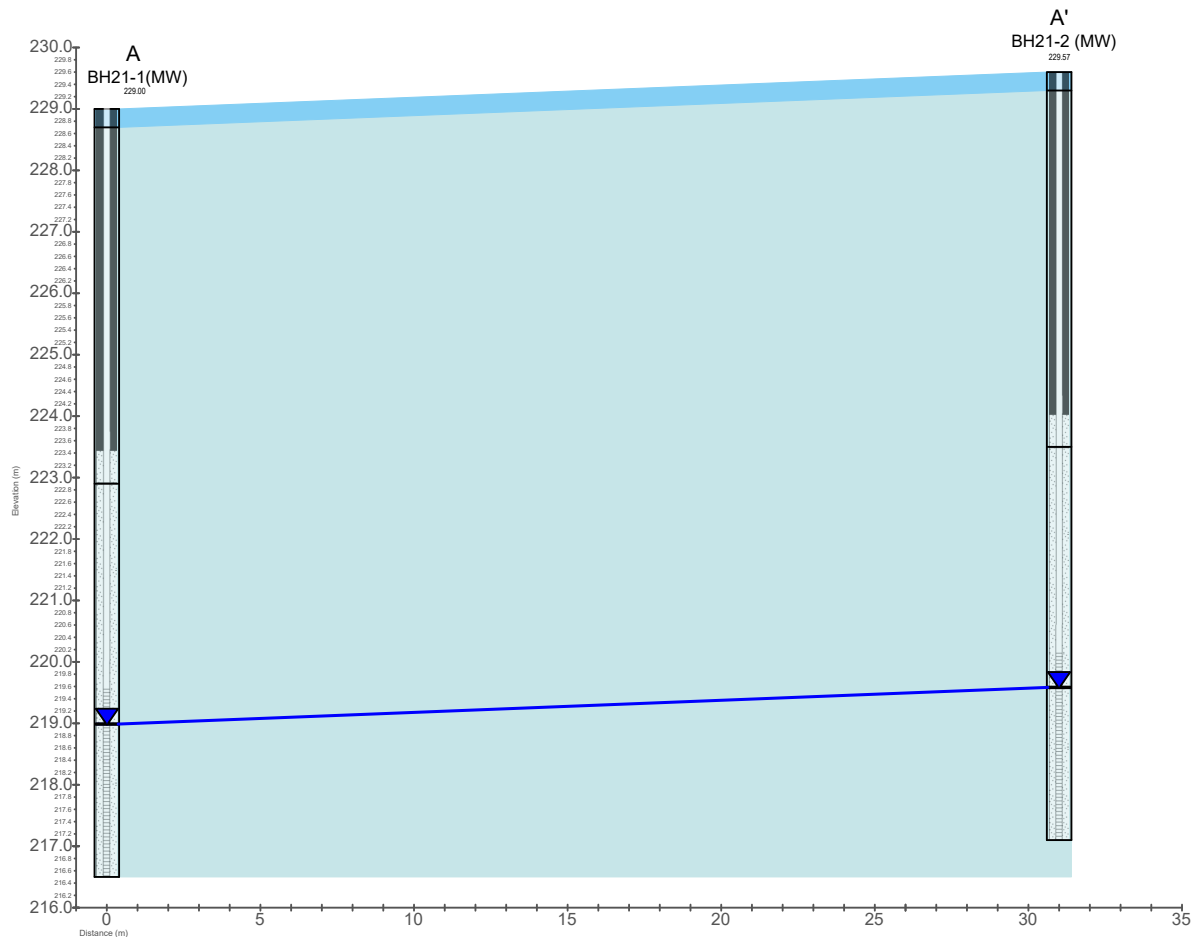
CLIENT:	PREPARED BY:
12148 Albion Vaughan Inc	

PROJECT: 12148 Albion Vaughan Road

TITLE: **Recently Identified Contaminants in Soil Before Actions Taken to Reduce the Concentration of Contaminants**

Site Assessment Criteria*Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition (Table 3) criteria for residential/parkland/institutional land uses with medium-fine textured soils.

Figure 8.2.4







Bedrock not encountered. No contaminant concentrations noted in soil or groundwater.

LEGEND:

SOILS

-  Silty Clay
-  Clayey Silt

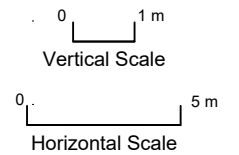
WELL DETAILS


-  Sand
-  Well Screen
-  Bentonite
-  Groundwater Level

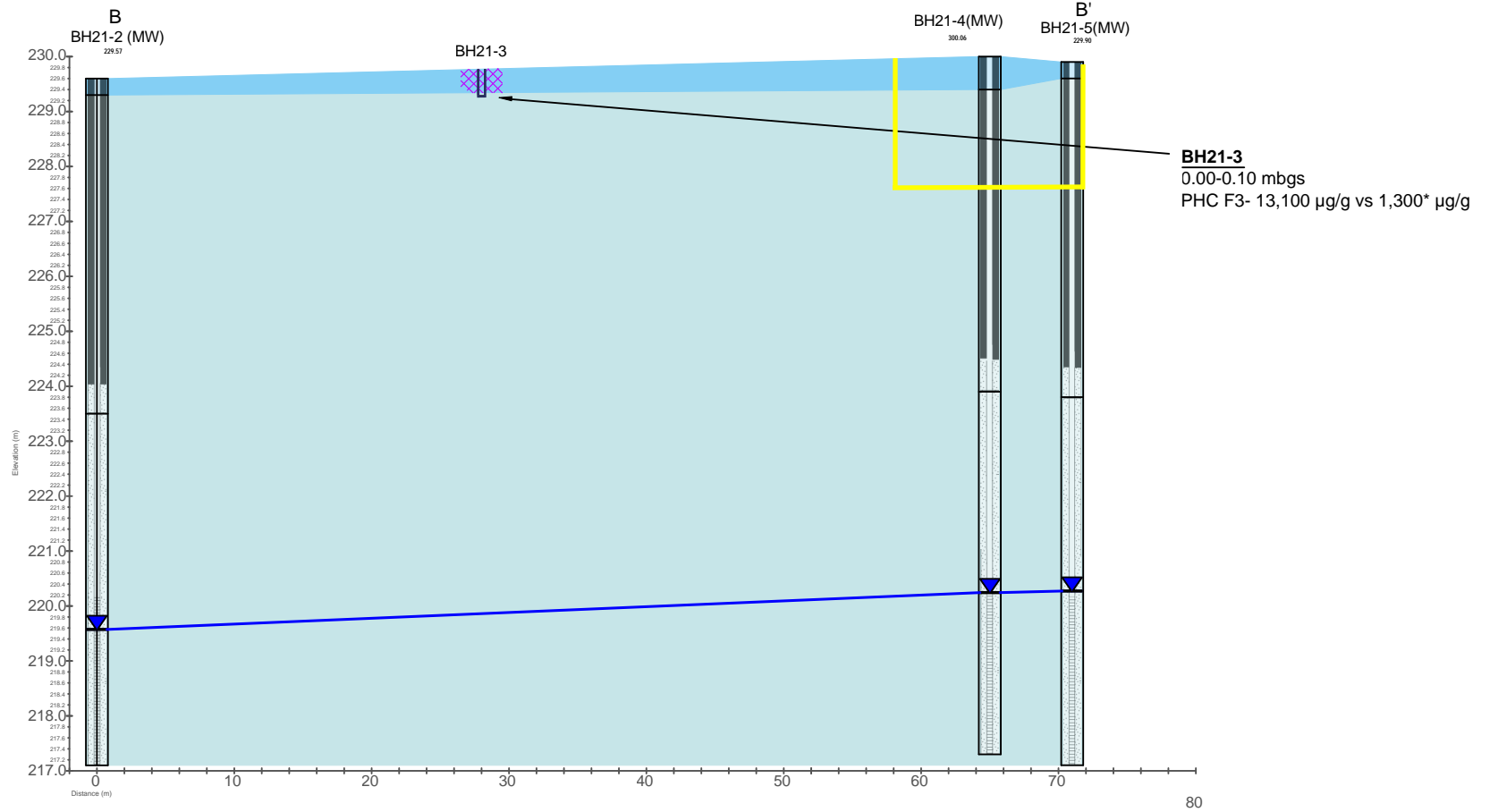
Laboratory Analysis:

Soil:
BH21-2: PHCs, BTEX

Ground Water:
BH21-1: PHCs, VOCs, Metals
BH21-2: PHCs, VOCs, Metals



CLIENT: 12148 Albion Vaughan Inc		PROJECT NO. 1604603	FIGURE NO. X-A
DRAWN: CV	APPROVED: SSz	TITLE: Cross Section A-A'	
DATE: 3/24/2021	SCALE: As shown	PROJECT: 12148 Albion Vaughan Rd	
PRINT SIZE: 8.5" x 11"	REVISION: 1	 74 Berkeley Street Toronto, Ontario M5A 2W7	



Bedrock not encountered. No contaminant concentrations noted in groundwater.

LEGEND:

SOILS

- Silty Clay
- Clayey Silt

SOIL CONTAMINATION

- Petroleum Hydrocarbon contamination in soil

WELL DETAILS

- Sand
- Well Screen
- Bentonite
- Groundwater Level
- Dwelling basement

Laboratory Analysis:

Soil:	Ground Water:
BH21-2: PHCs, BTEX	BH21-2: PHCs, VOCs, Metals
BH21-3: PHCs, VOCs	BH21-4: PHCs, BTEX
BH21-4: PHCs, VOCs	BH21-5: PHCs, BTEX
BH21-5: PHCs, BTEX	

Vertical Scale

 Horizontal Scale

CLIENT: 12148 Albion Vaughan Inc		PROJECT NO.: 1604603	FIGURE NO.: X-B
DRAWN: CV	APPROVED: SSz	TITLE: Cross Section B-B'	
DATE: 3/24/2021	SCALE: As shown	PROJECT: 12148 Albion Vaughan Rd	
PRINT SIZE: 8.5" x 11"	REVISION: 1		

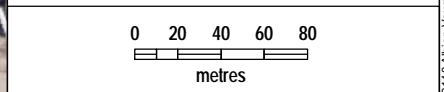
74 Berkeley Street
 Toronto, Ontario
 M5A 2W7

Drawings



- LEGEND:**
- Phase Two Property
 - Phase One Study Area
 - Watercourse (MNR)

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	PROJECT NO. 1604603	REVISION: 1
	DATE: Mar 23, 2021	SCALE: 1:3500
	DRAWN: CV	DATUM: NAD 1983
	CHECKED: SSZ	PROJECTION: UTM zone 17

CLIENT:	PREPARED BY:
12148 Albion Vaughan Inc	Palmer™

PROJECT: 12148 Albion Vaughan Rd

TITLE: **Site Location Map**

Drawing 1



LEGEND:

- Monitoring Well Location
- Borehole Location
- Phase Two Property
- Watercourse (MNRF)
- Regional Ground Water Flow Direction
- Local Ground Water Flow
- Water Line
- Bell Line
- Storage Tank
 - 1. Two (2) 900L heating oil ASTs
 - 2. One (1) heating oil 900L AST
 - 3. One (1) diesel AST of unknown size

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0 20 40
metres

	PROJECT NO. 1604603	REVISION: 1
	DATE: Mar 23, 2021	SCALE: 1:1091
	DRAWN: CV	DATUM: NAD 1983
	CHECKED: SSz	PROJECTION: UTM zone 17

CLIENT: 12148 Albion Vaughan Inc	PREPARED BY: Palmer™
PROJECT: 12148 Albion Vaughan Rd	
TITLE: Borehole Location Plan	
Drawing 2	

Document Path: G:\Shared drives\Projects 2016\16046 - Aztec Restoration\1604603 - 12148 Albion Vaughan Rd\Mapping\GIS\Phase 2\1604603_Dr2-1_Borehole Location Plan.mxd



- LEGEND:**
- Phase One Property
 - Phase One Study Area
 - ~ Watercourse (MNRF)
 - ← Inferred Ground Water Flow Direction
 - Water Well¹
 - 8 PCA of Concern
 - 14 PCA Not of Concern
 - **Storage Tank**

1. Two (2) 900 L heating oil ASTs
2. One (1) heating oil 900 L AST
3. One (1) diesel AST of unknown size
4. Three (3) USTs - 22,700 L, 22,700L, (gasoline) and 45,400 L (diesel)
5. One (1) 1000 L tank
6. One (1) 70,000 L tank, two (2) 45,400 L tanks, two (2) 22,700 L tanks

PCA 52. Storage, Maintenance, Fueling, and Repair of Equipment, Vehicles, and Material Used to Maintain Transportation Systems

PCA 52. Storage, Maintenance, Fueling, and Repair of Equipment, Vehicles, and Material Used to Maintain Transportation Systems

PCA #28. Gasoline and Associated Products Storage in Fixed Tanks

APEC 5

APEC 3

PCA #8. Chemical Manufacturing, Processing, and Bulk Storage

APEC 1

PCA #28. Gasoline and Associated Products Storage in Fixed Tanks

PCA #28. Gasoline and Associated Products Storage in Fixed Tanks

PCA #28. Gasoline and Associated Products Storage in Fixed Tanks

PCA #39. Paints Manufacturing, Processing and Bulk Storage

PCA #8. Chemical Manufacturing, Processing and Bulk Storage

APEC 6

APEC 7

APEC 4

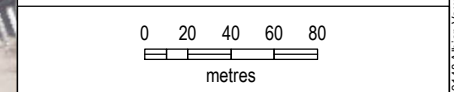
APEC 2

PCA #30. Importation of Fill Material of Unknown Quality

12148 ALBION VAUGHAN RD RESIDENTIAL

1. Water Well Information System, Ministry of the Environment Conservation and Parks.

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	PROJECT NO. 1604601	REVISION: 1
	DATE: Nov 26, 2020	SCALE: 1:3500
	DRAWN: CV	DATUM: NAD 1983
	CHECKED: SSZ	PROJECTION: UTM zone 17

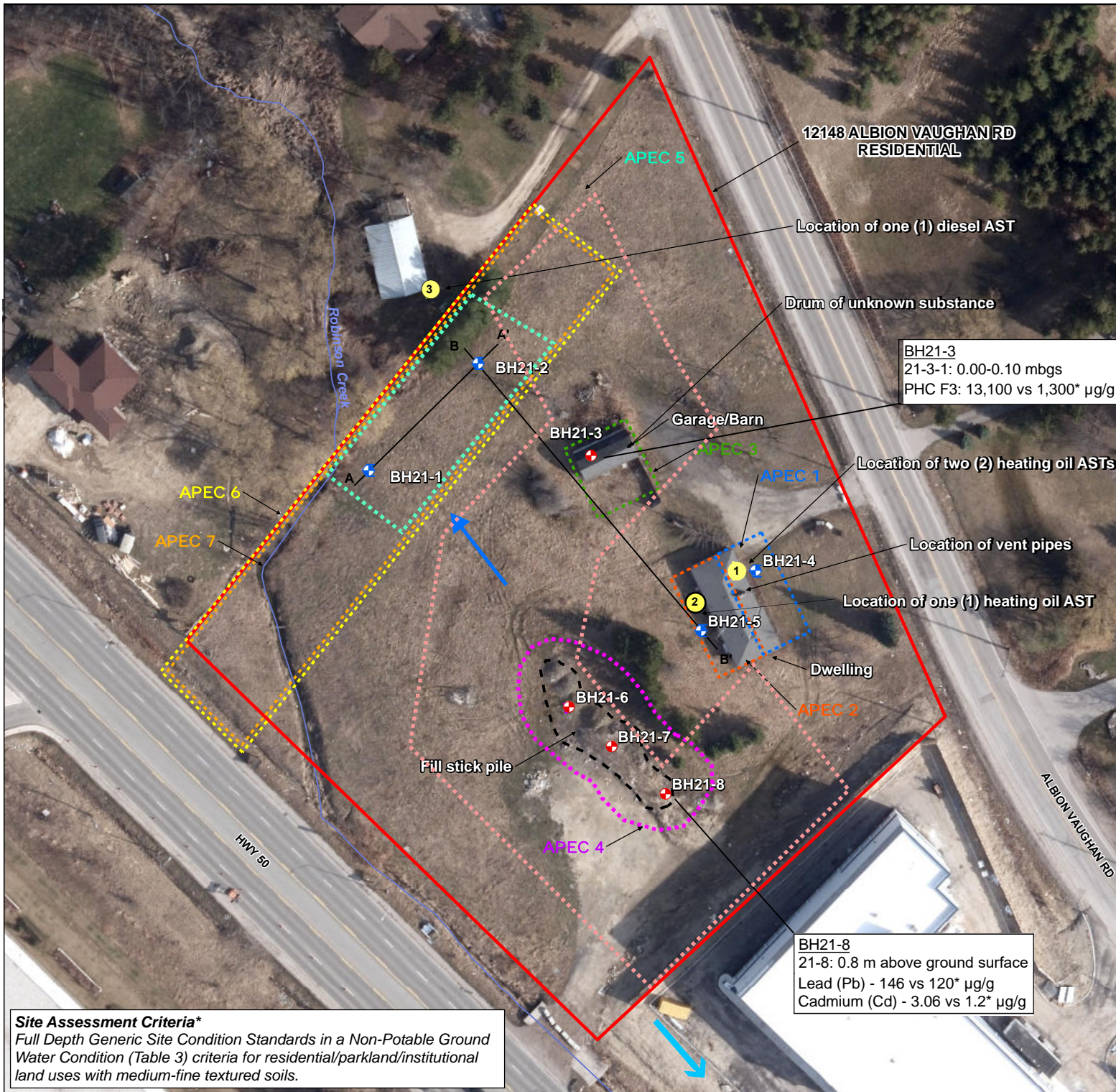
CLIENT:	PREPARED BY:
Aztec Restoration	Palmer™

PROJECT: 12148 Albion Vaughan Inc

TITLE: **On-Site and Off-Site Areas of Potential Environmental Concern**

Drawing 3

Document Path: G:\Shared drives\Projects 2016\16046 - Aztec Restoration\1604601 - 12148 Albion Vaughan Inc\1-Phase One ESA\Mapping\GIS\1604601_5-1_Areas of Potential Environmental Concern.mxd



- LEGEND:**
- Monitoring Well Location
 - x Borehole Location
 - Phase Two Property
 - ~ Watercourse (MNRF)
 - ← Regional Ground Water Flow Direction
 - Local Ground Water Flow Direction
 - Storage Tank
 - Proposed building location

A-A' Cross Section Profile Location

APEC #1: Existing Interior Heating Oil Aboveground Storage Tanks (ASTs)

APEC #2: Existing Exterior Heating Oil AST

APEC #3: Existing Hazardous Material Storage Likely Used for Equipment Maintenance

APEC #4: Fill Stockpile

APEC #5: Existing diesel AST

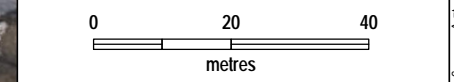
APEC #6: Existing Truck and Trailer Repair Center, historic metal fabrication

APEC #7: RV Repair Center with Fuel Underground Storage Tank (UST)

BH21-3
 21-3-1: 0.00-0.10 mbgs
 PHC F3: 13,100 vs 1,300* µg/g

BH21-8
 21-8: 0.8 m above ground surface
 Lead (Pb) - 146 vs 120* µg/g
 Cadmium (Cd) - 3.06 vs 1.2* µg/g

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	PROJECT NO. 1604603	REVISION: 1
	DATE: Mar 24, 2021	SCALE: 1:1100
	DRAWN: CV	DATUM: NAD 1983
	CHECKED: SSZ	PROJECTION: UTM zone 17

CLIENT:	PREPARED BY:
12148 Albion Vaughan Inc	Palmer™

PROJECT: 12148 Albion Vaughan Rd

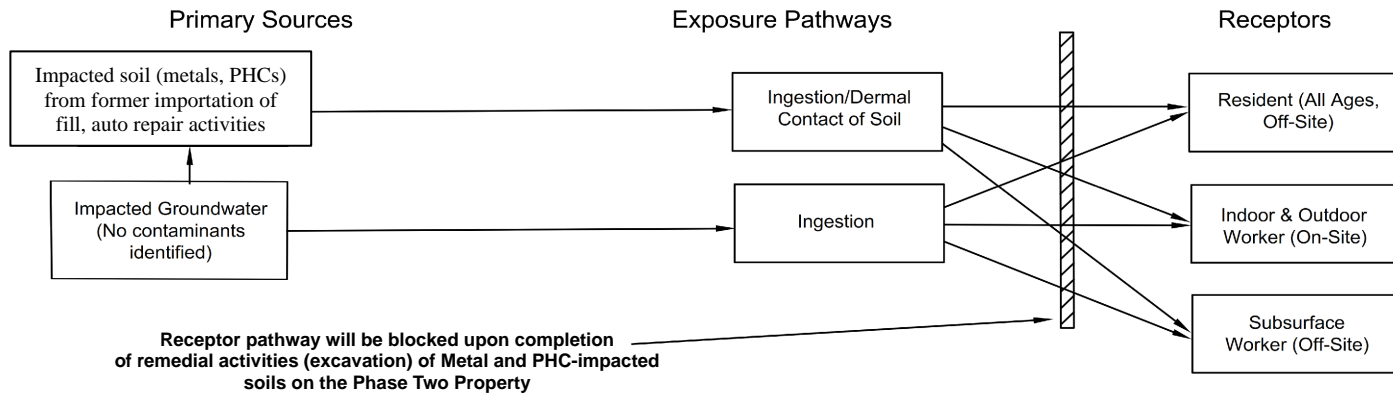
TITLE: **Impacted Locations (Soil)**

Drawing 4

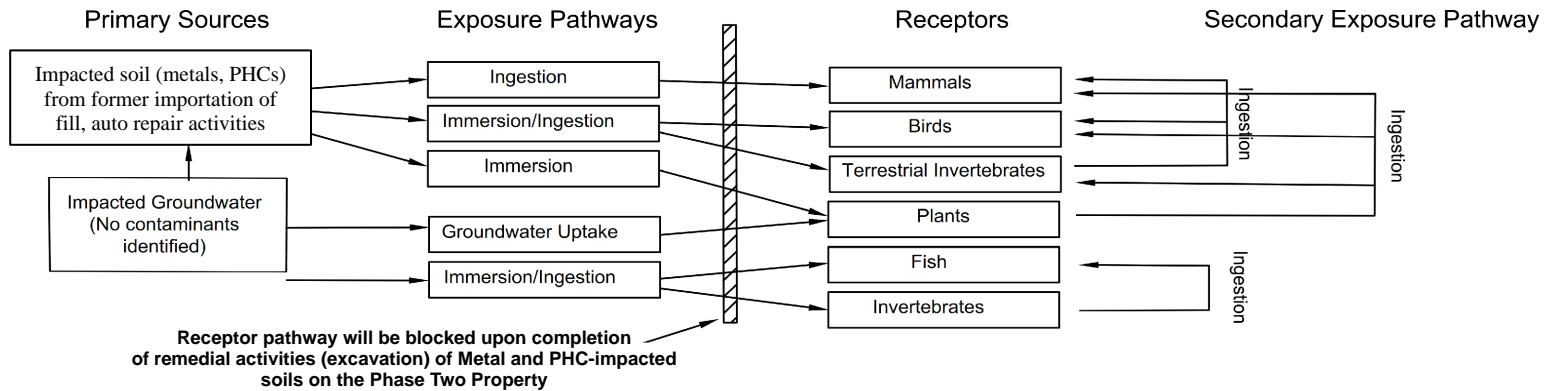
Site Assessment Criteria*
 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition (Table 3) criteria for residential/parkland/institutional land uses with medium-fine textured soils.

Document Path: G:\Sharon\ed-dr\res\proj\1604603 - A21\ec\Res\at\em1604603 - 12148 Albion Vaughan Rd\Maping\GIS\Phase 2\1604603_Dr-4-1.mxd ed Loc 1 on (Soil)

Human Receptors and Exposure Pathways



Ecological Receptors and Exposure Pathways



PROJECT NO. 1604603

DATE: Mar 23, 2021

DRAWN: CV

CHECKED: SSz

CLIENT:

12148 Albion
Vaughan Inc

PREPARED BY:

Palmer™

PROJECT: 12148 Albion Vaughan Rd

TITLE:
**Conceptual Model
for Human and Ecological
Receptors**

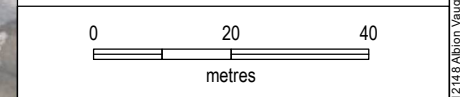
Drawing 5

GARAGE/BARN DETAIL



- LEGEND:**
- Monitoring Well Location
 - Borehole Location
 - Watercourse (MNRF)
 - Regional Ground Water Flow Direction
 - Local Ground Water Flow Direction
 - Storage Tank
 - PHC Impacted Area to be Excavated
 - Phase Two Property

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	PROJECT NO.	1604603	REVISION:	1
	DATE:	Jan 20, 2022	SCALE:	1:1100
	DRAWN:	CV	DATUM:	NAD 1983
	CHECKED:	SSz	PROJECTION:	UTM zone 17

CLIENT:	PREPARED BY:
Aztec Restoration	Palmer™

PROJECT: 12148 Albion Vaughan Rd

TITLE: **Excavation Areas**

Drawing 6

21-NW-1: 0.30 mbgs
 Benzene: <0.0068 vs 0.21 g/g
 Ethylbenzene: <0.018 vs 2 g/g
 Toluene: <0.080 vs 6 g/g
 Xylene: <0.050 vs 25 g/g
 PHC F1: <5.0 vs 65 g/g
 PHC F2: <10 vs 150 g/g
 PHC F3: <50 vs 1300 g/g
 PHC F4: <50 vs 5600 g/g

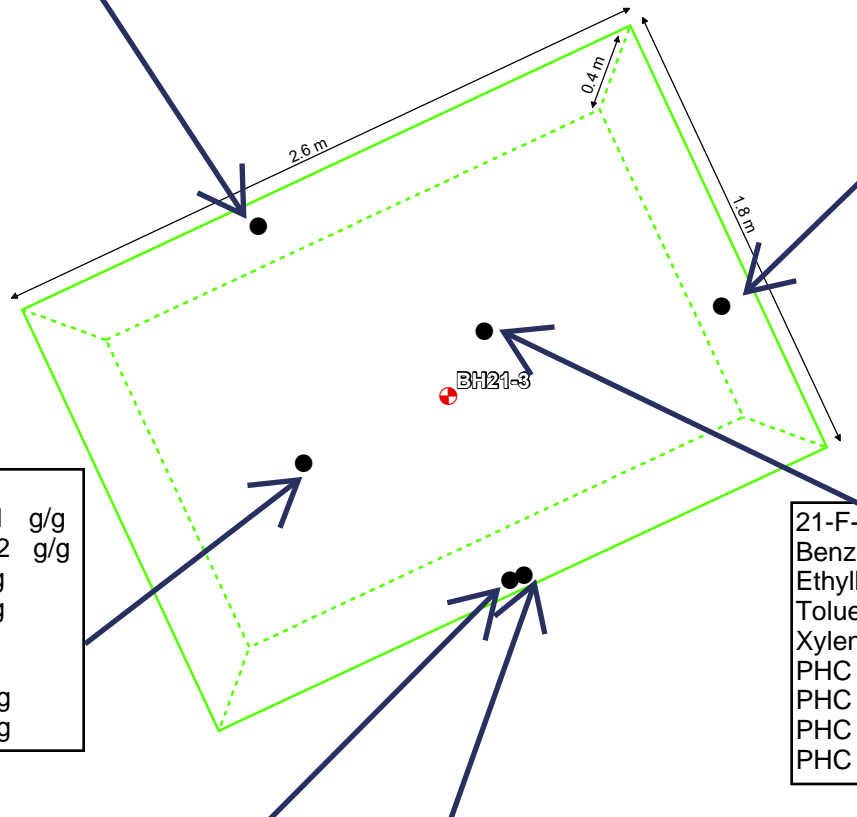
21-EW-1: 0.30 mbgs
 Benzene: <0.0068 vs 0.21 g/g
 Ethylbenzene: <0.018 vs 2 g/g
 Toluene: <0.080 vs 6 g/g
 Xylene: <0.050 vs 25 g/g
 PHC F1: <5.0 vs 65 g/g
 PHC F2: <10 vs 150 g/g
 PHC F3: <50 vs 1300 g/g
 PHC F4: <50 vs 5600 g/g

21-F-1: 0.30 mbgs
 Benzene: <0.0068 vs 0.21 g/g
 Ethylbenzene: <0.018 vs 2 g/g
 Toluene: <0.080 vs 6 g/g
 Xylene: <0.050 vs 25 g/g
 PHC F1: <5.0 vs 65 g/g
 PHC F2: <10 vs 150 g/g
 PHC F3: <50 vs 1300 g/g
 PHC F4: <50 vs 5600 g/g

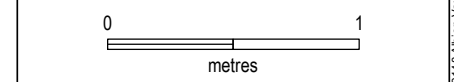
21-F-2: 0.30 mbgs
 Benzene: <0.0068 vs 0.21 g/g
 Ethylbenzene: <0.018 vs 2 g/g
 Toluene: <0.080 vs 6 g/g
 Xylene: <0.050 vs 25 g/g
 PHC F1: <5.0 vs 65 g/g
 PHC F2: <10 vs 150 g/g
 PHC F3: <50 vs 1300 g/g
 PHC F4: <50 vs 5600 g/g

21-SW-1: 0.30 mbgs
 Benzene: <0.0068 vs 0.21 g/g
 Ethylbenzene: <0.018 vs 2 g/g
 Toluene: <0.080 vs 6 g/g
 Xylene: <0.050 vs 25 g/g
 PHC F1: <5.0 vs 65 g/g
 PHC F2: <10 vs 150 g/g
 PHC F3: <50 vs 1300 g/g
 PHC F4: <50 vs 5600 g/g

21-SW-1D: 0.30 mbgs
 Benzene: <0.0068 vs 0.21 g/g
 Ethylbenzene: <0.018 vs 2 g/g
 Toluene: <0.080 vs 6 g/g
 Xylene: <0.050 vs 25 g/g
 PHC F1: <5.0 vs 65 g/g
 PHC F2: <10 vs 150 g/g
 PHC F3: <50 vs 1300 g/g
 PHC F4: <50 vs 5600 g/g



- LEGEND:
- Confirmation Sample Location
 - ⊕ Borehole Location
 - ▭ PHC Impacted Area to be Excavated
 - ▭ Phase Two Property



	PROJECT NO. 1604603	REVISION: 1
	DATE: Jan 20, 2022	SCALE: 1:30
	DRAWN: CV	DATUM: NAD 1983
	CHECKED: SSz	PROJECTION: UTM zone 17

CLIENT: Aztec Restoration	PREPARED BY: Palmer™
------------------------------	--------------------------------

PROJECT: 12148 Albion Vaughan Rd

TITLE:
Confirmation Sampling

Drawing 7

Document Path: G:\Shared drives\Projects 2016\16046 - Aztec Restoration\1604603 - 12148 Albion Vaughan Rd\Maping\GIS\Phase 2\1604603_Dr7-1_Confirmation Sampling.mxd

Photographs



Photograph 1

Photo depicts drilling of BH21-4.



Photograph 2

Photo depicts auguring of BH21-5.



Photograph 3

Photo depicts auguring of BH21-2.



Photograph 4

Photo depicts drilling of BH21-1.

Appendix A – General

A1 – Sampling and Analysis Plan

Site: 12148 Albion Vaughan Road, Caledon, Ontario

Project #: 1604603

Location ID	Media	Sample No.	Approximate Depth (m)	Date of Sample Collection	Date of Analysis	Chemical Analyses	Purpose and Justification
BH21-1	Ground Water	BH21-1	NA	4-Mar-2021	5-Mar-21	Petroleum Hydrocarbons (PHCs), Volatile Organic Compounds (VOCs), Metals	Characterize ground water conditions of a potential contamination source. Collected to verify and/or refute APEC# 6 and 7.
BH21-2	Soil	BH21-2-2	0.76-1.52	3-Mar-2021	8-Mar-2021	PHCs, Benzene, Toluene, Ethylbenzene, Xylene (BTEX)	Worst case soil sample. Collected to verify and/or refute APEC #5.
		BH21-2-6		3-Mar-2021	12-Mar-21	pH	Sample to determine the pH of the soil.
		BH21-2-6D		3-Mar-2021	12-Mar-21	pH	QA/QC. Duplicate sample of BH21-2-6
	Ground Water	BH21-2	NA	4-Mar-2021	5-Mar-21	PHCs, VOCs, Metals	Characterize ground water conditions of a potential contamination source. Collected to verify and/or refute APEC# 5, 6, and 7.
		BH21-2D	NA	4-Mar-2021	5-Mar-21	PHCs, VOCs, Metals	QA/QC. Duplicate sample of BH 21-2.
BH21-3	Soil	BH21-3	0.00-0.10	2-Mar-2021	8-Mar-2021	PHCs, VOCs	Worst case soil sample. Collected to verify and/or refute APEC #3.
BH21-4	Soil	BH21-4-1	0.00-0.76	2-Mar-2021	12-Mar-21	pH	Sample to determine the pH of the soil.
		BH21-4-4		2-Mar-2021	8-Mar-2021	PHCs, BTEX	Worst case soil sample. Collected to verify and/or refute APEC #1.
		BH21-4-4D		2-Mar-2021	8-Mar-2021	PHCs, BTEX	QA/QC. Duplicate sample of BH21-4-4
	Ground Water	BH21-4	NA	4-Mar-2021	5-Mar-21	PHCs, BTEX	Characterize ground water conditions of a potential contamination source. Collected to verify and/or refute APEC# 1.

**Phase Two ESA
Sampling and Analysis Plan**

BH21-5	Soil	BH21-5-2	0.76-1.52	2-Mar-2021	8-Mar-2021	PHCs, BTEX	Worst case soil sample. Collected to verify and/or refute APEC #2.
		BH21-5-7		2-Mar-2021		Grain Size	Soil sample collected to determine grain size of the soil representative of the Site.
	Ground Water	BH21-5	NA	4-Mar-2021	5-Mar-21	PHCs, BTEX	Characterize ground water conditions of a potential contamination source. Collected to verify and/or refute APEC# 2.
BH21-6	Soil	BH21-6	0.00-0.30	3-Mar-2021	12-Mar-21	Metals, As, Sb, Se, and inorganic parameters (Na, B-HWS, Cl-, CN-, Cr(VI), Hg, low or high pH, EC and SAR).	Worst case soil sample. Collected to verify and/or refute APEC #4.
BH21-7	Soil	BH21-7	0.00-0.30	3-Mar-2021	12-Mar-21	Metals, As, Sb, Se, and inorganic parameters (Na, B-HWS, Cl-, CN-, Cr(VI), Hg, low or high pH, EC and SAR).	Worst case soil sample. Collected to verify and/or refute APEC #4.
BH21-8	Soil	BH21-8	0.00-0.30	3-Mar-2021	12-Mar-21	Metals, As, Sb, Se, and inorganic parameters (Na, B-HWS, Cl-, CN-, Cr(VI), Hg, low or high pH, EC and SAR).	Worst case soil sample. Collected to verify and/or refute APEC #4.
		BH21-8D	0.00-0.30	3-Mar-2021	12-Mar-21	Metals, As, Sb, Se, and inorganic parameters (Na, B-HWS, Cl-, CN-, Cr(VI), Hg, low or high pH, EC and SAR).	QA/QC. Duplicate sample of BH21-8

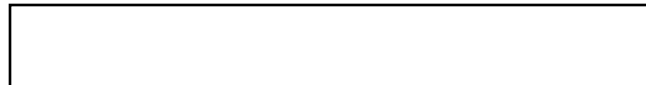
Appendix A – General A2 – Finalized Field Logs

PROJECT: 1604603 Phase Two ESA	REF. NO.: 1604603
CLIENT: 12148 Albion Vaughan Inc	Method: Direct Push with Split Spoon
PROJECT LOCATION: 12148 Albion Vaughan Road, Caledon, ON	Diameter: 150 mm
DATUM: Geodetic	Date: Mar-04-2021
BH LOCATION: 4856296.391N 604546.994E	COMPILED BY: SS

SOIL PROFILE		SAMPLES		SAMPLE REMARKS	Head Space Combustible Vapor Reading (ppm)	LABORATORY ANALYSIS AND REMARKS	GROUND WATER CONDITIONS	WELL CONSTRUCTION DETAILS
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER					
229.0	Ground Surface							
0.0 228.7	Fill: Brown silty clay fill with organics	•						
0.3	Fill: Clayey silt fill with trace sand, brown, with debris between 0.61 and 0.91							
227.0								
2.1	Till: Clayey silt till, grey, with cobbles at 2.59m, 4.70m, and 6.25m, and a sand seam at 3.50m	•						-Bentonite
3								
4								
5								
222.9								
6.1	BH Augured to 12.80 Sand seam between 8.20 and 9.40 m							
						Analysis: PHCs, VOCs, Metals		
								W. L. 220.5 m Mar 04, 2021
								-Sand
								-Screen
216.2	END OF BOREHOLE							
12.8	Notes: 1. Upon completion of drilling, a 50mm diameter monitoring well was installed in the borehole. 2. Augured to 12.53 m							

PALMER ENV. AND SITE CLUB
PALMER ENVIRONMENTAL SERVICES - 12148 ALBION VAUGHAN ROAD, Caledon, ON L4R 4E4

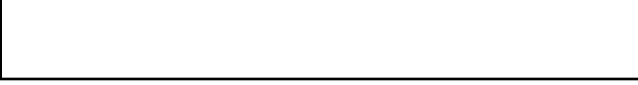
GROUNDWATER ELEVATIONS
 Measurement



PROJECT: 1604603 Phase Two ESA	REF. NO.: 1604603
CLIENT: 12148 Albion Vaughan Inc	Method: Direct Push with Split Spoon
PROJECT LOCATION: 12148 Albion Vaughan Road, Caledon, ON	Diameter: 150 mm
DATUM: Geodetic	Date: Mar-04-2021
BH LOCATION: 4856318.017N 604569.159E	COMPILED BY SS

SOIL PROFILE		SAMPLES		SAMPLE REMARKS	Head Space Combustible Vapor Reading (ppm)	LABORATORY ANALYSIS AND REMARKS	GROUND WATER CONDITIONS	WELL CONSTRUCTION DETAILS
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER TYPE					
230.6	Ground Surface							
230.3	Fill: Brown silty clay fill with organics		1 SS			Analysis: PHCs, BTEX		
0.3	Fill: Clayey silt fill with trace sand, brown, with debris between 0.61 and 0.91		2 SS					
			3 SS					
228.5	Till: Clayey silt till, grey, with cobbles at 2.59m, 4.70m, and 6.25m, and a sand seam at 3.50m		4 SS					
2.1			5 SS					
			6 SS					
			7 SS					
			8 SS					
224.5								
6.1	BH Augured to 12.53 Sand seam between 8.20 and 9.40 m					Analysis: PHCs, VOCs, Metals		
218.0								
12.5	END OF BOREHOLE Notes: 1. Upon completion of drilling, a 50mm diameter monitoring well was installed in the borehole.							

GROUNDWATER ELEVATIONS
 Measurement



PALMER ENV. AND SITE CL. 1604603 PHASE TWO ALBION VAUGHAN ROAD, CALEDON, ON

PROJECT: 1604603 Phase Two ESA CLIENT: 12148 Albion Vaughan Inc PROJECT LOCATION: 12148 Albion Vaughan Road, Caledon, ON DATUM: Geodetic BH LOCATION: 4856299.32N 604592.10E	Method: Hand Auger Diameter: 300 mm Date: Mar-03-2021 REF. NO.: 1604603 ENCL NO.: COMPILED BY: SS
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SOIL PROFILE		SAMPLES		SAMPLE REMARKS	Head Space Combustible Vapor Reading (ppm)	LABORATORY ANALYSIS AND REMARKS	GROUND WATER CONDITIONS	WELL CONSTRUCTION DETAILS
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER TYPE					
229.8	Ground Surface							
0.0 229.5 0.3	Fill: Sandy gravel fill with staining and petroleum odour	[X]	1		[X]	Analysis: PHCs, VOCs		

PALMER ENV. AND SITE CLS
 PALMER ENVIRONMENTAL SERVICES - PALMER
 12148 ALBION VAUGHAN ROAD, Caledon, ON

GROUNDWATER ELEVATIONS

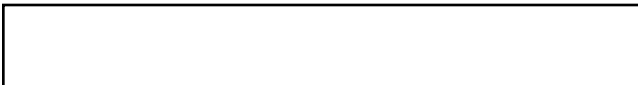
Measurement				
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PROJECT: 1604603 Phase Two ESA CLIENT: 12148 Albion Vaughan Inc PROJECT LOCATION: 12148 Albion Vaughan Road, Caledon, ON DATUM: Geodetic BH LOCATION: 4856276.058N 604625.445E	Method: Direct Push with Split Spoon Diameter: 150 mm Date: Mar-03-2021	REF. NO.: 1604603 ENCL NO.: COMPILED BY: SS
--	---	---

SOIL PROFILE		SAMPLES		SAMPLE REMARKS	Head Space Combustible Vapor Reading (ppm)	LABORATORY ANALYSIS AND REMARKS	GROUND WATER CONDITIONS	WELL CONSTRUCTION DETAILS
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER TYPE					
230.1	Ground Surface							
0.0	Fill: Silty clay fill, brown, with organics	•••	1 SS			Analysis: PHCs, BTEX		
229.5			2 SS					
0.6	Fill: Clayey silt fill with trace sand, brown	▨▨▨	3 SS					
			4 SS					
227.8	Till: Clayey silt till, grey, with trace gravel	▩▩▩	5 SS					
2.3			6 SS					
			7 SS					
			8 SS					
224.0								
6.1	BH Augured to 12.74 Sand seam between 11.10 and 11.6 m					Analysis: PHCs, BTEX		Sand W. L. 220.3 m Mar 04, 2021 Screen
217.3								
12.7	END OF BOREHOLE Notes: 1. Upon completion of drilling, a 50mm diameter monitoring well was installed in the borehole.							

GROUNDWATER ELEVATIONS

Measurement



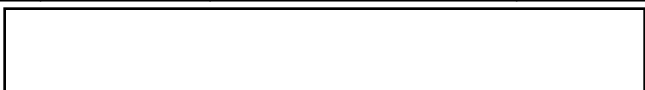
PALMER ENV. AND CON. CORP. PALMER ENVIRONMENTAL SERVICES - 12148 ALBION VAUGHAN ROAD, Caledon, ON L7R 4R4

PROJECT: 1604603 Phase Two ESA	REF. NO.: 1604603
CLIENT: 12148 Albion Vaughan Inc	Method: Direct Push with Split Spoon
PROJECT LOCATION: 12148 Albion Vaughan Road, Caledon, ON	Diameter: 150 mm
DATUM: Geodetic	Date: Mar-03-2021
BH LOCATION: 4856263.822N 604614.289E	COMPILED BY: SS

SOIL PROFILE			SAMPLES		SAMPLE REMARKS	Head Space Combustible Vapor Reading (ppm)	LABORATORY ANALYSIS AND REMARKS	GROUND WATER CONDITIONS	WELL CONSTRUCTION DETAILS
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE					
229.9	Ground Surface								
0.0 229.6	Fill: Silty clay fill with organics		1	SS	█		Analysis: PHCs, BTEX		
0.3	Fill: Clayey silt fill with trace sand, brown, with debris between 0.61 and 0.91m		2	SS	█				
1.9	Till: Clayey silt till, grey, with trace gravel cobbles at 4.11m		3	SS	█				
			4	SS	█				
			5	SS	█				
			6	SS	█				
			7	SS	█				
			8	SS	█				
6.1	BH Augured to 12.78 Sand seam between 10.2 and 11.3 m						Analysis: PHCs, BTEX		Sand W. L. 220.3 m Mar 04, 2021 Screen
217.1 12.8	END OF BOREHOLE Notes: 1. Upon completion of drilling, a 50mm diameter monitoring well was installed in the borehole.								

GROUNDWATER ELEVATIONS

Measurement



PALMER ENV. AND SITE CLUB PALMER ENVIRONMENTAL SERVICES - 12148 ALBION VAUGHAN ROAD, UNIT 12, CALEDON, ONTARIO, CANADA

Appendix A – General

A3 – Certificates of Analysis or Analytical Reports from Laboratories



PALMER ENVIRONMENTAL CONSULTING
GROUP INC. (Richmond Hill)
ATTN: Samo Szakal
74 BERKELEY STREET
TORONTO ON M5V 1E3

Date Received: 04-MAR-21
Report Date: 11-MAR-21 10:31 (MT)
Version: FINAL

Client Phone: 647-795-8152

Certificate of Analysis

Lab Work Order #: L2563694
Project P.O. #: 1604603
Job Reference: 1604603
C of C Numbers: 20-889593
Legal Site Desc:

Jennifer Barkshire-Paterson
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 95 West Beaver Creek Road, Unit 1, Richmond Hill, ON L4B 1H2 Canada | Phone: +1 905 881 9887 | Fax: +1 905 881 8062
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)							
(No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine)							
(No parameter exceedances)							

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Dissolved Metals - WATER

Analyte	Unit	Guide Limits		Lab ID	L2563694-1	L2563694-2	L2563694-3
		#1	#2	Sample Date	04-MAR-21	04-MAR-21	04-MAR-21
				Sample ID	21-1	21-2	21-2D
Dissolved Metals Filtration Location	-	-		FIELD	FIELD	FIELD	
Antimony (Sb)-Dissolved	ug/L	20000	20000	0.11	0.13	0.13	
Arsenic (As)-Dissolved	ug/L	1900	1900	0.72	1.00	0.93	
Barium (Ba)-Dissolved	ug/L	29000	29000	122	158	184	
Beryllium (Be)-Dissolved	ug/L	67	67	<0.10	<0.10	<0.10	
Boron (B)-Dissolved	ug/L	45000	45000	63	59	56	
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	0.048	0.286	0.277	
Chromium (Cr)-Dissolved	ug/L	810	810	<0.50	<0.50	<0.50	
Cobalt (Co)-Dissolved	ug/L	66	66	2.40	2.34	2.52	
Copper (Cu)-Dissolved	ug/L	87	87	0.46	2.26	1.03	
Lead (Pb)-Dissolved	ug/L	25	25	0.071	0.188	0.138	
Molybdenum (Mo)-Dissolved	ug/L	9200	9200	1.08	1.00	1.09	
Nickel (Ni)-Dissolved	ug/L	490	490	3.27	3.09	3.25	
Selenium (Se)-Dissolved	ug/L	63	63	0.137	<0.050	<0.050	
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.050	<0.050	<0.050	
Sodium (Na)-Dissolved	ug/L	23000002300000		36300	97500 ^{DLHC}	91100	
Thallium (Tl)-Dissolved	ug/L	510	510	0.014	0.036	0.035	
Uranium (U)-Dissolved	ug/L	420	420	1.89	3.05	3.00	
Vanadium (V)-Dissolved	ug/L	250	250	<0.50	<0.50	<0.50	
Zinc (Zn)-Dissolved	ug/L	1100	1100	<1.0	5.2	3.3	

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

- Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
- Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits		Lab ID	L2563694-1	L2563694-2	L2563694-3	L2563694-4	L2563694-5	L2563694-6
		#1	#2	Sample Date	04-MAR-21	04-MAR-21	04-MAR-21	03-MAR-21	03-MAR-21	04-MAR-21
				Sample ID	21-1	21-2	21-2D	21-4	21-5	TRIP BLANK
Acetone	ug/L	130000	130000		<30 ^{OWP}	<30 ^{OWP}	<30 ^{OWP}			<30
Benzene	ug/L	44	430		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50	<0.50 ^{OWP}	<0.50
Bromodichloromethane	ug/L	850000	850000		<2.0 ^{OWP}	<2.0 ^{OWP}	<2.0 ^{OWP}			<2.0
Bromoform	ug/L	380	770		<5.0 ^{OWP}	<5.0 ^{OWP}	<5.0 ^{OWP}			<5.0
Bromomethane	ug/L	5.6	56		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}			<0.50
Carbon tetrachloride	ug/L	0.79	8.4		<0.20 ^{OWP}	<0.20 ^{OWP}	<0.20 ^{OWP}			<0.20
Chlorobenzene	ug/L	630	630		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}			<0.50
Dibromochloromethane	ug/L	82000	82000		<2.0 ^{OWP}	<2.0 ^{OWP}	<2.0 ^{OWP}			<2.0
Chloroform	ug/L	2.4	22		<1.0 ^{OWP}	<1.0 ^{OWP}	<1.0 ^{OWP}			<1.0
1,2-Dibromoethane	ug/L	0.25	0.83		<0.20 ^{OWP}	<0.20 ^{OWP}	<0.20 ^{OWP}			<0.20
1,2-Dichlorobenzene	ug/L	4600	9600		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}			<0.50
1,3-Dichlorobenzene	ug/L	9600	9600		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}			<0.50
1,4-Dichlorobenzene	ug/L	8	67		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}			<0.50
Dichlorodifluoromethane	ug/L	4400	4400		<2.0 ^{OWP}	<2.0 ^{OWP}	<2.0 ^{OWP}			<2.0
1,1-Dichloroethane	ug/L	320	3100		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}			<0.50
1,2-Dichloroethane	ug/L	1.6	12		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}			<0.50
1,1-Dichloroethylene	ug/L	1.6	17		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}			<0.50
cis-1,2-Dichloroethylene	ug/L	1.6	17		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}			<0.50
trans-1,2-Dichloroethylene	ug/L	1.6	17		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}			<0.50
Methylene Chloride	ug/L	610	5500		<5.0 ^{OWP}	<5.0 ^{OWP}	<5.0 ^{OWP}			<5.0
1,2-Dichloropropane	ug/L	16	140		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}			<0.50
cis-1,3-Dichloropropene	ug/L	-	-		<0.30 ^{OWP}	<0.30 ^{OWP}	<0.30 ^{OWP}			<0.30
trans-1,3-Dichloropropene	ug/L	-	-		<0.30 ^{OWP}	<0.30 ^{OWP}	<0.30 ^{OWP}			<0.30
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45		<0.50	<0.50	<0.50			<0.50
Ethylbenzene	ug/L	2300	2300		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50	<0.50 ^{OWP}	<0.50
n-Hexane	ug/L	51	520		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}			<0.50
Methyl Ethyl Ketone	ug/L	470000	1500000		<20 ^{OWP}	<20 ^{OWP}	<20 ^{OWP}			<20
Methyl Isobutyl Ketone	ug/L	140000	580000		<20 ^{OWP}	<20 ^{OWP}	<20 ^{OWP}			<20
MTBE	ug/L	190	1400		<2.0 ^{OWP}	<2.0 ^{OWP}	<2.0 ^{OWP}			<2.0
Styrene	ug/L	1300	9100		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}			<0.50

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - WATER

		Lab ID	L2563694-1	L2563694-2	L2563694-3	L2563694-4	L2563694-5	L2563694-6	
		Sample Date	04-MAR-21	04-MAR-21	04-MAR-21	03-MAR-21	03-MAR-21	04-MAR-21	
		Sample ID	21-1	21-2	21-2D	21-4	21-5	TRIP BLANK	
Analyte	Unit	Guide Limits							
		#1	#2						
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}		<0.50	
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}		<0.50	
Tetrachloroethylene	ug/L	1.6	17	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}		<0.50	
Toluene	ug/L	18000	18000	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50	<0.50 ^{OWP}	
1,1,1-Trichloroethane	ug/L	640	6700	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}		<0.50	
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}		<0.50	
Trichloroethylene	ug/L	1.6	17	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}		<0.50	
Trichlorofluoromethane	ug/L	2500	2500	<5.0 ^{OWP}	<5.0 ^{OWP}	<5.0 ^{OWP}		<5.0	
Vinyl chloride	ug/L	0.5	1.7	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}		<0.50	
o-Xylene	ug/L	-	-	<0.30 ^{OWP}	<0.30 ^{OWP}	<0.30 ^{OWP}	<0.30	<0.30 ^{OWP}	
m+p-Xylenes	ug/L	-	-	<0.40 ^{OWP}	<0.40 ^{OWP}	<0.40 ^{OWP}	<0.40	<0.40 ^{OWP}	
Xylenes (Total)	ug/L	4200	4200	<0.50	<0.50	<0.50	<0.50	<0.50	
Surrogate: 4-Bromofluorobenzene	%	-	-	89.8	91.2	96.0	95.9	97.0	
Surrogate: 1,4-Difluorobenzene	%	-	-	100.8	99.6	100.8	97.7	98.3	

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

- Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
- Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Hydrocarbons - WATER

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	
		#1	#2	L2563694-1	04-MAR-21	21-1	L2563694-2	04-MAR-21	21-2	L2563694-3	04-MAR-21	21-2D	L2563694-4	03-MAR-21	21-4	L2563694-5
F1 (C6-C10)	ug/L	750	750	<25 ^{OWP}	<25 ^{OWP}	<25 ^{OWP}	<25 ^{OWP}	<25 ^{OWP}	<25 ^{OWP}	<25 ^{OWP}	<25 ^{OWP}	<25 ^{OWP}	<25 ^{OWP}	<25 ^{OWP}	<25 ^{OWP}	
F1-BTEX	ug/L	750	750	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	
F2 (C10-C16)	ug/L	150	150	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
F3 (C16-C34)	ug/L	500	500	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	
F4 (C34-C50)	ug/L	500	500	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370	<370	<370	<370	<370	<370	<370	<370	<370	<370	<370	<370	
Chrom. to baseline at nC50		-	-	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
Surrogate: 2-Bromobenzotrifluoride	%	-	-	85.4	89.4	83.9	82.2	89.6								
Surrogate: 3,4-Dichlorotoluene	%	-	-	87.4	98.4	99.7	82.6	87.8								

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
OWP	Organic water sample contained visible sediment (must be included as part of analysis). Measured concentrations of organic substances in water can be biased high due to presence of

Reference Information

sediment.

DLHC Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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BTX-511-HS-WT	Water	BTEX by Headspace	SW846 8260 (511)
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BTX is determined by analyzing by headspace-GC/MS.

F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L
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Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS
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Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	EPA 3511/CCME Tier 1
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Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
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The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260
XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

20-889593

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
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WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
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GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
 74 BERKELEY STREET
 TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX-511-HS-WT		Water						
Batch	R5397164							
WG3497426-4	DUP	WG3497426-3						
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-21
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	05-MAR-21
m+p-Xylenes		0.40	0.44		ug/L	9.5	30	05-MAR-21
o-Xylene		<0.30	0.30	RPD-NA	ug/L	N/A	30	05-MAR-21
Toluene		0.68	0.72		ug/L	5.7	30	05-MAR-21
WG3497426-1	LCS							
Benzene			101.5		%		70-130	05-MAR-21
Ethylbenzene			99.9		%		70-130	05-MAR-21
m+p-Xylenes			93.4		%		70-130	05-MAR-21
o-Xylene			98.9		%		70-130	05-MAR-21
Toluene			98.9		%		70-130	05-MAR-21
WG3497426-2	MB							
Benzene			<0.50		ug/L		0.5	05-MAR-21
Ethylbenzene			<0.50		ug/L		0.5	05-MAR-21
m+p-Xylenes			<0.40		ug/L		0.4	05-MAR-21
o-Xylene			<0.30		ug/L		0.3	05-MAR-21
Toluene			<0.50		ug/L		0.5	05-MAR-21
Surrogate: 1,4-Difluorobenzene			97.4		%		70-130	05-MAR-21
Surrogate: 4-Bromofluorobenzene			95.9		%		70-130	05-MAR-21
WG3497426-5	MS	WG3497426-3						
Benzene			101.7		%		50-140	05-MAR-21
Ethylbenzene			101.5		%		50-140	05-MAR-21
m+p-Xylenes			94.5		%		50-140	05-MAR-21
o-Xylene			100.6		%		50-140	05-MAR-21
Toluene			100.2		%		50-140	05-MAR-21
F1-HS-511-WT		Water						
Batch	R5397164							
WG3497426-4	DUP	WG3497426-3						
F1 (C6-C10)		41	33		ug/L	22	30	05-MAR-21
WG3497426-1	LCS							
F1 (C6-C10)			94.3		%		80-120	05-MAR-21
WG3497426-2	MB							
F1 (C6-C10)			<25		ug/L		25	05-MAR-21
Surrogate: 3,4-Dichlorotoluene			100.2		%		60-140	05-MAR-21
WG3497426-5	MS	WG3497426-3						



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Water						
Batch R5397164								
WG3497426-5	MS	WG3497426-3						
F1 (C6-C10)			78.7		%		60-140	05-MAR-21
Batch R5397766								
WG3497755-4	DUP	WG3497755-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	08-MAR-21
WG3497755-1	LCS		110.3		%		80-120	08-MAR-21
F1 (C6-C10)								
WG3497755-2	MB		<25		ug/L		25	08-MAR-21
F1 (C6-C10)								
Surrogate: 3,4-Dichlorotoluene			99.5		%		60-140	08-MAR-21
WG3497755-5	MS	WG3497755-3						
F1 (C6-C10)			87.5		%		60-140	08-MAR-21
F2-F4-511-WT		Water						
Batch R5398040								
WG3497802-2	LCS							
F2 (C10-C16)			94.5		%		70-130	08-MAR-21
F3 (C16-C34)			94.1		%		70-130	08-MAR-21
F4 (C34-C50)			94.9		%		70-130	08-MAR-21
WG3497802-1	MB							
F2 (C10-C16)			<100		ug/L		100	08-MAR-21
F3 (C16-C34)			<250		ug/L		250	08-MAR-21
F4 (C34-C50)			<250		ug/L		250	08-MAR-21
Surrogate: 2-Bromobenzotrifluoride			83.3		%		60-140	08-MAR-21
MET-D-UG/L-MS-WT		Water						
Batch R5397759								
WG3497672-4	DUP	WG3497672-3						
Antimony (Sb)-Dissolved		0.14	0.14		ug/L	0.2	20	05-MAR-21
Arsenic (As)-Dissolved		0.53	0.58		ug/L	9.0	20	05-MAR-21
Barium (Ba)-Dissolved		16.8	16.3		ug/L	3.0	20	05-MAR-21
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	05-MAR-21
Boron (B)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	05-MAR-21
Cadmium (Cd)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	05-MAR-21
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	05-MAR-21
Cobalt (Co)-Dissolved		0.78	0.81		ug/L	2.7	20	05-MAR-21
Copper (Cu)-Dissolved		0.73	0.76		ug/L	3.6	20	05-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R5397759							
WG3497672-4 DUP		WG3497672-3						
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	05-MAR-21
Molybdenum (Mo)-Dissolved		0.481	0.479		ug/L	0.6	20	05-MAR-21
Nickel (Ni)-Dissolved		0.65	0.65		ug/L	0.6	20	05-MAR-21
Selenium (Se)-Dissolved		0.074	0.063		ug/L	15	20	05-MAR-21
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	05-MAR-21
Sodium (Na)-Dissolved		6260	6370		ug/L	1.7	20	05-MAR-21
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	05-MAR-21
Uranium (U)-Dissolved		0.133	0.138		ug/L	3.9	20	05-MAR-21
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	05-MAR-21
Zinc (Zn)-Dissolved		1.0	1.0		ug/L	2.3	20	05-MAR-21
WG3497672-2 LCS								
Antimony (Sb)-Dissolved			103.6		%		80-120	05-MAR-21
Arsenic (As)-Dissolved			102.5		%		80-120	05-MAR-21
Barium (Ba)-Dissolved			104.8		%		80-120	05-MAR-21
Beryllium (Be)-Dissolved			95.3		%		80-120	05-MAR-21
Boron (B)-Dissolved			92.2		%		80-120	05-MAR-21
Cadmium (Cd)-Dissolved			97.8		%		80-120	05-MAR-21
Chromium (Cr)-Dissolved			98.3		%		80-120	05-MAR-21
Cobalt (Co)-Dissolved			97.7		%		80-120	05-MAR-21
Copper (Cu)-Dissolved			97.9		%		80-120	05-MAR-21
Lead (Pb)-Dissolved			102.0		%		80-120	05-MAR-21
Molybdenum (Mo)-Dissolved			98.1		%		80-120	05-MAR-21
Nickel (Ni)-Dissolved			98.0		%		80-120	05-MAR-21
Selenium (Se)-Dissolved			101.0		%		80-120	05-MAR-21
Silver (Ag)-Dissolved			98.8		%		80-120	05-MAR-21
Sodium (Na)-Dissolved			97.6		%		80-120	05-MAR-21
Thallium (Tl)-Dissolved			99.7		%		80-120	05-MAR-21
Uranium (U)-Dissolved			96.1		%		80-120	05-MAR-21
Vanadium (V)-Dissolved			100.8		%		80-120	05-MAR-21
Zinc (Zn)-Dissolved			98.7		%		80-120	05-MAR-21
WG3497672-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	05-MAR-21
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	05-MAR-21
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	05-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R5397759							
WG3497672-1	MB							
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	05-MAR-21
Boron (B)-Dissolved			<10		ug/L		10	05-MAR-21
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	05-MAR-21
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	05-MAR-21
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	05-MAR-21
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	05-MAR-21
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	05-MAR-21
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	05-MAR-21
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	05-MAR-21
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	05-MAR-21
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	05-MAR-21
Sodium (Na)-Dissolved			<50		ug/L		50	05-MAR-21
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	05-MAR-21
Uranium (U)-Dissolved			<0.010		ug/L		0.01	05-MAR-21
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	05-MAR-21
Zinc (Zn)-Dissolved			<1.0		ug/L		1	05-MAR-21
WG3497672-5	MS	WG3497672-3						
Antimony (Sb)-Dissolved			97.3		%		70-130	05-MAR-21
Arsenic (As)-Dissolved			105.5		%		70-130	05-MAR-21
Barium (Ba)-Dissolved			N/A	MS-B	%		-	05-MAR-21
Beryllium (Be)-Dissolved			94.5		%		70-130	05-MAR-21
Boron (B)-Dissolved			87.4		%		70-130	05-MAR-21
Cadmium (Cd)-Dissolved			100.8		%		70-130	05-MAR-21
Chromium (Cr)-Dissolved			96.9		%		70-130	05-MAR-21
Cobalt (Co)-Dissolved			96.0		%		70-130	05-MAR-21
Copper (Cu)-Dissolved			97.2		%		70-130	05-MAR-21
Lead (Pb)-Dissolved			97.3		%		70-130	05-MAR-21
Molybdenum (Mo)-Dissolved			94.0		%		70-130	05-MAR-21
Nickel (Ni)-Dissolved			95.1		%		70-130	05-MAR-21
Selenium (Se)-Dissolved			113.5		%		70-130	05-MAR-21
Silver (Ag)-Dissolved			95.3		%		70-130	05-MAR-21
Sodium (Na)-Dissolved			N/A	MS-B	%		-	05-MAR-21
Thallium (Tl)-Dissolved			99.0		%		70-130	05-MAR-21
Uranium (U)-Dissolved			99.1		%		70-130	05-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R5397759							
WG3497672-5 MS		WG3497672-3						
Vanadium (V)-Dissolved			99.0		%		70-130	05-MAR-21
Zinc (Zn)-Dissolved			99.9		%		70-130	05-MAR-21
VOC-511-HS-WT								
	Water							
Batch	R5397766							
WG3497755-4 DUP		WG3497755-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	08-MAR-21
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	08-MAR-21
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-MAR-21
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	08-MAR-21
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	08-MAR-21
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	08-MAR-21
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	08-MAR-21
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-MAR-21
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-MAR-21
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	08-MAR-21
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	08-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5397766							
WG3497755-4	DUP	WG3497755-3						
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	08-MAR-21
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	08-MAR-21
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	08-MAR-21
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	08-MAR-21
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	08-MAR-21
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	08-MAR-21
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	08-MAR-21
WG3497755-1	LCS							
1,1,1,2-Tetrachloroethane			93.3		%		70-130	08-MAR-21
1,1,1,2,2-Tetrachloroethane			89.1		%		70-130	08-MAR-21
1,1,1-Trichloroethane			90.5		%		70-130	08-MAR-21
1,1,2-Trichloroethane			86.3		%		70-130	08-MAR-21
1,1-Dichloroethane			87.8		%		70-130	08-MAR-21
1,1-Dichloroethylene			91.7		%		70-130	08-MAR-21
1,2-Dibromoethane			83.3		%		70-130	08-MAR-21
1,2-Dichlorobenzene			94.8		%		70-130	08-MAR-21
1,2-Dichloroethane			84.2		%		70-130	08-MAR-21
1,2-Dichloropropane			86.0		%		70-130	08-MAR-21
1,3-Dichlorobenzene			90.8		%		70-130	08-MAR-21
1,4-Dichlorobenzene			91.2		%		70-130	08-MAR-21
Acetone			89.4		%		60-140	08-MAR-21
Benzene			85.5		%		70-130	08-MAR-21
Bromodichloromethane			90.7		%		70-130	08-MAR-21
Bromoform			101.1		%		70-130	08-MAR-21
Bromomethane			87.8		%		60-140	08-MAR-21
Carbon tetrachloride			92.1		%		70-130	08-MAR-21
Chlorobenzene			93.0		%		70-130	08-MAR-21
Chloroform			89.5		%		70-130	08-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5397766							
WG3497755-1	LCS							
cis-1,2-Dichloroethylene			90.5		%		70-130	08-MAR-21
cis-1,3-Dichloropropene			78.6		%		70-130	08-MAR-21
Dibromochloromethane			86.2		%		70-130	08-MAR-21
Dichlorodifluoromethane			85.3		%		50-140	08-MAR-21
Ethylbenzene			86.7		%		70-130	08-MAR-21
n-Hexane			87.6		%		70-130	08-MAR-21
m+p-Xylenes			89.2		%		70-130	08-MAR-21
Methyl Ethyl Ketone			82.5		%		60-140	08-MAR-21
Methyl Isobutyl Ketone			75.1		%		60-140	08-MAR-21
Methylene Chloride			87.8		%		70-130	08-MAR-21
MTBE			90.5		%		70-130	08-MAR-21
o-Xylene			98.8		%		70-130	08-MAR-21
Styrene			91.7		%		70-130	08-MAR-21
Tetrachloroethylene			82.6		%		70-130	08-MAR-21
Toluene			88.9		%		70-130	08-MAR-21
trans-1,2-Dichloroethylene			91.2		%		70-130	08-MAR-21
trans-1,3-Dichloropropene			80.0		%		70-130	08-MAR-21
Trichloroethylene			89.1		%		70-130	08-MAR-21
Trichlorofluoromethane			91.7		%		60-140	08-MAR-21
Vinyl chloride			94.9		%		60-140	08-MAR-21
WG3497755-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	08-MAR-21
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	08-MAR-21
1,1,1-Trichloroethane			<0.50		ug/L		0.5	08-MAR-21
1,1,2-Trichloroethane			<0.50		ug/L		0.5	08-MAR-21
1,1-Dichloroethane			<0.50		ug/L		0.5	08-MAR-21
1,1-Dichloroethylene			<0.50		ug/L		0.5	08-MAR-21
1,2-Dibromoethane			<0.20		ug/L		0.2	08-MAR-21
1,2-Dichlorobenzene			<0.50		ug/L		0.5	08-MAR-21
1,2-Dichloroethane			<0.50		ug/L		0.5	08-MAR-21
1,2-Dichloropropane			<0.50		ug/L		0.5	08-MAR-21
1,3-Dichlorobenzene			<0.50		ug/L		0.5	08-MAR-21
1,4-Dichlorobenzene			<0.50		ug/L		0.5	08-MAR-21
Acetone			<30		ug/L		30	08-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
 74 BERKELEY STREET
 TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R5397766							
WG3497755-2 MB								
Benzene			<0.50		ug/L		0.5	08-MAR-21
Bromodichloromethane			<2.0		ug/L		2	08-MAR-21
Bromoform			<5.0		ug/L		5	08-MAR-21
Bromomethane			<0.50		ug/L		0.5	08-MAR-21
Carbon tetrachloride			<0.20		ug/L		0.2	08-MAR-21
Chlorobenzene			<0.50		ug/L		0.5	08-MAR-21
Chloroform			<1.0		ug/L		1	08-MAR-21
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	08-MAR-21
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	08-MAR-21
Dibromochloromethane			<2.0		ug/L		2	08-MAR-21
Dichlorodifluoromethane			<2.0		ug/L		2	08-MAR-21
Ethylbenzene			<0.50		ug/L		0.5	08-MAR-21
n-Hexane			<0.50		ug/L		0.5	08-MAR-21
m+p-Xylenes			<0.40		ug/L		0.4	08-MAR-21
Methyl Ethyl Ketone			<20		ug/L		20	08-MAR-21
Methyl Isobutyl Ketone			<20		ug/L		20	08-MAR-21
Methylene Chloride			<5.0		ug/L		5	08-MAR-21
MTBE			<2.0		ug/L		2	08-MAR-21
o-Xylene			<0.30		ug/L		0.3	08-MAR-21
Styrene			<0.50		ug/L		0.5	08-MAR-21
Tetrachloroethylene			<0.50		ug/L		0.5	08-MAR-21
Toluene			<0.50		ug/L		0.5	08-MAR-21
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	08-MAR-21
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	08-MAR-21
Trichloroethylene			<0.50		ug/L		0.5	08-MAR-21
Trichlorofluoromethane			<5.0		ug/L		5	08-MAR-21
Vinyl chloride			<0.50		ug/L		0.5	08-MAR-21
Surrogate: 1,4-Difluorobenzene			101.9		%		70-130	08-MAR-21
Surrogate: 4-Bromofluorobenzene			99.1		%		70-130	08-MAR-21
WG3497755-5 MS		WG3497755-3						
1,1,1,2-Tetrachloroethane			100.0		%		50-140	08-MAR-21
1,1,2,2-Tetrachloroethane			81.9		%		50-140	08-MAR-21
1,1,1-Trichloroethane			98.1		%		50-140	08-MAR-21
1,1,2-Trichloroethane			90.4		%		50-140	08-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R5397766							
WG3497755-5 MS		WG3497755-3						
1,1-Dichloroethane			118.9		%		50-140	08-MAR-21
1,1-Dichloroethylene			98.6		%		50-140	08-MAR-21
1,2-Dibromoethane			85.4		%		50-140	08-MAR-21
1,2-Dichlorobenzene			101.0		%		50-140	08-MAR-21
1,2-Dichloroethane			90.1		%		50-140	08-MAR-21
1,2-Dichloropropane			94.1		%		50-140	08-MAR-21
1,3-Dichlorobenzene			97.9		%		50-140	08-MAR-21
1,4-Dichlorobenzene			97.6		%		50-140	08-MAR-21
Acetone			92.4		%		50-140	08-MAR-21
Benzene			93.1		%		50-140	08-MAR-21
Bromodichloromethane			98.7		%		50-140	08-MAR-21
Bromoform			99.5		%		50-140	08-MAR-21
Bromomethane			92.4		%		50-140	08-MAR-21
Carbon tetrachloride			100.5		%		50-140	08-MAR-21
Chlorobenzene			100.1		%		50-140	08-MAR-21
Chloroform			97.6		%		50-140	08-MAR-21
cis-1,2-Dichloroethylene			96.9		%		50-140	08-MAR-21
cis-1,3-Dichloropropene			82.2		%		50-140	08-MAR-21
Dibromochloromethane			90.1		%		50-140	08-MAR-21
Dichlorodifluoromethane			85.1		%		50-140	08-MAR-21
Ethylbenzene			92.3		%		50-140	08-MAR-21
n-Hexane			91.2		%		50-140	08-MAR-21
m+p-Xylenes			95.1		%		50-140	08-MAR-21
Methyl Ethyl Ketone			81.3		%		50-140	08-MAR-21
Methyl Isobutyl Ketone			69.3		%		50-140	08-MAR-21
Methylene Chloride			95.1		%		50-140	08-MAR-21
MTBE			100.4		%		50-140	08-MAR-21
o-Xylene			105.2		%		50-140	08-MAR-21
Styrene			96.1		%		50-140	08-MAR-21
Tetrachloroethylene			86.5		%		50-140	08-MAR-21
Toluene			94.5		%		50-140	08-MAR-21
trans-1,2-Dichloroethylene			97.7		%		50-140	08-MAR-21
trans-1,3-Dichloropropene			80.6		%		50-140	08-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R5397766							
WG3497755-5	MS	WG3497755-3						
Trichloroethylene			97.5		%		50-140	08-MAR-21
Trichlorofluoromethane			98.4		%		50-140	08-MAR-21
Vinyl chloride			99.4		%		50-140	08-MAR-21
Batch	R5399673							
WG3500398-1	LCS							
1,1,1,2-Tetrachloroethane			86.8		%		70-130	11-MAR-21
1,1,2,2-Tetrachloroethane			52.8	LCS-L	%		70-130	11-MAR-21
1,1,1-Trichloroethane			95.0		%		70-130	11-MAR-21
1,1,2-Trichloroethane			91.4		%		70-130	11-MAR-21
1,1-Dichloroethane			118.3		%		70-130	11-MAR-21
1,1-Dichloroethylene			98.7		%		70-130	11-MAR-21
1,2-Dibromoethane			96.2		%		70-130	11-MAR-21
1,2-Dichlorobenzene			98.5		%		70-130	11-MAR-21
1,2-Dichloroethane			94.9		%		70-130	11-MAR-21
1,2-Dichloropropane			93.9		%		70-130	11-MAR-21
1,3-Dichlorobenzene			111.3		%		70-130	11-MAR-21
1,4-Dichlorobenzene			105.7		%		70-130	11-MAR-21
Acetone			120.2		%		60-140	11-MAR-21
Benzene			94.4		%		70-130	11-MAR-21
Bromodichloromethane			93.0		%		70-130	11-MAR-21
Bromoform			70.8		%		70-130	11-MAR-21
Bromomethane			96.7		%		60-140	11-MAR-21
Carbon tetrachloride			96.1		%		70-130	11-MAR-21
Chlorobenzene			95.7		%		70-130	11-MAR-21
Chloroform			97.2		%		70-130	11-MAR-21
cis-1,2-Dichloroethylene			102.3		%		70-130	11-MAR-21
cis-1,3-Dichloropropene			88.0		%		70-130	11-MAR-21
Dibromochloromethane			83.8		%		70-130	11-MAR-21
Dichlorodifluoromethane			98.9		%		50-140	11-MAR-21
Ethylbenzene			98.8		%		70-130	11-MAR-21
n-Hexane			95.1		%		70-130	11-MAR-21
m+p-Xylenes			96.6		%		70-130	11-MAR-21
Methyl Ethyl Ketone			101.3		%		60-140	11-MAR-21
Methyl Isobutyl Ketone			70.5		%		60-140	11-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
 74 BERKELEY STREET
 TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5399673							
WG3500398-1	LCS							
Methylene Chloride			101.6		%		70-130	11-MAR-21
MTBE			97.4		%		70-130	11-MAR-21
o-Xylene			100.5		%		70-130	11-MAR-21
Styrene			89.2		%		70-130	11-MAR-21
Tetrachloroethylene			104.8		%		70-130	11-MAR-21
Toluene			105.3		%		70-130	11-MAR-21
trans-1,2-Dichloroethylene			101.0		%		70-130	11-MAR-21
trans-1,3-Dichloropropene			92.9		%		70-130	11-MAR-21
Trichloroethylene			94.7		%		70-130	11-MAR-21
Trichlorofluoromethane			98.6		%		60-140	11-MAR-21
Vinyl chloride			101.2		%		60-140	11-MAR-21
WG3500398-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	11-MAR-21
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	11-MAR-21
1,1,1-Trichloroethane			<0.50		ug/L		0.5	11-MAR-21
1,1,2-Trichloroethane			<0.50		ug/L		0.5	11-MAR-21
1,1-Dichloroethane			<0.50		ug/L		0.5	11-MAR-21
1,1-Dichloroethylene			<0.50		ug/L		0.5	11-MAR-21
1,2-Dibromoethane			<0.20		ug/L		0.2	11-MAR-21
1,2-Dichlorobenzene			<0.50		ug/L		0.5	11-MAR-21
1,2-Dichloroethane			<0.50		ug/L		0.5	11-MAR-21
1,2-Dichloropropane			<0.50		ug/L		0.5	11-MAR-21
1,3-Dichlorobenzene			<0.50		ug/L		0.5	11-MAR-21
1,4-Dichlorobenzene			<0.50		ug/L		0.5	11-MAR-21
Acetone			<30		ug/L		30	11-MAR-21
Benzene			<0.50		ug/L		0.5	11-MAR-21
Bromodichloromethane			<2.0		ug/L		2	11-MAR-21
Bromoform			<5.0		ug/L		5	11-MAR-21
Bromomethane			<0.50		ug/L		0.5	11-MAR-21
Carbon tetrachloride			<0.20		ug/L		0.2	11-MAR-21
Chlorobenzene			<0.50		ug/L		0.5	11-MAR-21
Chloroform			<1.0		ug/L		1	11-MAR-21
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	11-MAR-21
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	11-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5399673							
WG3500398-2 MB								
Dibromochloromethane			<2.0		ug/L		2	11-MAR-21
Dichlorodifluoromethane			<2.0		ug/L		2	11-MAR-21
Ethylbenzene			<0.50		ug/L		0.5	11-MAR-21
n-Hexane			<0.50		ug/L		0.5	11-MAR-21
m+p-Xylenes			<0.40		ug/L		0.4	11-MAR-21
Methyl Ethyl Ketone			<20		ug/L		20	11-MAR-21
Methyl Isobutyl Ketone			<20		ug/L		20	11-MAR-21
Methylene Chloride			<5.0		ug/L		5	11-MAR-21
MTBE			<2.0		ug/L		2	11-MAR-21
o-Xylene			<0.30		ug/L		0.3	11-MAR-21
Styrene			<0.50		ug/L		0.5	11-MAR-21
Tetrachloroethylene			<0.50		ug/L		0.5	11-MAR-21
Toluene			<0.50		ug/L		0.5	11-MAR-21
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	11-MAR-21
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	11-MAR-21
Trichloroethylene			<0.50		ug/L		0.5	11-MAR-21
Trichlorofluoromethane			<5.0		ug/L		5	11-MAR-21
Vinyl chloride			<0.50		ug/L		0.5	11-MAR-21
Surrogate: 1,4-Difluorobenzene			100.4		%		70-130	11-MAR-21
Surrogate: 4-Bromofluorobenzene			94.2		%		70-130	11-MAR-21

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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

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Contact: Samo Szakal

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
LCS-L	Lab Control Sample recovery was below ALS DQO. Reference Material and/or Matrix Spike results were acceptable. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

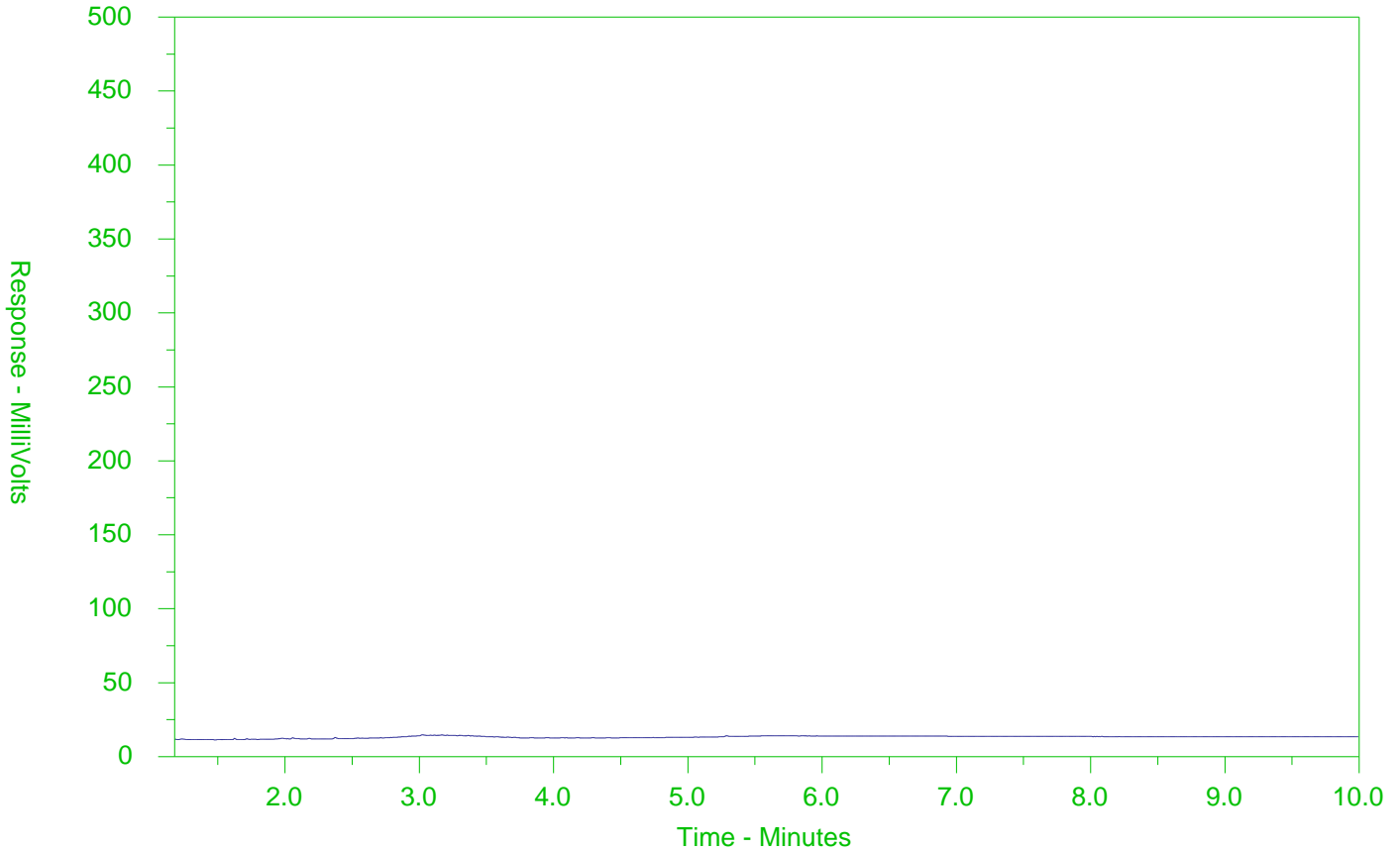
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2563694-1
 Client Sample ID: 21-1



← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

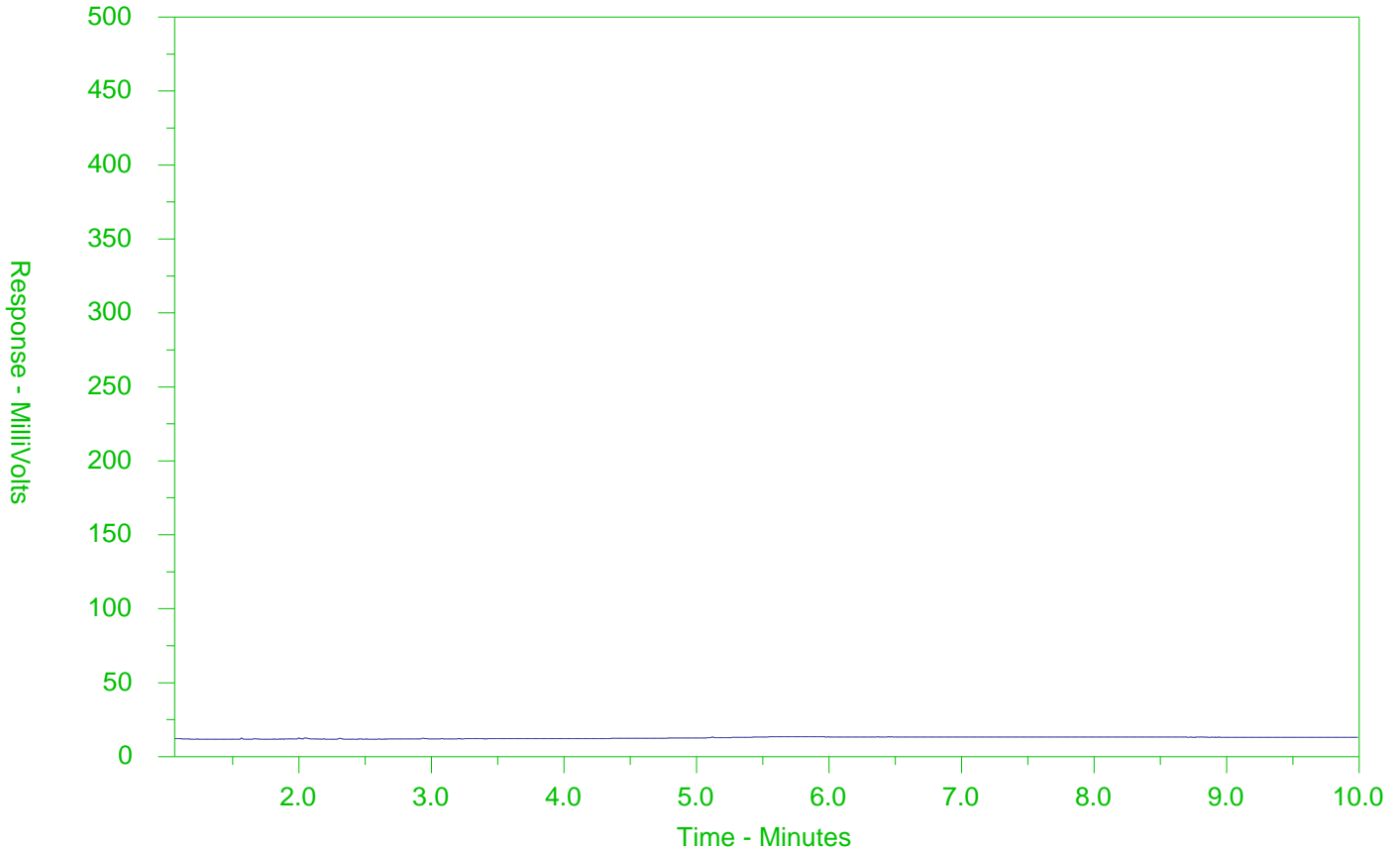
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2563694-2
 Client Sample ID: 21-2



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

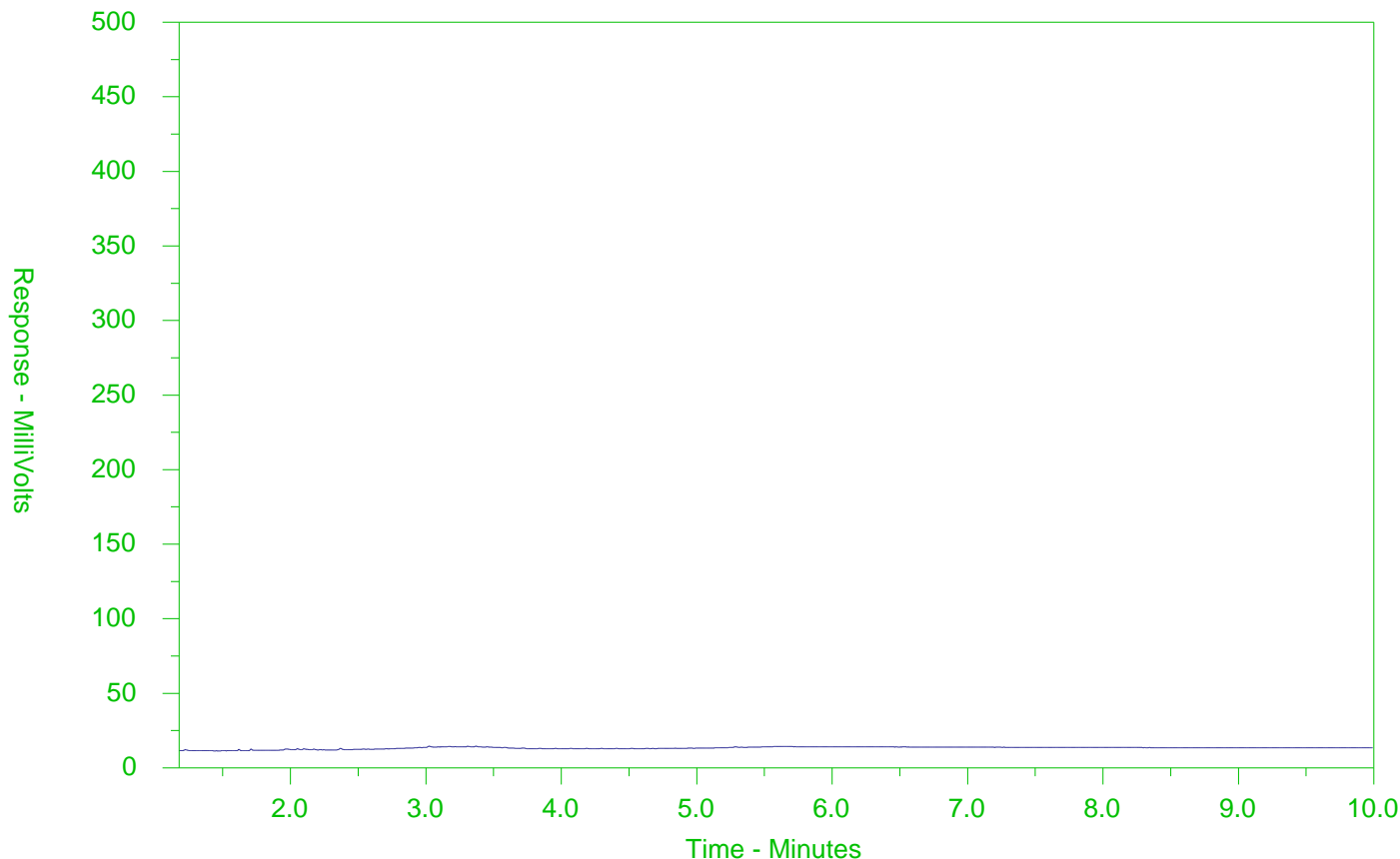
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2563694-3
 Client Sample ID: 21-2D



← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

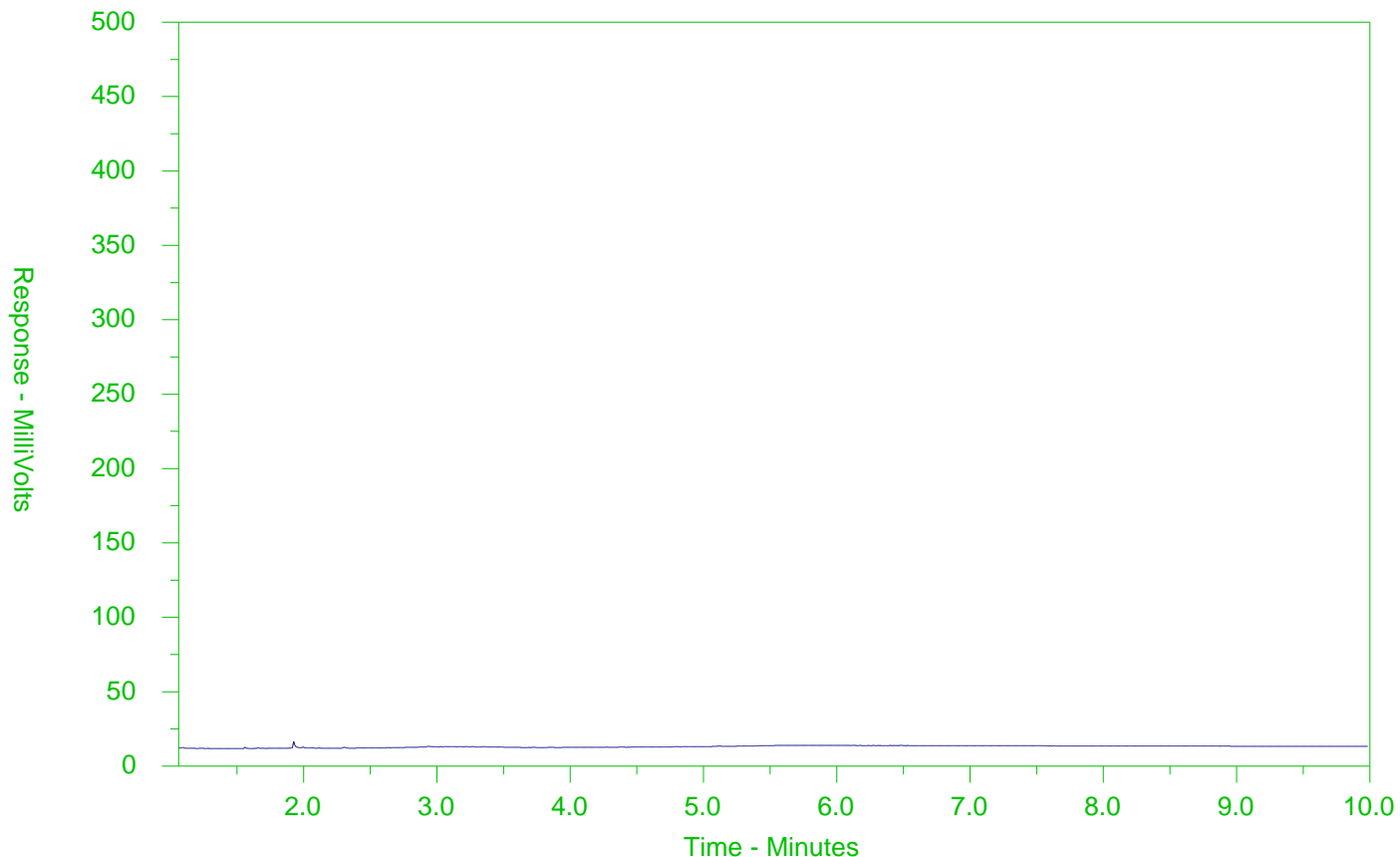
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2563694-4
 Client Sample ID: 21-4



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

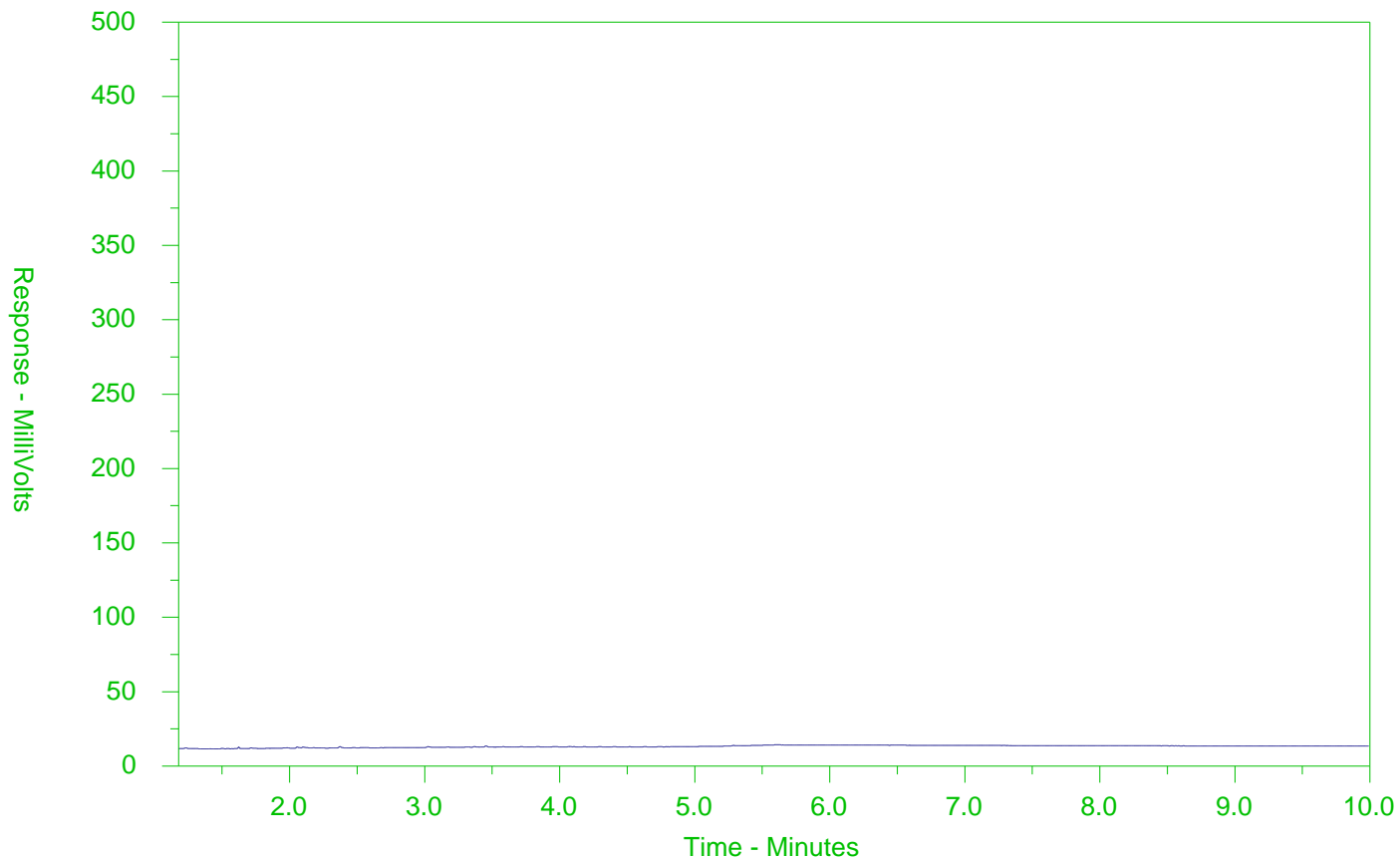
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2563694-5
 Client Sample ID: 21-5



← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.



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Report To Contact and company name below will appear on the final report		Reports / Recipients		Turnaround Time (TAT) Requested		AFFIX ALS BARCODE LABEL HERE (ALS use only)																																																									
Company: PALMER environmental consulting group		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)		<input checked="" type="checkbox"/> Routine [R] if received by 3pm M-F - no surcharges apply																																																											
Contact: Sam Szaikal		Merge QC/QCI Reports with COA <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		<input type="checkbox"/> 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum																																																											
Phone: 416 390 3410		<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		<input type="checkbox"/> 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum																																																											
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX		<input type="checkbox"/> 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum																																																											
Street: 74 Berkeley St		Email 1 or Fax: samo.szaikal@perc.ca		<input type="checkbox"/> 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum																																																											
City/Province: Toronto, ON		Email 2: samo.szaikal@perc.ca		<input type="checkbox"/> Same day [E2] if received by 10am M-S - 200% rush surcharge. Additional fees may apply to rush requests on weekends, statutory holidays and non-routine tests																																																											
Postal Code: M5R 1A7		Email 3:		Date and Time Required for all E&P TATs: 12-3-21																																																											
Invoice To		Invoice Recipients		For all tests with rush TATs requested, please contact your AM to confirm availability.																																																											
Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX		Analysis Request																																																											
Copy of Invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Email 1 or Fax: sam@perc.ca																																																													
Company: Palmer environmental consulting group		Email 2: samo.szaikal@perc.ca		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																																											
Contact: Accounting		Oil and Gas Required Fields (Client use)																																																													
Project Information		AFE/Cost Center:		<table border="1" style="width: 100%; height: 100%;"> <tr> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">PHC + VOC</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">VCMs Metals</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">PHC + BTEX</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">VOC</td> <td colspan="12"></td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">SAMPLES ON HOLD</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">EXTENDED STORAGE REQUIRED</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">SUSPECTED HAZARD (see notes)</td> </tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> </table>				NUMBER OF CONTAINERS	PHC + VOC	VCMs Metals	PHC + BTEX	VOC													SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)																																				
NUMBER OF CONTAINERS	PHC + VOC	VCMs Metals	PHC + BTEX										VOC															SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)																																	
ALS Account # / Quote #: 24400		Major/Minor Code:																																																													
Job #: 1604603		Routing Code:																																																													
PO / AFE: 1604603		Requisitioner:																																																													
LSD: RD		Location:																																																													
ALS Lab Work Order # (ALS use only): 12563694		ALS Contact: J. Borshic		Sampler: SS																																																											
ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type																																																											
21-1		4-3-21	11 AM	Water	5	X	X																																																								
21-2		"	10 AM	"	5	X	X																																																								
21-2D		"	"	"	5	X	X																																																								
21-4		3-3-21	12pm	"	4			X																																																							
21-5		3-3-21	2pm	"	4			X																																																							
	Trip blank								X																																																						
Drinking Water (DW) Samples¹ (client use)		Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)		SAMPLE RECEIPT DETAILS (ALS use only)																																																											
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		0 Reg 153, T3 res.		Cooling Method: <input type="checkbox"/> NONE <input type="checkbox"/> ICE <input checked="" type="checkbox"/> ICE PACKS <input type="checkbox"/> FROZEN <input type="checkbox"/> COOLING INITIATED																																																											
Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				Submission Comments identified on Sample Receipt Notification: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO																																																											
				Cooler Custody Seals Intact: <input type="checkbox"/> YES <input checked="" type="checkbox"/> N/A Sample Custody Seal Intact: <input type="checkbox"/> YES <input checked="" type="checkbox"/> N/A																																																											
				INITIAL COOLER TEMPERATURES °C: 5.2		FINAL COOLER TEMPERATURES °C: 10.3																																																									
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)																																																										
Released by: SS	Date: 4-3-21	Time:	Received by: Karim	Date: 3/4/21	Time: 14:12	Received by: JI	Date: 3/4/21	Time: 14:15																																																							



PALMER ENVIRONMENTAL CONSULTING
GROUP INC. (Richmond Hill)
ATTN: Samo Szakal
74 BERKELEY STREET
TORONTO ON M5V 1E3

Date Received: 04-MAR-21
Report Date: 17-MAR-21 10:46 (MT)
Version: FINAL

Client Phone: 647-795-8152

Certificate of Analysis

Lab Work Order #: L2563701
Project P.O. #: 1604603
Job Reference: 1604603
C of C Numbers:
Legal Site Desc:

Jennifer Barkshire-Paterson
Account Manager

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ADDRESS: 95 West Beaver Creek Road, Unit 1, Richmond Hill, ON L4B 1H2 Canada | Phone: +1 905 881 9887 | Fax: +1 905 881 8062
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Summary of Guideline Exceedances

Guideline		Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Coarse)							
L2563701-4	21-3-1		Hydrocarbons	F3 (C16-C34)	13100	300	ug/g
				F4 (C34-C50)	3880	2800	ug/g
L2563701-12	21-8		Metals	Cadmium (Cd)	3.06	1.2	ug/g
				Lead (Pb)	146	120	ug/g
L2563701-13	21-8D		Metals	Cadmium (Cd)	3.06	1.2	ug/g
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine)							
L2563701-4	21-3-1		Hydrocarbons	F3 (C16-C34)	13100	1300	ug/g
L2563701-12	21-8		Metals	Cadmium (Cd)	3.06	1.2	ug/g
				Lead (Pb)	146	120	ug/g
L2563701-13	21-8D		Metals	Cadmium (Cd)	3.06	1.2	ug/g

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Physical Tests - SOIL

Analyte	Unit	Guide Limits									
		#1	#2								
Conductivity	mS/cm	0.7	0.7								
Grain Size Curve		-	-	SEE ATTACHED							
% Moisture	%	-	-	11.9	11.6	1.25	17.8	17.7			
pH	pH units	-	-	7.55						7.69	7.79

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

- Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
- Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Physical Tests - SOIL

Analyte	Unit	Guide Limits				Lab ID	Sample Date	Sample ID
		#1	#2			L2563701-10	L2563701-11	L2563701-12
Conductivity	mS/cm	0.7	0.7	0.520	0.565	0.513	0.469	
Grain Size Curve		-	-					
% Moisture	%	-	-	14.7	15.2	14.0	12.4	
pH	pH units	-	-	7.51	7.61	7.67	7.73	

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Particle Size - SOIL

Lab ID L2563701-6
Sample Date 02-MAR-21
Sample ID 21-5-7

Analyte	Unit	Guide Limits		
		#1	#2	
Gravel (4.75mm - 3in.)	%	-	-	<1.0
Medium Sand (0.425mm - 2.0mm)	%	-	-	6.8
Coarse Sand (2.0mm - 4.75mm)	%	-	-	1.8
Fine Sand (0.075mm - 0.425mm)	%	-	-	13.8
Silt (0.002mm - 0.075mm)	%	-	-	44.9
Silt (0.005mm - 0.075mm)	%	-	-	29.6
Clay (<0.002mm)	%	-	-	32.5
Clay (<0.005mm)	%	-	-	47.8

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

- Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
- Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Cyanides - SOIL

Analyte	Unit	Guide Limits					
		#1	#2				
Cyanide, Weak Acid Diss	ug/g	0.051	0.051	<0.050	<0.050	<0.050	<0.050

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Saturated Paste Extractables - SOIL

		Lab ID		L2563701-10	L2563701-11	L2563701-12	L2563701-13
	Sample Date	03-MAR-21	03-MAR-21	03-MAR-21	03-MAR-21	03-MAR-21	03-MAR-21
	Sample ID	21-6	21-7	21-8	21-8D		
Analyte	Unit	Guide Limits					
		#1	#2				
SAR	SAR	5	5	0.29	0.26	0.30	0.28
Calcium (Ca)	mg/L	-	-	56.6	63.3	80.7	75.6
Magnesium (Mg)	mg/L	-	-	4.81	4.87	6.82	5.84
Sodium (Na)	mg/L	-	-	8.49	8.01	10.4	9.27

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

- Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
- Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Metals - SOIL

Analyte	Unit	Guide Limits		Lab ID	L2563701-10	L2563701-11	L2563701-12	L2563701-13
		#1	#2	Sample Date	03-MAR-21	03-MAR-21	03-MAR-21	03-MAR-21
				Sample ID	21-6	21-7	21-8	21-8D
Antimony (Sb)	ug/g	7.5	7.5	<1.0	<1.0	1.4	1.3	
Arsenic (As)	ug/g	18	18	4.6	5.1	4.6	5.4	
Barium (Ba)	ug/g	390	390	59.3	60.1	73.2	72.7	
Beryllium (Be)	ug/g	4	5	<0.50	<0.50	<0.50	<0.50	
Boron (B)	ug/g	120	120	10.0	9.7	10.9	9.9	
Boron (B), Hot Water Ext.	ug/g	1.5	1.5	0.54	0.40	0.82	0.78	
Cadmium (Cd)	ug/g	1.2	1.2	0.99	0.66	3.06	3.06	
Chromium (Cr)	ug/g	160	160	25.6	19.9	26.9	29.7	
Cobalt (Co)	ug/g	22	22	6.7	6.8	7.7	7.6	
Copper (Cu)	ug/g	140	180	47.0	31.8	110	111	
Lead (Pb)	ug/g	120	120	38.4	24.5	146	106	
Mercury (Hg)	ug/g	0.27	1.8	0.0524	0.0349	0.152	0.152	
Molybdenum (Mo)	ug/g	6.9	6.9	1.3	<1.0	1.7	2.7	
Nickel (Ni)	ug/g	100	130	18.5	16.3	22.1	21.6	
Selenium (Se)	ug/g	2.4	2.4	<1.0	<1.0	<1.0	<1.0	
Silver (Ag)	ug/g	20	25	0.41	<0.20	1.02	1.06	
Thallium (Tl)	ug/g	1	1	<0.50	<0.50	<0.50	<0.50	
Uranium (U)	ug/g	23	23	<1.0	<1.0	<1.0	<1.0	
Vanadium (V)	ug/g	86	86	25.6	25.6	30.3	28.5	
Zinc (Zn)	ug/g	340	340	251	165	336	329	

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

- Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
- Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Speciated Metals - SOIL

	Lab ID				
		L2563701-10	L2563701-11	L2563701-12	L2563701-13
	Sample Date	03-MAR-21	03-MAR-21	03-MAR-21	03-MAR-21
Sample ID	21-6	21-7	21-8	21-8D	
Guide Limits					
Analyte	Unit	#1	#2		
Chromium, Hexavalent	ug/g	8	10	<0.20	<0.20
				<0.20	0.25

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

Analyte	Unit	Guide Limits		Lab ID	L2563701-2	L2563701-3	L2563701-4	L2563701-5	L2563701-7
		#1	#2	Sample Date	02-MAR-21	02-MAR-21	02-MAR-21	02-MAR-21	03-MAR-21
				Sample ID	21-4-4	21-4-4D	21-3-1	21-5-2	21-2-2
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.05						
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05						
Tetrachloroethylene	ug/g	0.28	2.3						
Toluene	ug/g	2.3	6	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080
1,1,1-Trichloroethane	ug/g	0.38	3.4						
1,1,2-Trichloroethane	ug/g	0.05	0.05						
Trichloroethylene	ug/g	0.061	0.52						
Trichlorofluoromethane	ug/g	4	5.8						
Vinyl chloride	ug/g	0.02	0.022						
o-Xylene	ug/g	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
m+p-Xylenes	ug/g	-	-	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Xylenes (Total)	ug/g	3.1	25	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-	104.1	107.5	96.2	100.5	104.4	
Surrogate: 1,4-Difluorobenzene	%	-	-	103.2	106.3	108.3	98.7	103.3	

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Hydrocarbons - SOIL

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID	L2563701-2	L2563701-3	L2563701-4	L2563701-5	L2563701-7					
		#1	#2	L2563701-2	02-MAR-21	21-4-4	L2563701-3	02-MAR-21	21-4-4D	L2563701-4	02-MAR-21	21-3-1	L2563701-5	02-MAR-21	21-5-2	L2563701-7
F1 (C6-C10)	ug/g	55	65	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0					
F1-BTEX	ug/g	55	65	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0					
F2 (C10-C16)	ug/g	98	150	<10	<10	44	<10	<10	<10	<10	<10					
F3 (C16-C34)	ug/g	300	1300	<50	<50	13100	<50	<50	<50	<50	<50					
F4 (C34-C50)	ug/g	2800	5600	<50	<50	3880	<50	<50	<50	<50	<50					
Total Hydrocarbons (C6-C50)	ug/g	-	-	<72	<72	17100	<72	<72	<72	<72	<72					
Chrom. to baseline at nC50		-	-	YES	YES	YES	YES	YES	YES	YES	YES					
Surrogate: 2-Bromobenzotrifluoride	%	-	-	92.6	89.4	87.2	94.2	90.0	94.2	90.0	90.0					
Surrogate: 3,4-Dichlorotoluene	%	-	-	80.2	86.2	52.6 ^{SURR-ND}	79.4	83.3	79.4	83.3	83.3					

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
SURR-ND	Surrogate recovery marginally exceeded ALS DQO. Reported non-detect results for associated samples were deemed to be unaffected.

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

BTX-511-HS-WT	Soil	BTEX-O.Reg 153/04 (July 2011)	SW846 8260
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BTX is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD
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The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199
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This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT	Soil	Conductivity (EC)	MOEE E3138
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A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S
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Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT Soil F1-O.Reg 153/04 (July 2011) E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT Soil F2-F4-O.Reg 153/04 (July 2011) CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

- Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
 2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
 3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
 4. F4G: Gravimetric Heavy Hydrocarbons
 5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
 6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
 7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
 8. This method is validated for use.
 9. Data from analysis of validation and quality control samples is available upon request.
 10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

GRAIN SIZE-HYD-SK Soil Grain Size by Hydrometer ASTM D6913/D7928

Particle size curve is generated from dry sieving (particles > 2 mm), wet sieving (particles 2 mm-75 um) and hydrometer readings (particles < 75 um)

ASTM D422-63 has been withdrawn, the ASTM D6913/D7928 standard serves as the successor method.

HG-200.2-CVAA-WT Soil Mercury in Soil by CVAAS EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT Soil Metals in Soil by CRC ICPMS EPA 200.2/6020B (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). For tests intended to support Ontario regulations, the <2mm fraction is ground to pass through a 0.355 mm sieve. Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H₂S) may be excluded if lost during sampling, storage, or digestion.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
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PH-WT	Soil	pH	MOEE E3137A
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A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C
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A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
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VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)
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Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION
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Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
SK	ALS ENVIRONMENTAL - SASKATOON, SASKATCHEWAN, CANADA
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Reference Information

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GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.



Quality Control Report

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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
 74 BERKELEY STREET
 TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT								
	Soil							
Batch	R5400597							
WG3501050-4	DUP	L2563469-4						
Boron (B), Hot Water Ext.		<0.10	<0.10	RPD-NA	ug/g	N/A	30	12-MAR-21
WG3501050-2	IRM	WT SAR4						
Boron (B), Hot Water Ext.			93.6		%		70-130	12-MAR-21
WG3501050-3	LCS							
Boron (B), Hot Water Ext.			102.0		%		70-130	12-MAR-21
WG3501050-1	MB							
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	12-MAR-21
BTX-511-HS-WT								
	Soil							
Batch	R5397771							
WG3497897-4	DUP	WG3497897-3						
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	08-MAR-21
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	08-MAR-21
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	08-MAR-21
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	08-MAR-21
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	08-MAR-21
WG3497897-2	LCS							
Benzene			113.1		%		70-130	08-MAR-21
Ethylbenzene			107.9		%		70-130	08-MAR-21
m+p-Xylenes			100.0		%		70-130	08-MAR-21
o-Xylene			106.9		%		70-130	08-MAR-21
Toluene			106.2		%		70-130	08-MAR-21
WG3497897-1	MB							
Benzene			<0.0068		ug/g		0.0068	08-MAR-21
Ethylbenzene			<0.018		ug/g		0.018	08-MAR-21
m+p-Xylenes			<0.030		ug/g		0.03	08-MAR-21
o-Xylene			<0.020		ug/g		0.02	08-MAR-21
Toluene			<0.080		ug/g		0.08	08-MAR-21
Surrogate: 1,4-Difluorobenzene			109.9		%		50-140	08-MAR-21
Surrogate: 4-Bromofluorobenzene			112.3		%		50-140	08-MAR-21
WG3497897-5	MS	WG3497897-3						
Benzene			121.6		%		60-140	08-MAR-21
Ethylbenzene			120.9		%		60-140	08-MAR-21
m+p-Xylenes			112.3		%		60-140	08-MAR-21
o-Xylene			119.6		%		60-140	08-MAR-21
Toluene			119.0		%		60-140	08-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-WAD-R511-WT								
	Soil							
Batch	R5400288							
WG3499691-3	DUP	L2563686-1						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	12-MAR-21
WG3499691-2	LCS							
Cyanide, Weak Acid Diss			93.4		%		80-120	12-MAR-21
WG3499691-1	MB							
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	12-MAR-21
WG3499691-4	MS	L2563686-1						
Cyanide, Weak Acid Diss			94.5		%		70-130	12-MAR-21
CR-CR6-IC-WT								
	Soil							
Batch	R5400261							
WG3499684-4	CRM	WT-SQC012						
Chromium, Hexavalent			108.3		%		70-130	12-MAR-21
WG3499684-3	DUP	L2563686-1						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	12-MAR-21
WG3499684-2	LCS							
Chromium, Hexavalent			97.8		%		80-120	12-MAR-21
WG3499684-1	MB							
Chromium, Hexavalent			<0.20		ug/g		0.2	12-MAR-21
EC-WT								
	Soil							
Batch	R5402004							
WG3501052-4	DUP	WG3501052-3						
Conductivity		0.306	0.306		mS/cm	0.0	20	16-MAR-21
WG3501052-2	IRM	WT SAR4						
Conductivity			111.3		%		70-130	16-MAR-21
WG3503075-1	LCS							
Conductivity			97.0		%		90-110	16-MAR-21
WG3501052-1	MB							
Conductivity			<0.0040		mS/cm		0.004	16-MAR-21
F1-HS-511-WT								
	Soil							
Batch	R5397771							
WG3497897-4	DUP	WG3497897-3						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	08-MAR-21
WG3497897-2	LCS							
F1 (C6-C10)			94.6		%		80-120	08-MAR-21
WG3497897-1	MB							
F1 (C6-C10)			<5.0		ug/g		5	08-MAR-21
Surrogate: 3,4-Dichlorotoluene			99.5		%		60-140	08-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
 74 BERKELEY STREET
 TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT								
Soil								
Batch	R5397771							
WG3497897-5	MS	WG3497897-3						
F1 (C6-C10)			93.6		%		60-140	08-MAR-21
Batch	R5398390							
WG3498750-4	DUP	WG3498750-3						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	09-MAR-21
WG3498750-2	LCS		112.3		%		80-120	09-MAR-21
F1 (C6-C10)								
WG3498750-1	MB		<5.0		ug/g		5	09-MAR-21
F1 (C6-C10)								
Surrogate: 3,4-Dichlorotoluene			132.2		%		60-140	09-MAR-21
WG3498750-5	MS	WG3498750-3						
F1 (C6-C10)			114.3		%		60-140	09-MAR-21
F2-F4-511-WT								
Soil								
Batch	R5399867							
WG3499461-3	DUP	WG3499461-5						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	11-MAR-21
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	11-MAR-21
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	11-MAR-21
WG3499461-2	LCS		87.6		%		80-120	11-MAR-21
F2 (C10-C16)								
F3 (C16-C34)			84.5		%		80-120	11-MAR-21
F4 (C34-C50)			82.0		%		80-120	11-MAR-21
WG3499461-1	MB		<10		ug/g		10	11-MAR-21
F2 (C10-C16)								
F3 (C16-C34)			<50		ug/g		50	11-MAR-21
F4 (C34-C50)			<50		ug/g		50	11-MAR-21
Surrogate: 2-Bromobenzotrifluoride			96.0		%		60-140	11-MAR-21
WG3499461-4	MS	WG3499461-5						
F2 (C10-C16)			87.2		%		60-140	11-MAR-21
F3 (C16-C34)			85.8		%		60-140	11-MAR-21
F4 (C34-C50)			75.9		%		60-140	11-MAR-21
GRAIN SIZE-HYD-SK								
Soil								
Batch	R5401924							
WG3501238-1	DUP	L2565063-1						
Gravel (4.75mm - 3in.)		<1.0	<1.0	RPD-NA	%	N/A	25	16-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
 74 BERKELEY STREET
 TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
GRAIN SIZE-HYD-SK Soil								
Batch R5401924								
WG3501238-1 DUP		L2565063-1						
Coarse Sand (2.0mm - 4.75mm)		<1.0	<1.0	RPD-NA	%	N/A	5	16-MAR-21
Medium Sand (0.425mm - 2.0mm)		1.2	<1.0	RPD-NA	%	N/A	5	16-MAR-21
Fine Sand (0.075mm - 0.425mm)		4.9	4.2	J	%	0.7	5	16-MAR-21
Silt (0.005mm - 0.075mm)		53.2	54.3	J	%	1.1	5	16-MAR-21
Clay (<0.005mm)		40.4	40.2	J	%	0.2	5	16-MAR-21
Silt (0.002mm - 0.075mm)		72.9	73.0	J	%	0.1	5	16-MAR-21
Clay (<0.002mm)		20.7	21.5	J	%	0.8	5	16-MAR-21
WG3501238-2 IRM		2020-PSA_SOIL						
Medium Sand (0.425mm - 2.0mm)			7.2		%		2-12	16-MAR-21
Fine Sand (0.075mm - 0.425mm)			35.9		%		29.6-39.6	16-MAR-21
Silt (0.005mm - 0.075mm)			31.9		%		27.4-37.4	16-MAR-21
Clay (<0.005mm)			25.0		%		21-31	16-MAR-21
Silt (0.002mm - 0.075mm)			36.2		%		32.3-42.3	16-MAR-21
Clay (<0.002mm)			20.6		%		16.1-26.1	16-MAR-21
HG-200.2-CVAA-WT Soil								
Batch R5400365								
WG3501035-2 CRM		WT-SS-2						
Mercury (Hg)			97.1		%		70-130	12-MAR-21
WG3501035-6 DUP		WG3501035-5						
Mercury (Hg)		0.0236	0.0229		ug/g	3.0	40	12-MAR-21
WG3501035-3 LCS			99.0		%		80-120	12-MAR-21
WG3501035-1 MB			<0.0050		mg/kg		0.005	12-MAR-21
MET-200.2-CCMS-WT Soil								
Batch R5400523								
WG3501035-2 CRM		WT-SS-2						
Arsenic (As)			108.5		%		70-130	12-MAR-21
Barium (Ba)			113.2		%		70-130	12-MAR-21
Beryllium (Be)			112.3		%		70-130	12-MAR-21
Boron (B)			10.6		mg/kg		3.5-13.5	12-MAR-21
Cadmium (Cd)			107.2		%		70-130	12-MAR-21
Chromium (Cr)			113.4		%		70-130	12-MAR-21
Cobalt (Co)			109.1		%		70-130	12-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
 74 BERKELEY STREET
 TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R5400523							
WG3501035-2	CRM	WT-SS-2						
Copper (Cu)			108.7		%		70-130	12-MAR-21
Lead (Pb)			124.0		%		70-130	12-MAR-21
Molybdenum (Mo)			109.6		%		70-130	12-MAR-21
Nickel (Ni)			108.2		%		70-130	12-MAR-21
Selenium (Se)			0.14		mg/kg		0-0.34	12-MAR-21
Silver (Ag)			99.1		%		70-130	12-MAR-21
Thallium (Tl)			0.074		mg/kg		0.029-0.129	12-MAR-21
Uranium (U)			98.4		%		70-130	12-MAR-21
Vanadium (V)			113.0		%		70-130	12-MAR-21
Zinc (Zn)			104.8		%		70-130	12-MAR-21
WG3501035-6	DUP	WG3501035-5						
Antimony (Sb)		0.14	0.13		ug/g	5.6	30	12-MAR-21
Arsenic (As)		6.63	5.90		ug/g	12	30	12-MAR-21
Barium (Ba)		72.5	60.4		ug/g	18	40	12-MAR-21
Beryllium (Be)		0.81	0.73		ug/g	9.8	30	12-MAR-21
Boron (B)		7.4	6.5		ug/g	12	30	12-MAR-21
Cadmium (Cd)		0.064	0.055		ug/g	15	30	12-MAR-21
Chromium (Cr)		26.3	23.7		ug/g	10	30	12-MAR-21
Cobalt (Co)		14.0	12.8		ug/g	9.1	30	12-MAR-21
Copper (Cu)		30.4	27.7		ug/g	9.4	30	12-MAR-21
Lead (Pb)		11.6	11.0		ug/g	5.1	40	12-MAR-21
Molybdenum (Mo)		0.46	0.42		ug/g	7.8	40	12-MAR-21
Nickel (Ni)		23.4	21.0		ug/g	11	30	12-MAR-21
Selenium (Se)		0.25	0.28		ug/g	9.2	30	12-MAR-21
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	12-MAR-21
Thallium (Tl)		0.155	0.144		ug/g	7.3	30	12-MAR-21
Uranium (U)		0.532	0.492		ug/g	7.7	30	12-MAR-21
Vanadium (V)		39.4	35.9		ug/g	9.3	30	12-MAR-21
Zinc (Zn)		63.5	57.7		ug/g	9.4	30	12-MAR-21
WG3501035-4	LCS							
Antimony (Sb)			115.9		%		80-120	12-MAR-21
Arsenic (As)			114.8		%		80-120	12-MAR-21
Barium (Ba)			113.1		%		80-120	12-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT								
	Soil							
Batch	R5400523							
WG3501035-4	LCS							
Beryllium (Be)			108.2		%		80-120	12-MAR-21
Boron (B)			107.3		%		80-120	12-MAR-21
Cadmium (Cd)			108.4		%		80-120	12-MAR-21
Chromium (Cr)			114.6		%		80-120	12-MAR-21
Cobalt (Co)			114.5		%		80-120	12-MAR-21
Copper (Cu)			110.6		%		80-120	12-MAR-21
Lead (Pb)			111.7		%		80-120	12-MAR-21
Molybdenum (Mo)			110.1		%		80-120	12-MAR-21
Nickel (Ni)			110.4		%		80-120	12-MAR-21
Selenium (Se)			112.4		%		80-120	12-MAR-21
Silver (Ag)			106.1		%		80-120	12-MAR-21
Thallium (Tl)			113.4		%		80-120	12-MAR-21
Uranium (U)			102.3		%		80-120	12-MAR-21
Vanadium (V)			116.0		%		80-120	12-MAR-21
Zinc (Zn)			109.0		%		80-120	12-MAR-21
WG3501035-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	12-MAR-21
Arsenic (As)			<0.10		mg/kg		0.1	12-MAR-21
Barium (Ba)			<0.50		mg/kg		0.5	12-MAR-21
Beryllium (Be)			<0.10		mg/kg		0.1	12-MAR-21
Boron (B)			<5.0		mg/kg		5	12-MAR-21
Cadmium (Cd)			<0.020		mg/kg		0.02	12-MAR-21
Chromium (Cr)			<0.50		mg/kg		0.5	12-MAR-21
Cobalt (Co)			<0.10		mg/kg		0.1	12-MAR-21
Copper (Cu)			<0.50		mg/kg		0.5	12-MAR-21
Lead (Pb)			<0.50		mg/kg		0.5	12-MAR-21
Molybdenum (Mo)			<0.10		mg/kg		0.1	12-MAR-21
Nickel (Ni)			<0.50		mg/kg		0.5	12-MAR-21
Selenium (Se)			<0.20		mg/kg		0.2	12-MAR-21
Silver (Ag)			<0.10		mg/kg		0.1	12-MAR-21
Thallium (Tl)			<0.050		mg/kg		0.05	12-MAR-21
Uranium (U)			<0.050		mg/kg		0.05	12-MAR-21
Vanadium (V)			<0.20		mg/kg		0.2	12-MAR-21
Zinc (Zn)			<2.0		mg/kg		2	12-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT		Soil						
Batch	R5398906							
WG3499642-3	DUP	L2563640-9						
% Moisture		15.1	15.2		%	0.6	20	10-MAR-21
WG3499642-2	LCS							
% Moisture			100.0		%		90-110	10-MAR-21
WG3499642-1	MB							
% Moisture			<0.25		%		0.25	10-MAR-21
Batch	R5398907							
WG3499644-3	DUP	L2563640-30						
% Moisture		17.3	17.1		%	1.3	20	10-MAR-21
WG3499644-2	LCS							
% Moisture			99.95		%		90-110	10-MAR-21
WG3499644-1	MB							
% Moisture			<0.25		%		0.25	10-MAR-21
PH-WT		Soil						
Batch	R5399363							
WG3499647-1	DUP	L2563640-26						
pH		7.39	7.42	J	pH units	0.03	0.3	10-MAR-21
WG3499699-1	LCS							
pH			6.98		pH units		6.9-7.1	10-MAR-21
SAR-R511-WT		Soil						
Batch	R5400641							
WG3501052-4	DUP	WG3501052-3						
Calcium (Ca)		24.5	24.7		mg/L	0.8	30	12-MAR-21
Sodium (Na)		11.5	11.6		mg/L	0.9	30	12-MAR-21
Magnesium (Mg)		9.61	9.73		mg/L	1.2	30	12-MAR-21
WG3501052-2	IRM	WT SAR4						
Calcium (Ca)			99.5		%		70-130	12-MAR-21
Sodium (Na)			92.0		%		70-130	12-MAR-21
Magnesium (Mg)			100.0		%		70-130	12-MAR-21
WG3501052-5	LCS							
Calcium (Ca)			108.3		%		80-120	12-MAR-21
Sodium (Na)			103.0		%		80-120	12-MAR-21
Magnesium (Mg)			102.8		%		80-120	12-MAR-21
WG3501052-1	MB							
Calcium (Ca)			<0.50		mg/L		0.5	12-MAR-21
Sodium (Na)			<0.50		mg/L		0.5	12-MAR-21
Magnesium (Mg)			<0.50				0.5	



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT		Soil						
Batch	R5400641							
WG3501052-1	MB							
Magnesium (Mg)			<0.50		mg/L		0.5	12-MAR-21
VOC-511-HS-WT		Soil						
Batch	R5398390							
WG3498750-4	DUP	WG3498750-3						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	09-MAR-21
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	09-MAR-21
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	09-MAR-21
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	09-MAR-21
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
 74 BERKELEY STREET
 TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R5398390							
WG3498750-4	DUP	WG3498750-3						
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	09-MAR-21
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	09-MAR-21
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	09-MAR-21
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	09-MAR-21
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	09-MAR-21
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	09-MAR-21
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	09-MAR-21
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	09-MAR-21
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	09-MAR-21
WG3498750-2	LCS							
1,1,1,2-Tetrachloroethane			98.9		%		60-130	09-MAR-21
1,1,1,2,2-Tetrachloroethane			93.6		%		60-130	09-MAR-21
1,1,1-Trichloroethane			99.9		%		60-130	09-MAR-21
1,1,2-Trichloroethane			94.6		%		60-130	09-MAR-21
1,1-Dichloroethane			94.7		%		60-130	09-MAR-21
1,1-Dichloroethylene			95.6		%		60-130	09-MAR-21
1,2-Dibromoethane			100.2		%		70-130	09-MAR-21
1,2-Dichlorobenzene			104.3		%		70-130	09-MAR-21
1,2-Dichloroethane			94.8		%		60-130	09-MAR-21
1,2-Dichloropropane			99.8		%		70-130	09-MAR-21
1,3-Dichlorobenzene			99.96		%		70-130	09-MAR-21
1,4-Dichlorobenzene			104.7		%		70-130	09-MAR-21
Acetone			100.9		%		60-140	09-MAR-21
Benzene			98.5		%		70-130	09-MAR-21
Bromodichloromethane			103.6		%		50-140	09-MAR-21
Bromoform			98.5		%		70-130	09-MAR-21
Bromomethane			92.9		%		50-140	09-MAR-21
Carbon tetrachloride			105.8		%		70-130	09-MAR-21
Chlorobenzene			103.1		%		70-130	09-MAR-21
Chloroform			100.6		%		70-130	09-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
 74 BERKELEY STREET
 TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R5398390							
WG3498750-2	LCS							
cis-1,2-Dichloroethylene			100.8		%		70-130	09-MAR-21
cis-1,3-Dichloropropene			99.5		%		70-130	09-MAR-21
Dibromochloromethane			97.4		%		60-130	09-MAR-21
Dichlorodifluoromethane			71.1		%		50-140	09-MAR-21
Ethylbenzene			103.1		%		70-130	09-MAR-21
n-Hexane			89.7		%		70-130	09-MAR-21
Methylene Chloride			98.0		%		70-130	09-MAR-21
MTBE			102.0		%		70-130	09-MAR-21
m+p-Xylenes			103.5		%		70-130	09-MAR-21
Methyl Ethyl Ketone			92.2		%		60-140	09-MAR-21
Methyl Isobutyl Ketone			96.0		%		60-140	09-MAR-21
o-Xylene			110.8		%		70-130	09-MAR-21
Styrene			100.5		%		70-130	09-MAR-21
Tetrachloroethylene			107.5		%		60-130	09-MAR-21
Toluene			102.7		%		70-130	09-MAR-21
trans-1,2-Dichloroethylene			97.4		%		60-130	09-MAR-21
trans-1,3-Dichloropropene			99.8		%		70-130	09-MAR-21
Trichloroethylene			106.3		%		60-130	09-MAR-21
Trichlorofluoromethane			97.3		%		50-140	09-MAR-21
Vinyl chloride			94.4		%		60-140	09-MAR-21
WG3498750-1	MB							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	09-MAR-21
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	09-MAR-21
1,1,1-Trichloroethane			<0.050		ug/g		0.05	09-MAR-21
1,1,2-Trichloroethane			<0.050		ug/g		0.05	09-MAR-21
1,1-Dichloroethane			<0.050		ug/g		0.05	09-MAR-21
1,1-Dichloroethylene			<0.050		ug/g		0.05	09-MAR-21
1,2-Dibromoethane			<0.050		ug/g		0.05	09-MAR-21
1,2-Dichlorobenzene			<0.050		ug/g		0.05	09-MAR-21
1,2-Dichloroethane			<0.050		ug/g		0.05	09-MAR-21
1,2-Dichloropropane			<0.050		ug/g		0.05	09-MAR-21
1,3-Dichlorobenzene			<0.050		ug/g		0.05	09-MAR-21
1,4-Dichlorobenzene			<0.050		ug/g		0.05	09-MAR-21
Acetone			<0.50		ug/g		0.5	09-MAR-21



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Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
 74 BERKELEY STREET
 TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R5398390							
WG3498750-1	MB							
Benzene			<0.0068		ug/g		0.0068	09-MAR-21
Bromodichloromethane			<0.050		ug/g		0.05	09-MAR-21
Bromoform			<0.050		ug/g		0.05	09-MAR-21
Bromomethane			<0.050		ug/g		0.05	09-MAR-21
Carbon tetrachloride			<0.050		ug/g		0.05	09-MAR-21
Chlorobenzene			<0.050		ug/g		0.05	09-MAR-21
Chloroform			<0.050		ug/g		0.05	09-MAR-21
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	09-MAR-21
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	09-MAR-21
Dibromochloromethane			<0.050		ug/g		0.05	09-MAR-21
Dichlorodifluoromethane			<0.050		ug/g		0.05	09-MAR-21
Ethylbenzene			<0.018		ug/g		0.018	09-MAR-21
n-Hexane			<0.050		ug/g		0.05	09-MAR-21
Methylene Chloride			<0.050		ug/g		0.05	09-MAR-21
MTBE			<0.050		ug/g		0.05	09-MAR-21
m+p-Xylenes			<0.030		ug/g		0.03	09-MAR-21
Methyl Ethyl Ketone			<0.50		ug/g		0.5	09-MAR-21
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	09-MAR-21
o-Xylene			<0.020		ug/g		0.02	09-MAR-21
Styrene			<0.050		ug/g		0.05	09-MAR-21
Tetrachloroethylene			<0.050		ug/g		0.05	09-MAR-21
Toluene			<0.080		ug/g		0.08	09-MAR-21
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	09-MAR-21
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	09-MAR-21
Trichloroethylene			<0.010		ug/g		0.01	09-MAR-21
Trichlorofluoromethane			<0.050		ug/g		0.05	09-MAR-21
Vinyl chloride			<0.020		ug/g		0.02	09-MAR-21
Surrogate: 1,4-Difluorobenzene			123.8		%		50-140	09-MAR-21
Surrogate: 4-Bromofluorobenzene			118.0		%		50-140	09-MAR-21
WG3498750-5	MS	WG3498750-3						
1,1,1,2-Tetrachloroethane			115.0		%		50-140	09-MAR-21
1,1,1,2,2-Tetrachloroethane			105.3		%		50-140	09-MAR-21
1,1,1-Trichloroethane			118.7		%		50-140	09-MAR-21
1,1,2-Trichloroethane			111.3		%		50-140	09-MAR-21



Quality Control Report

Workorder: L2563701

Report Date: 17-MAR-21

Page 12 of 14

Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R5398390							
WG3498750-5 MS		WG3498750-3						
1,1-Dichloroethane			115.9		%		50-140	09-MAR-21
1,1-Dichloroethylene			117.7		%		50-140	09-MAR-21
1,2-Dibromoethane			118.5		%		50-140	09-MAR-21
1,2-Dichlorobenzene			118.6		%		50-140	09-MAR-21
1,2-Dichloroethane			112.9		%		50-140	09-MAR-21
1,2-Dichloropropane			116.2		%		50-140	09-MAR-21
1,3-Dichlorobenzene			115.0		%		50-140	09-MAR-21
1,4-Dichlorobenzene			119.8		%		50-140	09-MAR-21
Acetone			125.3		%		50-140	09-MAR-21
Benzene			115.7		%		50-140	09-MAR-21
Bromodichloromethane			119.0		%		50-140	09-MAR-21
Bromoform			115.9		%		50-140	09-MAR-21
Bromomethane			115.7		%		50-140	09-MAR-21
Carbon tetrachloride			122.3		%		50-140	09-MAR-21
Chlorobenzene			118.2		%		50-140	09-MAR-21
Chloroform			120.4		%		50-140	09-MAR-21
cis-1,2-Dichloroethylene			121.5		%		50-140	09-MAR-21
cis-1,3-Dichloropropene			112.9		%		50-140	09-MAR-21
Dibromochloromethane			115.0		%		50-140	09-MAR-21
Dichlorodifluoromethane			111.7		%		50-140	09-MAR-21
Ethylbenzene			116.9		%		50-140	09-MAR-21
n-Hexane			113.1		%		50-140	09-MAR-21
Methylene Chloride			118.8		%		50-140	09-MAR-21
MTBE			115.4		%		50-140	09-MAR-21
m+p-Xylenes			117.0		%		50-140	09-MAR-21
Methyl Ethyl Ketone			112.8		%		50-140	09-MAR-21
Methyl Isobutyl Ketone			114.0		%		50-140	09-MAR-21
o-Xylene			126.2		%		50-140	09-MAR-21
Styrene			115.5		%		50-140	09-MAR-21
Tetrachloroethylene			120.8		%		50-140	09-MAR-21
Toluene			116.6		%		50-140	09-MAR-21
trans-1,2-Dichloroethylene			117.2		%		50-140	09-MAR-21
trans-1,3-Dichloropropene			115.5		%		50-140	09-MAR-21



Quality Control Report

Workorder: L2563701

Report Date: 17-MAR-21

Page 13 of 14

Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R5398390							
WG3498750-5 MS		WG3498750-3						
Trichloroethylene			121.5		%		50-140	09-MAR-21
Trichlorofluoromethane			120.8		%		50-140	09-MAR-21
Vinyl chloride			122.2		%		50-140	09-MAR-21

Quality Control Report

Workorder: L2563701

Report Date: 17-MAR-21

Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

Page 14 of 14

Contact: Samo Szakal

Legend:

Limit ALS Control Limit (Data Quality Objectives)
DUP Duplicate
RPD Relative Percent Difference
N/A Not Available
LCS Laboratory Control Sample
SRM Standard Reference Material
MS Matrix Spike
MSD Matrix Spike Duplicate
ADE Average Desorption Efficiency
MB Method Blank
IRM Internal Reference Material
CRM Certified Reference Material
CCV Continuing Calibration Verification
CVS Calibration Verification Standard
LCSD Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

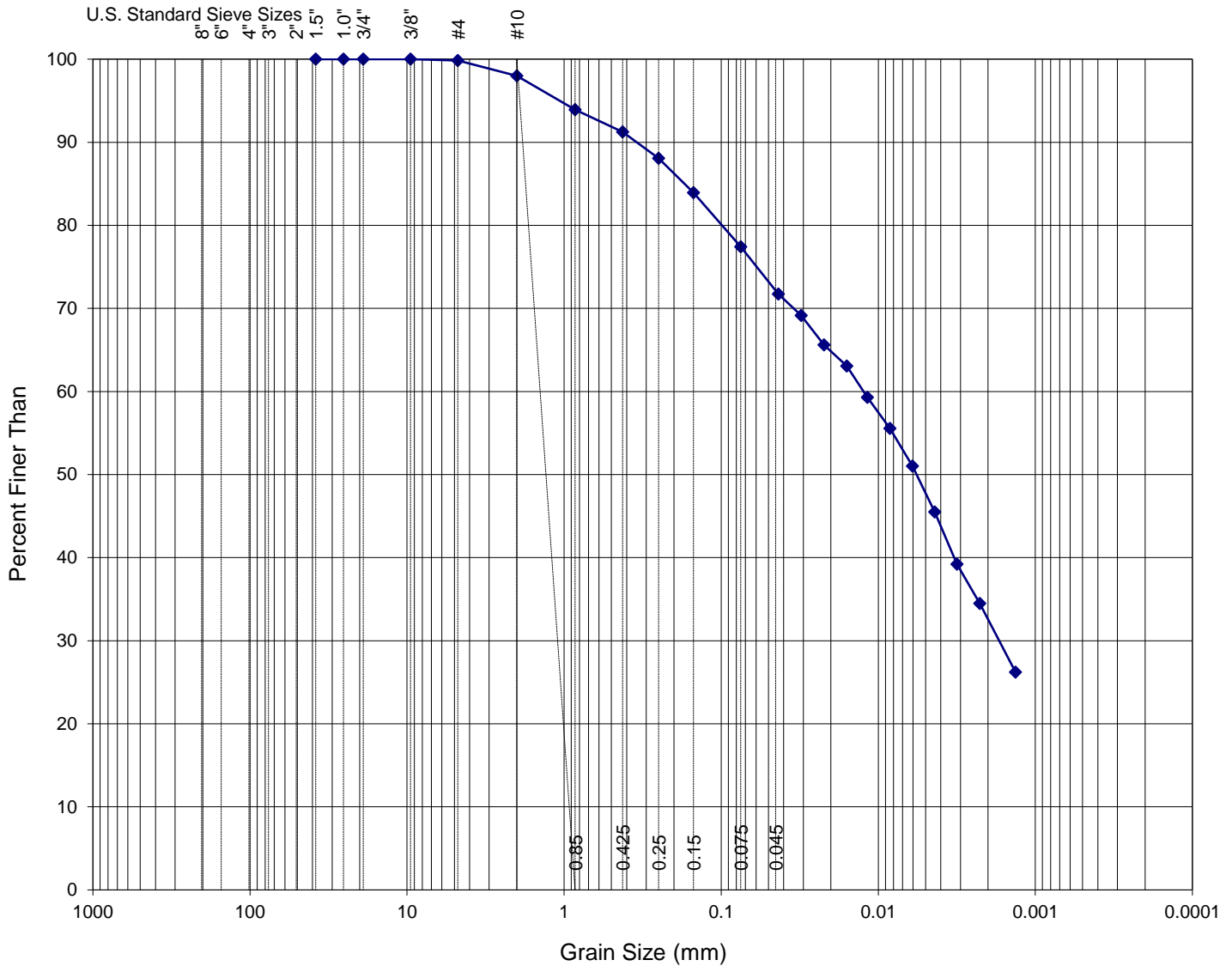
ALS Laboratory Group

819-58th Street, Saskatoon, SK

PARTICLE SIZE DISTRIBUTION CURVE

Client Name: PALMER ENVIRONMENTAL CONSULTANTS
 Project Number:
 Client Sample ID 21-5-7
 Lab Sample ID L2563701-6
 Date Sample Received 04-Mar-21
 Test Completion Date: 16-Mar-21
 Analyst: HML

BOULDERS	COBBLES	GRAVEL		SAND SIZES			SILT	CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE		



METHOD DESCRIPTION

Method Reference: ASTM D 422 - 63 (2002)
 Dispersion method: Mechanical
 Dispersion period: 1 minute cm/s
 Soil classification system used: ASTM D422-63 Classification

DESCRIPTION OF SAND AND GRAVEL PARTICLES

Shape: Angular
 Hardness: Hard

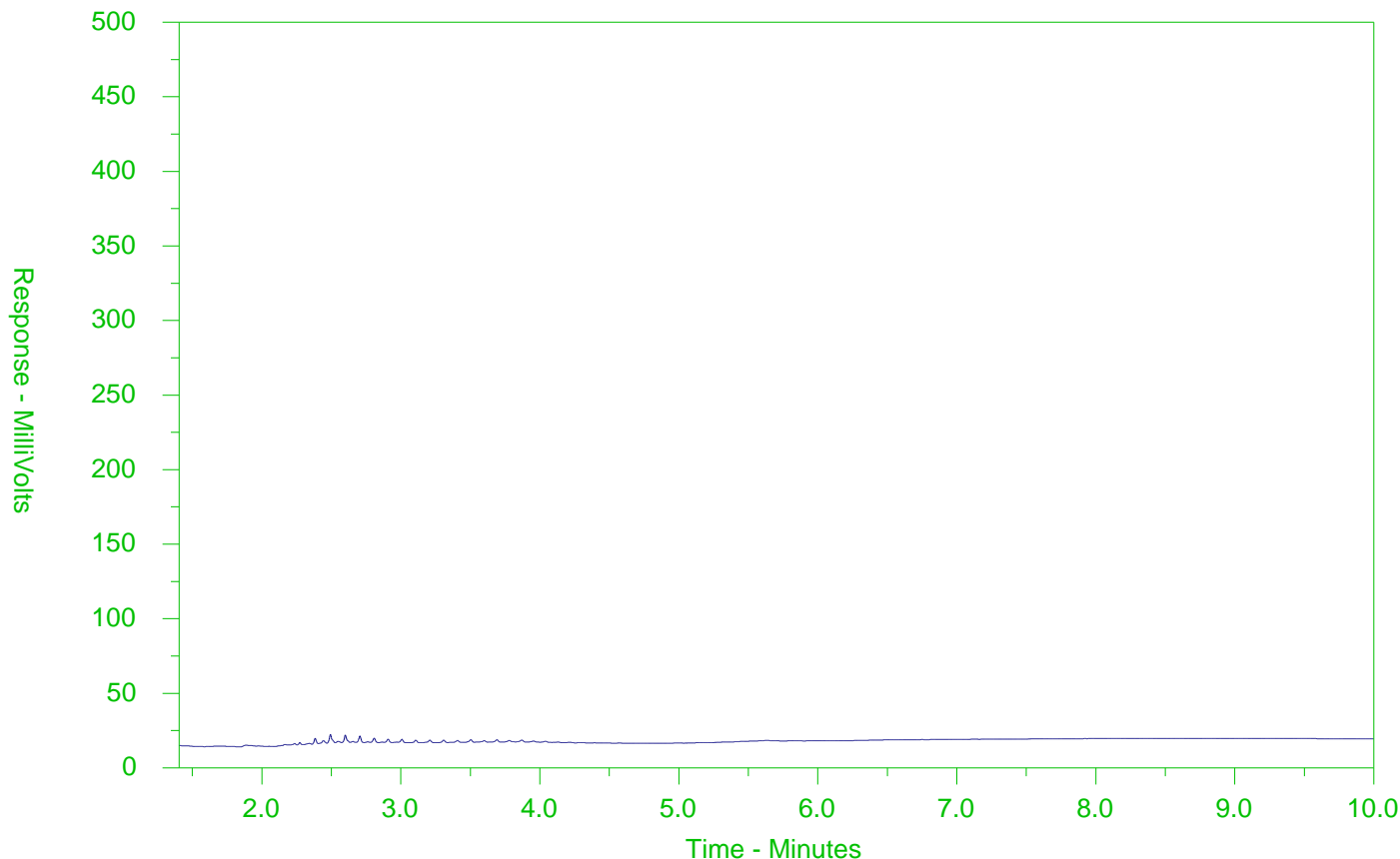
SUMMARY OF RESULTS

GRAIN SIZE	WT %	DIA. RANGE (mm)
% GRAVEL :	<1	> 4.75
% COARSE SAND :	1.84	2.0 - 4.75
% MEDIUM SAND :	6.75	0.425 - 2.0
% FINE SAND :	13.83	0.075 - 0.425
% SILT :	29.62	0.075 - 0.005
% CLAY :	47.81	< 0.005

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2563701-2
 Client Sample ID: 21-4-4



← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

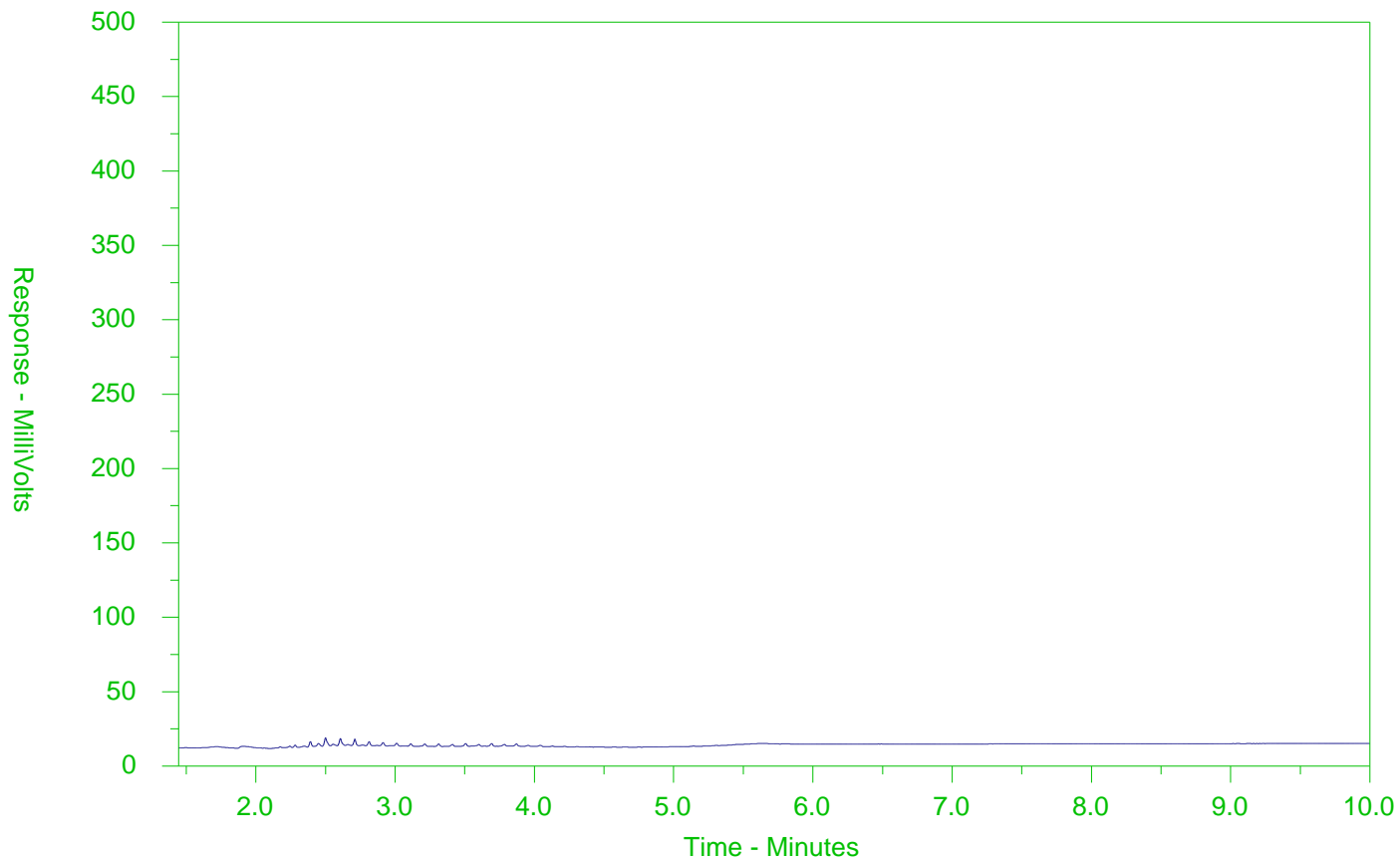
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2563701-3
 Client Sample ID: 21-4-4D



← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

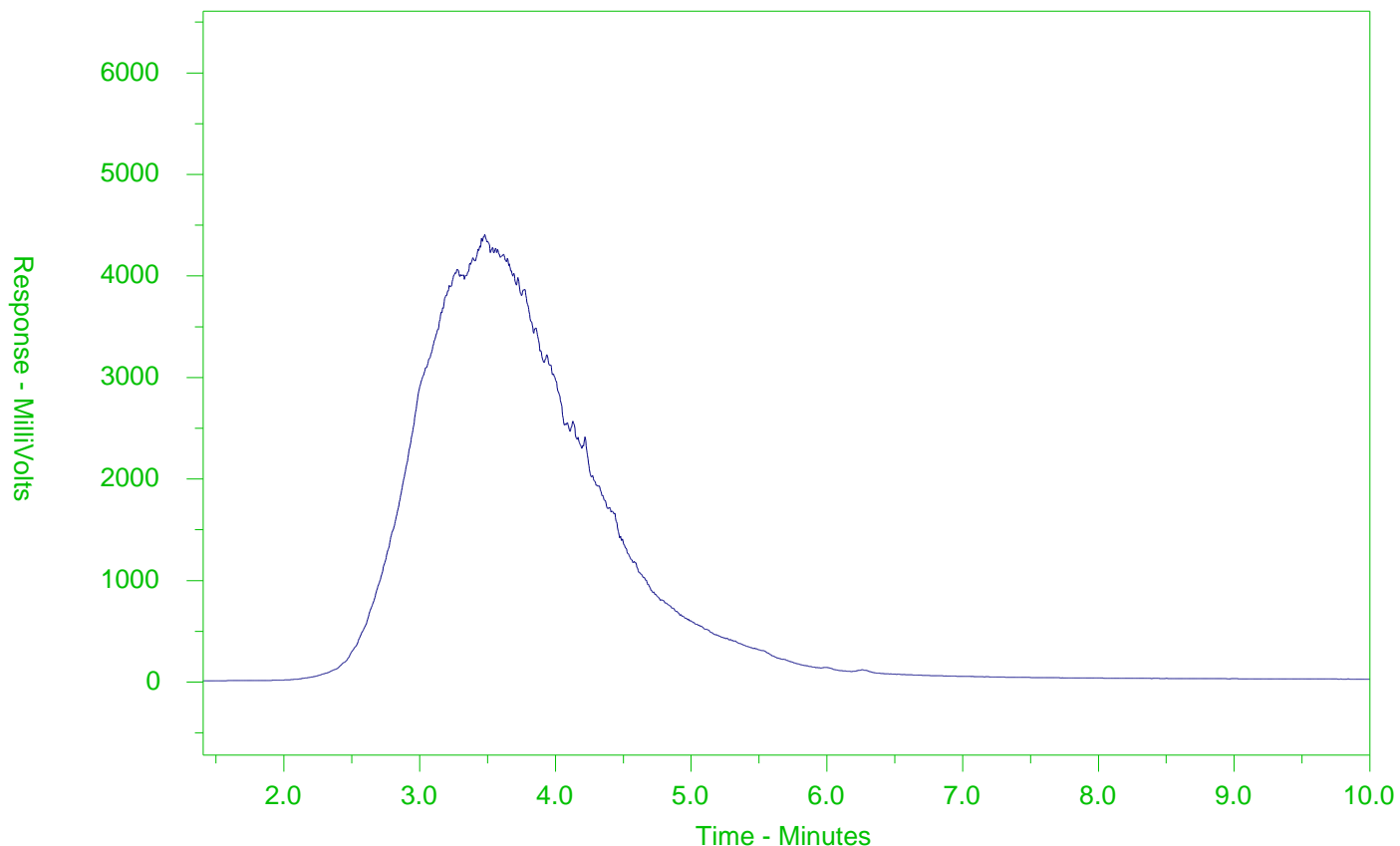
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2563701-4
 Client Sample ID: 21-3-1



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

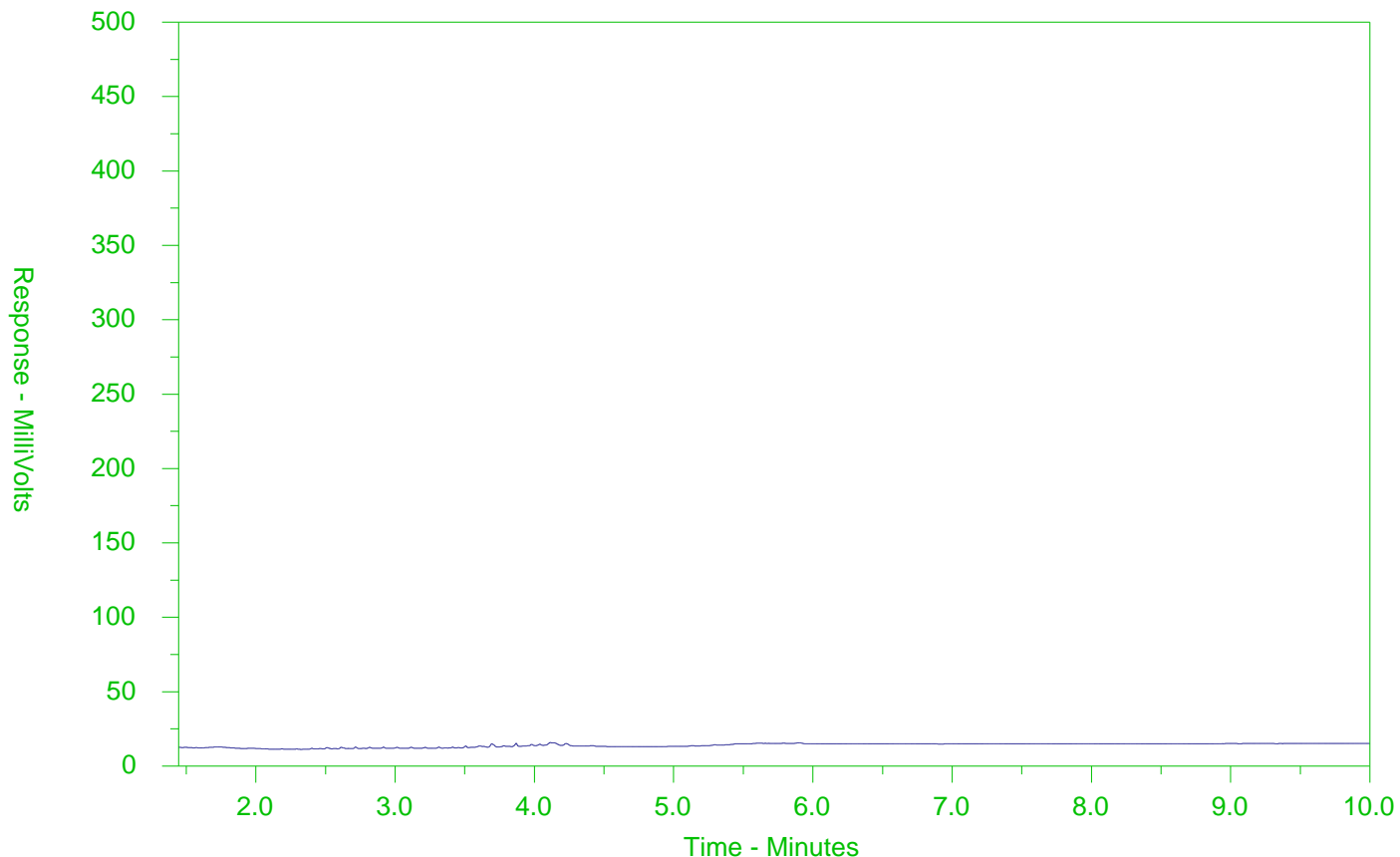
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2563701-5
 Client Sample ID: 21-5-2



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

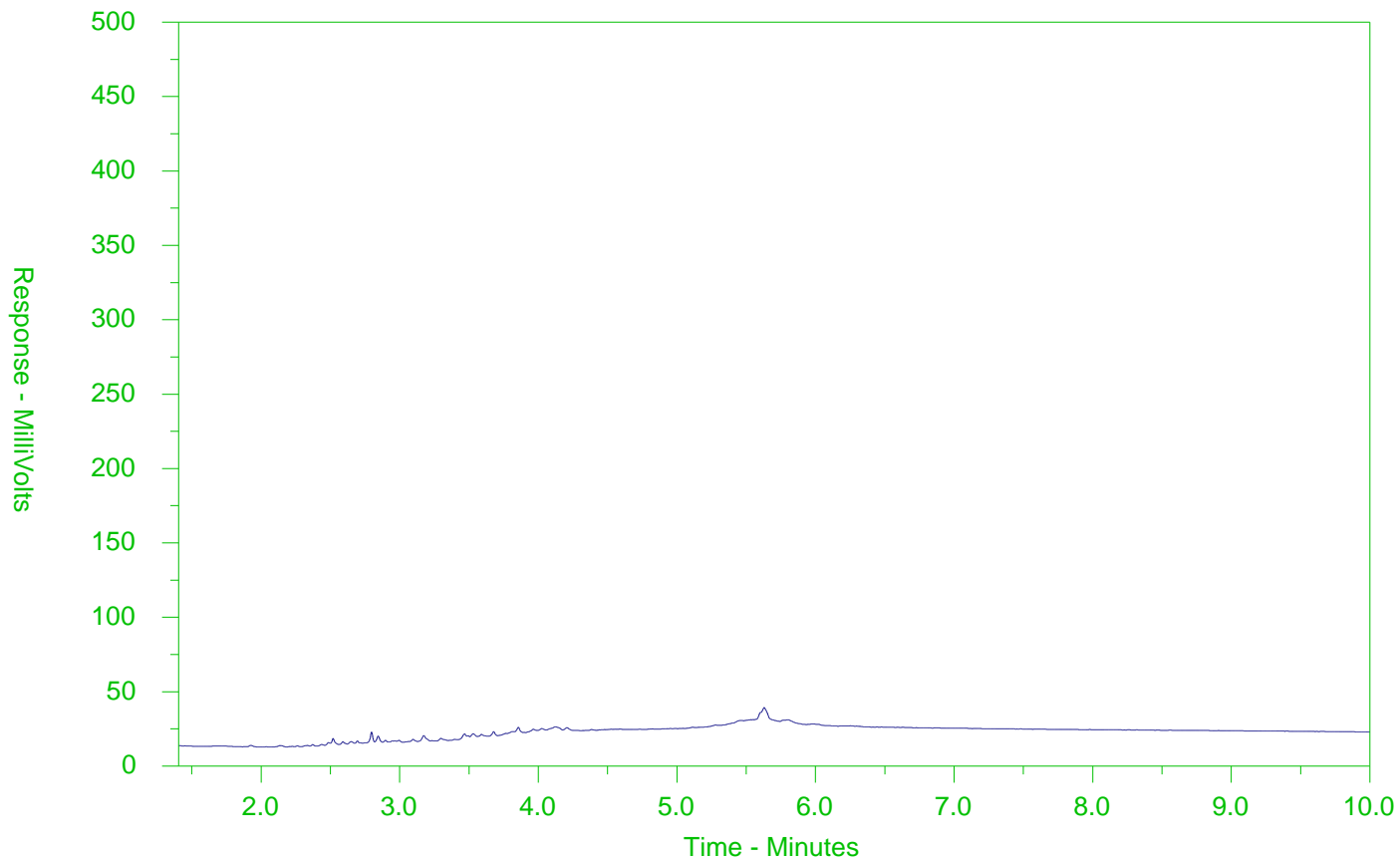
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2563701-7
 Client Sample ID: 21-2-2



← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

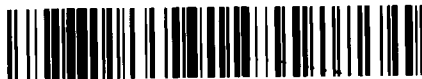
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.



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Chai



L2563701-COFC

COC Number: 20 -

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Report To Contact and company name below will appear on the final report		Reports / Recipients			Turnaround Time (TAT) Requested				AFFIX ALS BARCODE LABEL HERE (ALS use only)																																																													
Company:	Palmer Environmental Consulting Group Inc.	Select Report Format:	<input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)	<input checked="" type="checkbox"/> Routine [R] if received by 3pm M-F - no surcharges apply <input type="checkbox"/> 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum <input type="checkbox"/> 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum <input type="checkbox"/> 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum <input type="checkbox"/> 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum <input type="checkbox"/> Same day [E2] if received by 10am M-S - 200% rush surcharge. Additional fees may apply to rush requests on weekends, statutory holidays and non-routine tests																																																																		
Contact:	Samo Szakal	Merge QC/QCI Reports with COA	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	Date and Time Required for all EAP TATs: <u>12-2-21</u>																																																																		
Phone:	905-399-3410	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		For all tests with rush TATs requested, please contact your AM to confirm availability.																																																																		
Company address below will appear on the final report		Select Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	Invoice Recipients			Analysis Request																																																															
Street:	74 Berkeley Street	Email 1 or Fax	samo.szakal@pecg.ca	Select Invoice Distribution:			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																																															
City/Province:	Toronto, ON	Email 2	sarah.sipak@pecg.ca	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			<table border="1"> <tr> <th rowspan="4">NUMBER OF CONTAINERS</th> <th colspan="10">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below</th> <th rowspan="4">SAMPLES ON HOLD</th> <th rowspan="4">EXTENDED STORAGE REQUIRED</th> <th rowspan="4">SUSPECTED HAZARD (see notes)</th> </tr> <tr> <td>PHC/BTEX</td> <td>PHC/VOC</td> <td>MR-1</td> <td>PH</td> <td>ICP</td> <td>Stain Size - Full Scale</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					NUMBER OF CONTAINERS	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below										SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)	PHC/BTEX	PHC/VOC	MR-1	PH	ICP	Stain Size - Full Scale																																							
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	PHC/BTEX	PHC/VOC	MR-1	PH	ICP	Stain Size - Full Scale																																																																
Postal Code:	M5A 2W7	Email 3		Oil and Gas Required Fields (client use)																																																																		
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Company: Palmer Environmental Consulting Group Inc.			AFE/Cost Center:			Routing Code:																																																														
	Copy of Invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Contact: Accounting			Major/Minor Code:			Requisitioner:																																																														
Project Information		ALS Account # / Quote #: 24400/ 1604603			Location:																																																																	
Job #:		ALS Lab Work Order # (ALS use only): <u>L2563701</u>			ALS Contact: J Barkshire																																																																	
PO / AFE:		ALS Sample # (ALS use only)			Date (dd-mmm-yy)			Time (hh:mm)			Sample Type																																																											
LSD:		Sample Identification and/or Coordinates (This description will appear on the report)																																																																				
		21-4-1			2-May-21			10am			SOIL																																																											
		21-4-4			"			"			"																																																											
		21-4-4D			"			"			"																																																											
		21-3-1			"			"			"																																																											
		21-5-2			"			2pm			"																																																											
		21-5-7			"			"			"																																																											
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		21-2-6			"			"			"																																																											
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		21-8			"			"			"																																																											
Drinking Water (DW) Samples¹ (client use)		Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)			SAMPLE RECEIPT DETAILS (ALS use only)																																																																	
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO		0 Reg 153 T3 Res			Cooling Method: <input type="checkbox"/> NONE <input type="checkbox"/> ICE <input checked="" type="checkbox"/> ICE PACKS <input type="checkbox"/> FROZEN <input type="checkbox"/> COOLING INITIATED																																																																	
Are samples for human consumption/ use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Submission Comments identified on Sample Receipt Notification: <input type="checkbox"/> YES <input type="checkbox"/> NO																																																																	
					Cooler Custody Seals Intact: <input type="checkbox"/> YES <input type="checkbox"/> N/A Sample Custody Seals Intact: <input type="checkbox"/> YES <input type="checkbox"/> N/A																																																																	
					INITIAL COOLER TEMPERATURES °C: <u>5.2</u> FINAL COOLER TEMPERATURES °C: <u>10.3</u>																																																																	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)																																																																	
Released by:	Date: <u>3-3-21</u>	Time:	Received by: <u>Karim</u>	Date: <u>3/4/2021</u>	Time: <u>14:12</u>	Received by: <u>SD</u>	Date: <u>3/4/21</u>	Time: <u>1745</u>																																																														



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L2563701-COFC

Form

COC Number: 20 -

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Company:	Palmer Environmental Consulting Group Inc.	Select Report Format:	<input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)	<input checked="" type="checkbox"/> Routine [R] if received by 3pm M-F - no surcharges apply <input type="checkbox"/> 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum <input type="checkbox"/> 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum <input type="checkbox"/> 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum <input type="checkbox"/> 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum <input type="checkbox"/> Same day [E2] if received by 10am M-S - 200% rush surcharge. Additional fees may apply to rush requests on weekends, statutory holidays and non-routine tests																																																			
Contact:	Samo Szakal	Merge QC/QCI Reports with COA	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A																																																				
Phone:	905-399-3410	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked																																																					
Company address below will appear on the final report		Select Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	Date and Time Required for all E&P TATs:			12-3-21																																																
Street:	74 Berkeley Street	Email 1 or Fax	samo.szakal@pecg.ca	Invoice Recipients			For all tests with rush TATs requested, please contact your AM to confirm availability.																																																
City/Province:	Toronto, ON	Email 2	sarah.sipak@pecg.ca	Select Invoice Distribution:			Analysis Request																																																
Postal Code:	M5A 2W7	Email 3		<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																																
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Company:			Palmer Environmental Consulting Group Inc.			<table border="1"> <tr> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</td> <td colspan="10"></td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">SAMPLES ON HOLD</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">EXTENDED STORAGE REQUIRED</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">SUSPECTED HAZARD (see notes)</td> </tr> <tr> <td colspan="10"></td> </tr> <tr> <td colspan="10"></td> </tr> <tr> <td colspan="10"></td> </tr> </table>				NUMBER OF CONTAINERS											SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)																														
NUMBER OF CONTAINERS													SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)																																								
Company:	Palmer Environmental Consulting Group Inc.	Contact:			Accounting																																																		
Contact:	Accounting	Project Information			Oil and Gas Required Fields (client use)																																																		
ALS Account # / Quote #:	24400/	Job #:	1604603	AFE/Cost Center:	PC#	Major/Minor Code:	Routing Code:																																																
PO / AFE:	1604603	Requisitioner:		Location:																																																			
ALS Lab Work Order # (ALS use only):	L2563701	ALS Contact:	J Barkshire	Sampler:	SS																																																		
ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type																																																			
	21-8D	3-3-21	2pm	SOIL	1	x																																																	
Drinking Water (DW) Samples¹ (client use)		Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)			SAMPLE RECEIPT DETAILS (ALS use only)																																																		
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO		Org 153 T3 Res			Cooling Method: <input type="checkbox"/> NONE <input type="checkbox"/> ICE <input checked="" type="checkbox"/> ICE PACKS <input type="checkbox"/> FROZEN <input type="checkbox"/> COOLING INITIATED																																																		
Are samples for human consumption/ use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Submission Comments identified on Sample Receipt Notification: <input type="checkbox"/> YES <input type="checkbox"/> NO																																																		
					Cooler Custody Seals Intact: <input type="checkbox"/> YES <input type="checkbox"/> N/A Sample Custody Seals Intact: <input type="checkbox"/> YES <input type="checkbox"/> N/A																																																		
					INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C																																															
					5.2			6.3																																															
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)																																																		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:																																															
J/LAB	3-3-21		Karan	3/4/2021	14:12	88	3/4/21		HAB																																														

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

ALG 2020 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Appendix A – General

A4 – Residue Management

BIN # IN: _____

DATE: 10/15/21

BIN # OUT: _____

P.O.#: _____

CUSTOMER: NEXT GEN

SERVICE ADDRESS: 12148 ALBION VAUGHAN RD. CITY: KLEINBURG

MATERIAL LIST - check all that apply

- | | |
|--|--------------------------------------|
| <input checked="" type="checkbox"/> SOIL | <input type="checkbox"/> MIXED WASTE |
| <input type="checkbox"/> BRICK OR BLOCK | <input type="checkbox"/> WOOD |
| <input type="checkbox"/> CONCRETE | <input type="checkbox"/> CARDBOARD |
| <input type="checkbox"/> ASPHALT | <input type="checkbox"/> DRYWALL |
| <input type="checkbox"/> MARBLE | <input type="checkbox"/> METAL |
| <input type="checkbox"/> STRAW | <input type="checkbox"/> ROOFING |
| <input type="checkbox"/> MASTIC | <input type="checkbox"/> PLASTIC |

SERVICE:

- DELIVERY
- REMOVAL
- EXCHANGE
- RE-LOCATE
- WAIT & LOAD
- AFTER HOURS
- WAIT TIME ON SITE: _____

BIN SIZE:

- 14 YARD
- 20 YARD
- 40 YARD
- COMPACTOR
- _____

NOTES

DIRT

READ CONDITIONS CAREFULLY BEFORE YOU SIGN:

Our Insurance policy prohibits waste from being piled higher than the container walls. Unsafe loads will be refused. We are not responsible for damage to property when placing, removing or moving containers. We only accept 100% Non-hazardous solid waste. NO LIQUID OR HAZARDOUS WASTE. The material is the customer's responsibility until payment is made in full and the material is accepted at a M.O.E.C.C. licensed facility. Refused loads will be returned with associated fees billed accordingly.

WHITE: OFFICE CANARY: CUSTOMER

Customer not available for signature 1:00PM

GL

DRIVER'S INITIALS

CUSTOMER'S ACKNOWLEDGEMENT



48 Millwick Drive
 Toronto, ON
 M9L 1Y3
 PH:(416) 863-9222 Fax:(416) 863-1496

TICKET#	DATE	SCALE OPERATOR	
MT 169587	10/15/2021	JP	
TIME IN	TIME OUT	TRUCK #	CONTAINER
1:29 pm	1:39 pm	TRIPLEWA	
REFERENCE			
038			

001014
 Triple Waste Management Ltd.
 48 Millwick Dr.
 Toronto, ON M9L 1Y3

INVOICE
 INBOUND

GROSS WEIGHT	28,010kg	Scale In	SCALE WEIGHT
TARE WEIGHT	17,980kg	Scale Out	
NET WEIGHT	10,030kg		

QTY.	UNIT	DESCRIPTION	RATE	SUBTOTAL	TAX	TOTAL
1.00	ld	Clean Fill (10-14 Yard)				

By signing this ticket, I accept all weights, classifications and charges contained herein, and certify this material to be 100% non-hazardous solid waste and expressly agree not to dump liquid or "hazardous waste" material as defined in Ontario Regulation 347. Millwick Transfer Limited does not assume any responsibility for any injury to persons or damage to vehicles.

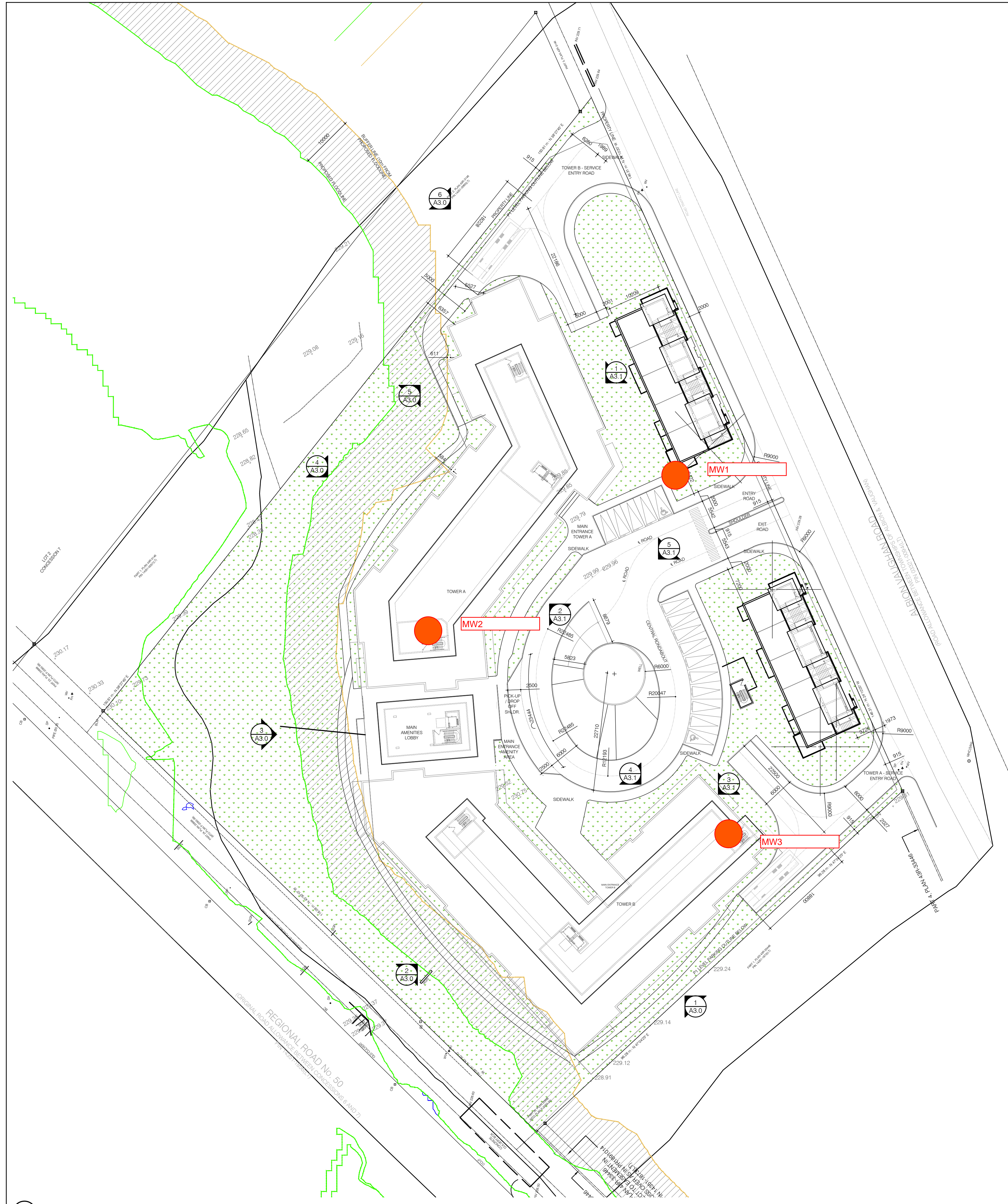
As the soil generator I hereby certify, the amount excavated from the source residential property does not exceed 1,000 cubic metres; does not have any known contamination, the property has not been used to store equipment or material [fuels, pesticides, solvents, batteries, etc.] that may have caused contamination and has not come from, or adjacent to, a remediation project, commercial or industrial property. Millwick Transfer Limited reserves the right to refuse and reload material that does not meet the above criteria. Please contact the office for further information.

TOTAL
PAID
CHANGE DUE
CHEQUE #

SIGNATURE _____

Appendix A – General

A5 – Survey of Phase Two

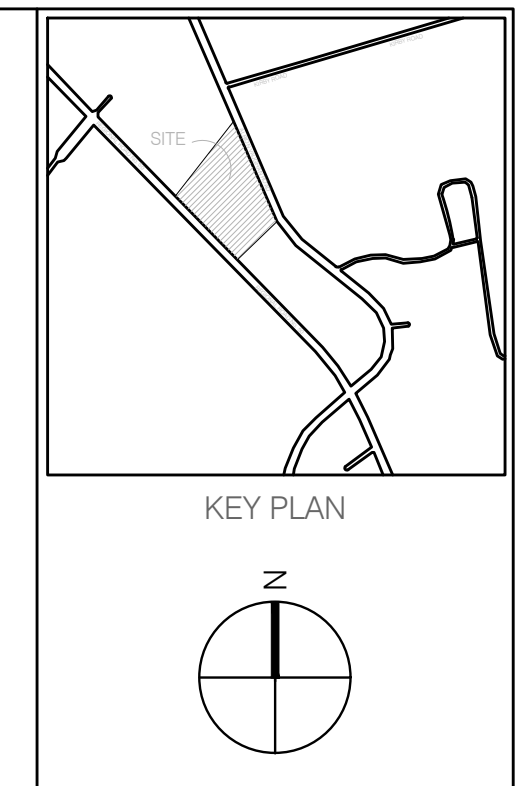


SITE DEVELOPMENT - RM ZONE (MULTIPLE RESIDENTIAL AREA)

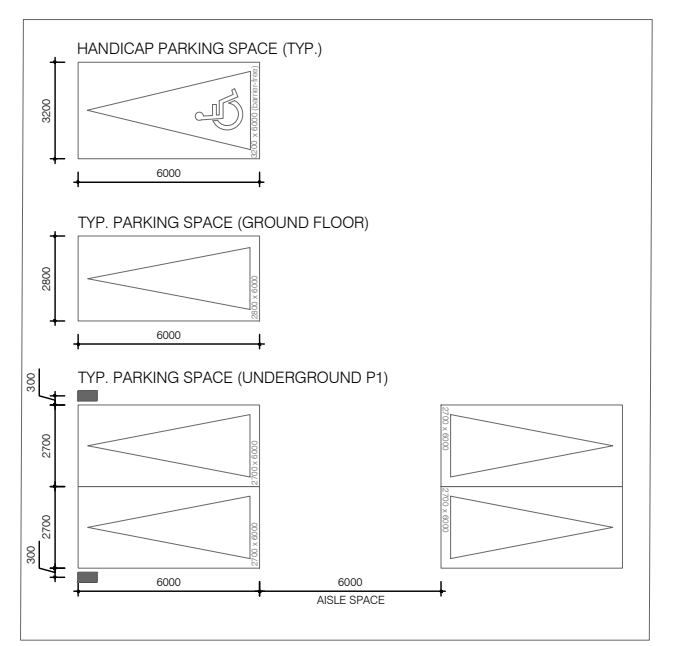
A - LOT AREA			
TOTAL LOT AREA		m ²	SQ/FT
GROSS SITE AREA		15376.75	165513.96
NET DEVELOPABLE AREA		11360.98	122288.57
B - GROSS FLOOR AREA			
B.1 - TOWER A (RESIDENTIAL CONDO GFA)			
	QTY.	m ²	SQ/FT
GROUND FLOOR LEVEL	1	1691.04	18202.15
2ND FLOOR LEVEL	1	1870.88	20137.98
3RD FLOOR LEVEL	1	1882.24	20260.26
4TH TO 6TH FLOOR LEVEL	3	5646.72	60780.79
TOTAL GFA		11090.88	119381.18
B.2 - TOWER B (RESIDENTIAL CONDO GFA)			
GROUND FLOOR LEVEL	1	1799.09	19365.23
2ND FLOOR LEVEL	1	1933.11	20807.82
3RD FLOOR LEVEL	1	1943.36	20918.15
4TH TO 6TH FLOOR LEVEL	3	5830.08	62754.46
TOTAL GFA		11505.64	123845.67
B.3 - TOWNHOMES (GFA)			
P1 LEVEL	1	171.66	
GROUND FLOOR LEVEL	1	654.53	7045.30
2ND FLOOR LEVEL	1	654.53	7045.30
3RD FLOOR LEVEL (TERRACE)	1	275.84	2969.12
TOTAL GFA		1756.56	17059.72
B.4 - AMENITY SPACE (GFA)			
GROUND FLOOR LEVEL	1	432.68	4657.33
2ND FLOOR LEVEL	1	435.12	4683.59
3RD FLOOR LEVEL (TERRACE)	1	275.84	2969.12
TOWER A	1	630.34	6784.92
TOWER B	1	575.52	6194.85
TOTAL GFA		2349.50	27639.31
B.5 - SERVICE AREAS (GFA)			
TOWER A - STORAGE		138.78	1493.82
TOWER B - STORAGE		124.59	1341.08
TOTAL GFA		263.37	2834.89
B.6 - GRAND TOTAL GFA			
		26965.94	290760.77
C - FLOOR SPACE INDEX (FSI)			
FSI = TOTAL GFA / LOT AREA			15376.75 / 25760.09
TOTAL SITE FSI			1.75 times
TOTAL USABLE SITE FSI			2.37 times

STORIES	UNITS TYPE	SQ/FT	m ²	TOWER A						TOWER B						TOTAL	TOTAL	TOTAL	TOTAL
				GROUND FLOOR	2ND FLOOR	3RD FLOOR	4TH FLOOR	5TH FLOOR	6TH FLOOR	GROUND FLOOR	2ND FLOOR	3RD FLOOR	4TH FLOOR	5TH FLOOR	6TH FLOOR				
1 BEDROOM	TYPE 1	633.8	68.86	4	4	3	3	3	3	4	4	4	4	4	4	44	0.84	37.00	
	TYPE 2	666.75	72.11	3	3	3	3	3	3	0	0	0	0	0	0	18	0.91	16.38	
	TYPE 3	649.82	70.35	0	1	1	1	1	1	0	0	0	0	0	0	5	0.86	4.31	
	TYPE 4	592.33	64.03	0	0	0	0	0	0	0	0	1	0	0	0	1	0.79	0.79	
	TYPE 1	800	85.81	1	1	0	0	0	0	0	0	0	0	0	0	2	1.06	2.12	
	TYPE 2	826.16	88.96	1	1	0	0	0	0	0	0	0	0	0	0	2	1.10	2.19	
	TYPE 3	655.97	70.61	1	1	1	1	1	1	0	0	0	0	0	0	6	1.27	7.61	
	TYPE 4	609.93	65.94	1	1	1	1	1	1	0	0	0	0	0	0	6	1.19	7.16	
1 BEDROOM - DEN	TYPE 5	810.45	86.68	1	1	1	1	1	1	0	0	0	0	0	0	6	1.08	6.47	
	TYPE 6	925	99.75	0	0	0	0	0	0	0	1	1	0	0	0	2	1.22	2.45	
	TYPE 7	1034.02	110.93	0	0	0	0	0	0	0	0	1	0	0	0	2	1.33	2.67	
	TYPE 8	820.41	87.85	0	0	0	0	0	0	0	0	1	0	0	0	1	0.81	0.81	
	TYPE 1	1031.10	110.21	3	3	3	3	3	3	0	0	0	0	0	0	18	1.33	23.92	
	TYPE 2	844.57	90.75	1	1	1	1	1	1	0	0	0	0	0	0	6	1.25	7.52	
	TYPE 3	961.36	103.65	1	1	1	1	1	1	0	0	0	0	0	0	6	1.28	7.66	
	TYPE 4	1114.62	119.85	1	0	0	0	0	0	0	0	0	0	0	0	1	1.48	1.48	
2 BEDROOM	TYPE 5	1011.47	108.97	1	0	0	0	0	0	0	0	0	0	0	0	1	1.34	1.34	
	TYPE 6	997.15	107.24	0	0	0	0	0	0	2	2	2	2	2	12	1.32	15.88		
	TYPE 7	1006.41	107.50	0	0	0	0	0	0	0	1	1	1	1	6	1.34	8.01		
	TYPE 8	1073.34	114.97	0	0	0	0	0	0	0	0	0	0	0	1	1.42	1.42		
	TYPE 9	933.07	100.49	0	0	0	0	0	0	5	5	5	5	5	30	1.24	37.15		
	TYPE 10	902.34	97.03	0	0	0	0	0	0	1	1	1	1	1	6	1.20	7.19		
	TYPE 11	922.87	99.07	0	0	0	0	0	0	1	1	1	1	1	6	1.24	7.43		
	TYPE 12	890.61	95.60	0	0	0	0	0	0	1	1	1	1	1	6	1.19	7.13		
	TYPE 13	962.65	103.81	0	0	0	0	0	0	1	0	0	0	0	1	1.32	1.32		
	TYPE 1	1114.62	119.85	0	1	1	1	1	1	0	0	0	0	0	0	5	1.48	7.40	
2 BEDROOM - LARGE BALCONY	TYPE 2	1011.47	108.97	0	1	1	1	1	1	0	0	0	0	0	5	1.34	6.71		
	TYPE 3	1043.88	111.96	0	1	1	1	1	1	0	0	0	0	0	5	1.39	6.93		
	TYPE 4	1044.17	112.00	0	0	1	1	1	1	0	0	0	0	0	4	1.65	6.60		
	TYPE 5	1037.95	111.87	0	0	1	1	1	1	0	0	0	0	0	4	1.64	6.57		
	TYPE 6	1073.34	114.97	0	0	0	0	0	0	0	1	1	1	1	5	1.42	7.12		
	TYPE 7	960.88	102.94	0	0	0	0	0	0	0	1	1	1	1	5	1.32	6.59		
	TYPE 8	1133.37	121.85	0	0	0	0	0	0	0	1	1	1	1	4	1.53	6.12		
	TYPE 9	1015.89	108.38	0	0	0	0	0	0	0	1	1	1	1	4	1.35	5.39		
	TYPE 10	1182.72	126.81	0	0	0	0	0	0	0	1	1	1	1	4	1.58	6.33		
	PARTIAL UNITS PER TOWER				19	21	20	20	20	20	19	21	20	20	20	20	283		
TOTAL UNITS PER TOWER						120					120								
TOTAL UNITS															240				

Name of Project: Fausto Cortese Architect MIX-USED CONDO DEVELOPMENT AT 12148 ALBION VAUGHAN RD. BOLTON - CALEDON		Location: 3580 Rutherford road, Unit 35 & 55 Vaughan, Ontario	
Ontario Building Code Data Matrix - Part 3 & 9			
			OBC Reference
1	Project Description: 2-6 Storeys Condo Building	<input checked="" type="checkbox"/> Addition <input type="checkbox"/> Alteration	Part 11 11.1 to 11.4
2	Major Occupancy(s): Group C		3.1.2.1.(1) 1.4.1.2 [A] 1.4.1.2 [A] 1.4.1.2 [A] 1.4.1.2 [A] & 3.2.1.1
3	Building Area (m ²): NEW: 4577.3 m ²		TOTAL: 4577.3 m ²
4	Gross Area (m ²): NEW: 25760.00 m ²		TOTAL: 25760.00 m ²
5	Number of Storeys: Above Grade: 6		Below Grade: 1
6	Number of Streets/Fire Fighter Access: 1		3.2.2.10 & 3.2.5.
7	Building Classification: GROUP C 3.2.2.4.3		3.2.2.7(B)
8	Sprinkler System Proposed:	<input checked="" type="checkbox"/> entire building <input type="checkbox"/> selected compartments <input type="checkbox"/> selected floor areas <input type="checkbox"/> basement	<input type="checkbox"/> in lieu of roof rating <input type="checkbox"/> not required <input type="checkbox"/> EXISTING NO CHANGE
9	Standpipe required:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3.2.9.
10	Fire Alarm required:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3.2.4.
11	Water Service/Supply is Adequate:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3.2.5.7
12	High Building:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3.2.6
13	Construction Restrictions:	<input type="checkbox"/> Combustible Permitted <input type="checkbox"/> Combustible	<input checked="" type="checkbox"/> Non-combustible <input type="checkbox"/> Non-combustible <input type="checkbox"/> Both
14	Mezzanine Area (m ²): N/A		3.2.1.1.(3)-(8)
15	Occupant load based on:	<input type="checkbox"/> m ² /person <input checked="" type="checkbox"/> design of building	3.1.17
16	Barrier-free Design:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain):	3.8
17	Hazardous Substances:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3.3.1.2 & 3.3.1.19
18	Required Fire Resistance Rating (FRR)	Horizontal Assemblies: Floor: 0.75 Hours Roof: 0 Hours FRR of Supporting Members: Floor: 0.75 Hours Roof: 0 Hours	Listed Design No. or Description (SB-3) S1
19	Spatial Separation - Construction of Exterior Walls - Existing Building	Area of L.D. or H/L	FRR (Hours) Listed Design or Description Comb Const Comb Const: Nonc. Non-comb Const



PARKING			
BY LAW - PARKING REQUIREMENTS			
CONDO UNITS (PARKING SPACES)	1 PARKING SPOT PER EACH 75M ² OR PORTION THEREOF TO A MAXIMUM OF 2 PARKING SPACES	283	
TOWNHOMES	2 CARS PER UNIT = 22 PARKING SPACES PER UNIT FOR VISITORS	20	
VISITOR TOWNHOMES	0.5 PARKING SPACES PER UNIT FOR VISITORS ON A LOT WITH FOUR OR MORE DWELLING UNITS	3	
NET TOTAL PARKING REQUIRED		306	
GRAND TOTAL PARKING PROVIDED		306 spaces req'd	
TOTAL PARKING PROVIDED	RESIDENT (HANDICAP)	RESIDENT SPOTS	TOTAL
P1 LEVEL	15	291	
GROUND FLOOR	2	13	
GRAND TOTAL PARKING PROVIDED	17	304	321 spaces prov.



TOWNHOMES					
BLOCK 1			BLOCK 2		
END UNIT 1 (TOTAL: 1711.48 SQ/FT - 183.86 M ²)	END UNIT 2 (TOTAL: 1342.14 SQ/FT - 144.82 M ²)	INTERMEDIATE UNIT (TOTAL: 1314.86 SQ/FT - 141.85 M ²)	END UNIT 1 (TOTAL: 1711.48 SQ/FT - 183.86 M ²)	END UNIT 2 (TOTAL: 1342.14 SQ/FT - 144.82 M ²)	INTERMEDIATE UNIT (TOTAL: 1314.86 SQ/FT - 141.85 M ²)
1	1	3	1	1	3
10			10		
20					

1 SITE PLAN SCALE: 1:400

ISSUED FOR CONSTRUCTION
ISSUED FOR BID
ISSUED FOR BUILDING PERMIT
ISSUED FOR SITE PLAN APPROVAL
SUBMITTALS

CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE PROJECT AND MUST REPORT ANY DISCREPANCIES TO THE DESIGNER BEFORE PROCEEDING WITH CONSTRUCTION.

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED AND SEALED BY THE DESIGNER. DO NOT SCALE DRAWINGS.

FCA
FAUSTO CORTESE ARCHITECTS
3590 RUTHERFORD RD. UNIT 7
VAUGHAN, ONTARIO, L4H 3T8
416-806-7000
FCORTESE@FCARCHITECTS.CA

PROPOSED MIX-USED CONDO DEVELOPMENT
12148 ALBION VAUGHAN RD
BOLTON
TOWN OF CALEDON

SITE PLAN

DATE: 08/12/2020 PROJECT NO.:
SCALE: DRAWING NO.: 2019-22
ORGANIZED BY: AS NOTED REVIEWED BY: A1.0

Appendix B – Remediation

B.1 Remedial Actions

Analytical results of the Phase Two ESA revealed the presence of PHC Fraction F3 within the garage structure (Area 1), and Cadmium and Lead located within the stockpiled material (Area 2) located on southwestern portion of the on the Subject Property, as presented in **Drawing 4**. Palmer has assumed that the impacted stockpiled material will be removed during regrading of the Site prior to development.

Ground water remediation was not required, as all ground water analytical results met the MECP Standards for all parameters analyzed.

Therefore, Palmer's remediation program targeted the remediation of the PHC Fraction F3 impacted soil.

Based on borehole analytical results (as presented in **Appendix A3**), fill materials located in Area 1 were to be excavated along the eastern portion of the Phase Two Property and disposed of off-Site, which consisted of the following:

Area	Location on Phase Two Property	Approximate Volume of Impacted Soil Removed (m ³)	Contaminants of Concern
1	Eastern portion of the Subject Property, in the vicinity of staining observed within the garage structure	2	PHC Fraction F3

Excavation activities were conducted by Nexxgen Environmental under the supervision of Palmer staff, and commenced on October 15, 2021. Nexxgen Environmental excavated Area 1, as shown in the **Photograph Appendix**.

No evidence of free product, odours and/or staining were observed in the vicinity of the Area 1 upon completion of soil excavation activities.

During the excavation activities, soil was directly placed into metal bins used for transport. All impacted soil was removed from the Phase Two Property by the excavating contractor (Nexxgen Environmental) and disposed of at Triple Waste Management Ltd. In Toronto, Ontario. In total, approximately 2 m³ (4.11 tonnes) of impacted soil was removed from the Phase Two Property. Copies of approved permits are presented in **Appendix B5**.

Upon excavation and removal of impacted material, Palmer monitored the excavated areas, including visual and olfactory observations and conducted verification sampling. Verification samples were submitted to ALS Environmental for chemical analyses of the parameters of concern from the excavated area, as mentioned above. Duplicate samples were also submitted for QA/QC purposes.

Soil was not imported to the Site for backfilling purposes and the excavation area remained open, as the Phase Two Property will be re-graded following the demolition of the existing garage structure.

A review of the soil analytical results collected during remediation activities (presented in **Appendix B6**) indicated that all collected wall and floor verification soil samples complied with the MECP Table 3 Standards for the proposed residential land use with medium-fine textured soils in a non-potable ground water condition. Therefore, all PHC Fraction F3 impacted soil was removed and disposed of off-site. Testing or monitoring of ground water was not completed as ground water contamination was not detected during the Phase Two ESA and was not encountered during excavation activities. The Lead and Cadmium impacted soils within the stockpile located at the southern portion of the Phase Two Property will be disposed of during the regrading of the Phase Two Property. Thus, upon completion of remedial activities, the soil in the vicinity of the existing garage on the Phase Two Property was restored to the MECP Table 3 Standards.

B.2 Free Flowing Product

Free flowing product was not observed during the Phase Two ESA or remedial activities.

B.3 Confirmation Sampling and Analysis

Upon excavation of the impacted area, the excavated area was monitored for any visual and/or olfactory observations. If any odours and/or staining were observed, further excavation was conducted until all malodorous or stained soil was removed from the wall or floor of the excavated area.

The excavated area, as presented in **Drawings 6** and **7**, consisted of the following:

Area	Lateral Dimensions (m)	Vertical Dimensions (m)	Maximum Depth Below Grade (m)	Number of Collected Floor Samples	Number of Collected Wall Samples	Parameters Analyzed
1	1.8	2.6	0.4	2	4	PHCs, BTEX

Vertical and lateral dimensions of each of the excavated area is presented in **Cross-Section B-B'** and **Drawing 7**.

Verification samples from both the floor and walls of the excavated areas were collected in accordance to the number of samples required based on the floor area of the test pit, as per O.Reg. 153/04 Schedule E, Table 3. If analytical results of any of the submitted verification samples revealed exceedances of any parameters analyzed, that area of the test pit was further excavated and another verification sample was collected until all analytical results indicated a contaminant concentration within the Table 3 Standards. Once all analytical results for the excavated area indicated that all verification samples complied with the MECP Table 3 standards for residential land use with medium-fine textured soils in a non-potable ground water condition, the excavation area was subsequently considered remediated.

Based on the field observations, “worst case” soil samples were collected from both the floor and wall of the excavated area and submitted for laboratory analyses in the vicinity of the depths where previous exceedances were encountered. In Area 1, two (2) floor and four (4) wall samples were collected for laboratory analysis, as shown in **Drawing 7**. Verification samples were submitted for analyses of contaminants that exceeded the Table 3 Standards during the Phase Two ESA, as previously discussed in *Section C.1*. Analytical results are presented in **Appendix C6**.

Analytical results of each of the submitted verification samples are presented in **Drawing 7 and Cross-Section B-B'** and are as follows:

Table 8. Soil Analytical Results: PHC with BTEX

a) Petroleum Hydrocarbons (F₁ – F₄) with BTEX

				PHCs					BTEX			
				F1 (C6-C10)	F1 (C6-C10) - BTEX*	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	Benzene	Toluene	Ethylbenzene	Xylenes, Total (Xylene Mixture)
				µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g
O.Reg. 153/04 MOECC Guideline (2011), Res/Park/Inst Property Use, Medium-Fine Textured Soil, Non-Potable Ground Water Condition				65	65	150	1300	5600	0.17	6	15	25
Sample Location	Sample ID	Sample Interval (mbgs)	Sample Date									
North wall	21-NW-1	0.3	15-Oct-21	<5.0	<5.0	<10	<50	<50	<0.0068	<0.018	<0.080	<0.050
East wall	21-EW-1	0.3	15-Oct-21	<5.0	<5.0	<10	<50	<50	<0.0068	<0.018	<0.080	<0.050
South wall	21-SW-1	0.3	15-Oct-21	<5.0	<5.0	<10	<50	<50	<0.0068	<0.018	<0.080	<0.050
South wall	21-SW-1D	0.3	15-Oct-21	<5.0	<5.0	<10	<50	<50	<0.0068	<0.018	<0.080	<0.050
Floor	21-F-1	0.3	15-Oct-21	<5.0	<5.0	<10	<50	<50	<0.0068	<0.018	<0.080	<0.050
Floor	21-F-2	0.4	15-Oct-21	<5.0	<5.0	<10	<50	<50	<0.0068	<0.018	<0.080	<0.050

B.4 Conclusions

One (1) identified area of impacted soil comprising PHC Fraction F3 was excavated and in total, approximately 2 m³ (4.11 tonnes) of impacted soil was hauled off-site by Nexxgen Environmental and disposed of at Triple Waste Management Ltd.

Verification sampling was conducted, and the laboratory analytical results of the verification samples indicated no exceedances in comparison to the MECP Table 3 standards for the proposed residential land use with medium-fine textured soils in a non-potable ground water condition. Upon receipt of analytical results indicating that all verification samples comply with the MECP Table 3 Standards, the excavation area was deemed complete and backfilling did not occur.

In conclusion, all impacted soil was removed and disposed of off-site and the Phase Two Property has been restored to the MECP Table 3 standards for the proposed residential land use with medium-fine textured soils in a non-potable ground water condition.

Appendix B – Remediation

B5 – Approved Permits

BIN # IN: _____

DATE: OCT. 15, 2021

BIN # OUT: _____

P.O.#: _____

CUSTOMER: NEXGEN

SERVICE ADDRESS: 12148 ALBION-VAUGHAN CITY: KLEINBERG

MATERIAL LIST - check all that apply

- | | |
|--|---|
| <input checked="" type="checkbox"/> SOIL | <input checked="" type="checkbox"/> MIXED WASTE |
| <input type="checkbox"/> BRICK OR BLOCK | <input type="checkbox"/> WOOD |
| <input type="checkbox"/> CONCRETE | <input type="checkbox"/> CARDBOARD |
| <input type="checkbox"/> ASPHALT | <input type="checkbox"/> DRYWALL |
| <input type="checkbox"/> MARBLE | <input checked="" type="checkbox"/> METAL |
| <input type="checkbox"/> STRAW | <input type="checkbox"/> ROOFING |
| <input type="checkbox"/> MASTIC | <input type="checkbox"/> PLASTIC |

SERVICE:

- DELIVERY
- REMOVAL
- EXCHANGE
- RE-LOCATE
- WAIT & LOAD
- AFTER HOURS
- WAIT TIME ON SITE: _____

BIN SIZE:

- 14 YARD
- 20 YARD
- 40 YARD
- COMPACTOR
- _____

NOTES

READ CONDITIONS CAREFULLY BEFORE YOU SIGN:

Our insurance policy prohibits waste from being piled higher than the container walls. Unsafe loads will be refused. We are not responsible for damage to property when placing, removing or moving containers. We only accept 100% Non-hazardous solid waste. NO LIQUID OR HAZARDOUS WASTE. The material is the customer's responsibility until payment is made in full and the material is accepted at a M.O.E.C.C. licensed facility. Refused loads will be returned with associated fees billed accordingly.

WHITE: OFFICE CANARY: CUSTOMER

Customer not available for signature _____

Gc

DRIVER'S INITIALS



CUSTOMER'S ACKNOWLEDGEMENT



48 Millwick Drive
 Toronto, ON
 M9L 1Y3
 PH:(416) 863-9222 Fax:(416) 863-1496

001014
 Triple Waste Management Ltd.
 48 Millwick Dr.
 Toronto, ON M9L 1Y3

INVOICE
 INBOUND

TICKET#	DATE	SCALE OPERATOR	
MT169474	10/15/2021	Pedro	
TIME IN	TIME OUT	TRUCK #	CONTAINER
7:31 am	7:41 am	TRIPLEWA	
REFERENCE			
016			
GROSS WEIGHT 20,070kg Scale In			SCALE WEIGHT
TARE WEIGHT 15,960kg Scale Out			
NET WEIGHT 4,110kg			

QTY.	UNIT	DESCRIPTION	RATE	SUBTOTAL	TAX	TOTAL
4.11	mt	Non-Hazardous Solid Waste				

By signing this ticket, I accept all weights, classifications and charges contained herein, and certify this material to be 100% non-hazardous solid waste and expressly agree not to dump liquid or "hazardous waste" material as defined in Ontario Regulation 347. Millwick Transfer Limited does not assume any responsibility for any injury to persons or damage to vehicles.

As the soil generator I hereby certify, the amount excavated from the source residential property does not exceed 1,000 cubic metres; does not have any known contamination, the property has not been used to store equipment or material [fuels, pesticides, solvents, batteries, etc.] that may have caused contamination and has not come from, or adjacent to, a remediation project, commercial or industrial property. Millwick Transfer Limited reserves the right to refuse and reload material that does not meet the above criteria. Please contact the office for further information.

TOTAL
PAID
CHANGE DUE
CHEQUE #

SIGNATURE _____

Appendix B – Remediation

B6 – Certificates of Analysis or Analytical Reports from Laboratories



PALMER ENVIRONMENTAL CONSULTING
GROUP INC. (Richmond Hill)
ATTN: Samo Szakal
74 BERKELEY STREET
TORONTO ON M5V 1E3

Date Received: 15-OCT-21
Report Date: 22-OCT-21 12:54 (MT)
Version: FINAL

Client Phone: 647-795-8152

Certificate of Analysis

Lab Work Order #: L2651843
Project P.O. #: 1604603
Job Reference: 1604603
C of C Numbers: 20-953130
Legal Site Desc:

KARANPARTAP SINGH
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 95 West Beaver Creek Road, Unit 1, Richmond Hill, ON L4B 1H2 Canada | Phone: +1 905 881 9887 | Fax: +1 905 881 8062
ALS CANADA LTD Part of the ALS Group An ALS Limited Company



ANALYTICAL REPORT

Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Coarse)							
(No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine)							
(No parameter exceedances)							

ANALYTICAL REPORT

Physical Tests - SOIL

		Lab ID	L2651843-1	L2651843-2	L2651843-3	L2651843-4	L2651843-5	L2651843-6	
	Sample Date	15-OCT-21	15-OCT-21	15-OCT-21	15-OCT-21	15-OCT-21	15-OCT-21	15-OCT-21	
	Sample ID	21-SW-1	21-SW-1D	21-EW-1	21-NW-1	21-F-1	21-F-2		
Analyte	Unit	Guide Limits							
		#1	#2						
% Moisture	%	-	-	18.7	18.6	20.3	17.7	14.3	19.3

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

Volatile Organic Compounds - SOIL

Analyte	Unit	Guide Limits		Lab ID	L2651843-1	L2651843-2	L2651843-3	L2651843-4	L2651843-5	L2651843-6
		#1	#2	Sample Date	15-OCT-21	15-OCT-21	15-OCT-21	15-OCT-21	15-OCT-21	15-OCT-21
				Sample ID	21-SW-1	21-SW-1D	21-EW-1	21-NW-1	21-F-1	21-F-2
Benzene	ug/g	0.21	0.17		<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068
Ethylbenzene	ug/g	2	15		<0.018	<0.018	<0.018	<0.018	<0.018	<0.018
Toluene	ug/g	2.3	6		<0.080	<0.080	<0.080	<0.080	<0.080	<0.080
o-Xylene	ug/g	-	-		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
m+p-Xylenes	ug/g	-	-		<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Xylenes (Total)	ug/g	3.1	25		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-		108.4	93.3	99.9	103.6	104.6	98.7
Surrogate: 1,4-Difluorobenzene	%	-	-		116.2	99.6	104.8	104.0	111.0	109.8

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

- Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
- Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Hydrocarbons - SOIL

Analyte	Unit	Guide Limits		Lab ID	L2651843-1	L2651843-2	L2651843-3	L2651843-4	L2651843-5	L2651843-6
		#1	#2	Sample Date	15-OCT-21	15-OCT-21	15-OCT-21	15-OCT-21	15-OCT-21	15-OCT-21
				Sample ID	21-SW-1	21-SW-1D	21-EW-1	21-NW-1	21-F-1	21-F-2
F1 (C6-C10)	ug/g	55	65	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
F1-BTEX	ug/g	55	65	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
F2 (C10-C16)	ug/g	98	150	<10	<10	<10	<10	<10	<10	<10
F3 (C16-C34)	ug/g	300	1300	<50	<50	<50	<50	<50	<50	<50
F4 (C34-C50)	ug/g	2800	5600	<50	<50	<50	<50	<50	<50	<50
Total Hydrocarbons (C6-C50)	ug/g	-	-	<72	<72	<72	<72	<72	<72	<72
Chrom. to baseline at nC50		-	-	YES	YES	YES	YES	YES	YES	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	78.1	80.1	86.5	88.5	93.1	90.8	
Surrogate: 3,4-Dichlorotoluene	%	-	-	94.7	95.8	96.2	90.0	97.0	96.0	

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
BTX-511-HS-WT	Soil	BTEX-O.Reg 153/04 (July 2011)	SW846 8260
F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

BTX is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011 and as of November 30, 2020), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS
---------------------	------	-----------------------------	----------------------

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011 and as of November 30, 2020), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1
---------------------	------	--------------------------------	-------------

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:

1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
---------------	--------	------------------	--------------------

9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011 and as of November 30, 2020), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

20-953130

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

*mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.*

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.



Quality Control Report

Workorder: L2651843

Report Date: 22-OCT-21

Page 1 of 4

Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
 74 BERKELEY STREET
 TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX-511-HS-WT		Soil						
Batch	R5625737							
WG3641251-4	DUP	WG3641251-3						
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	21-OCT-21
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	21-OCT-21
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	21-OCT-21
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-OCT-21
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	21-OCT-21
WG3641251-2	LCS							
Benzene			64.8	MES	%		70-130	21-OCT-21
Ethylbenzene			86.3		%		70-130	21-OCT-21
m+p-Xylenes			87.7		%		70-130	21-OCT-21
o-Xylene			94.6		%		70-130	21-OCT-21
Toluene			74.8		%		70-130	21-OCT-21
WG3641251-1	MB							
Benzene			<0.0068		ug/g		0.0068	21-OCT-21
Ethylbenzene			<0.018		ug/g		0.018	21-OCT-21
m+p-Xylenes			<0.030		ug/g		0.03	21-OCT-21
o-Xylene			<0.020		ug/g		0.02	21-OCT-21
Toluene			<0.080		ug/g		0.08	21-OCT-21
Surrogate: 1,4-Difluorobenzene			118.9		%		50-140	21-OCT-21
Surrogate: 4-Bromofluorobenzene			114.2		%		50-140	21-OCT-21
WG3641251-5	MS	WG3641251-3						
Benzene			102.9		%		60-140	21-OCT-21
Ethylbenzene			94.8		%		60-140	21-OCT-21
m+p-Xylenes			99.1		%		60-140	21-OCT-21
o-Xylene			99.6		%		60-140	21-OCT-21
Toluene			93.3		%		60-140	21-OCT-21
F1-HS-511-WT		Soil						
Batch	R5625737							
WG3641251-4	DUP	WG3641251-3						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	21-OCT-21
WG3641251-2	LCS							
F1 (C6-C10)			99.97		%		80-120	21-OCT-21
WG3641251-1	MB							
F1 (C6-C10)			<5.0		ug/g		5	21-OCT-21
Surrogate: 3,4-Dichlorotoluene			112.8		%		60-140	21-OCT-21
WG3641251-5	MS	WG3641251-3						



Quality Control Report

Workorder: L2651843

Report Date: 22-OCT-21

Page 2 of 4

Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
 74 BERKELEY STREET
 TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT								
	Soil							
Batch	R5625737							
WG3641251-5	MS	WG3641251-3						
F1 (C6-C10)			101.3		%		60-140	21-OCT-21
F2-F4-511-WT								
	Soil							
Batch	R5624355							
WG3639290-3	DUP	WG3639290-5						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	19-OCT-21
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	19-OCT-21
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	19-OCT-21
WG3639290-2	LCS							
F2 (C10-C16)			84.3		%		80-120	19-OCT-21
F3 (C16-C34)			87.0		%		80-120	19-OCT-21
F4 (C34-C50)			91.4		%		80-120	19-OCT-21
WG3639290-1	MB							
F2 (C10-C16)			<10		ug/g		10	19-OCT-21
F3 (C16-C34)			<50		ug/g		50	19-OCT-21
F4 (C34-C50)			<50		ug/g		50	19-OCT-21
Surrogate: 2-Bromobenzotrifluoride			84.0		%		60-140	19-OCT-21
WG3639290-4	MS	WG3639290-5						
F2 (C10-C16)			79.9		%		60-140	19-OCT-21
F3 (C16-C34)			84.8		%		60-140	19-OCT-21
F4 (C34-C50)			90.8		%		60-140	19-OCT-21
Batch	R5626845							
WG3642228-3	DUP	WG3642228-5						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	22-OCT-21
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	22-OCT-21
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	22-OCT-21
WG3642228-2	LCS							
F2 (C10-C16)			96.9		%		80-120	22-OCT-21
F3 (C16-C34)			94.8		%		80-120	22-OCT-21
F4 (C34-C50)			94.4		%		80-120	22-OCT-21
WG3642228-1	MB							
F2 (C10-C16)			<10		ug/g		10	22-OCT-21
F3 (C16-C34)			<50		ug/g		50	22-OCT-21
F4 (C34-C50)			<50		ug/g		50	22-OCT-21
Surrogate: 2-Bromobenzotrifluoride			92.6		%		60-140	22-OCT-21



Quality Control Report

Workorder: L2651843

Report Date: 22-OCT-21

Page 3 of 4

Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

Contact: Samo Szakal

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	Soil							
Batch	R5626845							
WG3642228-4 MS		WG3642228-5						
F2 (C10-C16)			91.3		%		60-140	22-OCT-21
F3 (C16-C34)			91.3		%		60-140	22-OCT-21
F4 (C34-C50)			97.5		%		60-140	22-OCT-21
MOISTURE-WT	Soil							
Batch	R5622676							
WG3639306-3 DUP		L2651810-7						
% Moisture		5.22	5.18		%	0.9	20	17-OCT-21
WG3639306-2 LCS								
% Moisture			101.2		%		90-110	17-OCT-21
WG3639306-1 MB								
% Moisture			<0.25		%		0.25	17-OCT-21

Quality Control Report

Workorder: L2651843

Report Date: 22-OCT-21

Client: PALMER ENVIRONMENTAL CONSULTING GROUP INC. (Richmond Hill)
74 BERKELEY STREET
TORONTO ON M5V 1E3

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Contact: Samo Szakal

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

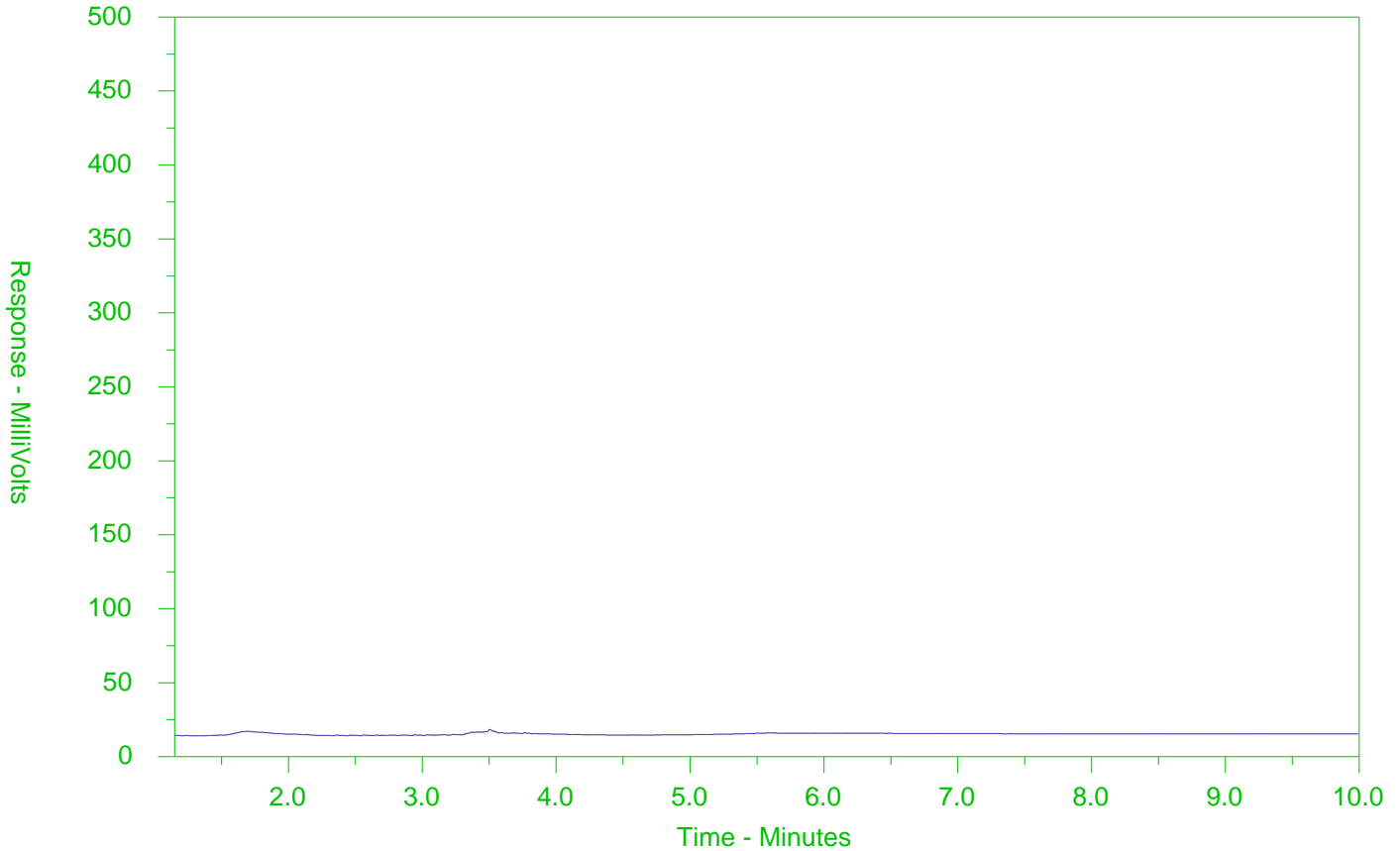
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2651843-1
 Client Sample ID: 21-SW-1



← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

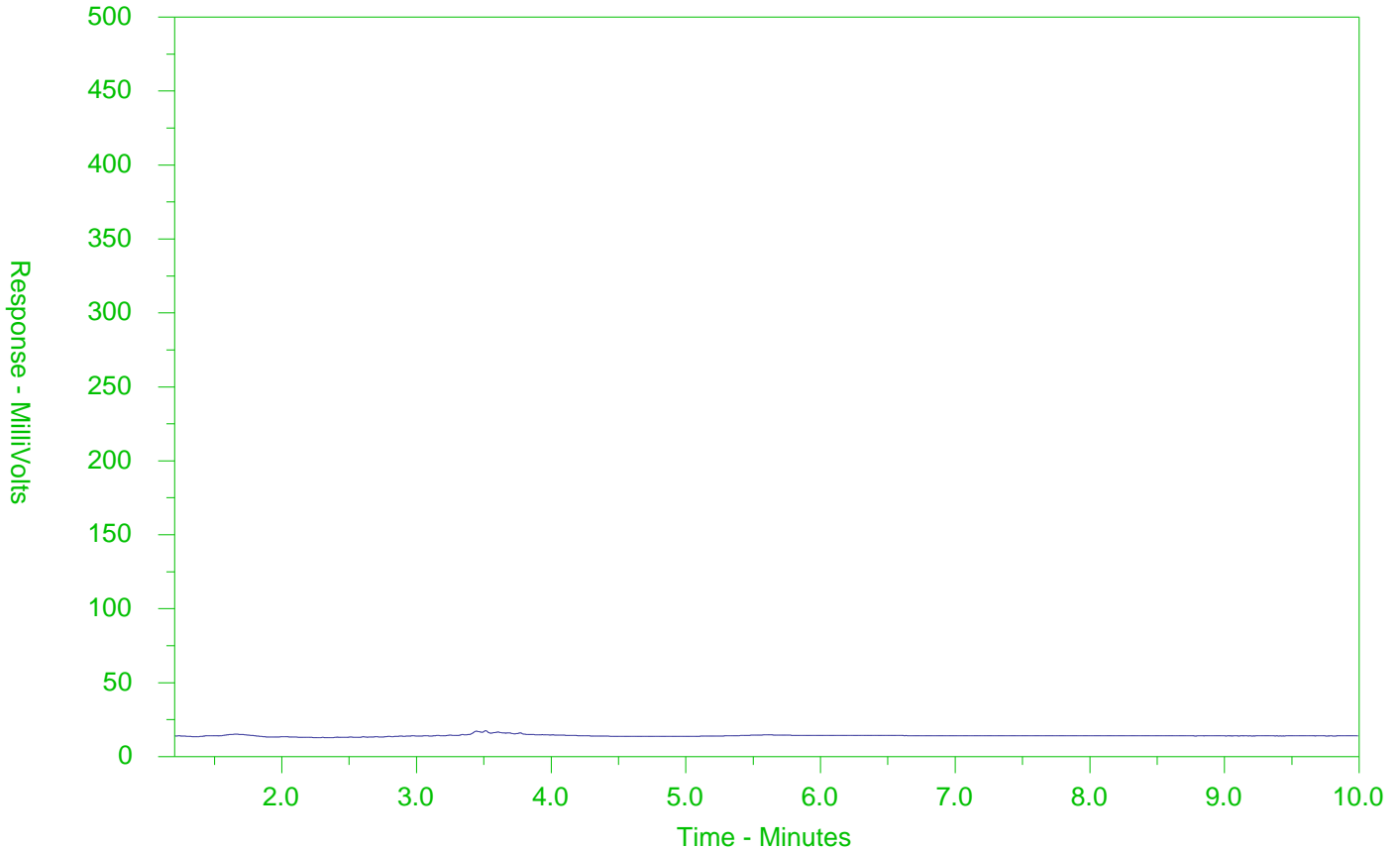
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2651843-2
 Client Sample ID: 21-SW-1D



← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

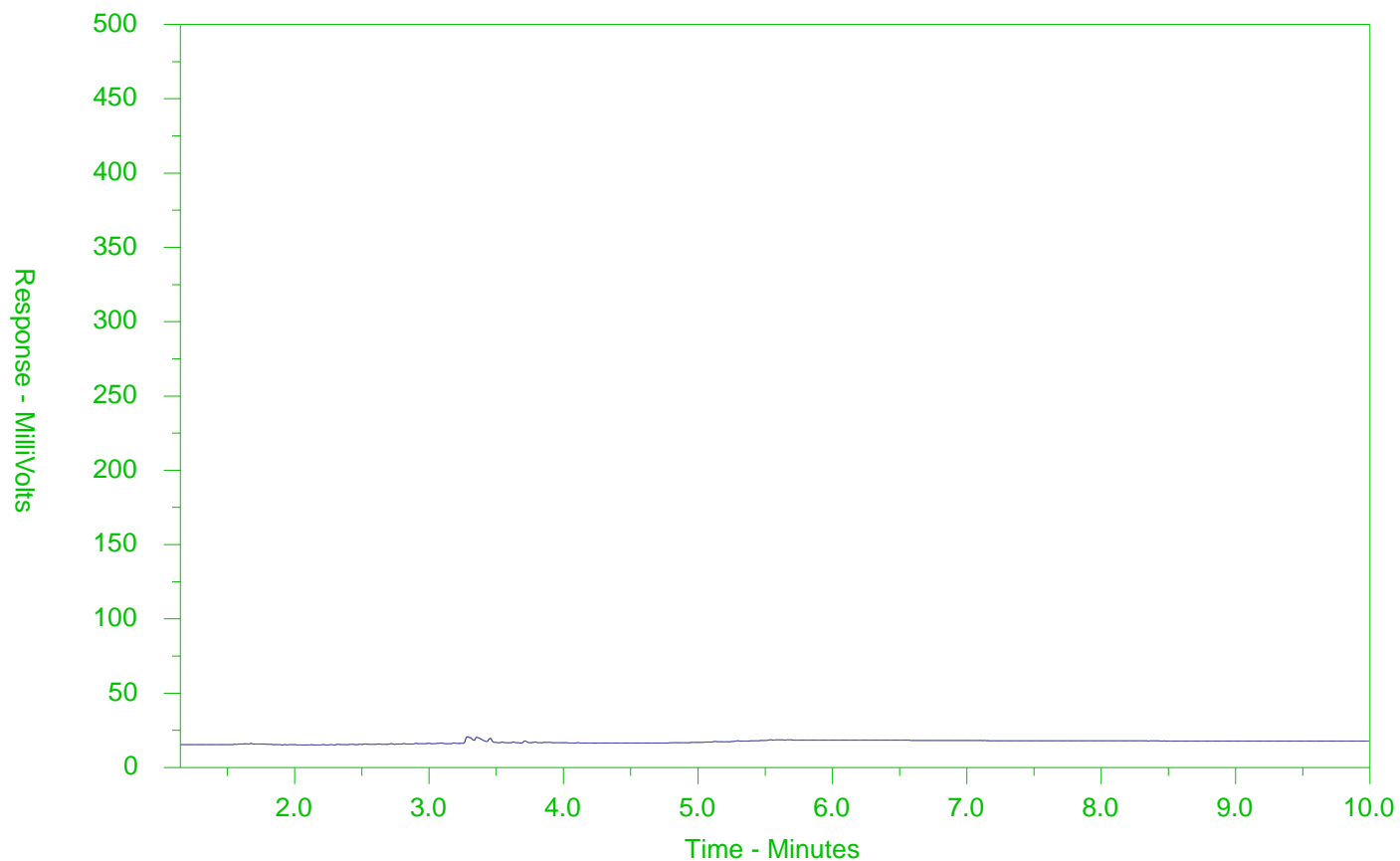
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2651843-3
 Client Sample ID: 21-EW-1



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
← Gasoline →			← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

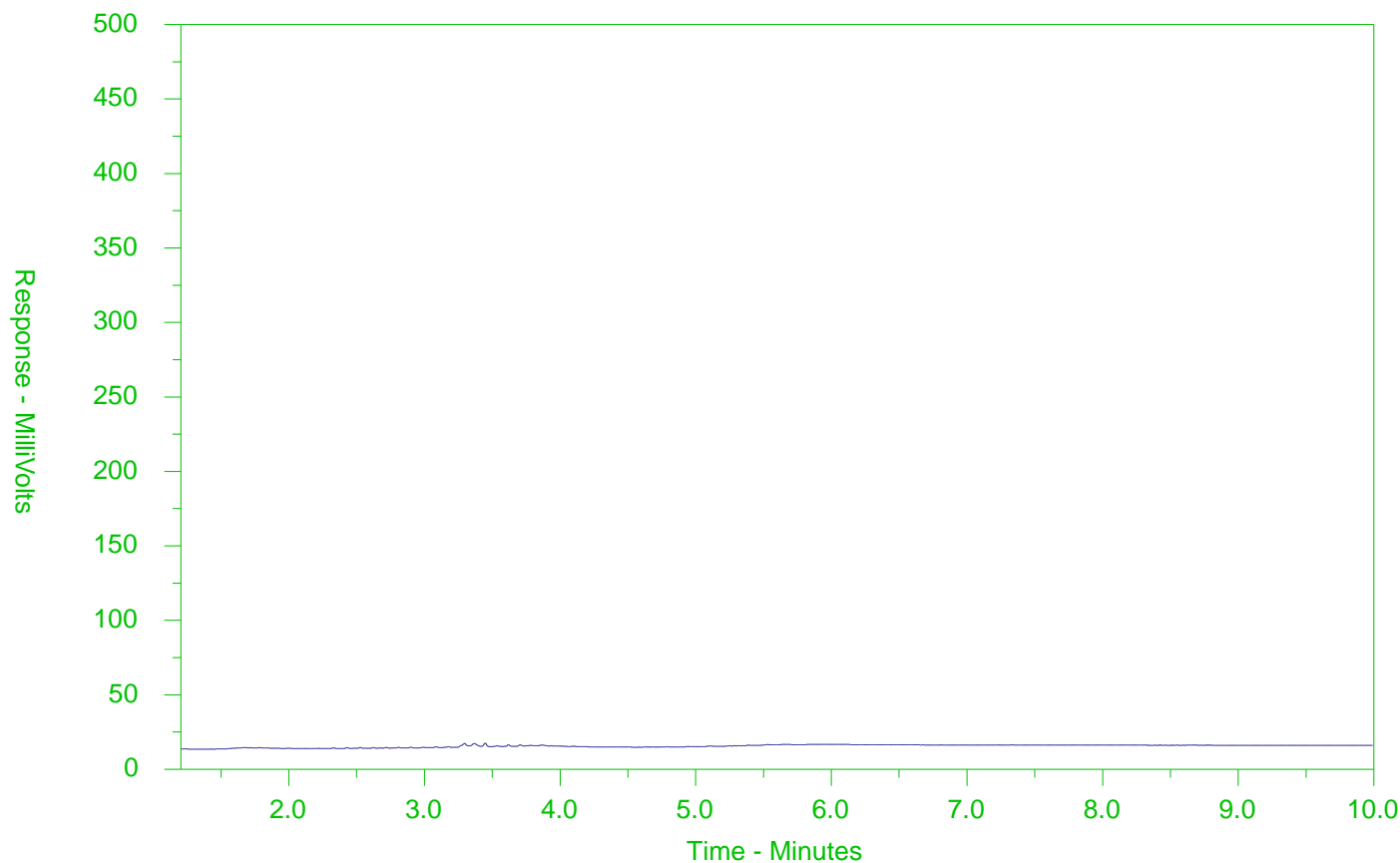
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2651843-4
 Client Sample ID: 21-NW-1



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
← Gasoline →			← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

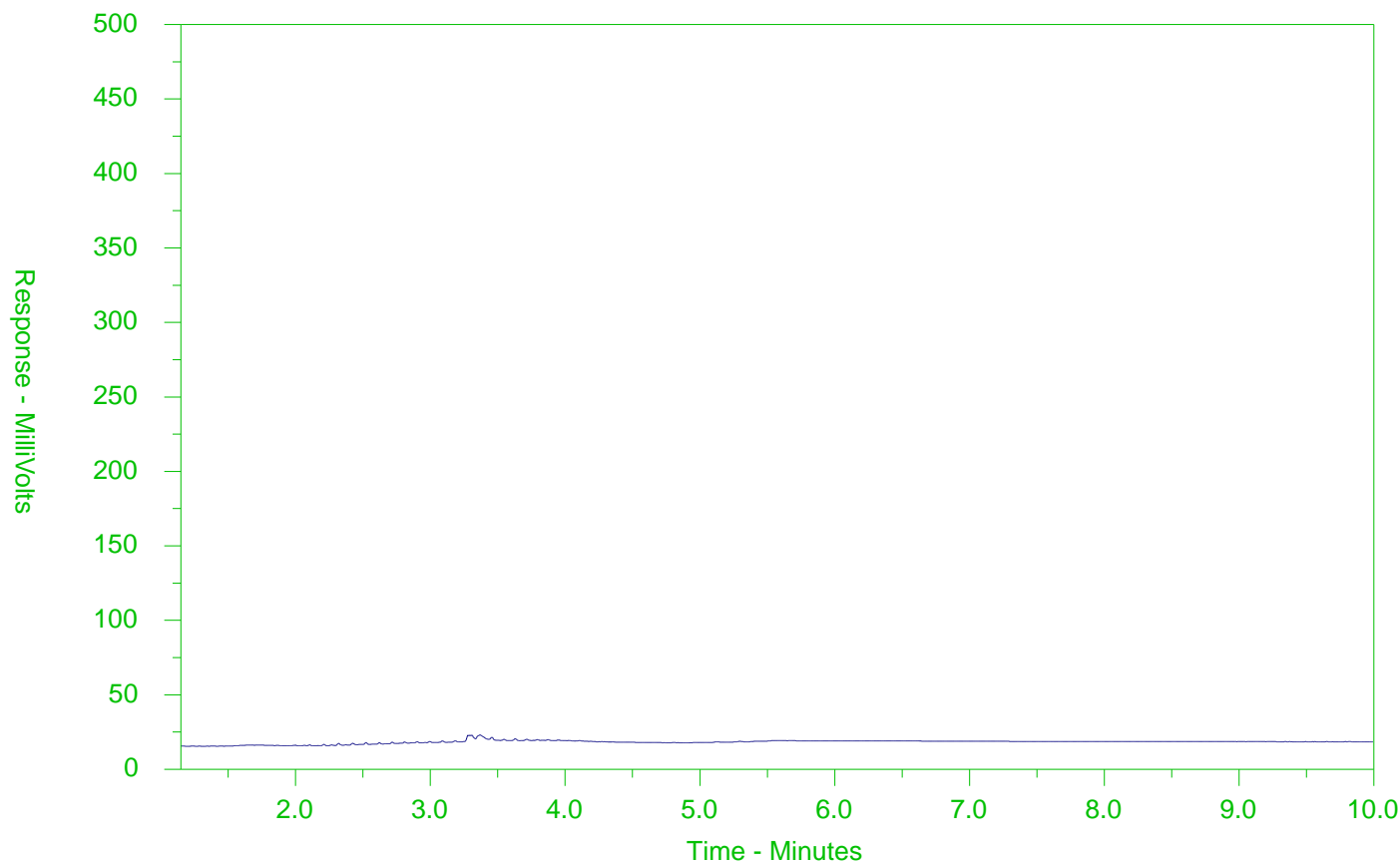
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2651843-5
 Client Sample ID: 21-F-1



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
← Gasoline →			← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

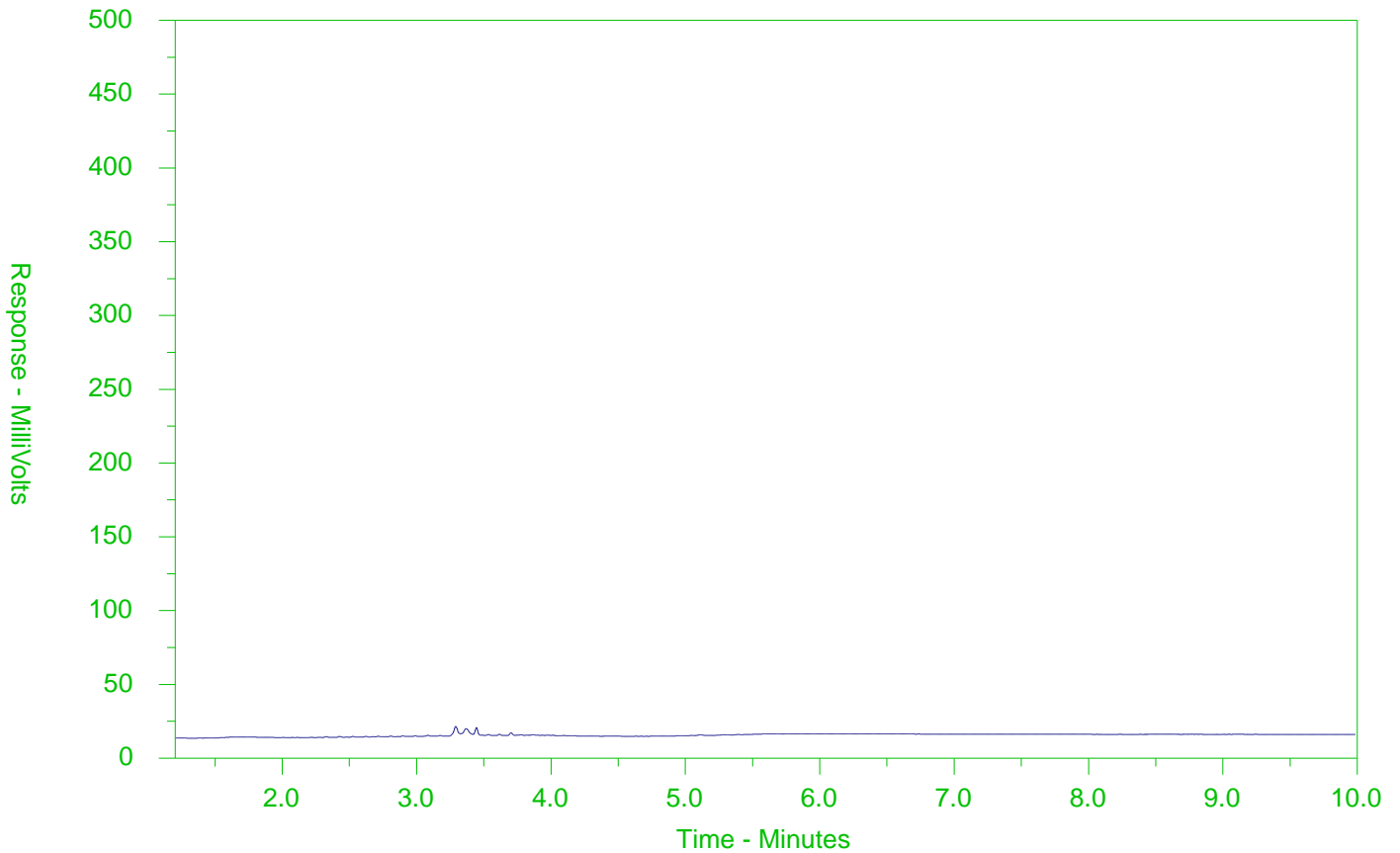
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2651843-6
 Client Sample ID: 21-F-2



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
← Gasoline →			← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Appendix C – Soil Excavated at the Phase Two Property or Excess Soil Brought to the Phase Two Property

C.1 Excess Soil Brought to RSC Property

Excess soil was not imported to the Phase Two Property for backfilling and/or regrading activities where soil was excavated in the vicinity of the garage structure.

C.2 Segregation of Soil

Excavated soil in Area 1 at the Phase Two Property was not segregated, and all excavated material was transported off-Site. Soil was not imported to the Phase Two Property as the Site will be re-graded following the demolition of the existing garage structure.

C.3 Stockpiles

Excavated soil was not stockpiled at the Phase Two Property and was excavated directly into metal bins for transport off-Site.