Phase II Environmental Site Assessment

424 Churchill Avenue North, Ottawa, Ontario

Muoi Lam Ho
Final Report

November 2022
02103035.000

ENGLOBE

Muoi Lam Ho

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Summary

Englobe Corp. (Englobe) was retained by Muoi Lam Ho (the "Client") to conduct a Phase II Environmental Site Assessment (ESA) at the property located at 424 Churchill Avenue North in Ottawa, Ontario (the "Site").

The purpose of a Phase II ESA is to confirm the presence or absence of impacts to the soil and groundwater quality at the Site in the Areas of Potential Environmental Concern (APECs) identified in the Phase I ESA. It is understood that this Phase II ESA was completed strictly for the purpose of environmental due diligence and is not intended to be utilized as supporting documentation for the filing of a Record of Site Condition (RSC) in accordance with Ontario Regulation (O. Reg.) 153/04 (as amended). The assessment was conducted in accordance with professional standards and procedures, which generally reflect the guidance provided under O. Reg. 153/04 (as amended).

The Site consists of an irregular shaped parcel of land that covers an area of approximately 1,000 m^2. It is developed with a single-storey, single-tenant commercial building with one underground basement level (Site building), and an asphalt-paved parking lot. The Site building, which has a footprint area of approximately 350 m^2, is occupied by a dry cleaning facility and laundromat (Laundry Land).

The Phase II ESA portion of the assessment was conducted in order to further evaluate the above-noted PCAs and to confirm the presence or absence of historical dry cleaning related chemicals in the soil and groundwater on Site

The field investigation consisted of the following activities:

- Obtaining underground utility clearances and locates;
- The advancement of three boreholes instrumented with groundwater monitoring wells at strategic locations on Site. Boreholes MW21-01 and MW21-02 were advanced within the parking lot in the northern portion of the Site. MW21-03 was advanced in the access driveway in the western portion of the Site. The boreholes were advanced through the overburden using hollow stem auger. Two of the boreholes (MW21-01 and MW21-03) were advanced through the encountered bedrock using tri-cone air hammer methods. Borehole MW21-02 was advanced through the bedrock using wireline diamond coring methods.
- The collection of soil and groundwater samples from the advanced boreholes/ monitoring wells, for laboratory analysis of petroleum hydrocarbon fractions F1 – F4 and VOCs.

Soil and groundwater analytical results were compared against applicable provincial standards, as set out in the following document:

- Ontario Ministry of the Environment, Conservation and Parks (MECP) "Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act", April 15, 2011. Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition. Industrial/Commercial/Community Property Use for soil (medium-fine textured soils), and All Types of Property Use for groundwater

Based on the laboratory analytical soil results, all laboratory-submitted soil samples were below the applicable MECP Table 7 standards for PHCs F1 – F4 and VOCs.

Based on the laboratory analytical groundwater results, the following exceedances of the applicable MECP Table 7 were detected in the groundwater samples collected on April 30, 2021.

- Concentrations of 1,1-dichloroethylene in the groundwater sample collected from monitoring well MW21-02 (0.66 µg/L) exceeded the applicable MECP Table 7 standard (0.5 µg/L).
- Concentrations of 1,2-dichloroethylene (cis) in the groundwater samples collected from monitoring wells MW21-01 (220 µg/L) and MW21-02 (860 µg/L) exceeded the applicable MECP Table 7 standard (1.6 µg/L).
- Concentrations of 1,2-dichloroethylene (trans) in the groundwater samples collected from monitoring wells MW21-01 (3.7 µg/L) and MW21-02 (12 µg/L) exceeded the applicable MECP Table 7 standard (1.6 µg/L).
- Concentrations of tetrachloroethylene in the groundwater samples collected from monitoring wells MW21-01 (930 µg/L), MW21-02 (890 µg/L), and MW21-03 (32 µg/L) exceeded the applicable MECP Table 7 standard (0.5 µg/L).
- Concentrations of trichloroethylene in the groundwater samples collected from monitoring wells MW21-01 (100 µg/L), MW21-02 (160 µg/L), and MW21-03 (2 µg/L) exceeded the applicable MECP Table 7 standard (0.5 µg/L).
- Concentrations of vinyl chloride in the groundwater samples collected from monitoring wells MW21-01 (7 µg/L) and MW21-02 (31 µg/L) exceeded the applicable MECP Table 7 standard (0.5 µg/L).
- Concentrations of PHC F2 (370 µg/L) and PHC F3 (750 µg/L) in the groundwater sample collected from monitoring well MW21-02 exceeded the applicable MECP Table 7 standards (150 µg/L and 500 µg/L, respectively).

Given the presence of confirmed VOC and PHC impacts within the groundwater at the monitoring well locations on Site, it is recommended that the identified groundwater contamination (exceeding the applicable MECP Table 7 standards) on Site be addressed through the application of a chemical oxidant or reductant into the groundwater.

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Table of Contents

APPENDICES

1 Introduction

1.1 General

Englobe Corp. (Englobe) was retained by Muoi Lam Ho (the "Client") to conduct a Phase II Environmental Site Assessment (ESA) at the property located at 424 Churchill Avenue North in Ottawa, Ontario (the "Site").

The purpose of a Phase II ESA is to confirm the presence or absence of impacts to the soil and groundwater quality at the Site in the Areas of Potential Environmental Concern (APECs) identified in the Phase I ESA[1]. It is understood that this Phase II ESA was completed strictly for the purpose of environmental due diligence and is not intended to be utilized as supporting documentation for the filing of a Record of Site Condition (RSC) in accordance with Ontario Regulation (O. Reg.) 153/04 (as amended). The assessment was conducted in accordance with professional standards and procedures, which generally reflect the guidance provided under O. Reg. 153/04 (as amended).

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1.2 Site Description

The Site is located at 424 Churchill Avenue North in Ottawa, Ontario, and is in an area zoned as TM H(24) - Traditional Mainstreet Zone. The Site consists of an irregular shaped parcel of land that covers an area of approximately 1,000 m^2. It is developed with a single-storey, one underground basement level, single-tenant commercial building and an asphalt parking lot. The building, which has a footprint area of approximately 350 m^2, is occupied by a dry cleaner and laundromat (Laundry Land).

Information regarding the Site and the Phase I study area (area within 250 m of Site boundaries) was compiled through a records review, Site reconnaissance and an interview of a knowledgeable Site representative. A depiction of the Phase I ESA study area is provided in Figure 2 in Appendix A.

2 Scope of Work

The scope of work for this Phase II ESA is summarized below. All work was completed in accordance with professional standards and procedures, which generally reflect the guidance provided under O. Reg. 153/04 (as amended).

The scope of work for the field program of the Phase II ESA consisted of the following activities:

- Obtaining underground utility clearances and locates;

[1] Phase I Environmental Site Assessment, 424 Churchill Avenue North, Ottawa, ON. Prepared by Englobe Corp. November 2022. Englobe File No.: 02103035.000

- The advancement of three boreholes (MW21-01 through MW21-03) instrumented with groundwater monitoring wells at strategic locations on Site. Boreholes MW21-01 and MW21-02 were advanced within the parking lot in the northern portion of the Site, while MW21-03 was advanced in the access driveway, in the western portion of the Sit; and
- The collection of soil and groundwater samples from the advanced boreholes/ monitoring wells, for laboratory analysis of petroleum hydrocarbon fractions F1 – F4 and VOCs.

3 Site Condition Standards

Based on Site conditions, the following Site Conditions Standards were considered applicable to the Site:

SOIL:

Ontario Ministry of the Environment, Conservation and Parks (MECP) "Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act", April 2011. Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition (Industrial/Commercial/Community Property Use, medium-fine textured soils).

GROUNDWATER:

MECP "Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act", April 2011. Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition (All Types of Property Use, medium-fine textured soils).

The rationale for the selection of the above-referenced Site Condition Standards was as follows:

- The Site and its adjacent properties are supplied with potable water through the City of Ottawa's municipal drinking water system; thus, the potable groundwater pathway is not considered applicable;
- The current use of the Site is commercial;
- Based on the boreholes advanced at the Site, more than 1/3 of the property consists of less than 2 metres of overburden soil overlying the bedrock. The Site is, therefore, designated as a shallow soil property as per O. Reg 153/04 section 43.1(3).
- The Site is located more than 30 metres from the nearest surface water body;
- Surface soils at the Site do not have a pH value less than 5 or greater than 9 (refer to the laboratory certificates of analysis in Appendix G); and
- A medium-fine grained soil texture was selected for comparison of analytical data to applicable provincial standards based on the results of two (2) grain size analysis on collected samples (refer to the laboratory certificates of analysis in Appendix G).

4 Methodology

4.1 Borehole Drilling

The drilling program took place on April 21 and 22, 2021 and consisted of the advancement of three boreholes (MW21-01 through MW21-03). All three boreholes were instrumented with groundwater monitoring wells. All boreholes were advanced within the parking lot area in the northern portion of the Site.

The boreholes were advanced by CCC Geotechnical & Environmental Drilling Ltd. (CCC), under the supervision of Englobe field personnel, using a CME truck-mounted drill rig. The boreholes were advanced through the overburden using hollow stem auger. The drill rig was equipped with a split spoon sampling device, which allowed for continuous soil sampling in the overburden. Two of the boreholes (MW21-01 and MW21-03) were advanced through the encountered bedrock using tri-cone air hammer methods. Borehole MW21-02 was advanced through the bedrock using wireline diamond coring methods.

Representative soil samples were recovered in 0.6 m intervals, where possible, and were then placed directly into laboratory-supplied containers.

The boreholes were advanced into the bedrock to depths of approximately 11.1 m bgs (MW21-01), 10.0 m bgs (MW21-02) and 12.8 m bgs (MW21-03).

A Site Plan illustrating the borehole/ monitoring well locations is provided in Appendix A, as Figure 4. Borehole logs are provided in Appendix E.

4.2 Soil Sampling

Soil samples were placed directly into laboratory-supplied sample jars and vials. The sample jars were filled completely with soil to minimize the amount of headspace vapour within the jars. Samples to be submitted for laboratory analysis of PHC F2 – F4 were placed in unpreserved 120 mL clear glass jars with Teflon lids, while samples to be submitted for laboratory analysis of volatile compounds (VOCs and PHC F1) were collected using disposable soil plug sample collectors supplied by the laboratory. The soil plugs were placed in laboratory-supplied vials charged with measured volumes of methanol for sample preservation.

Soil samples were logged in the field for texture, odour, moisture and visual appearance (staining).

4.3 Field Screening Methods

A portion of each collected soil sample from the advanced boreholes was placed in a polyethylene bag and was allowed to equilibrate in a warm environment prior to being screened for combustible vapour concentrations (CVCs). Combustible vapour concentrations of soil samples were measured using an RKI Eagle 2™ dual gas portable vapour meter. The RKI Eagle 2™ is equipped with a catalytic combustible gas detector (CCGD) with a detection limit of 5 parts per million (ppm), and a photoionization detector (PID) with a detection limit of 1 ppm, for the detection of PHC and VOC vapour concentrations. The vapour meter was operated in methane elimination mode and was calibrated prior to use.

Based on visual and olfactory observations, CVC measurements, and the position of the collected soil samples with respect to the inferred groundwater table, three soil samples were submitted for

laboratory analysis. The CVCs of the collected soil samples, as measured by the vapour meter, are provided in the borehole logs in Appendix E. Soil sample locations and analysis are presented in the table below.

Table 1: Summary of Soil Samples Submitted for Laboratory Analysis

Sampling Date (m/d/y)	Sample ID/Location	Sample Depth (m bgs)	Laboratory Analysis
4/21/2021	MW21-01 SS2	0.9 - 1.2	PHCs F1 - F4, VOCs
4/21/2021	MW21-02 SS2	0.9 - 1.0	PHCs F1 - F4, VOCs, pH
4/22/2021	MW21-03 SS1	0.3 - 0.8	PHCs F1 - F4, VOCs

4.4 Monitoring Well Installation

Monitoring wells were installed by CCC, in all three of the advanced boreholes, using the same drilling equipment described above. The wells were constructed with a 50 mm diameter polyvinyl chloride (PVC) pipe and a #10 slotted PVC well screen, approximately 3.0 m in length. A sand-pack consisting of clean silica gravel was placed within the annular space surrounding the screened section of the wells and to a depth of approximately 0.3 m above the top of the screen. Bentonite was placed within the remaining annular space within the bedrock and overburden. A locking J-Plug cap was placed at the top of each well pipe and a protective flush-mount steel casing was cemented at surface to protect the well. The monitoring wells were installed in accordance with Ontario Regulation (O. Reg.) 903 - Wells (as amended), made under the Ontario Water Resources Act.

The monitoring wells were developed using a bladder pump to remove any groundwater impacted by drilling activities and to reduce the amount of sediment within the wells.

4.5 Groundwater Level Measurements

Prior to sampling, groundwater levels and the presence/absence of light and dense non-aqueous phase liquids (LNAPLs and DNAPLs) were measured using a Heron Instruments™ oil/water interface probe that was thoroughly decontaminated between monitoring wells using reagent-free detergent and water, followed by a distilled water rinse. Clean, new nitrile gloves were worn during the sampling process and discarded between samples to prevent cross-contamination.

4.6 Groundwater Sampling

In order to remove any stagnant groundwater prior to sampling and reduce the amount of sediment within the wells, the installed monitoring wells were developed on April 29, 2021. Monitoring wells MW21-01 and MW21-03 were purged of approximately three well volumes of groundwater, while MW21-02 was purged of approximately 13 well volumes. All wells were developed using a downhole pump system.

On April 30, 2021 groundwater was purging/sampling was completed using low flow techniques using a submersible pump (bladder pump), operating at a low flow rate (<1 L/minute). Englobe monitored the water quality parameters using a Horiba™ U52 multi-parameter water quality meter, including pH, conductivity, dissolved oxygen (DO), temperature, turbidity and oxygen redox potential (ORP), and recorded each reading every 3 to 5 minutes during, purging prior to sampling. Groundwater samples were collected after three consecutive readings of field groundwater parameters were within 10% of

each other. Once field parameters stabilized, the flow-through cell was removed, and the groundwater sample was collected directly into laboratory-supplied sample containers.

All groundwater sample containers were labelled with the Englobe project number and site name, monitoring well identification, and sampling date. Groundwater samples were then placed in clean laboratory-supplied coolers containing ice made from potable water, to store and maintain the samples at a temperature below 10°C.

Prior to well development, purging, and the collection of every groundwater sample, the submersible pump, and other sampling equipment was decontaminated with Alconox brand phosphate-free detergent and distilled water with a distilled water rinse. New powder-free nitrile gloves were donned by the Englobe technician prior to the handling of each sample, to eliminate cross-contamination.

Groundwater sample locations and analyses are presented below.

Table 2: Summary of Groundwater Samples Submitted for Laboratory Analysis

Sampling Date (m/d/y)	Sample ID/ Location	Laboratory Analysis
04/30/2021	MW21-01	PHCs F1 - F4, VOCs
	MW21-02	PHCs F1 - F4, VOCs
	MW21-03	PHCs F1 - F4, VOCs

4.7 Analytical Testing

Soil and groundwater samples were submitted to Bureau Veritas (BV Labs) of Ottawa, Ontario, for chemical analysis. Bureau Veritas is a Canadian Association for Laboratory Accreditation Inc. (CALA) accredited laboratory

4.8 Residue Maintenance

All soil cuttings resulting from drilling activities, purge water resulting from well development and purging activities, and fluids resulting from equipment decontamination were appropriately contained and secured on Site. Proper disposal is to be coordinated by Englobe.

4.9 Quality Assurance / Quality Control

Englobe maintains a standard Quality Assurance/ Quality Control (QA/QC) program for environmental investigations. All project documentation was maintained and controlled by the appointed field supervisor. All borehole advancement and soil and groundwater sampling were completed in accordance with industry standards, and applicable provincial standards/guidelines.

Collected soil and groundwater samples during the investigation were placed in ice-packed coolers prior to being shipped, under a Chain of Custody protocol, to BV Labs for chemical analysis.

The potential for cross-contamination between samples was minimized by, where applicable, washing sampling tools with reagent-free detergent and water, followed by rinsing with distilled water, and by wearing new disposable nitrile gloves prior to the handling of each sample. All field screening instruments (i.e. RKI Eagle 2™ vapour meter) were calibrated prior to arriving on Site

5 Field Investigation Results

5.1 Stratigraphy

Based on the soil data collected during the advancement of the boreholes, the general soil stratigraphy at the Site is characterized by a surficial asphalt layer underlain by a fill material, mainly consisting of silty sand with trace to some gravel, which is underlain by sandy silt. Underlying the overburden material at shallow depths was bedrock. The bedrock was confirmed at the MW21-02 location as Limestone. Boreholes MW21-01 and MW21-03 were advanced using tri-cone air drilling techniques; therefore, the bedrock type could not be verified at these locations.

Detailed descriptions and soil stratigraphy for each borehole are provided in the borehole logs in Appendix E.

5.2 Groundwater Field Measurements

As previously noted, Englobe field personnel collected groundwater level measurements from the installed monitoring wells prior to groundwater sampling activities. The measured groundwater levels are presented in the table below.

Table 3: Groundwater Levels

Monitoring Well ID	Groundwater Depth(1)
MW21-01	6.46 (April 29, 2021)
MW21-02	6.80 (April 30, 2021)
MW21-03	6.92 (April 29, 2021)

Note: (1) Groundwater depths measured in metres below ground surface

5.3 Field Observations

There was no visual or olfactory evidence of petroleum or other impacts observed in any of the soil samples collected. Hydrocarbon odours were noted at MW21-02 and MW21-03 during well development. No sheen or free-phase liquid petroleum hydrocarbons or dense non-aqueous phase liquids were noted during the drilling or sampling activities.

5.4 Soil Texture

Two soil samples (MW21-01 SS2, and MW21-03 SS1) were submitted to Bureau Veritas (BV Labs) of Ottawa, Ontario for grain size analysis. Based on the results, the submitted samples contain approximately 80 percent by mass of particles smaller than 75 micrometers in mean diameter. Therefore, fine-medium grained soil texture was selected for comparison of analytical data to applicable provincial standards. The laboratory certificates of analysis are provided in Appendix G.

5.5 Soil Quality

Analytical results of the soil samples submitted for laboratory analysis were compared against the applicable MECP Table 7 standards for Industrial/Commercial/Community Property Use and medium-fine textured soils.

Based on the laboratory analytical results, concentrations of all analyzed parameters (PHCs F1 – F4 and VOCs) in the laboratory-submitted soil samples met the applicable MECP Table 7 standards.

Concentrations of Tetrachloroethylene were detected in the three submitted soil samples, MW21-01 SS2 (0.9-1.2 m), MW21-02 SS2 (0.9-1.0 m), and MW21-03 SS1 (0.3-0.8m), below the applicable MECP Table 7 standards.

Concentrations of PHCs were also detected in two submitted soil samples, MW21-02 SS2 (F3 and F4), and MW21-03 SS1 (F4), below the applicable MECP Table 7 standards.

Concentrations of all other analyzed parameters were below the laboratory reportable detection limits (RDLs).

Refer to Table F-1, in Appendix F, for the soil analytical results. The laboratory certificates of analysis are provided in Appendix G.

5.6 Groundwater Quality

Analytical results of the groundwater samples submitted for laboratory analysis were compared against the applicable MECP Table 7 standards for All Types of Property Use.

Based on the laboratory analytical results, the following exceedances of the applicable MECP Table 7 were detected in the groundwater samples collected on April 30, 2021:

- Concentrations of 1,1- dichloroethylene in the groundwater sample collected from monitoring well MW21-02 (0.66 µg/L) exceeded the applicable MECP Table 7 standard (0.5 µg/L)
- Concentrations of 1,2-dichloroethylene (cis) in the groundwater samples collected from monitoring wells MW21-01 (220 µg/L) and MW21-02 (860 µg/L) exceeded the applicable MECP Table 7 standard (1.6 µg/L)
- Concentrations of 1,2-dichloroethylene (trans) in the groundwater samples collected from monitoring wells MW21-01 (3.7 µg/L) and MW21-02 (12 µg/L) exceeded the applicable MECP Table 7 standard (1.6 µg/L)
- Concentrations of tetrachloroethylene in the groundwater samples collected from monitoring wells MW21-01 (930 µg/L), MW21-02 (890 µg/L), and MW21-03 (32 µg/L) exceeded the applicable MECP Table 7 standard (0.5 µg/L)
- Concentrations of trichloroethylene in the groundwater samples collected from monitoring wells MW21-01 (100 µg/L), MW21-02 (160 µg/L), and MW21-03 (2 µg/L) exceeded the applicable MECP Table 7 standard (0.5 µg/L)
- Concentrations of vinyl chloride in the groundwater samples collected from monitoring wells MW21-01 (7 µg/L) and MW21-02 (31 µg/L) exceeded the applicable MECP Table 7 standard (0.5 µg/L)
- Concentrations of PHC F2 (370 µg/L) and PHC F3 (750 µg/L) in the groundwater sample collected from monitoring well MW21-02 exceeded the applicable MECP Table 7 standards (150 µg/L and 500 µg/L, respectively)

Refer to Table F-2, in Appendix F, for the groundwater analytical results. The laboratory certificates of analysis are provided in Appendix G.

6 Conclusions and Recommendations

The Phase II ESA portion of the assessment was conducted in order to further evaluate the above-noted potential environmental concern and to confirm the presence or absence of historical dry cleaning related chemicals in the soil and groundwater on Site. The field program consisted of the advancement of three boreholes, instrumented with groundwater monitoring wells, at select locations on Site. A total of three soil samples and three groundwater samples (one soil and one groundwater sample from each borehole/ monitoring well) collected during the investigation were submitted for laboratory analysis of PHCs F1 – F4 and VOCs

Given the presence of confirmed VOC and PHC impacts within the groundwater at the monitoring well locations on Site, it is recommended that the identified groundwater contamination (exceeding the applicable MECP Table 7 standards) on Site be addressed through the application of a chemical oxidant or reductant into the groundwater.

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The assessment should not be considered a comprehensive audit that covers and eliminates all present, past and future risks. The information presented in this Report is based on data collected during the completion of the monitoring conducted. The overall site/building/subsurface/groundwater conditions were extrapolated based on information collected at specific sampling locations. Professional judgement was exercised in gathering and analyzing data; however, no monitoring method can completely eliminate the possibility of obtaining partially imprecise or incomplete information; it can only reduce the possibility to an acceptable level. Consequently, the actual site/building/subsurface/groundwater conditions between the sampling points may vary. In addition, analysis has been carried out only for the chemical and physical parameters identified, and it should not be inferred that other chemical species or physical conditions are not present.

It is recommended practice that the Company be retained during subsequent phases of the project, to confirm that the conditions throughout the site do not deviate materially from those encountered throughout the sampling program.

Appendix A
Figures

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Note

1. This drawing shall be read in conjunction with the associated technical report.

Revision	Date	Issue	Approval
A	05/10/2021	Preliminary	

Client: GSI Group Cold Storage Ltd.

Site: 424 Churchill Avenue North, Ottawa, ON

ENGLOBE

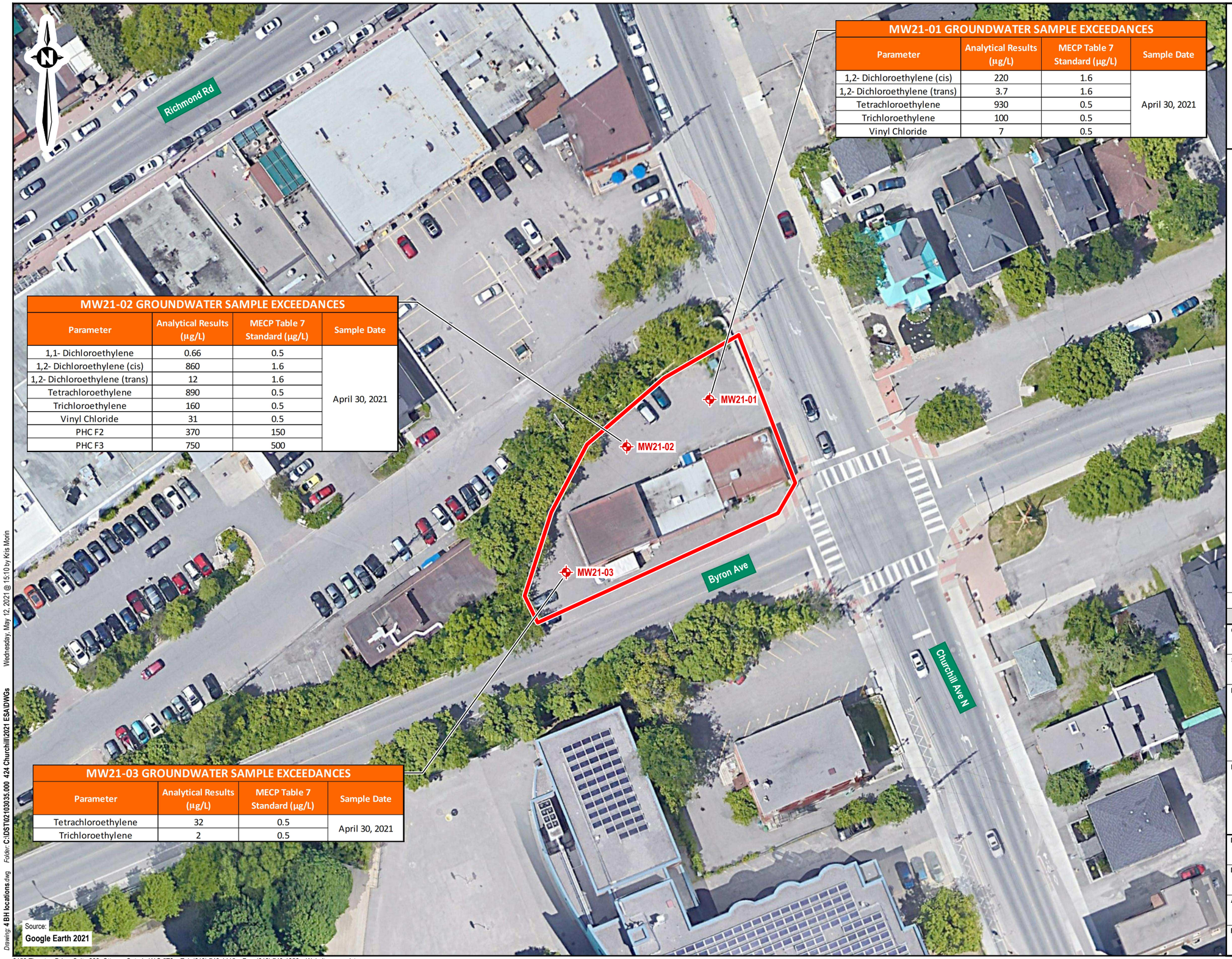
Report Title: Phase I Environmental Site Assessment

Drawing Title: Site Location Map

Designed By: R.V.T	Date: May 2021
Drawn By: K.M.	Project No.: 02103035.000
Approved By:	Figure No.: 1
Scale: As shown	

Drawing: 1 site location.dwg Folder: C:\DST\02103035.000 424 Churchill\2021 ESA\DWGs Wednesday, May 12, 2021 @ 15:04 by Kris Morin

2150 Thurston Drive, Suite 203, Ottawa, Ontario K1G 5T9 Tel: (613) 748-1415 Fax: (613) 748-1356 Website: www.dstgroup.com



MW21-01 GROUNDWATER SAMPLE EXCEEDANCES

Parameter	Analytical Results (µg/L)	MECP Table 7 Standard (µg/L)	Sample Date
1,2- Dichloroethylene (cis)	220	1.6	April 30, 2021
1,2- Dichloroethylene (trans)	3.7	1.6	
Tetrachloroethylene	930	0.5	
Trichloroethylene	100	0.5	
Vinyl Chloride	7	0.5	

MW21-02 GROUNDWATER SAMPLE EXCEEDANCES

Parameter	Analytical Results (µg/L)	MECP Table 7 Standard (µg/L)	Sample Date
1,1- Dichloroethylene	0.66	0.5	April 30, 2021
1,2- Dichloroethylene (cis)	860	1.6	
1,2- Dichloroethylene (trans)	12	1.6	
Tetrachloroethylene	890	0.5	
Trichloroethylene	160	0.5	
Vinyl Chloride	31	0.5	
PHC F2	370	150	
PHC F3	750	500	

MW21-03 GROUNDWATER SAMPLE EXCEEDANCES

Parameter	Analytical Results (µg/L)	MECP Table 7 Standard (µg/L)	Sample Date
Tetrachloroethylene	32	0.5	April 30, 2021
Trichloroethylene	2	0.5	

Source:
Google Earth 2021

ENGLOBE

Note

1. This drawing shall be read in conjunction with the associated technical report.

Legend

- Approximate site limits
- Approximate location of borehole / monitoring well

1:600

0 10 20 30 m

0 1:1 5 cm

Scale accurate when printed at 100% using paper size ANSI full bleed B (11.0 x 17.0 Inches)

Revision	Date	Issue	Approval
A	05/10/2021	Preliminary	

Client
GSI Group Cold Storage Ltd.

Site
424 Churchill Avenue North, Ottawa, ON

Report Title
Phase II Environmental Site Assessment

Drawing Title
Borehole Location Plan and Groundwater Exceedances

Designed By	Scale
R.V.T	As shown
Drawn By	**Date**
K.M.	May 2021
Approved By	**Project No.**
	02103035.000

Figure No.
2

Drawing: 4 BH locations.dwg Folder: C:\DST\02103035.000 424 Churchill\2021 ESA\DWGs Wednesday, May 12, 2021 @ 15:10 by Kris Morin

2150 Thurston Drive, Suite 203, Ottawa, Ontario K1G 5T9 Tel: (613) 748-1415 Fax: (613) 748-1356 Website: www.dstgroup.com

Appendix B
Borehole Logs

ENGLOBE

Page 1 of 1

MW21-01

DST Project No. 02103035.000
Client GSI Group Cold Storage Ltd.
Project Phase II Environmental Site Assessment
Address 424 Churchill Avenue North, Ottawa, ON

Date April 21, 2021
Method Hollow Stem Auger & Tri-cone air hammer

Depth (m)	Elevation (m)	Water level (mREL)	Well construction	Depth (m) / Elevation (m)	Symbol	Material Description	Sample #	Sample Type	'N' Value/RQD %	CCGD / PID Reading: CCGD	CCGD / PID Reading: PID	Analysis: PAHs	Analysis: PHCs	Analysis: Metals	Analysis: VOCs	Analysis: pH	Remarks
				0		ASPHALT - (140 mm thickness)	GS1										
				0.1		FILL - Silty sand, trace gravel, loose, brown, damp											
0.5				0.5		SANDY SILT - trace gravel, compact, brown, damp	SS1		6	25 ppm	0 ppm						
1.0							SS2		50+	210 ppm	1 ppm		✓		✓		
1.5				1.2		BEDROCK - Borehole advanced into bedrock using Tri-cone air drilling methods (bedrock type and quality could not be confirmed)											
2.0																	
2.5																	
3.0																	
3.5																	
4.0																	
4.5																	
5.0																	
5.5																	
6.0																	
6.5		▼															Groundwater level at 6.46 mbgs on April 30, 2021.
7.0																	
7.5																	
8.0																	
8.5																	
9.0																	
9.5																	
10.0																	
10.5																	
11.0						End of Borehole at 11.1 m.											
11.5																	
12.0																	
12.5																	

Page 1 of 1

MW21-02

DST Project No. 02103035.000
Client GSI Group Cold Storage Ltd.
Project Phase II Environmental Site Assessment
Address 424 Churchill Avenue North, Ottawa, ON

Date April 21, 2021
Method Hollow Stem Auger & Diamond coring

Depth (m)	Elevation (m)	Water level (mREL)	Well construction	Depth (m) Elevation (m)	Symbol	Material Description	Sample #	Sample Type	'N' Value/RQD %	CCGD / PID Reading: CCGD	CCGD / PID Reading: PID	Analysis: PAHs	Analysis: PHCs	Analysis: Metals	Analysis: VOCs	Analysis: pH	Remarks
0				0		ASPHALT - (120 mm thickness)	GS1										
				0.1		FILL - Sand, some gravel, compact, brown, damp												
0.5				0.5		SANDY SILT - trace gravel, compact, brown, damp,	SS1		11	360 ppm	1 ppm							
1.0							SS2		50+	710 ppm	3 ppm		✓		✓	✓	
				1		LIMESTONE - highly weathered and fractured, grey												
						Auger refusal encountered at 1.4 mbgs												
1.5				1.4		LIMESTONE - poor quality based on RQD, slightly weathered, strong, medium to thickly bedded												
2.0							RC1		43								
2.5																	
3.0																	
3.5							RC2		37								
4.0				3.8		- 0.1m thick shale bed												
4.5				4.5		- fair quality based on RQD, fresh												
5.0							RC3		68								
5.5																	
6.0																	
				6.1		- excellent quality based on RQD												
6.5																	
7.0		▼					RC4		93								Groundwater level at 6.80 mbgs on April 29, 2021.
7.5																	
8.0							RC5		92								
8.5																	
9.0				9		- fair quality based on RQD												
9.5							RC6		50								
10.0						End of Borehole at 10.0 m.												
10.5																		
11.0																		
11.5																		
12.0																		
12.5																		

Page 1 of 1

MW21-03

DST Project No. 02103035.000
Client GSI Group Cold Storage Ltd.
Project Phase II Environmental Site Assessment
Address 424 Churchill Avenue North, Ottawa, ON

Date April 22, 2021
Method Hollow Stem Auger & Tri-cone air hammer

Depth (m)	Elevation (m)	Water level (mREL)	Well construction	Depth (m) Elevation (m)	Symbol	Material Description	Sample #	Sample Type	'N' Value/RQD %	CCGD / PID Reading: CCGD	CCGD / PID Reading: PID	Analysis (Submitted for laboratory analysis): PAHs	PHCs	Metals	VOCs	pH	Remarks
0				0		ASPHALT - (140 mm thickness)	GS1										
				0.1		FILL - Silty sand, trace gravel, brown, compact, damp											
0.5				0.3		SANDY SILT - trace gravel, brown, compact, damp	SS1		50+	5 ppm	0 ppm		✓		✓		
1.0				0.8		BEDROCK - Borehole advanced into bedrock using Tri-cone air drilling methods (bedrock type and quality could not be confirmed)											
1.5																	
2.0																	
2.5																	
3.0																	
3.5																	
4.0																	
4.5																	
5.0																	
5.5																	
6.0																	
6.5																	
7.0		▼															Groundwater level at 6.92 mbgs on April 30, 2021.
7.5																	
8.0																	
8.5																	
9.0																	
9.5																	
10.0																	
10.5																	
11.0																	
11.5																	
12.0																	
12.5						End of Borehole at 12.8 m.											

Appendix C
Laboratory Analytical Results

ENGLOBE

Table F-1 - Petroleum Hydrocarbons and Volatile Organic Compounds in Soil

Parameter	MECP Table 7 Criteria	Units	RDL	Sample ID		
				Sample Depth (metres below ground surface)		
				Sample Collection Date (yyyy-mm-dd)		
				MW21-01 SS2	MW21-02 SS2	MW21-03 SS1
				0.9 - 1.2	0.9 - 1.0	0.3 - 0.8
				2021-04-21	2021-04-21	2021-04-22
pH	NV	NV	NV	NV	7.86	NV
PHCs						
F1 (C6-C10)	65	ug/g	10	<10	<10	<10
F2 (C10-C16)	250	ug/g	10	<10	<10	<10
F3 (C16-C34)	2,500	ug/g	50	<50	100	<50
F4 (C34-C50)	6,600	ug/g	50	<50	290	95
F4G (gravimetric)	6,600	ug/g	100	NV	1100	NV
VOCs						
Acetone	28	ug/g	0.50	<0.50	<0.50	<0.50
Benzene	0.4	ug/g	0.02	<0.020	<0.020	<0.020
Bromodichloromethane	18	ug/g	0.05	<0.050	<0.050	<0.050
Bromoform	1.7	ug/g	0.05	<0.050	<0.050	<0.050
Bromomethane	0.05	ug/g	0.05	<0.050	<0.050	<0.050
Carbon Tetrachloride	1.5	ug/g	0.05	<0.050	<0.050	<0.050
Chlorobenzene	2.7	ug/g	0.05	<0.050	<0.050	<0.050
Chloroform	0.18	ug/g	0.05	<0.050	<0.050	<0.050
Dibromochloromethane	13	ug/g	0.05	<0.050	<0.050	<0.050
Dichlorodifluoromethane	25	ug/g	0.05	<0.050	<0.050	<0.050
1,2-Dichlorobenzene	8.5	ug/g	0.05	<0.050	<0.050	<0.050
1,3-Dichlorobenzene	12	ug/g	0.05	<0.050	<0.050	<0.050
1,4-Dichlorobenzene	0.84	ug/g	0.05	<0.050	<0.050	<0.050
1,1-Dichloroethane	21	ug/g	0.05	<0.050	<0.050	<0.050
1,2-Dichloroethane	0.05	ug/g	0.05	<0.050	<0.050	<0.050
1,1-Dichloroethylene	0.48	ug/g	0.05	<0.050	<0.050	<0.050
cis-1,2-Dichloroethylene	37	ug/g	0.05	<0.050	<0.050	<0.050
trans-1,2-Dichloroethylene	9.3	ug/g	0.05	<0.050	<0.050	<0.050
1,2-Dichloropropane	0.68	ug/g	0.05	<0.050	<0.050	<0.050
cis-1,3-Dichloropropene	NV	ug/g	0.03	<0.030	<0.030	<0.030
trans-1,3-Dichloropropene	NV	ug/g	0.04	<0.040	<0.040	<0.040
1,3-Dichloropropene (cis+trans)	0.21	ug/g	0.05	<0.050	<0.050	<0.050
Ethylbenzene	19	ug/g	0.02	<0.020	<0.020	<0.020
Ethylene Dibromide	0.05	ug/g	0.05	<0.050	<0.050	<0.050
Hexane (n-Hexane)	88	ug/g	0.05	<0.050	<0.050	<0.050
Methyl Ethyl Ketone	88	ug/g	0.5	<0.5	<0.5	<0.5
Methyl Isobutyl Ketone	210	ug/g	0.5	<0.5	<0.5	<0.5
Methyl tert-butyl ether (MTBE)	3.2	ug/g	0.05	<0.05	<0.05	<0.05
Methylene Chloride (Dichloromethane)	2	ug/g	0.05	<0.05	<0.05	<0.05
Styrene	43	ug/g	0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	0.11	ug/g	0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	0.094	ug/g	0.05	<0.05	<0.05	<0.05
Toluene	78	ug/g	0.02	<0.02	<0.02	<0.02
Tetrachloroethylene	21	ug/g	0.05	0.72	0.27	0.32
1,1,1-Trichloroethane	12	ug/g	0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	0.11	ug/g	0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.61	ug/g	0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	5.8	ug/g	0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.25	ug/g	0.02	<0.02	<0.02	<0.02
p+m- Xylene	NV	ug/g	0.02	<0.02	<0.02	<0.02
o-Xylene	NV	ug/g	0.02	<0.02	<0.02	<0.02
Xylenes, Total	30	ug/g	0.02	<0.02	<0.02	<0.02

Notes	
MECP Table 7 Criteria	Table 7, Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Industrial/Commercial/Community Property Use, fine-medium textured soil, Ontario Ministry of the Environment "Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act"* (MECP July 2011).
RDL	Reportable Detection Limit
NV	No Criteria/RDL Value
'<'	Values is less than the RDL
Exceeds MECP Table 7 Criteria	**Result**

Table F-2 - Petroleum Hydrocarbons and Volatile Organic Compounds in Groundwater

Parameter	MECP Table 7 Criteria	Units	RDL MW21-01 and MW21-02*	RDL MW21-03	Sample ID		
					Sample Collection Date (yyyy-mm-dd)		
					MW21-01	MW21-02	MW21-03
					2021-04-30	2021-04-30	2021-04-30
PHCs							
F1 (C6-C10)	420	µg/L	130	25	320	340	<25
F2 (C10-C16)	150	µg/L	100	100	<100	**370**	<100
F3 (C16-C34)	500	µg/L	200	200	240	**750**	<200
F4 (C34-C50)	500	µg/L	200	200	<200	<200	<200
Reached Baseline at C50	NV	NV	NV	NV	Yes	Yes	Yes
VOCs							
Acetone	100000	µg/L	50	10	<50	<50	<10
Benzene	0.5	µg/L	0.20	0.2	<0.20	<0.20	<0.2
Bromodichloromethane	67000	µg/L	0.5	0.5	<0.5	<0.5	<0.5
Bromoform	5	µg/L	5.0	1.0	<5.0	<5.0	<1.0
Bromomethane	0.89	µg/L	0.5	0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	0.2	µg/L	0.2	0.2	<0.2	<0.2	<0.2
Chlorobenzene	140	µg/L	0.2	0.2	<0.2	<0.2	<0.2
Chloroform	2	µg/L	1.0	0.2	<1.0	<1.0	<0.2
Dibromochloromethane	65000	µg/L	0.5	0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	3500	µg/L	5.0	1.0	<5.0	<5.0	<1.0
1,2-Dichlorobenzene	150	µg/L	0.5	0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	7600	µg/L	0.5	0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	0.5	µg/L	0.5	0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	11	µg/L	0.2	0.2	<0.2	<0.2	<0.2
1,2-Dichloroethane	0.5	µg/L	0.5	0.5	<0.5	<0.5	<0.5
1,1-Dichloroethylene	0.5	µg/L	0.2	0.2	<0.2	**0.66**	<0.2
cis-1,2-Dichloroethylene	1.6	µg/L	2.5	0.5	**220**	**860**	1.5
trans-1,2-Dichloroethylene	1.6	µg/L	2.5	0.5	**3.7**	**12**	<0.5
1,2-Dichloropropane	0.58	µg/L	0.2	0.2	<0.2	<0.2	<0.2
cis-1,3-Dichloropropene	NV	µg/L	0.3	0.3	<0.3	<0.3	<0.3
trans-1,3-Dichloropropene	NV	µg/L	0.4	0.4	<0.4	<0.4	<0.4
1,3-Dichloropropene (cis+trans)	0.5	µg/L	0.4	0.4	<0.4	<0.4	<0.4
Ethylbenzene	54	µg/L	0.2	0.2	<0.2	<0.2	<0.2
Ethylene Dibromide	0.2	µg/L	0.2	0.2	<0.2	<0.2	<0.2
Hexane (n-Hexane)	5	µg/L	5.0	1.0	<5.0	<5.0	<1.0
Methyl Ethyl Ketone	21000	µg/L	50	10	<50	<50	<10
Methyl Isobutyl Ketone	5200	µg/L	25	5.0	<25	<25	<5.0
Methyl tert-butyl ether (MTBE)	15	µg/L	2.5	0.5	<2.5	<2.5	<0.5
Methylene Chloride (Dichloromethane)	26	µg/L	2.0	2.0	<2.0	<2.0	<2.0
Styrene	43	µg/L	0.5	0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	1.1	µg/L	0.5	0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.5	0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	0.5	µg/L	1.0	0.2	**930**	**890**	**32**
Toluene	320	µg/L	0.2	0.2	<0.2	<0.2	<0.2
1,1,1-Trichloroethane	23	µg/L	0.2	0.2	<0.2	<0.2	<0.2
1,1,2-Trichloroethane	0.5	µg/L	0.5	0.5	<0.5	<0.5	<0.5
Trichloroethylene	0.5	µg/L	1.0	0.2	**100**	**160**	**2**
Trichlorofluoromethane	2000	µg/L	2.5	0.5	<2.5	<2.5	<0.5
Vinyl Chloride	0.5	µg/L	1.0	0.2	**7**	**31**	<0.2
p+m-Xylene	NV	µg/L	1.0	0.2	<1.0	<1.0	<0.2
o-Xylene	NV	µg/L	1.0	0.2	<1.0	<1.0	<0.2
Total Xylenes	72	µg/L	1.0	0.2	<1.0	<1.0	<0.2

Notes	
MECP Table 7 Criteria	Table 7, Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition, All Types of Property Use, Ontario Ministry of the Environment "Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act*" (MECP July 2011).
RDL	Reportable Detection Limit
*	Due to high concentrations of target analytes, samples MW21-01 and MW21-02 required dilution during analysis by the laboratory. Detection limits were adjusted accordingly. In order to meet the required regulatory criteria, results for selected compounds (obtained by a separate analysis using an appropriate low dilution) were provided by the laboratory.
NV	No Criteria/RDL Value
'<'	Values is less than the RDL
Exceeds MECP Table 7 Criteria	**Result**

Appendix D
Laboratory Certificates of Analysis

ENGLOBE

Your Project #: 2103035
Your C.O.C. #: 157066

Attention: Salim Eid

DST Consulting Engineers Inc
Ottawa - Standing Offer
2150 Thurston Dr
Unit 203
Ottawa, ON
CANADA K1G 5T9

Report Date: 2021/05/03
Report #: R6618976
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1B1260
Received: 2021/04/26, 15:05

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
1,3-Dichloropropene Sum (1)	3	N/A	2021/05/03		EPA 8260C m
Petroleum Hydrocarbons F2-F4 in Soil (1, 2)	3	2021/04/28	2021/04/29	CAM SOP-00316	CCME CWS m
F4G (CCME Hydrocarbons Gravimetric) (1)	1	2021/04/30	2021/04/30	CAM SOP-00316	CCME PHC-CWS m
Moisture (1)	3	N/A	2021/04/27	CAM SOP-00445	Carter 2nd ed 51.2 m
pH CaCl2 EXTRACT (1)	1	2021/04/29	2021/04/29	CAM SOP-00413	EPA 9045 D m
Volatile Organic Compounds and F1 PHCs (1)	3	N/A	2021/05/01	CAM SOP-00230	EPA 8260C m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Laboratories Mississauga
(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following “Alberta Environment’s Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003”. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1

Your Project #: 2103035
Your C.O.C. #: 157066

Attention: Salim Eid

DST Consulting Engineers Inc
Ottawa - Standing Offer
2150 Thurston Dr
Unit 203
Ottawa, ON
CANADA K1G 5T9

Report Date: 2021/05/03
Report #: R6618976
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1B1260
Received: 2021/04/26, 15:05
Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Bureau Veritas
03 May 2021 12:45:11

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Katherine Szozda, Project Manager
Email: Katherine.Szozda@bureauveritas.com
Phone# (613)274-0573 Ext:7063633
==========
This report has been generated and distributed using a secure automated process.
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		PKN585	PKN586	PKN587		
Sampling Date		2021/04/21	2021/04/21	2021/04/22		
COC Number		157066	157066	157066		
	UNITS	MW21-1,SS2	MW21-2,SS2	MW21-3,SS1	RDL	QC Batch
Inorganics						
Moisture	%	14	8.8	3.5	1.0	7321314
Calculated Parameters						
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	<0.050	<0.050	0.050	7320252
Volatile Organics						
Acetone (2-Propanone)	ug/g	<0.50	<0.50	<0.50	0.50	7324273
Benzene	ug/g	<0.020	<0.020	<0.020	0.020	7324273
Bromodichloromethane	ug/g	<0.050	<0.050	<0.050	0.050	7324273
Bromoform	ug/g	<0.050	<0.050	<0.050	0.050	7324273
Bromomethane	ug/g	<0.050	<0.050	<0.050	0.050	7324273
Carbon Tetrachloride	ug/g	<0.050	<0.050	<0.050	0.050	7324273
Chlorobenzene	ug/g	<0.050	<0.050	<0.050	0.050	7324273
Chloroform	ug/g	<0.050	<0.050	<0.050	0.050	7324273
Dibromochloromethane	ug/g	<0.050	<0.050	<0.050	0.050	7324273
1,2-Dichlorobenzene	ug/g	<0.050	<0.050	<0.050	0.050	7324273
1,3-Dichlorobenzene	ug/g	<0.050	<0.050	<0.050	0.050	7324273
1,4-Dichlorobenzene	ug/g	<0.050	<0.050	<0.050	0.050	7324273
Dichlorodifluoromethane (FREON 12)	ug/g	<0.050	<0.050	<0.050	0.050	7324273
1,1-Dichloroethane	ug/g	<0.050	<0.050	<0.050	0.050	7324273
1,2-Dichloroethane	ug/g	<0.050	<0.050	<0.050	0.050	7324273
1,1-Dichloroethylene	ug/g	<0.050	<0.050	<0.050	0.050	7324273
cis-1,2-Dichloroethylene	ug/g	<0.050	<0.050	<0.050	0.050	7324273
trans-1,2-Dichloroethylene	ug/g	<0.050	<0.050	<0.050	0.050	7324273
1,2-Dichloropropane	ug/g	<0.050	<0.050	<0.050	0.050	7324273
cis-1,3-Dichloropropene	ug/g	<0.030	<0.030	<0.030	0.030	7324273
trans-1,3-Dichloropropene	ug/g	<0.040	<0.040	<0.040	0.040	7324273
Ethylbenzene	ug/g	<0.020	<0.020	<0.020	0.020	7324273
Ethylene Dibromide	ug/g	<0.050	<0.050	<0.050	0.050	7324273
Hexane	ug/g	<0.050	<0.050	<0.050	0.050	7324273
Methylene Chloride(Dichloromethane)	ug/g	<0.050	<0.050	<0.050	0.050	7324273
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.50	<0.50	<0.50	0.50	7324273
Methyl Isobutyl Ketone	ug/g	<0.50	<0.50	<0.50	0.50	7324273
Methyl t-butyl ether (MTBE)	ug/g	<0.050	<0.050	<0.050	0.050	7324273
Styrene	ug/g	<0.050	<0.050	<0.050	0.050	7324273
1,1,1,2-Tetrachloroethane	ug/g	<0.050	<0.050	<0.050	0.050	7324273
1,1,2,2-Tetrachloroethane	ug/g	<0.050	<0.050	<0.050	0.050	7324273
Tetrachloroethylene	ug/g	0.72	0.27	0.32	0.050	7324273

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		PKN585	PKN586	PKN587		
Sampling Date		2021/04/21	2021/04/21	2021/04/22		
COC Number		157066	157066	157066		
	UNITS	MW21-1,SS2	MW21-2,SS2	MW21-3,SS1	RDL	QC Batch
Toluene	ug/g	<0.020	<0.020	<0.020	0.020	7324273
1,1,1-Trichloroethane	ug/g	<0.050	<0.050	<0.050	0.050	7324273
1,1,2-Trichloroethane	ug/g	<0.050	<0.050	<0.050	0.050	7324273
Trichloroethylene	ug/g	<0.050	<0.050	<0.050	0.050	7324273
Trichlorofluoromethane (FREON 11)	ug/g	<0.050	<0.050	<0.050	0.050	7324273
Vinyl Chloride	ug/g	<0.020	<0.020	<0.020	0.020	7324273
p+m-Xylene	ug/g	<0.020	<0.020	<0.020	0.020	7324273
o-Xylene	ug/g	<0.020	<0.020	<0.020	0.020	7324273
Total Xylenes	ug/g	<0.020	<0.020	<0.020	0.020	7324273
F1 (C6-C10)	ug/g	<10	<10	<10	10	7324273
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	10	7324273
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	10	7322590
F3 (C16-C34 Hydrocarbons)	ug/g	<50	100	<50	50	7322590
F4 (C34-C50 Hydrocarbons)	ug/g	<50	290	95	50	7322590
Reached Baseline at C50	ug/g	Yes	No	Yes		7322590
Surrogate Recovery (%)						
o-Terphenyl	%	84	91	93		7322590
4-Bromofluorobenzene	%	90	91	91		7324273
D10-o-Xylene	%	81	82	84		7324273
D4-1,2-Dichloroethane	%	115	115	115		7324273
D8-Toluene	%	98	98	98		7324273

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

RESULTS OF ANALYSES OF SOIL

BV Labs ID		PKN586	
Sampling Date		2021/04/21	
COC Number		157066	
	UNITS	MW21-2,SS2	QC Batch
Inorganics			
Available (CaCl2) pH	pH	7.86	7325030
QC Batch = Quality Control Batch			

PETROLEUM HYDROCARBONS (CCME)

BV Labs ID		PKN586		
Sampling Date		2021/04/21		
COC Number		157066		
	UNITS	MW21-2,SS2	RDL	QC Batch
F2-F4 Hydrocarbons				
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	1100	100	7327230

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

TEST SUMMARY

BV Labs ID: PKN585
Sample ID: MW21-1,SS2
Matrix: Soil

Collected: 2021/04/21
Shipped:
Received: 2021/04/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	7320252	N/A	2021/05/03	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7322590	2021/04/28	2021/04/29	Anna Stuglik Rolland
Moisture	BAL	7321314	N/A	2021/04/27	Manpreet Kaur
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7324273	N/A	2021/05/01	Rebecca McClean

BV Labs ID: PKN586
Sample ID: MW21-2,SS2
Matrix: Soil

Collected: 2021/04/21
Shipped:
Received: 2021/04/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	7320252	N/A	2021/05/03	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7322590	2021/04/28	2021/04/29	Anna Stuglik Rolland
F4G (CCME Hydrocarbons Gravimetric)	BAL	7327230	2021/04/30	2021/04/30	Rashmi Dubey
Moisture	BAL	7321314	N/A	2021/04/27	Manpreet Kaur
pH CaCl2 EXTRACT	AT	7325030	2021/04/29	2021/04/29	Surinder Rai
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7324273	N/A	2021/05/01	Rebecca McClean

BV Labs ID: PKN587
Sample ID: MW21-3,SS1
Matrix: Soil

Collected: 2021/04/22
Shipped:
Received: 2021/04/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	7320252	N/A	2021/05/03	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7322590	2021/04/28	2021/04/29	Anna Stuglik Rolland
Moisture	BAL	7321314	N/A	2021/04/27	Manpreet Kaur
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7324273	N/A	2021/05/01	Rebecca McClean

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.7°C

Results relate only to the items tested.

Bureau Veritas Laboratories 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvlabs.com

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7322590	o-Terphenyl	2021/04/28	98	60 - 130	98	60 - 130	96	%		
7324273	4-Bromofluorobenzene	2021/05/01	98	60 - 140	98	60 - 140	95	%		
7324273	D10-o-Xylene	2021/05/01	87	60 - 130	95	60 - 130	72	%		
7324273	D4-1,2-Dichloroethane	2021/05/01	114	60 - 140	110	60 - 140	116	%		
7324273	D8-Toluene	2021/05/01	104	60 - 140	103	60 - 140	95	%		
7321314	Moisture	2021/04/27							4.3	20
7322590	F2 (C10-C16 Hydrocarbons)	2021/04/28	101	50 - 130	101	80 - 120	<10	ug/g	NC	30
7322590	F3 (C16-C34 Hydrocarbons)	2021/04/28	100	50 - 130	100	80 - 120	<50	ug/g	NC	30
7322590	F4 (C34-C50 Hydrocarbons)	2021/04/28	101	50 - 130	101	80 - 120	<50	ug/g	NC	30
7324273	1,1,1,2-Tetrachloroethane	2021/05/01	105	60 - 140	97	60 - 130	<0.050	ug/g	NC	50
7324273	1,1,1-Trichloroethane	2021/05/01	102	60 - 140	101	60 - 130	<0.050	ug/g	NC	50
7324273	1,1,2,2-Tetrachloroethane	2021/05/01	109	60 - 140	97	60 - 130	<0.050	ug/g	NC	50
7324273	1,1,2-Trichloroethane	2021/05/01	118	60 - 140	105	60 - 130	<0.050	ug/g	NC	50
7324273	1,1-Dichloroethane	2021/05/01	109	60 - 140	103	60 - 130	<0.050	ug/g	NC	50
7324273	1,1-Dichloroethylene	2021/05/01	110	60 - 140	106	60 - 130	<0.050	ug/g	NC	50
7324273	1,2-Dichlorobenzene	2021/05/01	97	60 - 140	89	60 - 130	<0.050	ug/g	NC	50
7324273	1,2-Dichloroethane	2021/05/01	111	60 - 140	102	60 - 130	<0.050	ug/g	NC	50
7324273	1,2-Dichloropropane	2021/05/01	111	60 - 140	104	60 - 130	<0.050	ug/g	NC	50
7324273	1,3-Dichlorobenzene	2021/05/01	98	60 - 140	90	60 - 130	<0.050	ug/g	NC	50
7324273	1,4-Dichlorobenzene	2021/05/01	112	60 - 140	103	60 - 130	<0.050	ug/g	NC	50
7324273	Acetone (2-Propanone)	2021/05/01	120	60 - 140	110	60 - 140	<0.50	ug/g	NC	50
7324273	Benzene	2021/05/01	102	60 - 140	97	60 - 130	<0.020	ug/g	NC	50
7324273	Bromodichloromethane	2021/05/01	110	60 - 140	102	60 - 130	<0.050	ug/g	NC	50
7324273	Bromoform	2021/05/01	106	60 - 140	94	60 - 130	<0.050	ug/g	NC	50
7324273	Bromomethane	2021/05/01	103	60 - 140	96	60 - 140	<0.050	ug/g	NC	50
7324273	Carbon Tetrachloride	2021/05/01	99	60 - 140	99	60 - 130	<0.050	ug/g	NC	50
7324273	Chlorobenzene	2021/05/01	98	60 - 140	90	60 - 130	<0.050	ug/g	NC	50
7324273	Chloroform	2021/05/01	107	60 - 140	102	60 - 130	<0.050	ug/g	NC	50
7324273	cis-1,2-Dichloroethylene	2021/05/01	104	60 - 140	98	60 - 130	<0.050	ug/g	NC	50
7324273	cis-1,3-Dichloropropene	2021/05/01	102	60 - 140	93	60 - 130	<0.030	ug/g	NC	50
7324273	Dibromochloromethane	2021/05/01	105	60 - 140	94	60 - 130	<0.050	ug/g	NC	50
7324273	Dichlorodifluoromethane (FREON 12)	2021/05/01	92	60 - 140	87	60 - 140	<0.050	ug/g	NC	50

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7324273	Ethylbenzene	2021/05/01	92	60 - 140	87	60 - 130	<0.020	ug/g	NC	50
7324273	Ethylene Dibromide	2021/05/01	104	60 - 140	92	60 - 130	<0.050	ug/g	NC	50
7324273	F1 (C6-C10) - BTEX	2021/05/01					<10	ug/g	NC	30
7324273	F1 (C6-C10)	2021/05/01	74	60 - 140	92	80 - 120	<10	ug/g	NC	30
7324273	Hexane	2021/05/01	114	60 - 140	110	60 - 130	<0.050	ug/g	NC	50
7324273	Methyl Ethyl Ketone (2-Butanone)	2021/05/01	130	60 - 140	116	60 - 140	<0.50	ug/g	NC	50
7324273	Methyl Isobutyl Ketone	2021/05/01	129	60 - 140	113	60 - 130	<0.50	ug/g	NC	50
7324273	Methyl t-butyl ether (MTBE)	2021/05/01	99	60 - 140	92	60 - 130	<0.050	ug/g	NC	50
7324273	Methylene Chloride(Dichloromethane)	2021/05/01	115	60 - 140	107	60 - 130	<0.050	ug/g	NC	50
7324273	o-Xylene	2021/05/01	94	60 - 140	89	60 - 130	<0.020	ug/g	NC	50
7324273	p+m-Xylene	2021/05/01	96	60 - 140	91	60 - 130	<0.020	ug/g	NC	50
7324273	Styrene	2021/05/01	107	60 - 140	99	60 - 130	<0.050	ug/g	NC	50
7324273	Tetrachloroethylene	2021/05/01	91	60 - 140	87	60 - 130	<0.050	ug/g	NC	50
7324273	Toluene	2021/05/01	97	60 - 140	91	60 - 130	<0.020	ug/g	NC	50
7324273	Total Xylenes	2021/05/01					<0.020	ug/g	NC	50
7324273	trans-1,2-Dichloroethylene	2021/05/01	104	60 - 140	99	60 - 130	<0.050	ug/g	NC	50
7324273	trans-1,3-Dichloropropene	2021/05/01	112	60 - 140	98	60 - 130	<0.040	ug/g	NC	50
7324273	Trichloroethylene	2021/05/01	102	60 - 140	98	60 - 130	<0.050	ug/g	NC	50
7324273	Trichlorofluoromethane (FREON 11)	2021/05/01	101	60 - 140	99	60 - 130	<0.050	ug/g	NC	50
7324273	Vinyl Chloride	2021/05/01	115	60 - 140	110	60 - 130	<0.020	ug/g	NC	50
7325030	Available (CaCl2) pH	2021/04/29			100	97 - 103			0.38	N/A
7327230	F4G-sg (Grav. Heavy Hydrocarbons)	2021/04/30	94	65 - 135	102	65 - 135	<100	ug/g	8.7	50

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Laboratories 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvlabs.com

BUREAU VERITAS

6740 Campobello Road, Mississauga, Ontario L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5779 Toll Free: 800-563-6266
CAM FCD-01191/6

CHAIN OF CUSTODY RECORD 157066 Page 1 of 1

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: DST Group	Company Name:	Quotation #:	[X] Regular TAT (5-7 days) Most analyses
Contact Name: Salim Eid	Contact Name:	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: 2150 Thurston Dr.	Address:	Project #: 2103035	Rush TAT (Surcharges will be applied)
Phone: 613-402-0398	Phone: Fax:	Site Location:	[ ] 1 Day [ ] 2 Days [ ] 3-4 Days
Email: seid@dstgroup.com mtillgart@dstgroup.com	Email:	Site #:	Date Required:
		Site Location Province: ON	Rush Confirmation #:
		Sampled By: CF	

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS LABORATORIES' DRINKING WATER CHAIN OF CUSTODY

Regulation 153

[X] Table 1 [ ] Res/Park [ ] Med/ Fine
[ ] Table 2 [ ] Ind/Comm [ ] Coarse
[ ] Table 3 [ ] Agri/ Other
[ ] Table ____
FOR RSC (PLEASE CIRCLE) Y / N

Other Regulations

[ ] CCME [ ] Sanitary Sewer Bylaw
[ ] MISA [ ] Storm Sewer Bylaw
[ ] PWQO Region ____
[ ] Other (Specify) ____
[ ] REG 558 (MIN. 3 DAY TAT REQUIRED)
[ ] REG 406 Table ____

Include Criteria on Certificate of Analysis: Y / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE) Metals / Hg / CrVI	BTEX/ PHC F1	PHCs F2 - F4	VOCs	REG 153 METALS & INORGANICS	REG 153 ICPMS METALS	REG 153 METALS (Hg, Cr VI, ICPMS Metals, HWS - B)	Cl								HOLD- DO NOT ANALYZE
1	MW21-1, 552	2021/04/21		GW	3		X	X	X												
2	MW21-2, 552	↓		↓	3		X	X	X				X								
3	MW21-3, 551	2021/04/22		↓	3		X	X	X												
4																					
5																					
6																					
7																					
8																					
9																					
10																					

RECEIVED IN OTTAWA

LABORATORY USE ONLY

CUSTODY SEAL Y / N — Present / Intact

COOLER TEMPERATURES: 5.4, 7.6.8

COOLING MEDIA PRESENT: Y / N ON ICE

COMMENTS: ON Ice

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
Cam Fisch	2021/04/26	1500	[illegible]	2021/04/26	15:05
			[illegible]	2021/04/27	08:00

26-Apr-21 15:05
Katherine Szozda
C1B1260
GK1 ENV-584

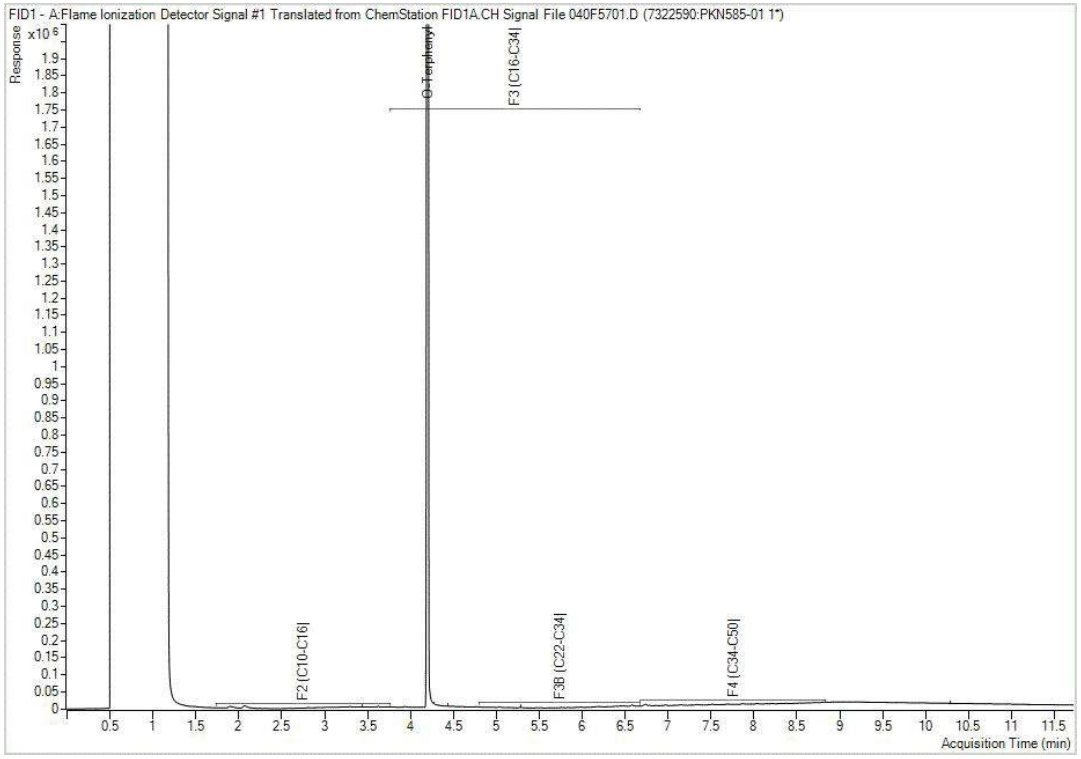
Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Bureau Veritas Laboratories' standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of [illegible] and-conditions

COC-1004 (06/19)

BV Labs Job #: C1B1260
Report Date: 2021/05/03
BV Labs Sample: PKN585

DST Consulting Engineers Inc
Client Project #: 2103035
Client ID: MW21-1,SS2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

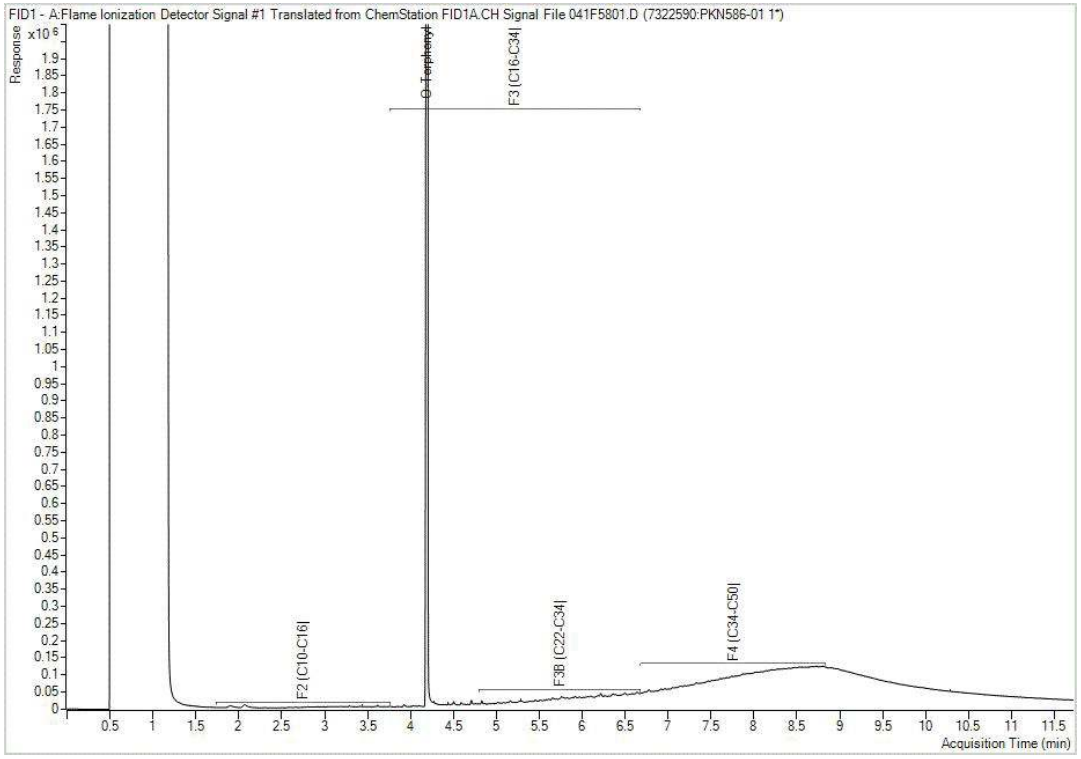


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1B1260
Report Date: 2021/05/03
BV Labs Sample: PKN586

DST Consulting Engineers Inc
Client Project #: 2103035
Client ID: MW21-2,SS2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

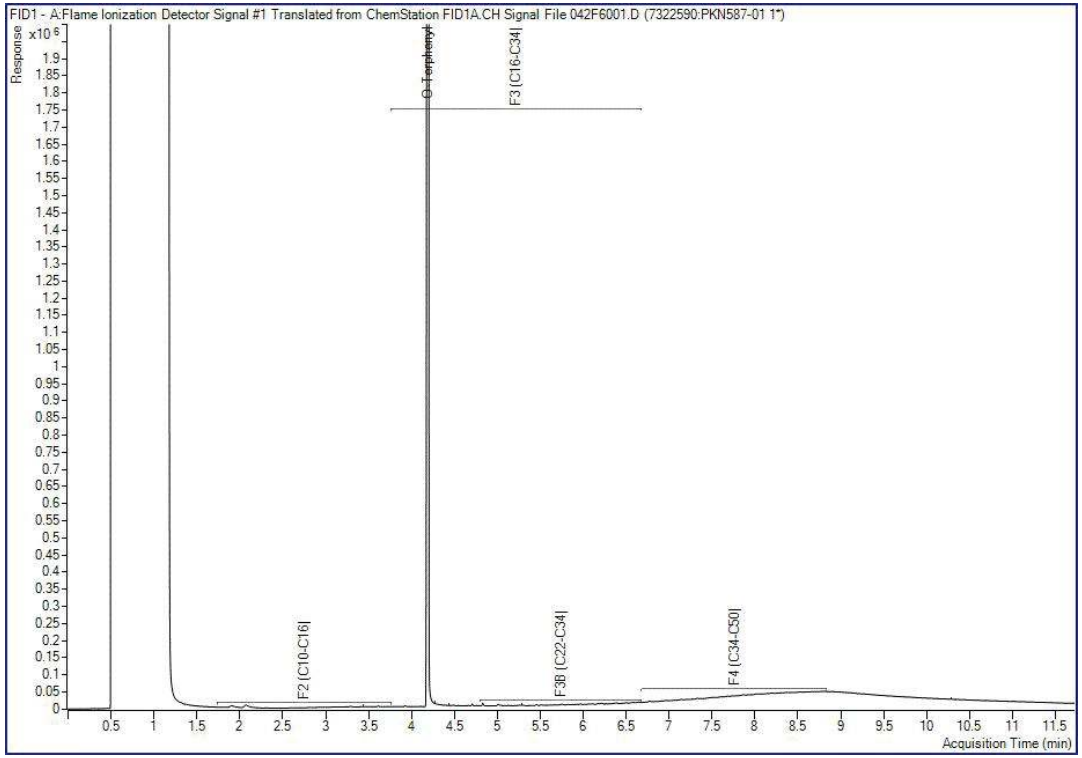


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1B1260
Report Date: 2021/05/03
BV Labs Sample: PKN587

DST Consulting Engineers Inc
Client Project #: 2103035
Client ID: MW21-3,SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: 02103035
Your C.O.C. #: 157055

Attention: Ryan Vanden Tillaart

DST Consulting Engineers Inc
Ottawa - Standing Offer
2150 Thurston Dr
Unit 203
Ottawa, ON
CANADA K1G 5T9

Report Date: 2021/05/10
Report #: R6627723
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1C2596
Received: 2021/05/07, 08:54

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Sieve, 75um (1)	2	N/A	2021/05/08	CAM SOP-00467	ASTM D1140 -17 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga

Your Project #: 02103035
Your C.O.C. #: 157055

Attention: Ryan Vanden Tillaart

DST Consulting Engineers Inc
Ottawa - Standing Offer
2150 Thurston Dr
Unit 203
Ottawa, ON
CANADA K1G 5T9

Report Date: 2021/05/10
Report #: R6627723
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1C2596
Received: 2021/05/07, 08:54

Encryption Key

Bureau Veritas
10 May 2021 09:03:02

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Katherine Szozda, Project Manager
Email: Katherine.Szozda@bureauveritas.com
Phone# (613)274-0573 Ext:7063633
==========
This report has been generated and distributed using a secure automated process.
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BV Labs Job #: C1C2596
Report Date: 2021/05/10

DST Consulting Engineers Inc
Client Project #: 02103035
Sampler Initials: RVT

RESULTS OF ANALYSES OF SOIL

BV Labs ID		PMV874	PMV875		
Sampling Date		2021/05/06 17:30	2021/05/06 17:30		
COC Number		157055	157055		
	UNITS	MW21-1 SS2	MW21-3 SS1	RDL	QC Batch
Miscellaneous Parameters					
Grain Size	%	FINE	FINE	N/A	7339480
Sieve - #200 (<0.075mm)	%	78	80	1	7339480
Sieve - #200 (>0.075mm)	%	22	20	1	7339480

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

BV Labs Job #: C1C2596
Report Date: 2021/05/10

DST Consulting Engineers Inc
Client Project #: 02103035
Sampler Initials: RVT

TEST SUMMARY

BV Labs ID: PMV874
Sample ID: MW21-1 SS2
Matrix: Soil

Collected: 2021/05/06
Shipped:
Received: 2021/05/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sieve, 75um	SIEV	7339480	N/A	2021/05/08	Prgya Panchal

BV Labs ID: PMV875
Sample ID: MW21-3 SS1
Matrix: Soil

Collected: 2021/05/06
Shipped:
Received: 2021/05/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sieve, 75um	SIEV	7339480	N/A	2021/05/08	Prgya Panchal

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.7°C

Results relate only to the items tested.

Bureau Veritas Laboratories 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvlabs.com

BV Labs Job #: C1C2596
Report Date: 2021/05/10

QUALITY ASSURANCE REPORT

DST Consulting Engineers Inc
Client Project #: 02103035
Sampler Initials: RVT

			RPD		QC Standard	
QC Batch	**Parameter**	**Date**	**Value (%)**	**QC Limits**	**% Recovery**	**QC Limits**
7339480	Sieve - #200 (<0.075mm)	2021/05/08	1.0	20	56	53 - 58
7339480	Sieve - #200 (>0.075mm)	2021/05/08	1.7	20	44	42 - 47

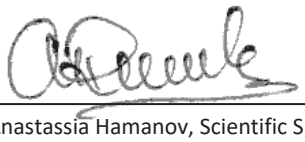
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Bureau Veritas Laboratories 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvlabs.com

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anastassia Hamanov, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Laboratories 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvlabs.com

BUREAU VERITAS

RUSH!

6740 Campobello Road, Mississauga, Ontario L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5779 Toll Free: 800-563-6266
CAM FCD-01191/6

CHAIN OF CUSTODY RECORD 157055 Page ____ of ____

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: DST	Company Name:	Quotation #:	☐ Regular TAT (5-7 days) Most analyses
Contact Name: Ryan VadeMheen	Contact Name:	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: 2150 Thurston Drive	Address:	Project #: ~~03156~~ 02163035	Rush TAT (Surcharges will be applied)
Phone: 613-462-2786 Fax:	Phone: Fax:	Site Location:	☒ 1 Day ☐ 2 Days ☐ 3-4 Days
Email: rvheen@dstgroup.com	Email:	Site #:	Date Required:
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS LABORATORIES' DRINKING WATER CHAIN OF CUSTODY		Site Location Province: Sampled By: RVH	Rush Confirmation #:

Regulation 153	Other Regulations
☐ Table 1 ☐ Res/Park ☐ Med/ Fine	☐ CCME ☐ Sanitary Sewer Bylaw
☐ Table 2 ☐ Ind/Comm ☐ Coarse	☐ MISA ☐ Storm Sewer Bylaw
☐ Table 3 ☐ Agri/ Other	☐ PWQO Region
☐ Table ____	☐ Other (Specify)
FOR RSC (PLEASE CIRCLE) Y / N	☐ REG 558 (MIN. 3 DAY TAT REQUIRED)
	☐ REG 406 Table ____

Include Criteria on Certificate of Analysis: Y / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE) Metals / Hg / CrVI	BTEX/ PHC F1	PHCs F2 - F4	VOCs	REG 153 METALS & INORGANICS	REG 153 ICPMS METALS	REG 153 METALS (Hg, Cr VI, ICPMS Metals, HWS - B)	See TSum							HOLD- DO NOT ANALYZE
1	MW21-1 SS2	2021/05/06	17:30	S									X							
2	MW21-3 SS1	2021/05/06	17:30	S									X							
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

07-May-21 08:54
Katherine Szozda
C1C2596
KJY OTT-001

LABORATORY USE ONLY		
CUSTODY SEAL Y / N		COOLER TEMPERATURES
Present	Intact	
✓	—	4.4.3
COOLING MEDIA PRESENT: Y / N		

COMMENTS: ON Ice

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
Ryan VadeMheen	2021/05/06	18:30		2021/05/07	8:54
			Rupesh Rupesh Kharel	2021/05/08	08:21

BV JOB #

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Bureau Veritas Laboratories' standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms available at http://www.bvlabs.com/terms-and-conditions

COC-1004 (06/19)

12/13/11- INVOICE

White: BV Labs - Yellow: Client

Your P.O. #: 2103035
Your Project #: 2103035
Your C.O.C. #: 824243-01-01

Attention: Ryan Vanden Tillaart

DST Consulting Engineers Inc
Ottawa - Standing Offer
2150 Thurston Dr
Unit 203
Ottawa, ON
CANADA K1G 5T9

Report Date: 2021/05/07
Report #: R6625541
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1B9704
Received: 2021/05/04, 09:00

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
1,3-Dichloropropene Sum (1)	3	N/A	2021/05/07		EPA 8260C m
Chloride by Automated Colourimetry (1)	1	N/A	2021/05/06	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	1	N/A	2021/05/06	CAM SOP-00414	SM 23 2510 m
Petroleum Hydrocarbons F2-F4 in Water (1, 2)	3	2021/05/06	2021/05/07	CAM SOP-00316	CCME PHC-CWS m
pH (1)	1	2021/05/05	2021/05/06	CAM SOP-00413	SM 4500H+ B m
Resistivity of Water (1)	1	2021/05/05	2021/05/06	CAM SOP-00414	SM 23 2510 m
Sulphate by Automated Colourimetry (1)	1	N/A	2021/05/06	CAM SOP-00464	EPA 375.4 m
Sulphide (1)	1	N/A	2021/05/06	CAM SOP-00455	SM 23 4500-S G m
Volatile Organic Compounds and F1 PHCs (1)	3	N/A	2021/05/07	CAM SOP-00230	EPA 8260C m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga

Your P.O. #: 2103035
Your Project #: 2103035
Your C.O.C. #: 824243-01-01

Attention: Ryan Vanden Tillaart

DST Consulting Engineers Inc
Ottawa - Standing Offer
2150 Thurston Dr
Unit 203
Ottawa, ON
CANADA K1G 5T9

Report Date: 2021/05/07
Report #: R6625541
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1B9704
Received: 2021/05/04, 09:00

(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
07 May 2021 17:08:08

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Katherine Szozda, Project Manager
Email: Katherine.Szozda@bureauveritas.com
Phone# (613)274-0573 Ext:7063633

==========

This report has been generated and distributed using a secure automated process.
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: C1B9704
Report Date: 2021/05/07

DST Consulting Engineers Inc
Client Project #: 2103035
Your P.O. #: 2103035
Sampler Initials: CF

RESULTS OF ANALYSES OF WATER

BV Labs ID		PMH109		
Sampling Date		2021/04/30		
COC Number		824243-01-01		
	UNITS	MW21-2	RDL	QC Batch
Calculated Parameters				
Resistivity	ohm-cm	160		7334889
Inorganics				
Conductivity	umho/cm	6100	1.0	7336307
pH	pH	7.92		7336338
Dissolved Sulphate (SO4)	mg/L	210	1.0	7335906
Sulphide	mg/L	<0.020	0.020	7338319
Dissolved Chloride (Cl-)	mg/L	1800	15	7335902

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		PMH108	PMH109		PMH110		
Sampling Date		2021/04/30	2021/04/30		2021/04/30		
COC Number		824243-01-01	824243-01-01		824243-01-01		
	UNITS	MW21-1	MW21-2	RDL	MW21-3	RDL	QC Batch
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	<0.50	0.50	<0.50	0.50	7334890
Volatile Organics							
Acetone (2-Propanone)	ug/L	<50	<50	50	<10	10	7329955
Benzene	ug/L	<0.20	<0.20	0.20	<0.20	0.20	7329955
Bromodichloromethane	ug/L	<0.50	<0.50	0.50	<0.50	0.50	7329955
Bromoform	ug/L	<5.0	<5.0	5.0	<1.0	1.0	7329955
Bromomethane	ug/L	<0.50	<0.50	0.50	<0.50	0.50	7329955
Carbon Tetrachloride	ug/L	<0.20	<0.20	0.20	<0.20	0.20	7329955
Chlorobenzene	ug/L	<0.20	<0.20	0.20	<0.20	0.20	7329955
Chloroform	ug/L	<1.0	<1.0	1.0	<0.20	0.20	7329955
Dibromochloromethane	ug/L	<0.50	<0.50	0.50	<0.50	0.50	7329955
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	0.50	<0.50	0.50	7329955
1,3-Dichlorobenzene	ug/L	<0.50	<0.50	0.50	<0.50	0.50	7329955
1,4-Dichlorobenzene	ug/L	<0.50	<0.50	0.50	<0.50	0.50	7329955
Dichlorodifluoromethane (FREON 12)	ug/L	<5.0	<5.0	5.0	<1.0	1.0	7329955
1,1-Dichloroethane	ug/L	<0.20	<0.20	0.20	<0.20	0.20	7329955
1,2-Dichloroethane	ug/L	<0.50	<0.50	0.50	<0.50	0.50	7329955
1,1-Dichloroethylene	ug/L	<0.20	0.66	0.20	<0.20	0.20	7329955
cis-1,2-Dichloroethylene	ug/L	220	860	2.5	1.5	0.50	7329955
trans-1,2-Dichloroethylene	ug/L	3.7	12	2.5	<0.50	0.50	7329955
1,2-Dichloropropane	ug/L	<0.20	<0.20	0.20	<0.20	0.20	7329955
cis-1,3-Dichloropropene	ug/L	<0.30	<0.30	0.30	<0.30	0.30	7329955
trans-1,3-Dichloropropene	ug/L	<0.40	<0.40	0.40	<0.40	0.40	7329955
Ethylbenzene	ug/L	<0.20	<0.20	0.20	<0.20	0.20	7329955
Ethylene Dibromide	ug/L	<0.20	<0.20	0.20	<0.20	0.20	7329955
Hexane	ug/L	<5.0	<5.0	5.0	<1.0	1.0	7329955
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	2.0	<2.0	2.0	7329955
Methyl Ethyl Ketone (2-Butanone)	ug/L	<50	<50	50	<10	10	7329955
Methyl Isobutyl Ketone	ug/L	<25	<25	25	<5.0	5.0	7329955
Methyl t-butyl ether (MTBE)	ug/L	<2.5	<2.5	2.5	<0.50	0.50	7329955
Styrene	ug/L	<0.50	<0.50	0.50	<0.50	0.50	7329955
1,1,1,2-Tetrachloroethane	ug/L	<0.50	<0.50	0.50	<0.50	0.50	7329955
1,1,2,2-Tetrachloroethane	ug/L	<0.50	<0.50	0.50	<0.50	0.50	7329955
Tetrachloroethylene	ug/L	930	890	1.0	32	0.20	7329955
Toluene	ug/L	<0.20	<0.20	0.20	<0.20	0.20	7329955

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs Job #: C1B9704
Report Date: 2021/05/07

DST Consulting Engineers Inc
Client Project #: 2103035
Your P.O. #: 2103035
Sampler Initials: CF

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		PMH108	PMH109		PMH110		
Sampling Date		2021/04/30	2021/04/30		2021/04/30		
COC Number		824243-01-01	824243-01-01		824243-01-01		
	UNITS	MW21-1	MW21-2	RDL	MW21-3	RDL	QC Batch
1,1,1-Trichloroethane	ug/L	<0.20	<0.20	0.20	<0.20	0.20	7329955
1,1,2-Trichloroethane	ug/L	<0.50	<0.50	0.50	<0.50	0.50	7329955
Trichloroethylene	ug/L	100	160	1.0	2.0	0.20	7329955
Trichlorofluoromethane (FREON 11)	ug/L	<2.5	<2.5	2.5	<0.50	0.50	7329955
Vinyl Chloride	ug/L	7.0	31	1.0	<0.20	0.20	7329955
p+m-Xylene	ug/L	<1.0	<1.0	1.0	<0.20	0.20	7329955
o-Xylene	ug/L	<1.0	<1.0	1.0	<0.20	0.20	7329955
Total Xylenes	ug/L	<1.0	<1.0	1.0	<0.20	0.20	7329955
F1 (C6-C10)	ug/L	320	340	130	<25	25	7329955
F1 (C6-C10) - BTEX	ug/L	320	340	130	<25	25	7329955
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/L	<100	370	100	<100	100	7338154
F3 (C16-C34 Hydrocarbons)	ug/L	240	750	200	<200	200	7338154
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	200	<200	200	7338154
Reached Baseline at C50	ug/L	Yes	Yes		Yes		7338154
Surrogate Recovery (%)							
o-Terphenyl	%	98	99		100		7338154
4-Bromofluorobenzene	%	86	86		84		7329955
D4-1,2-Dichloroethane	%	108	108		109		7329955
D8-Toluene	%	97	99		97		7329955

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs Job #: C1B9704
Report Date: 2021/05/07

DST Consulting Engineers Inc
Client Project #: 2103035
Your P.O. #: 2103035
Sampler Initials: CF

TEST SUMMARY

BV Labs ID: PMH108
Sample ID: MW21-1
Matrix: Water

Collected: 2021/04/30
Shipped:
Received: 2021/05/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	7334890	N/A	2021/05/07	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7338154	2021/05/06	2021/05/07	Ksenia Trofimova
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7329955	N/A	2021/05/07	Anna Gabrielyan

BV Labs ID: PMH109
Sample ID: MW21-2
Matrix: Water

Collected: 2021/04/30
Shipped:
Received: 2021/05/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	7334890	N/A	2021/05/07	Automated Statchk
Chloride by Automated Colourimetry	KONE	7335902	N/A	2021/05/06	Deonarine Ramnarine
Conductivity	AT	7336307	N/A	2021/05/06	Yogesh Patel
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7338154	2021/05/06	2021/05/07	Ksenia Trofimova
pH	AT	7336338	2021/05/05	2021/05/06	Yogesh Patel
Resistivity of Water		7334889	2021/05/06	2021/05/06	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7335906	N/A	2021/05/06	Deonarine Ramnarine
Sulphide	ISE/S	7338319	N/A	2021/05/06	Neil Dassanayake
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7329955	N/A	2021/05/07	Anna Gabrielyan

BV Labs ID: PMH110
Sample ID: MW21-3
Matrix: Water

Collected: 2021/04/30
Shipped:
Received: 2021/05/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	7334890	N/A	2021/05/07	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7338154	2021/05/06	2021/05/07	Ksenia Trofimova
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7329955	N/A	2021/05/07	Anna Gabrielyan

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	9.0°C

Sample PMH108 [MW21-1] : VOCF1 Analysis: Due to high concentrations of target analytes, sample required dilution. Detection limits were adjusted accordingly. In order to meet required regulatory criteria, results for selected compounds (obtained by a separate analysis using an appropriate low dilution) are included in the report.

Sample PMH109 [MW21-2] : VOCF1 Analysis: Due to high concentrations of target analytes, sample required dilution. Detection limits were adjusted accordingly. In order to meet required regulatory criteria, results for selected compounds (obtained by a separate analysis using an appropriate low dilution) are included in the report.

Results relate only to the items tested.

BV Labs Job #: C1B9704
Report Date: 2021/05/07

QUALITY ASSURANCE REPORT

DST Consulting Engineers Inc
Client Project #: 2103035
Your P.O. #: 2103035
Sampler Initials: CF

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7329955	4-Bromofluorobenzene	2021/05/06	103	70 - 130	103	70 - 130	89	%		
7329955	D4-1,2-Dichloroethane	2021/05/06	101	70 - 130	105	70 - 130	106	%		
7329955	D8-Toluene	2021/05/06	103	70 - 130	102	70 - 130	98	%		
7338154	o-Terphenyl	2021/05/07	105	60 - 130	103	60 - 130	97	%		
7329955	1,1,1,2-Tetrachloroethane	2021/05/07	99	70 - 130	100	70 - 130	<0.50	ug/L	NC	30
7329955	1,1,1-Trichloroethane	2021/05/07	97	70 - 130	97	70 - 130	<0.20	ug/L	NC	30
7329955	1,1,2,2-Tetrachloroethane	2021/05/07	98	70 - 130	102	70 - 130	<0.50	ug/L	NC	30
7329955	1,1,2-Trichloroethane	2021/05/07	98	70 - 130	102	70 - 130	<0.50	ug/L	NC	30
7329955	1,1-Dichloroethane	2021/05/07	91	70 - 130	93	70 - 130	<0.20	ug/L	NC	30
7329955	1,1-Dichloroethylene	2021/05/07	95	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
7329955	1,2-Dichlorobenzene	2021/05/07	97	70 - 130	100	70 - 130	<0.50	ug/L	NC	30
7329955	1,2-Dichloroethane	2021/05/07	91	70 - 130	94	70 - 130	<0.50	ug/L	NC	30
7329955	1,2-Dichloropropane	2021/05/07	94	70 - 130	97	70 - 130	<0.20	ug/L	NC	30
7329955	1,3-Dichlorobenzene	2021/05/07	101	70 - 130	105	70 - 130	<0.50	ug/L	NC	30
7329955	1,4-Dichlorobenzene	2021/05/07	108	70 - 130	113	70 - 130	<0.50	ug/L	NC	30
7329955	Acetone (2-Propanone)	2021/05/07	98	60 - 140	102	60 - 140	<10	ug/L	NC	30
7329955	Benzene	2021/05/07	87	70 - 130	89	70 - 130	<0.20	ug/L	NC	30
7329955	Bromodichloromethane	2021/05/07	97	70 - 130	100	70 - 130	<0.50	ug/L	NC	30
7329955	Bromoform	2021/05/07	97	70 - 130	102	70 - 130	<1.0	ug/L	NC	30
7329955	Bromomethane	2021/05/07	86	60 - 140	90	60 - 140	<0.50	ug/L	NC	30
7329955	Carbon Tetrachloride	2021/05/07	94	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
7329955	Chlorobenzene	2021/05/07	95	70 - 130	96	70 - 130	<0.20	ug/L	NC	30
7329955	Chloroform	2021/05/07	95	70 - 130	96	70 - 130	<0.20	ug/L	NC	30
7329955	cis-1,2-Dichloroethylene	2021/05/07	95	70 - 130	97	70 - 130	<0.50	ug/L	NC	30
7329955	cis-1,3-Dichloropropene	2021/05/07	82	70 - 130	86	70 - 130	<0.30	ug/L	NC	30
7329955	Dibromochloromethane	2021/05/07	95	70 - 130	98	70 - 130	<0.50	ug/L	NC	30
7329955	Dichlorodifluoromethane (FREON 12)	2021/05/07	97	60 - 140	100	60 - 140	<1.0	ug/L	NC	30
7329955	Ethylbenzene	2021/05/07	88	70 - 130	89	70 - 130	<0.20	ug/L	NC	30
7329955	Ethylene Dibromide	2021/05/07	91	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
7329955	F1 (C6-C10) - BTEX	2021/05/07					<25	ug/L	NC	30
7329955	F1 (C6-C10)	2021/05/07	90	60 - 140	88	60 - 140	<25	ug/L	NC	30

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7329955	Hexane	2021/05/07	95	70 - 130	95	70 - 130	<1.0	ug/L	NC	30
7329955	Methyl Ethyl Ketone (2-Butanone)	2021/05/07	101	60 - 140	108	60 - 140	<10	ug/L	NC	30
7329955	Methyl Isobutyl Ketone	2021/05/07	93	70 - 130	101	70 - 130	<5.0	ug/L	NC	30
7329955	Methyl t-butyl ether (MTBE)	2021/05/07	85	70 - 130	88	70 - 130	<0.50	ug/L	NC	30
7329955	Methylene Chloride(Dichloromethane)	2021/05/07	97	70 - 130	100	70 - 130	<2.0	ug/L	NC	30
7329955	o-Xylene	2021/05/07	90	70 - 130	91	70 - 130	<0.20	ug/L	NC	30
7329955	p+m-Xylene	2021/05/07	93	70 - 130	93	70 - 130	<0.20	ug/L	NC	30
7329955	Styrene	2021/05/07	102	70 - 130	106	70 - 130	<0.50	ug/L	NC	30
7329955	Tetrachloroethylene	2021/05/07	91	70 - 130	90	70 - 130	<0.20	ug/L	NC	30
7329955	Toluene	2021/05/07	88	70 - 130	88	70 - 130	<0.20	ug/L	NC	30
7329955	Total Xylenes	2021/05/07					<0.20	ug/L	NC	30
7329955	trans-1,2-Dichloroethylene	2021/05/07	95	70 - 130	96	70 - 130	<0.50	ug/L	NC	30
7329955	trans-1,3-Dichloropropene	2021/05/07	85	70 - 130	89	70 - 130	<0.40	ug/L	NC	30
7329955	Trichloroethylene	2021/05/07	99	70 - 130	100	70 - 130	<0.20	ug/L	NC	30
7329955	Trichlorofluoromethane (FREON 11)	2021/05/07	94	70 - 130	94	70 - 130	<0.50	ug/L	NC	30
7329955	Vinyl Chloride	2021/05/07	93	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
7335902	Dissolved Chloride (Cl-)	2021/05/06	NC	80 - 120	104	80 - 120	<1.0	mg/L	1.2	20
7335906	Dissolved Sulphate (SO4)	2021/05/06	119	75 - 125	103	80 - 120	<1.0	mg/L	NC	20
7336307	Conductivity	2021/05/05			102	85 - 115	<1.0	umho/cm	0.25	25
7336338	pH	2021/05/05			102	98 - 103			0.72	N/A
7338154	F2 (C10-C16 Hydrocarbons)	2021/05/07	123	60 - 130	104	60 - 130	<100	ug/L	2.0	30
7338154	F3 (C16-C34 Hydrocarbons)	2021/05/07	128	60 - 130	117	60 - 130	<200	ug/L	30	30
7338154	F4 (C34-C50 Hydrocarbons)	2021/05/07	129	60 - 130	119	60 - 130	<200	ug/L	NC	30

Bureau Veritas Laboratories 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvlabs.com

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7338319	Sulphide	2021/05/06	90	80 - 120	100	80 - 120	<0.020	mg/L	NC	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

BV Labs Job #: C1B9704
Report Date: 2021/05/07

DST Consulting Engineers Inc
Client Project #: 2103035
Your P.O. #: 2103035
Sampler Initials: CF

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Laboratories 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvlabs.com

04-May-21 09:00
Katherine Szozda
C1B9704

J_L ENV-1258

Presence of Visible Particulate/Sediment

Maxxam Analytics
CAM FCD-01013/5
Page 1 of 1

When there is >1cm of visible particulate/sediment, the amount will be recorded in the field below

			Bottle Types																														
			Inorganics					Organics												Hydrocarbons							Volatiles				Other				
	Sample ID	All	CrVI	CN	General	Hg	Metals (Diss.)	Organic 1 of 2	Organic 2 of 2	PCB 1 of 2	PCB 2 of 2	Pest/ Herb 1 of 2	Pest/ Herb 2 of 2	SVOC/ ABN 1 of 2	SVOC/ ABN 2 of 2	PAH 1 of 2	PAH 2 of 2	Dioxin /Furan	F1 Vial 1	F1 Vial 2	F1 Vial 3	F1 Vial 4	F2-F4 1 of 2	F2-F4 2 of 2	F4G	VOC Vial 1	VOC Vial 2	VOC Vial 3	VOC Vial 4						
1	MW21-1	TS																															
2	2	↓																															
3	3	↓																															
4																																	
5																																	
6																																	
7																																	
8																																	
9																																	
10																																	

Comments:

Legend:	
P	Suspended Particulate
TS	Trace Settled Sediment (just covers bottom of container or less)
S	Sediment greater than (>) Trace, but less than (<) 1 cm

Recorded By: (signature/print) J.L

Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free 800-563-6266 Fax (905) 817-5777 www.bvlabs.com

04-May-21 09:00
Katherine Szozda
C1B9704

Page 1 of 1

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name:	#3824 DST Consulting Engineers Inc	Company Name:		Quotation #:	B82715
Attention:	Accounts Payable	Attention:	Ryan Vanden Tillaart	P.O. #:	2103035
Address:	2150 Thurston Dr Unit 203 Ottawa ON K1G 5T9	Address:		Project:	2103035
Tel:	(613) 748-1415 Fax: (613) 748-1356	Tel:	Fax:	Project Name:	
Email:	ap@dstgroup.com	Email:	rtillaart@dstgroup.com; seid@dstgroup.com	Site #:	
				Sampled By:	CF

J_L ENV-1258

Bottle Order #: 824243
COC #: C#824243-01-01
Project Manager: Katherine Szozda

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☒ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___	☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ___ ☐ PWQO ☐ Reg 406 Table ___ ☐ Other ___	

Include Criteria on Certificate of Analysis (Y/N)? ___

Turnaround Time (TAT) Required
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O.Reg 153 VOCs by HS & F1-F4 PHCs	Organic Analysis Results	pH	Chloride	Sulphate	Sulphide	Resistivity	Redox Potential			# of Bottles	Comments
1		MW21-1	2021/04/30		GW		X											
2		MW21-2	"		"		X		X	X	X	X	X	X				
3		MW21-3	"		"		X											
4																		
5																		
6																		
7																		
8																		
9																		ON JL
10																		

RUSH

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Cameron Fisch	21/05/04	1600		2021/05/04	9:00	
				21/05/05	08:30	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	10, 9, 8	Present		
		Intact	✓	

White: BV Labs Yellow: Client

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

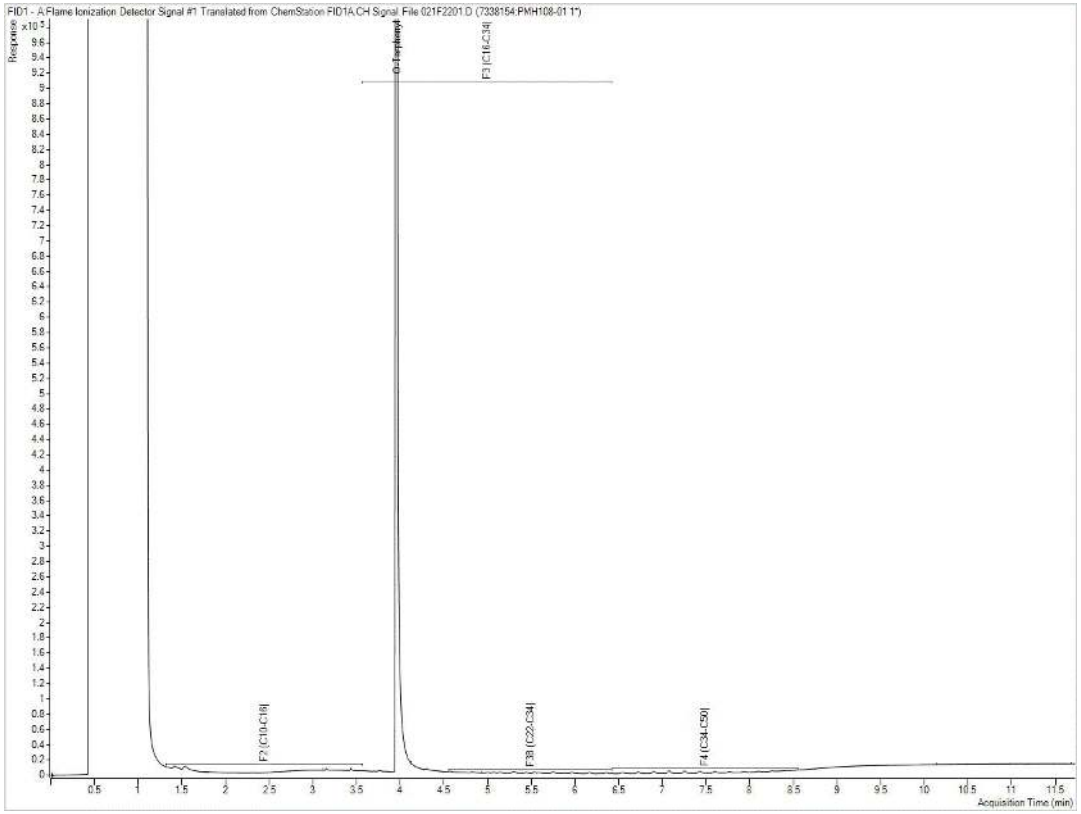
SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

Bureau Veritas Canada (2019) Inc.

BV Labs Job #: C1B9704
Report Date: 2021/05/07
BV Labs Sample: PMH108

DST Consulting Engineers Inc
Client Project #: 2103035
Client ID: MW21-1

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

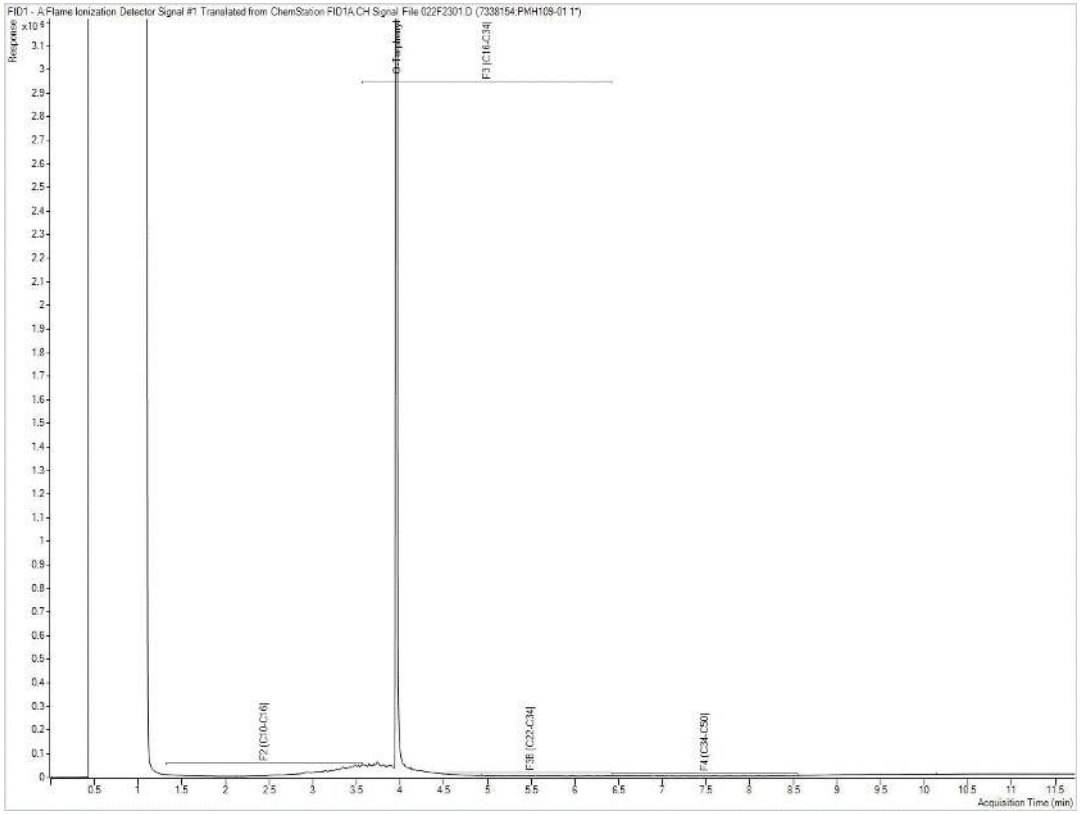


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1B9704
Report Date: 2021/05/07
BV Labs Sample: PMH109

DST Consulting Engineers Inc
Client Project #: 2103035
Client ID: MW21-2

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

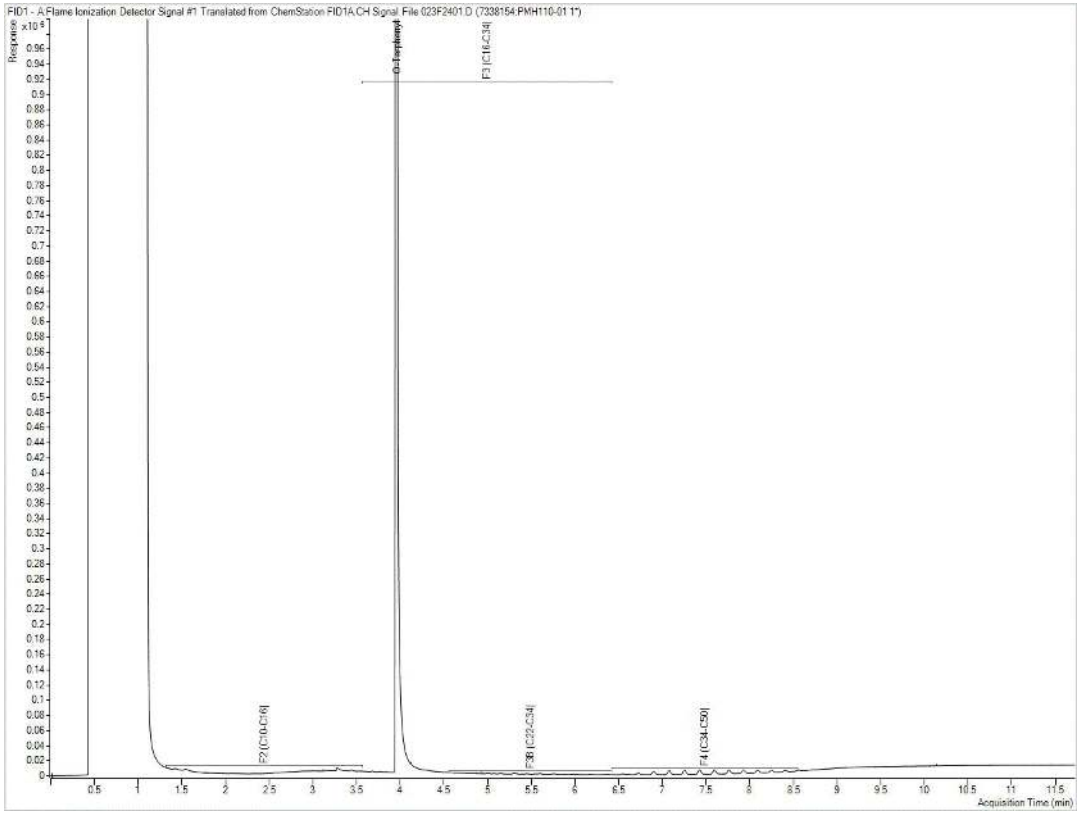


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: C1B9704
Report Date: 2021/05/07
BV Labs Sample: PMH110

DST Consulting Engineers Inc
Client Project #: 2103035
Client ID: MW21-3

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.