

The Corporation of the City of Mississauga

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

**Waldorf Way Triangle
Mississauga, Ontario**

December 2022



Phase Two Environmental Site Assessment
Waldorf Way Triangle, Mississauga, Ontario

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December 23, 2022

Prepared By:

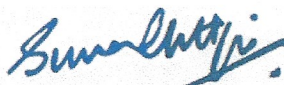
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Executive Summary

Arcadis Canada Inc. (Arcadis) was retained by the City of Mississauga (the City) to complete a Phase Two Environmental Site Assessment (ESA) for the property referred to as Waldorf Way Triangle, in Mississauga, Ontario (the Phase Two Property). The Phase Two Property location is shown on **Figure 1** and a site plan is provided as **Figure 2**. This Phase Two ESA was completed in general accordance with Ontario Regulation 153/04 (as amended) and generally accepted industry practices. This Phase Two ESA is being conducted as a follow-up of the Phase One ESA conducted by Arcadis in 2022 (Arcadis, 2022).

The Phase Two Property is located approximately 10 meters (m) south of Waldorf Way cul-de-sac and adjacent to/immediately west of the residential property at 7342 Waldorf Way. The Phase Two Property is currently vacant and is primarily comprised of a naturalized area adjacent to (and east of) the Orangeville-Brampton Railway corridor. The Phase Two Property comprises an area of approximately 0.22 hectares (2,200 m²).

The Phase Two ESA investigation was undertaken to investigate soil conditions in one area of potential environmental concern (APEC), that was identified in the Phase One ESA, that was completed by Arcadis in 2022, to determine the presence/absence of impacts in soil and ground water at the Phase Two Property. No on-site potentially contaminating activities (PCAs) were identified for the Phase One Property. One off-site PCA was identified on the west adjacent property (i.e., the rail tracks).

Contaminants of Potential Concern (COPCs) related to APEC 1 (associated with the off-site PCA on the west adjacent property [rail tracks]), included volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), petroleum hydrocarbons (PHCs), Metals, Hydride-Forming Metals, Hexavalent Chromium (Cr(VI)), Mercury (Hg), Hot Water Soluble Boron (HWS-B), cyanide (CN), pH and chlorophenols (CPs).

The investigation activities involved hand augering of three (3) boreholes at the Phase Two Property and collecting one (1) 'worst-case' soil sample from each borehole. The applicable MECP SCSs at the Phase Two Property are the MECP Table 3 SCS for RPI property use and coarse-textured soil.

Presented below are the key findings:

- During the Phase Two ESA, sandy silt was encountered to a maximum depth of 0.6 m bgs. At BH-2 clayey silt was encountered to a maximum depth of 0.3 m bgs, and was underlain by silty clay to a maximum depth of 0.6 m bgs. Sandy silt was encountered to a maximum depth of 0.3 m bgs at BH-3, and was underlain by clayey silt to a maximum depth of 0.6 m bgs.
- Soil samples submitted for laboratory analysis were analysed for one or more of PAHs, PHCs, metals and inorganics, VOCs, CP's and/or grain size;
- Concentrations of analysed parameters in submitted soil samples are below the MECP Table 3 SCS for RPI property use and coarse textured soil.

No further investigation is recommended at this time.

1 Introduction

Arcadis was retained by the City to complete a Phase Two ESA for the property referred to as Waldorf Way Triangle, in Mississauga, Ontario (the Phase Two Property). The Phase Two Property location is shown on **Figure 1** and a site plan is provided as **Figure 2**. This Phase Two ESA was completed in general accordance with Ontario Regulation 153/04 (as amended) and generally accepted industry practices. This Phase Two ESA is being conducted as a follow-up to the Phase One ESA conducted by Arcadis in 2022 (Arcadis, 2022). It is noted that a Record of Site Condition (RSC) is not being submitted for the Phase Two Property. Arcadis understands that the Phase Two ESA was conducted as a due diligence measure prior to the potential acquisition of the Phase Two Property by the City.

The Phase Two ESA was undertaken to investigate soil conditions in one APEC, that was identified in the Arcadis Phase One ESA.

1.1 Site Description

The Phase Two Property is legally described as Part of Lot 12 Concession 3 West of Hurontario Street, designated as Part 4 on Plan 43R-40341; City of Mississauga and has a property identification number (PIN) of 14085-1814 (LT). Based on a review of aerial photographs, the Phase Two Property has remained vacant since the earliest available aerial photograph for review (1954). As such, the Phase Two Property has likely never been developed. The Phase Two Property has no current municipal address and for the purposes of this report the Phase Two Property is referred to as the Waldorf Way Triangle, Mississauga, Ontario.

The Phase Two Property is located approximately 10 meters (m) south of Waldorf Way cul-de-sac and adjacent to/immediately west of the residential property at 7342 Waldorf Way. The Phase Two Property is currently vacant and is primarily comprised of a naturalized area adjacent to (and east of) the closed Orangeville-Brampton Railway corridor. The Phase Two Property comprises an area of approximately 0.22 hectares (2,200 m²).

1.2 Property Ownership

At the time of the preparation of this report, the Phase Two Property was owned by Orangeville Railway Development Corporation. The authorized contact person for the Phase Two Property at the City is Ms. Katrina MacDonald. Contact information for the City is as follows:

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1.3 Current and Proposed Future Uses

The Phase Two Property is currently under industrial property use as it is associated with the former railway corridor. It is understood that the Phase Two Property will be part of a future recreational trail to be constructed along the closed railway corridor. Generally, when a property use is changed from industrial to parkland, a RSC is required under O.Reg 153/04. However, under Section 13 of the regulation, the change of a property use from a railway line to a trail used for recreational activities is exempt. As such, an RSC is not required for the Phase Two Property.

1.4 Applicable Site Condition Standards

To evaluate the analytical data from soil samples analysed during this investigation, SCSs were selected from the MECP) "Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act", dated April 15, 2011 (MECP 2011a) in accordance with Ontario Regulation 153/04 (as amended).

The applicable SCSs for the Phase Two Property are the MECP Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Residential/Parkland/Institutional (RPI) Property Use, Coarse Textured Soils (herein referred to as the MECP Table 3 SCS; MECP 2011a).

Information used in establishing these SCSs include:

- The Phase Two Property is not located in or within 30 m from an "area of natural significance" as defined by Ontario Regulation 153/04 (as amended).
- The reported pH values for three (3) surface soil samples (not including the field duplicate) collected as part of this Phase Two ESA were reported within the specified range of 5 to 9 for surface soils. It is noted that deeper soil samples (i.e. from subsurface soils) were not analysed for pH.
- The maximum investigated depth of this Phase Two ESA is only 0.6 m bgs, however, based on a review of one well record for the Phase One Study Area, bedrock was not listed as encountered to a maximum investigated depth of 33.5. As such, it is unlikely that the Phase Two Property would be considered a "shallow soil property" as defined by O. Reg. 153/04.
- Grain size analyses completed on one (1) representative soil sample confirmed site soils to be coarse textured.
- The nearest water body to the Phase Two Property is Credit River located approximately 300 m east of the Phase One Property.
- The residential area around the Phase Two Property is serviced by the South Peel Drinking Water System which obtains potable water from Lake Ontario.
- It is understood that the future use of the Phase Two Property will be Parkland.

2 Background Information

2.1 Physical Setting

Arcadis reviewed geological and topographical maps including the Surficial Geology of Southern Ontario, Bedrock Geology of Ontario, Physiography of Southern Ontario, and Ontario Base Mapping (OBM) Data maps which were provided by ERIS, as part of the Phase One ESA (Arcadis, 2022). Based on the topographic map (Ontario Base Mapping, 2010) which illustrates the Phase Two Study Area, the regional topography is generally flat and slopes gradually to the east, towards Credit River.

Regional physiography comprises Bevelled Till Plains belonging to the Peel Plain region. Surficial geology in the majority of the Phase One Study Area is comprised of predominantly gravelly sand and silty sand derived from deltaic and lacustrine deposits. Surficial geology in the north portion of the Phase One Study area is comprised of poorly sorted, dirty, sand and gravel derived from older terrace alluvium.

Based on a review of one well record for the Phase One Study Area, soils encountered include sand and gravel underlain by clay till to 6.4 m, underlain by sand and gravel to 18 m, silty sand till to 21.9 m, and sand and gravel with clay to 33.5 m.

The Phase Two Property is not located in or within 30 meters of an area of natural significance.

2.2 Past Investigations

A Phase One ESA was completed by Arcadis in 2022 for the Phase Two Property. No other previous environmental investigation reports were made available to Arcadis for review. A summary of the 2022 Phase One ESA is provided in the section below.

2.2.1 Phase One ESA, Arcadis, 2022

Arcadis conducted a Phase One ESA for the Phase Two Property on behalf of the City in November 2022. The objective of the Phase One ESA was to identify APECs on the Phase One Property resulting from on-site and off-site PCAs. The Phase One ESA was conducted in general conformance with the requirements of O.Reg. 153/04 (as amended).

No on-site PCAs were identified for the Phase One Property. One off-site PCA was identified on the west adjacent property (i.e., the rail tracks).

The Phase One ESA concluded that one (1) APEC was identified on the Phase One Property summarized below and shown on **Figure 3**.

- APEC 1 – Associated with off-site PCA on west adjacent property (rail tracks). COPCs related to APEC 1 included VOCs, PAHs, PHCs, Metals, Hydride-Forming Metals, Cr(VI), Hg, HWS-B, CN, pH and CPs.

Based on the findings of the Phase One ESA, a Phase Two ESA was recommended to investigate the APEC identified at the site.

3 Scope of the Investigation

3.1 Overview of Site Investigation

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

1. Prepared and implemented a site-specific Health and Safety Plan (HASP) for the field work program;
2. Arranged for public (Ontario OneCall) and private utility locates (Premier Locates) to be completed, prior to any intrusive work
3. Advanced three (3) boreholes (BH-1, BH-2 and BH-3) with a hand auger, up to 0.6 metres below ground surface (m bgs) and collected one (1) soil sample from each borehole for laboratory analysis VOCs, PAHs, PHCs, metals and inorganics, and CPs, and grain size;
4. Implemented a quality assurance / quality control (QA/QC) program including the analysis of duplicate soil samples; and
5. Prepared a Phase Two ESA report documenting the methodology and findings of the completed environmental investigation work program.

3.2 Media Investigated

Three (3) boreholes (BH-1 to BH-3) were advanced using a hand auger to assess soil quality.

Groundwater was not investigated as part of this Phase Two ESA. No surface water bodies were situated or present on the Phase Two property, and thus no sediment or surface water testing was carried out during the Phase Two ESA.

A summary of the sampling completed at each borehole at the Phase Two Property is summarized in the table below:

Area of Potential Environmental Concern	Soil Sampling Locations	Monitoring Wells Installed/Sampled
APEC 1 – Rail tracks (west adjacent property)	BH-1, BH-2, BH-3	None

The borehole locations were selected to provide adequate coverage of the Phase Two Property and to provide sufficient coverage of the identified APEC.

4 Investigation Method

4.1 General

The Phase Two ESA focused on investigating APEC-1 identified in the Phase One ESA (Arcadis, 2022). Specifically, the objectives of the assessment were to assess the potential for presence of contamination in soil on the Phase Two Property. The Phase Two ESA methodology and results are presented in the following sections.

4.1.1 Health and Safety

Prior to commencing intrusive investigations at the Phase Two Property, a site-specific HASP was developed and implemented. The HASP identified and provided mitigative actions for potential physical and chemical hazards associated with the Phase Two ESA. The HASP also provided procedures to follow in the event of an emergency. A health and safety kick-off meeting and job safety analysis were conducted to advise on-site project personnel of the potential risks and appropriate mitigative actions, as well as to address any health and safety concerns of on-site project staff.

The HASP has been retained on file by Arcadis.

4.1.2 Utility Clearances

Prior to the commencement of field work, Arcadis contacted local utility providers to locate underground utilities via Ontario OneCall (public) including local telephone, power, streetlights, gas, water, and sewers at the site. Premier Locates of Aurora, Ontario, a private utility locate contractor, was retained by Arcadis to identify underground utilities at the site and to clear the proposed borehole locations.

4.2 Hand Augering

The hand augering program was conducted on October 28, 2022. The hand augering program consisted of manually advancing three (3) boreholes (BH-1, BH-2 and BH-3) using hand auger methods. The hand auger was attached to an extendable steel rod and rotated into the ground to a depth from 0 to 0.3 m bgs and from 0.3 to 0.6 m bgs to obtain soil samples.

During hand augering, subsurface conditions were logged for soil characteristics, olfactory observations, and visual evidence of contamination. Disposable nitrile gloves, replaced after collecting each sample, were worn when handling sampling tools and samples. Sampling tools were decontaminated with an Alconox wash and a distilled water rinse between sampling locations.

The findings of the field observations at each borehole are recorded in the individual logs presented in **Appendix A**.

4.3 Soil: Sampling

Two soil samples (from 0 to 0.3 and 0.3 to 0.6 m bgs) were collected from each borehole for field logging/screening and possible laboratory analysis. Upon retrieval, the soil sample was placed in a sealable polyethylene bag, and based on field screening, one (1) 'worst case' sample was collected from each borehole.

Soil samples for analysis were placed in laboratory supplied glass jars and stored in a cooler, packed with ice for sample preservation. Samples were cooled immediately upon collection and maintained in a cold state until submitted under chain-of-custody documentation to Bureau Veritas Laboratories (BV Labs) in Mississauga, Ontario. All samples for VOCs/PHC F1 analysis were collected in pre-weighed laboratory supplied vials containing methanol preservative. Soil samples were submitted for laboratory analysis of VOCs, PHCs, PAHs, metals and inorganics, and CPs. One soil sample was also submitted for grain size analysis.

Detailed hand auger borehole logs are provided in **Appendix A**, and the laboratory certificate of analysis is provided in **Appendix B**.

4.4 Field Screening Measurements

To assist with the selection of samples for laboratory analysis, and to identify potential petroleum hydrocarbon presence, soil vapour measurements were taken using an RKI Eagle II portable hand-held organic vapour meter (OVM) equipped with a photoionization detector (PID). The RKI Eagle II reports soil vapour concentrations in parts per million by volume (ppmv) or as a percentage of the lower explosive limit (% LEL) of equivalent hexane and isobutylene vapour. The RKI Eagle II was operated in methane elimination mode. The readings were taken by placing the end of the intake tube of the monitor into the headspace of the bagged soil samples while the soil was gently broken up. Recorded values correspond to the maximum reading attained.

Accuracy and precision of the field instruments were ensured through calibration prior to the field effort. The RKI Eagle II was calibrated to known concentrations of hexane (400 ppmv) and isobutylene (100ppm).

OVM and PID readings are provided in the hand auger borehole logs found in **Appendix A**.

4.5 Analytical Testing

Analytical testing of soil samples was completed by BV Labs. BV Labs is accredited by the Standards Council of Canada (SCC) to perform the analyses required by this investigation.

4.6 Waste Management Procedures

No waste materials were generated during the Phase Two ESA field activities.

4.7 Quality Assurance/Quality Control (QA/QC) Measures

The following QA/QC measures and precautions were taken during the Phase Two ESA field program to minimize the potential for cross contamination and to maintain sample integrity:

- Disposable nitrile gloves, replaced after each sample collection, were worn when handling sampling tools and samples;

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- Prior to re-use, non-dedicated sampling equipment (i.e., the hand auger) was thoroughly cleaned using an Alconox wash and distilled water rinse;
- All soil samples for potential laboratory analysis were collected in the appropriate new containers provided by the laboratory, and where appropriate, containing preservatives;
- One (1) soil sample was analysed in duplicate;
- Samples were stored in a cooler with ice until submission to the laboratory;
- Samples submitted to the laboratory were accompanied by the appropriate laboratory Chain of Custody documentation for tracking purposes; and,
- Samples submitted to the laboratory were enclosed in a cooler with a signed and dated custody seal.

Laboratory QA/QC consisted of analysis of replicate samples, method blanks, spiked method blanks, surrogate standard recoveries, and the use of analytical methods in accordance with the SCC guidelines. Laboratory QA/QC is documented in the certificates of analyses provided in **Appendix B**.

The sampling procedure and the laboratory analytical precision were evaluated by submitting the field duplicate (DUP-01, Duplicate of BH-3 2FT) and comparing the duplicate result to the result of the corresponding sample. For the laboratory blind duplicate, the relative percent difference (RPD) was calculated using the following formula:

$$RPD = | X_1 - X_2 | / X_{avg} \times 100$$

where, X_1 and X_2 are the measured concentrations of the duplicate pairs and X_{avg} is the mean of these two values. Results for duplicate analyses of field duplicate samples were considered acceptable where RPD values were <100% for soil duplicate analyses, consistent with common industry practices.

5 Review and Evaluation

5.1 General

5.1.1 Geology

The soil stratigraphy observed in the boreholes advanced at the Phase Two Property are presented in the attached hand auger borehole logs (**Appendix A**).

During the Phase Two ESA, sandy silt was encountered to a maximum investigated depth of 0.6 m bgs. At BH-2 clayey silt was encountered to a depth of 0.3 m bgs and was underlain by silty clay to a maximum investigated depth of 0.6 m bgs. Sandy silt was encountered to a depth of 0.3 m bgs at BH-3, and was underlain by clayey silt to a maximum investigated depth of 0.6 m bgs. Visually the soil appeared to be light brown to brown in colour with no apparent evidence of hydrocarbon or solvent odours and/or staining. The soil was observed to be dry to moist throughout the three boreholes.

5.1.2 Soil Texture

One (1) soil sample (BH-1 1FT) representative of site conditions was submitted for grain size analyses. The results of analysis indicate that soils are considered to be coarse textured in accordance with O.Reg. 153/04 (as amended). Grain size analysis results are presented in **Table 1**.

5.1.3 Soil: Field Screening

Soil field screening techniques employed during the field assessment included recording visual observations of soil characteristics and measurement of headspace vapour concentrations. Headspace vapour concentrations measured in the soil samples recovered are presented on the hand auger borehole logs provided in **Appendix A**. OVM and PID readings for screened soil samples from all three borehole locations were 0 ppmv.

5.2 Soil Quality

Three (3) soil samples plus one (1) field duplicate were submitted to BV Labs for laboratory analysis. Locations and depths of samples are presented in the hand auger borehole logs provided in **Appendix A**. The soil samples were submitted for laboratory analysis of PAHs, PHCs, metals and inorganics, VOCs, CPs and/or grain size. The borehole soil analytical results are presented in **Tables 2 to 6** and are summarized on **Figure 4**. The laboratory Certificate of Analysis is provided in **Appendix B**.

Concentrations of analysed parameters in submitted soil samples are below the MECP Table 3 SCS for RPI property use and coarse textured soil.

5.3 Quality Assurance and Quality Control Results

The analytical results for the field duplicate (DUP-01, Duplicate of BH-3 2FT) were compared and RPDs were calculated using the procedures outlined in Section 4.11. Calculable RPDs for soil were below the applicable alert limit.

6 Conclusions

The investigation activities involved hand augering of three (3) boreholes at the Phase Two Property and collecting one (1) 'worst-case' soil sample from each borehole. The applicable MECP SCSs at the Phase Two Property are the MECP Table 3 SCS for RPI property use and coarse-textured soil. Presented below are the key findings:

- During the Phase Two ESA, sandy silt was encountered to a maximum depth of 0.6 m bgs. At BH-2 clayey silt was encountered to a maximum depth of 0.3 m bgs, and was underlain by silty clay to a maximum depth of 0.6 m bgs. Sandy silt was encountered to a maximum depth of 0.3 m bgs at BH-3, and was underlain by clayey silt to a maximum depth of 0.6 m bgs.
- Soil samples submitted for laboratory analysis were analysed for one or more of PAHs, PHCs, metals and inorganics, VOCs, CP's and/or grain size;
- Concentrations of analysed parameters in submitted soil samples are below the MECP Table 3 SCS for RPI property use and coarse textured soil.

No further investigation is recommended at this time.

7 Limitations

The findings derived from the Phase Two ESA investigation were based on information collected at selected sample locations from boreholes and are limited to an assessment of those contaminants specifically addressed in this report. It may become apparent that soil conditions differ between and beyond the sampling locations examined in this study during future investigations or other work that could not be detected or anticipated at the time of this study. As such, Arcadis Canada Inc. (Arcadis) cannot be held liable for environmental conditions that were not apparent from the available information. The conclusions presented represent the best judgment of the assessors based on current environmental standards and on the site conditions observed on the date(s) of Arcadis's site visit in October, 2022.

This report was prepared by Arcadis exclusively for the account of the City of Mississauga (the CLIENT). Other than by the CLIENT, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of Arcadis. Any use, reliance on or decision made by any person other than CLIENT based on this report is the sole responsibility of such other person. The CLIENT and Arcadis make no representation or warranty to any other person with regard to this report and the work referred to in this report and the CLIENT and Arcadis accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

Achieving the study objectives stated in this report has required Arcadis to arrive at conclusions based on the information presently known to Arcadis. No investigative method can completely eliminate the possibility of obtaining partially imprecise or incomplete information; it can only reduce this possibility to an acceptable level. Professional judgment was exercised in gathering and analyzing the information obtained. Professional judgment was also exercised in the formulation of recommendations. Like all professional persons rendering advice, we cannot act as absolute insurers of the conclusions we reach. We perform our work, within the limits prescribed by our client, with the usual thoroughness and competence of our profession. No other warranty or representation, expressed or implied, is included or intended in this report.

Third party information reviewed and used to formulate this report is assumed to be complete and correct. Arcadis used this information in good faith and will not accept any responsibility for deficiencies, misinterpretation or incompleteness of the information contained in documents prepared by third parties.

The conclusions presented represent the best judgment of the assessors based on current environmental standards and on the site conditions observed on the date of Arcadis's site visit. Due to the nature of the investigation and the limited data available, the assessors cannot warrant against undiscovered environmental liabilities.

Nothing in this report is intended to constitute or provide a legal opinion.

Should additional information become available, Arcadis requests that this information be brought to our attention so that we may re-assess the conclusions presented herein.

8 References

Arcadis Canada Inc. (Arcadis), 2022. Phase One Environmental Site Assessment, Waldorf Way Triangle, Mississauga, Ontario. November 2022

City of Mississauga. Current and historical aerial photography – Maps. [https://
http://www6.mississauga.ca/missmaps/#](https://http://www6.mississauga.ca/missmaps/#). Accessed October 4, 2022.

Ministry of Environment, Conservation and Parks (MECP), 2011a. Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act. April 2011.

Tables



TABLE 1 - GRAIN SIZE ANALYSIS
 (All concentrations expressed as %, unless otherwise noted)

Sample ID	BH-1 1FT
Sample Depth (mbgs)	0.0-0.3
Consultant	Arcadis
Laboratory ID	UDO705
Date Sampled	28-Oct-2022
Sieve - #200 < 0.075 mm	24
Sieve - #200 > 0.075 mm	76
Classification	COARSE

Notes:

mbgs = metres below ground surface

mm = millimeters



TABLE 2 - CONCENTRATIONS OF VOCs IN SOIL
(All concentrations expressed as µg/g, unless otherwise noted)

Sample ID Sample Depth (mbgs) Sampled By Laboratory ID Date Sampled	Table 3 SCS ¹	BH-1 2FT	BH-2 1FT	BH-3 2FT	DUP-01	RPD
		0.3 - 0.6 Arcadis UDO704 28-Oct-2022	0.0 - 0.3 Arcadis UDO706 28-Oct-2022	0.3 - 0.6 Arcadis UDO707 28-Oct-2022	Duplicate of BH-3 2FT Arcadis UDO708 28-Oct-2022	
Acetone	16	<0.49	<0.49	<0.49	<0.49	nc
Benzene	0.21	<0.0060	<0.0060	<0.0060	<0.0060	nc
Bromodichloromethane	13	<0.040	<0.040	<0.040	<0.040	nc
Bromoform	0.27	<0.040	<0.040	<0.040	<0.040	nc
Bromomethane	0.05	<0.040	<0.040	<0.040	<0.040	nc
Carbon Tetrachloride	0.05	<0.040	<0.040	<0.040	<0.040	nc
Chlorobenzene	2.4	<0.040	<0.040	<0.040	<0.040	nc
Chloroform	0.05	<0.040	<0.040	<0.040	<0.040	nc
Dibromochloromethane	9.4	<0.040	<0.040	<0.040	<0.040	nc
1,2-Dichlorobenzene	3.4	<0.040	<0.040	<0.040	<0.040	nc
1,3-Dichlorobenzene	4.8	<0.040	<0.040	<0.040	<0.040	nc
1,4-Dichlorobenzene	0.083	<0.040	<0.040	<0.040	<0.040	nc
1,1-Dichloroethane	3.5	<0.040	<0.040	<0.040	<0.040	nc
1,2-Dichloroethane	0.05	<0.049	<0.049	<0.049	<0.049	nc
1,1-Dichloroethylene	0.05	<0.040	<0.040	<0.040	<0.040	nc
Cis-1,2-Dichloroethylene	3.4	<0.040	<0.040	<0.040	<0.040	nc
Trans-1,2-Dichloroethylene	0.084	<0.040	<0.040	<0.040	<0.040	nc
1,2-Dichloropropane	0.05	<0.040	<0.040	<0.040	<0.040	nc
Cis-1,3-Dichloropropylene	NV	<0.030	<0.030	<0.030	<0.030	nc
Trans-1,3-Dichloropropylene	NV	<0.040	<0.040	<0.040	<0.040	nc
Ethylbenzene	2	<0.010	<0.010	<0.010	<0.010	nc
Ethylene Dibromide	0.05	<0.040	<0.040	<0.040	<0.040	nc
Methyl Ethyl Ketone	16	<0.40	<0.40	<0.40	<0.40	nc
Methylene Chloride	0.1	<0.049	<0.049	<0.049	<0.049	nc
Methyl Isobutyl Ketone	1.7	<0.40	<0.40	<0.40	<0.40	nc
Methyl-t-Butyl Ether	0.75	<0.040	<0.040	<0.040	<0.040	nc
Styrene	0.7	<0.040	<0.040	<0.040	<0.040	nc
1,1,1,2-Tetrachloroethane	0.058	<0.040	<0.040	<0.040	<0.040	nc
1,1,2,2-Tetrachloroethane	0.05	<0.040	<0.040	<0.040	<0.040	nc
Toluene	2.3	<0.020	<0.020	<0.020	<0.020	nc
Tetrachloroethylene	0.28	<0.040	<0.040	<0.040	<0.040	nc
1,1,1-Trichloroethane	0.38	<0.040	<0.040	<0.040	<0.040	nc
1,1,2-Trichloroethane	0.05	<0.040	<0.040	<0.040	<0.040	nc
Trichloroethylene	0.061	<0.010	<0.010	<0.010	<0.010	nc
Vinyl Chloride	0.02	<0.019	<0.019	<0.019	<0.019	nc
m-Xylene & p-Xylene	NV	<0.020	<0.020	<0.020	<0.020	nc
o-Xylene	NV	<0.020	<0.020	<0.020	<0.020	nc
Total Xylenes	3.1	<0.020	<0.020	<0.020	<0.020	nc
Dichlorodifluoromethane	16	<0.40	<0.40	<0.40	<0.40	nc
Hexane(n)	2.8	<0.040	<0.040	<0.040	<0.040	nc
Trichlorofluoromethane	4	<0.040	<0.040	<0.040	<0.040	nc
1,3-Dichloropropene (cis + trans)	0.05	<0.050	<0.050	<0.050	<0.050	nc

Notes:

- = Not Analyzed
- NV = No Value
- mbgs = Metres Below Ground Surface
- nc = Not calculable as one or both results are not detected and/or detected result is less than 5 times detection limit.
- RPD = Relative Percent Difference (not calculated when one or both results are less than or equal to 5X RDL)

¹ Ontario MECP Soil, Ground Water and Sediment Standards for use Under Part XV.1 of the Environmental Protection Act, April 15, 2011; Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Residential/Parkland/Institutional Property Use, Coarse Textured Soils

<Value = Concentration of analyzed parameter is less than the laboratory detection limit

Value = Concentration of analyzed parameter exceeds the applicable MECP SCS



TABLE 3 - CONCENTRATIONS OF METALS AND INORGANICS IN SOIL
(All concentrations expressed as µg/g, unless otherwise noted)

Sample ID Sample Depth (mbgs) Sampled By Laboratory ID Date Sampled	Table 3 SCS ¹	BH-1 2FT	BH-1 1FT	BH-3 2FT	DUP-01	RPD
		0.3 - 0.6 Arcadis UDO704 28-Oct-2022	0.0 - 0.3 Arcadis UDO706 28-Oct-2022	0.3 - 0.6 Arcadis UDO707 28-Oct-2022	Duplicate of BH-3 2FT Arcadis UDO708 28-Oct-2022	
Antimony	7.5	<0.20	<0.20	<0.20	0.22	nc
Arsenic	18	2.5	3.5	4.6	4.5	2%
Barium	390	23	36	52	50	4%
Beryllium	4	0.22	0.41	0.48	0.46	4%
Boron (Total)	120	<5.0	7.8	8.5	7.4	14%
Boron (Hot Water Soluble)	1.5	0.082	0.22	0.24	0.34	34%
Cadmium	1.2	<0.10	0.12	0.1	0.13	26%
Chromium	160	8.6	15	15	15	0%
Chromium VI	8	<0.18	<0.18	<0.18	<0.18	nc
Cobalt	22	3.4	8.0	7.8	7.2	8%
Copper	140	14	22	30	33	10%
Lead	120	5.3	7.7	12	13	8%
Mercury	0.27	<0.050	<0.050	<0.050	<0.050	nc
Molybdenum	6.9	<0.50	<0.50	<0.50	<0.50	nc
Nickel	100	7.1	17	18	17	6%
Selenium	2.4	<0.50	<0.50	<0.50	<0.50	nc
Silver	20	<0.20	<0.20	<0.20	<0.20	nc
Thallium	1	<0.050	0.099	0.12	0.11	9%
Uranium	23	0.32	0.55	0.49	0.49	0%
Vanadium	86	17	21	23	22	4%
Zinc	340	21	44	46	47	2%
pH (pH Units)	NV	7.7	7.54	7.7	7.78	1%
Conductivity (mS/cm)	0.7	0.1	0.14	0.28	0.28	0%
Sodium Adsorption Ratio	5	0.31	0.26	1.8	1.3	32%
Cyanide, Free	0.051	<0.01	<0.01	<0.01	<0.01	nc

Notes:

- = Not Analyzed

NV = No Value

mbgs = Metres Below Ground Surface

nc = Not calculable as one or both results are not detected and/or detected result is less than 5 times detection limit.

RPD = Relative Percent Difference (not calculated when one or both results are less than or equal to 5X RDL)

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<Value = Concentration of analyzed parameter is less than the laboratory detection limit

Value = Concentration of analyzed parameter exceeds the applicable MECP SCS



TABLE 4 - CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN SOIL
 (All concentrations expressed as µg/g, unless otherwise noted)

Sample ID Sample Depth (mbgs) Sampled By Laboratory ID Date Sampled	Table 3 SCS ¹	BH-1 2FT	BH-2 1FT	BH-3 2FT	DUP-01	RPD
		0.3 - 0.6 Arcadis UDO704 28-Oct-2022	0.0 - 0.3 Arcadis UDO706 28-Oct-2022	0.3 - 0.6 Arcadis UDO707 28-Oct-2022	Duplicate of BH-3 2FT Arcadis UDO708 28-Oct-2022	
F1 (C6-C10)	55	<10	<10	<10	<10	nc
F2 (C10-C16)	98	<10	<10	<10	<10	nc
F3 (C16-C34)	300	<50	<50	<50	<50	nc
F4 (C34-C50)	2800	<50	<50	<50	<50	nc
Reached Baseline at C50	NV	YES	YES	YES	YES	nc
F4 Gravimetric	2800	-	-	-	-	

Notes:

- = Not Analyzed

NV = No Value

mbgs = Metres Below Ground Surface

nc = Not calculable as one or both results are not detected and/or detected result is less than 5 times detection limit.

RPD = Relative Percent Difference (not calculated when one or both results are less than or equal to 5X RDL)

¹ Ontario MECP Soil, Ground Water and Sediment Standards for use Under Part XV.1 of the Environmental Protection Act, April 15, 2011; Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Residential/Parkland/Institutional Property Use, Coarse Textured Soils

<Value = Concentration of analyzed parameter is less than the laboratory detection limit

Value = Concentration of analyzed parameter exceeds the applicable MECP SCS



TABLE 5 - CONCENTRATIONS OF POLYCYCLIC AROMATIC HYDROCARBONS IN SOIL
(All concentrations expressed as µg/g, unless otherwise noted)

Sample ID Sample Depth (mbgs) Sampled By Laboratory ID Date Sampled	Table 3 SCS ¹	BH-1 2FT	BH-2 1FT	BH-3 2FT	DUP-01	RPD
		0.3 - 0.6 Arcadis UDO704 28-Oct-2022	0.0 - 0.3 Arcadis UDO706 28-Oct-2022	0.3 - 0.6 Arcadis UDO707 28-Oct-2022	Duplicate of BH-3 2FT Arcadis UDO708 28-Oct-2022	
Acenaphthene	7.9	<0.0050	<0.0050	<0.0050	<0.0050	nc
Acenaphthylene	0.15	<0.0050	<0.0050	0.0087	<0.0050	nc
Anthracene	0.67	<0.0050	<0.0050	0.006	<0.0050	nc
Benzo(a)anthracene	0.5	<0.0050	<0.0050	0.022	0.011	67%
Benzo(a)pyrene	0.3	0.0059	0.0055	0.025	0.012	70%
Benzo(b)fluoranthene	0.78	0.01	0.012	0.038	0.02	62%
Benzo(ghi)perylene	6.6	0.009	0.0075	0.02	0.011	58%
Benzo(k)fluoranthene	0.78	<0.0050	<0.0050	0.014	0.0061	79%
Chrysene	7	<0.0050	0.0063	0.02	0.011	58%
Dibenzo(a,h)anthracene	0.1	<0.0050	<0.0050	<0.0050	<0.0050	nc
Fluoranthene	0.69	0.0072	0.0073	0.021	0.017	21%
Fluorene	62	<0.0050	<0.0050	<0.0050	<0.0050	nc
Indeno(1,2,3-cd)pyrene	0.38	0.0075	0.0055	0.019	0.0099	63%
1-Methylnaphthalene	0.99	0.0059	<0.0050	0.0055	<0.0050	nc
2-Methylnaphthalene		0.0061	<0.0050	0.005	<0.0050	nc
Naphthalene	0.6	<0.0050	<0.0050	<0.0050	<0.0050	nc
Phenanthrene	6.2	<0.0050	<0.0050	0.0059	<0.0050	nc
Pyrene	78	0.0068	0.0089	0.029	0.022	27%
Methylnaphthalene, 2-(1-)	0.99	0.012	<0.0071	0.011	<0.0071	nc

Notes:

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NV = No Value

mbgs = Metres Below Ground Surface

nc = Not calculable as one or both results are not detected and/or detected result is less than 5 times detection limit.

RPD = Relative Percent Difference (not calculated when one or both results are less than or equal to 5X RDL)

¹ Ontario MECP Soil, Ground Water and Sediment Standards for use Under Part XV.1 of the Environmental Protection Act, April 15, 2011; Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Residential/Parkland/Institutional Property Use, Coarse Textured Soils

<Value = Concentration of analyzed parameter is less than the laboratory detection limit

Value = Concentration of analyzed parameter exceeds the applicable MECP SCS



TABLE 6 - CONCENTRATIONS OF CHLOROPHENOLS IN SOIL
 (All concentrations expressed as µg/g, unless otherwise noted)

Sample ID Sample Depth (mbgs) Sampled By Laboratory ID Date Sampled	Table 3 SCS ¹	BH-1 2FT	BH-2 1FT	BH-3 2FT	DUP-01	RPD
		0.3 - 0.6 Arcadis UDO704 28-Oct-2022	0.0 - 0.3 Arcadis UDO706 28-Oct-2022	0.3 - 0.6 Arcadis UDO707 28-Oct-2022	Duplicate of BH-3 2FT Arcadis UDO708 28-Oct-2022	
2-Chlorophenol	1.6	<0.05	<0.05	<0.05	<0.05	nc
2,4-Dichlorophenol	1.7	<0.05	<0.05	<0.05	<0.05	nc
Pentachlorophenol	0.1	<0.05	<0.05	<0.05	<0.05	nc
2,4,5-Trichlorophenol	4.4	<0.05	<0.05	<0.05	<0.05	nc
2,4,6-Trichlorophenol	3.8	<0.05	<0.05	<0.05	<0.05	nc

Notes:

- = Not Analyzed

NV = No Value

mbgs = Metres Below Ground Surface

nc = Not calculable as one or both results are not detected and/or detected result is less than 5 times detection limit.

RPD = Relative Percent Difference (not calculated when one or both results are less than or equal to 5X RDL)

¹ Ontario MECP Soil, Ground Water and Sediment Standards for use Under Part XV.1 of

the Environmental Protection Act, April 15, 2011; Table 3: Full Depth Generic Site

Condition Standards in a Non-Potable Ground Water Condition,

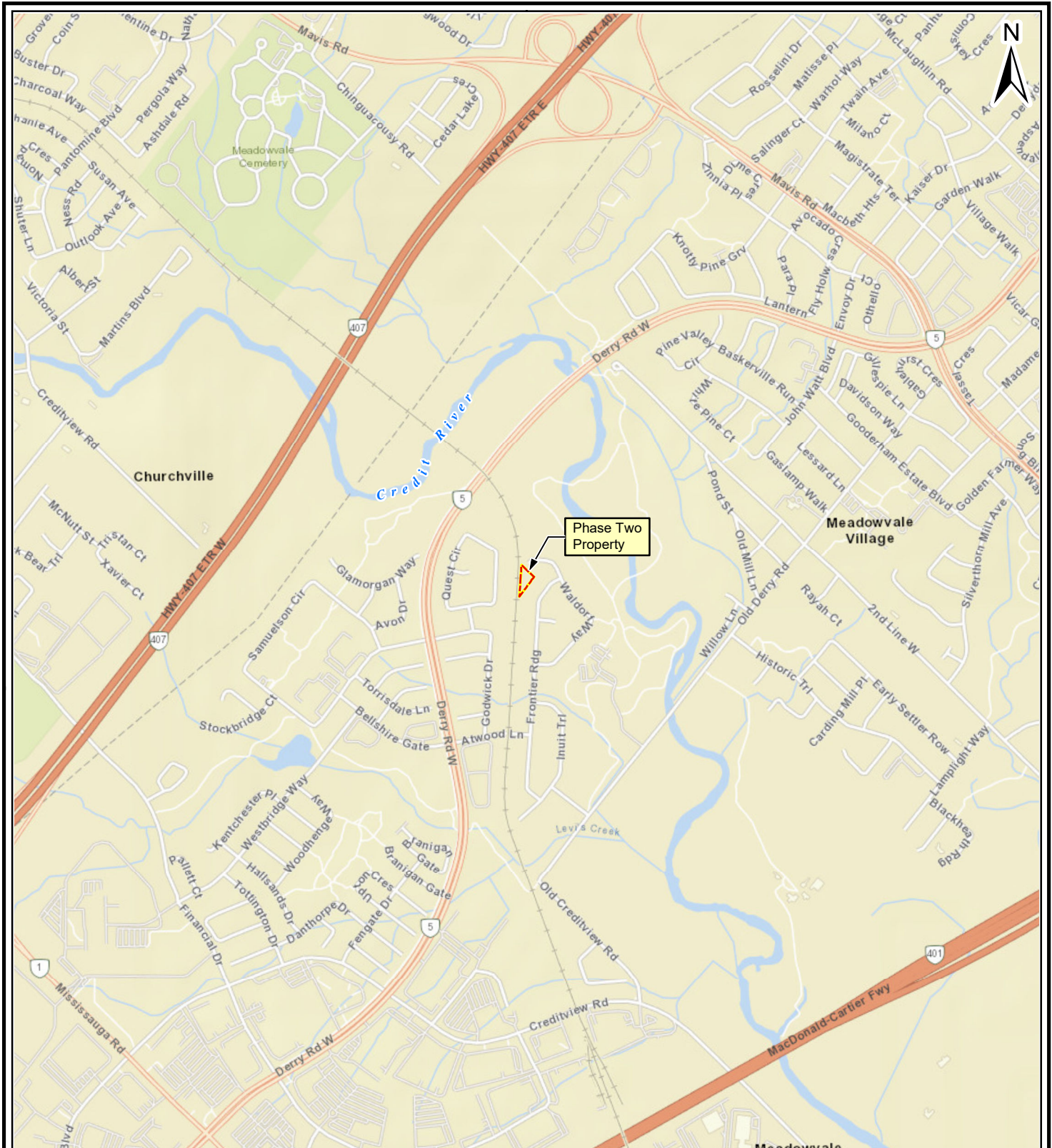
Residential/Parkland/Institutional Property Use, Coarse Textured Soils

<Value = Concentration of analyzed parameter is less than the laboratory detection limit

Value = Concentration of analyzed parameter exceeds the applicable MECP SCS

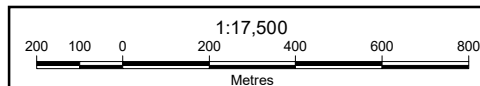
WARNING: The methylnaphthalene standards are applicable to both 1-Methylnaphthalene and 2-Methylnaphthalene, with the provision that if both are detected the sum of the two must not exceed the standard.

Figures



Legend

 - Phase Two Property Boundary



Title: SITE LOCATION	
Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT WALDORF WAY TRIANGLE, MISSISSAUGA, ONTARIO	
Client: CITY OF MISSISSAUGA	
Date: Oct 2022	Updated: Nov 17, 2022
FIGURE 1	

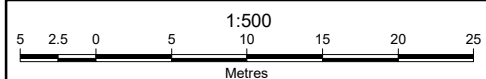


Layout: 8.5" x 11" (Author: mzarej)



Legend

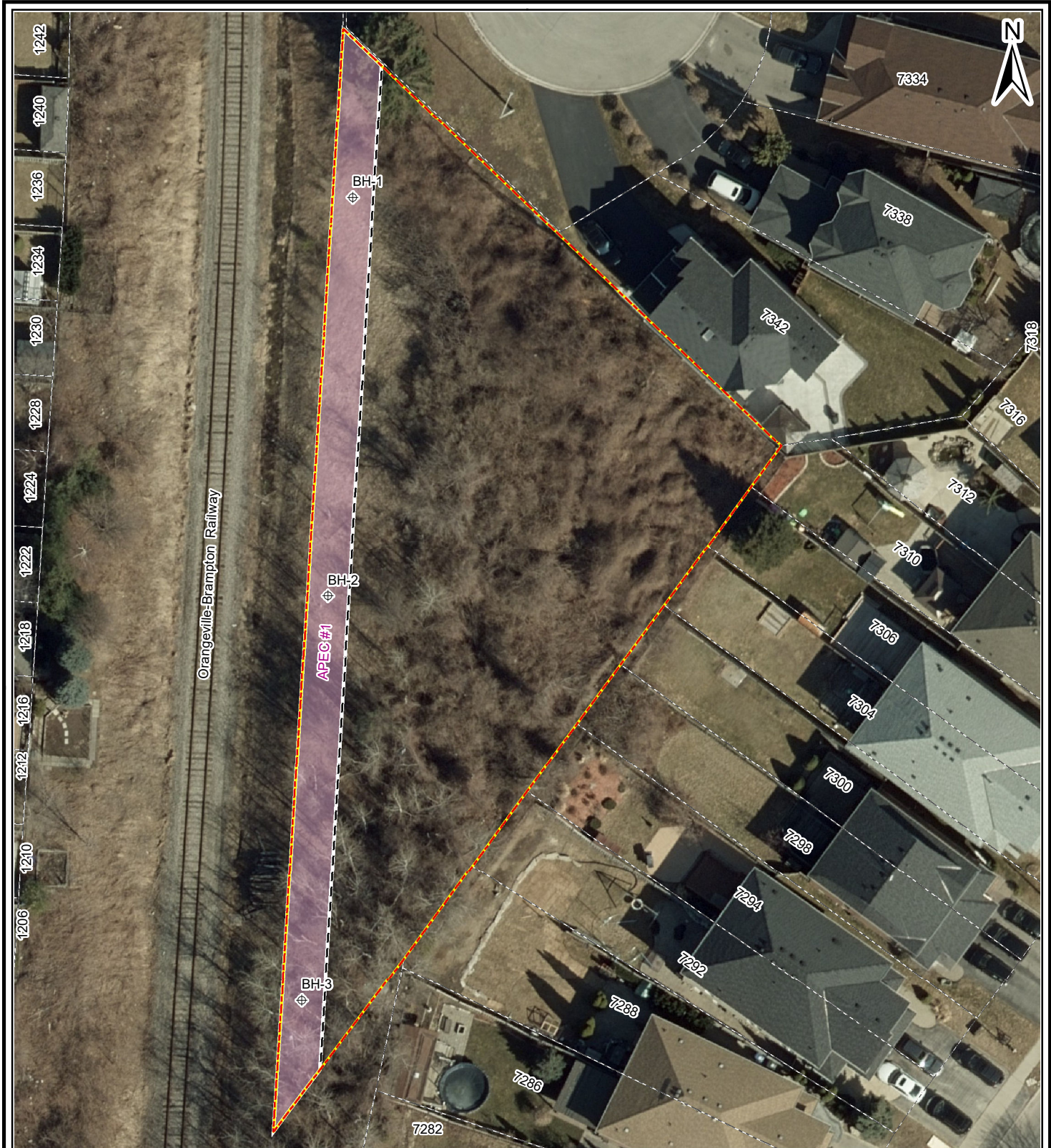
- Phase Two Property Boundary
- ⊕ - Hand Auger
(Arcadis, Oct 28, 2022)



Title:	SITE PLAN
Project:	PHASE TWO ENVIRONMENTAL SITE ASSESSMENT WALDORF WAY TRIANGLE, MISSISSAUGA, ONTARIO
Client:	CITY OF MISSISSAUGA
Date:	Oct 2022
Updated:	Nov 17, 2022
FIGURE 2	



Layout: 8.5" x 11" (Author: mzarej)



APEC #	AREA OF POTENTIAL ENVIRONMENTAL CONCERN (APEC)	MEDIA POTENTIALLY IMPACTED	CONTAMINANT OF POTENTIAL CONCERN
APEC #1	West Adjacent Rail Tracks	Soil	VOCs, PAHs, PHCs, Metals, Hydride-Forming Metals, Cr(VI), Hg, HWS-B, CN, pH, CPs

Title: **AREAS OF POTENTIAL ENVIRONMENTAL CONCERN**
 Project: **PHASE TWO ENVIRONMENTAL SITE ASSESSMENT WALDORF WAY TRIANGLE, MISSISSAUGA, ONTARIO**
 Client: **CITY OF MISSISSAUGA**

Date: **Oct 2022**
 Updated: **Dec 02, 2022**
FIGURE 3

Legend

- Phase Two Property Boundary
- APEC
- Hand Auger

Scale: 1:500
 5 2.5 0 5 10 15 Metres

Layout: 8.5" x 11" (Author: mzarej)



Legend

- Phase Two Property Boundary
- + - Hand Auger
(Concentration of all analysed parameters in soil samples are below the MECP Table 3 SCS)

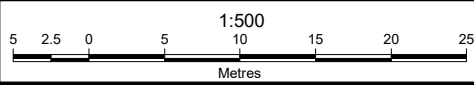
SITE CONDITION STANDARDS
 Table 3: Full Depth Generic Site Condition Standards for Coarse Textured Soil in a Non-Potable Ground Water Condition – Soil Standards, Residential/ Parkland/ Institutional Property Use. Soil, ground water and sediment standards for use under Part XV.1 of the Environmental Protection Act, 2011.

Title: SOIL ANALYTICAL RESULTS (METALS AND INORGANICS, PHCs, PAHs, VOCs, CPs)
Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT WALDORF WAY TRIANGLE, MISSISSAUGA, ONTARIO
Client: CITY OF MISSISSAUGA



Date: **Oct 2022**
 Updated: **Dec 02, 2022**
FIGURE 4

Notes:
 (0.3-0.6) - soil sample depth interval (mbgs)
 (mbgs) - metre below ground surface



Layout: 8.5" x 11" (Author: mzarej)

Appendix A

Hand Auger Borehole Logs



HAND AUGER BOREHOLE LOGS

Sample Location	Sample ID	Date Sampled	Depth (m bgs)	OM Reading (ppmv)	PID Reading (ppmv)	Northing (m)	Easting (m)	Soil Type	Analytical Parameters	APECs Investigated
BH-1	BH-1 1 FT	28/10/2022	0.0 - 0.3	0	0	601721.7	4831152.2	Sandy Silt	-	-
	BH-1 2 FT		0.3 - 0.6	0	0			Sandy Silt	VOCs, PAHs, PHCs, Metals, Hydride-Forming Metals, Cr (VI), Hg, HWS-B, CN, pH and CPs	1
BH-2	BH-2 1 FT	28/10/2022	0.0 - 0.3	0	0	601719.4	4831115.3	Clayey Silt	VOCs, PAHs, PHCs, Metals, Hydride-Forming Metals, Cr (VI), Hg, HWS-B, CN, pH and CPs	1
	BH-2 2 FT		0.3 - 0.6	0	0			Silty Clay	-	-
BH-3	BH3-1 FT	28/10/2022	0.0 - 0.3	0	0	601717.0	4831077.9	Sandy Silt	-	-
	BH-3 2 FT		0.3 - 0.6	0	0			Clayey Silt	VOCs, PAHs, PHCs, Metals, Hydride-Forming Metals, Cr (VI), Hg, HWS-B, CN, pH and CPs	1

Notes

m bgs metres below ground surface
na not applicable
nm not measured
- not analysed
ppmv parts per million by volume equivalent hexane

Appendix B

Laboratory Certificate of Analysis



Your Project #: 30150141
 Site Location: WALDORF WAY TRIANGLE
 Your C.O.C. #: n/a

Attention: Sumon Chatterjee

ARCADIS Canada Inc
 121 Granton Dr
 Unit 12
 Richmond Hill, ON
 CANADA L4B 3N4

Report Date: 2022/11/11
 Report #: R7384135
 Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2V6578

Received: 2022/10/28, 18:47

Sample Matrix: Soil
 # Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	4	N/A	2022/11/10	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron	2	2022/11/03	2022/11/03	CAM SOP-00408	R153 Ana. Prot. 2011
Hot Water Extractable Boron	2	2022/11/03	2022/11/05	CAM SOP-00408	R153 Ana. Prot. 2011
1,3-Dichloropropene Sum	3	N/A	2022/11/03		EPA 8260C m
1,3-Dichloropropene Sum	1	N/A	2022/11/06		EPA 8260C m
Free (WAD) Cyanide	3	2022/11/03	2022/11/03	CAM SOP-00457	OMOE E3015 m
Free (WAD) Cyanide	1	2022/11/03	2022/11/04	CAM SOP-00457	OMOE E3015 m
Conductivity	3	2022/11/03	2022/11/03	CAM SOP-00414	OMOE E3530 v1 m
Conductivity	1	2022/11/03	2022/11/04	CAM SOP-00414	OMOE E3530 v1 m
Acid Extractables by GC/MS	4	2022/11/04	2022/11/04	CAM SOP-00332	EPA 8270E m
Hexavalent Chromium in Soil by IC (1)	2	2022/11/03	2022/11/05	CAM SOP-00436	EPA 3060/7199 m
Hexavalent Chromium in Soil by IC (1)	2	2022/11/03	2022/11/06	CAM SOP-00436	EPA 3060/7199 m
Petroleum Hydrocarbons F2-F4 in Soil (2)	4	2022/11/09	2022/11/10	CAM SOP-00316	CCME CWS m
Acid Extractable Metals by ICPMS	1	2022/11/03	2022/11/03	CAM SOP-00447	EPA 6020B m
Acid Extractable Metals by ICPMS	3	2022/11/03	2022/11/04	CAM SOP-00447	EPA 6020B m
Moisture	1	N/A	2022/11/01	CAM SOP-00445	Carter 2nd ed 51.2 m
Moisture	3	N/A	2022/11/02	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	4	2022/11/09	2022/11/09	CAM SOP-00318	EPA 8270D m
pH CaCl2 EXTRACT	4	2022/11/03	2022/11/03	CAM SOP-00413	EPA 9045 D m
Sieve, 75um	1	N/A	2022/11/03	CAM SOP-00467	ASTM D1140 -17 m
Sodium Adsorption Ratio (SAR)	2	N/A	2022/11/04	CAM SOP-00102	EPA 6010C
Sodium Adsorption Ratio (SAR)	2	N/A	2022/11/05	CAM SOP-00102	EPA 6010C
Volatile Organic Compounds and F1 PHCS	3	N/A	2022/11/03	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds and F1 PHCS	1	N/A	2022/11/05	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. Where applicable, the analytical testing herein was performed in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the



Your Project #: 30150141
Site Location: WALDORF WAY TRIANGLE
Your C.O.C. #: n/a

Attention: Sumon Chatterjee

ARCADIS Canada Inc
121 Granton Dr
Unit 12
Richmond Hill, ON
CANADA L4B 3N4

Report Date: 2022/11/11
Report #: R7384135
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2V6578

Received: 2022/10/28, 18:47

Assessment of Properties under Part XV.1 of the Environmental Protection Act. Bureau Veritas is accredited by SCC (Lab ID 97) for all specific parameters as required by Ontario Regulation 153/04.

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.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

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) Soils are reported on a dry weight basis unless otherwise specified.

(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas 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.



Your Project #: 30150141
Site Location: WALDORF WAY TRIANGLE
Your C.O.C. #: n/a

Attention: Sumon Chatterjee

ARCADIS Canada Inc
121 Granton Dr
Unit 12
Richmond Hill, ON
CANADA L4B 3N4

Report Date: 2022/11/11
Report #: R7384135
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2V6578

Received: 2022/10/28, 18:47

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Marijane Cruz, Senior Project Manager
Email: Marijane.Cruz@bureauveritas.com
Phone# (905)817-5756

=====

Bureau Veritas 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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



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VERITAS

Bureau Veritas Job #: C2V6578
Report Date: 2022/11/11

ARCADIS Canada Inc
Client Project #: 30150141
Site Location: WALDORF WAY TRIANGLE
Sampler Initials: JG

O.REG 153 CHLOROPHENOLS (SOIL)

Bureau Veritas ID		UDO704	UDO706	UDO707			UDO708		
Sampling Date		2022/10/28 17:20	2022/10/28 17:25	2022/10/28 17:30			2022/10/28 17:30		
COC Number		n/a	n/a	n/a			n/a		
	UNITS	BH-1 2FT	BH-2 1FT	BH-3 2FT	RDL	QC Batch	DUP-01	RDL	QC Batch
Inorganics									
Moisture	%						8.7	1.0	8320182
Phenolics									
2-Chlorophenol	ug/g	<0.05	<0.05	<0.05	0.05	8326259	<0.05	0.05	8326259
2,4-Dichlorophenol	ug/g	<0.05	<0.05	<0.05	0.05	8326259	<0.05	0.05	8326259
2,4,6-Trichlorophenol	ug/g	<0.05	<0.05	<0.05	0.05	8326259	<0.05	0.05	8326259
Pentachlorophenol	ug/g	<0.05	<0.05	<0.05	0.05	8326259	<0.05	0.05	8326259
2,4,5-Trichlorophenol	ug/g	<0.05	<0.05	<0.05	0.05	8326259	<0.05	0.05	8326259
Surrogate Recovery (%)									
2,4,6-Tribromophenol	%	92	93	94		8326259	93		8326259
2-Fluorophenol	%	83	77	78		8326259	75		8326259
D5-Phenol	%	77	76	75		8326259	72		8326259
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									



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ARCADIS Canada Inc
Client Project #: 30150141
Site Location: WALDORF WAY TRIANGLE
Sampler Initials: JG

O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID		UDO704			UDO704			UDO706		
Sampling Date		2022/10/28 17:20			2022/10/28 17:20			2022/10/28 17:25		
COC Number		n/a			n/a			n/a		
	UNITS	BH-1 2FT	RDL	QC Batch	BH-1 2FT Lab-Dup	RDL	QC Batch	BH-2 1FT	RDL	QC Batch

Calculated Parameters										
Sodium Adsorption Ratio	N/A	0.31 (1)		8316327				0.26 (1)		8316327

Inorganics										
Conductivity	mS/cm	0.10	0.002	8323794				0.14	0.002	8323860
Moisture	%	3.7	1.0	8320911	3.2	1.0	8320911	6.1	1.0	8320911
Available (CaCl2) pH	pH	7.70		8323786				7.54		8323786
WAD Cyanide (Free)	ug/g	<0.01	0.01	8323428				<0.01	0.01	8323428
Chromium (VI)	ug/g	<0.18	0.18	8324396				<0.18	0.18	8324396

Metals										
Hot Water Ext. Boron (B)	ug/g	0.082	0.050	8323485				0.22	0.050	8323799
Acid Extractable Antimony (Sb)	ug/g	<0.20	0.20	8323456				<0.20	0.20	8323456
Acid Extractable Arsenic (As)	ug/g	2.5	1.0	8323456				3.5	1.0	8323456
Acid Extractable Barium (Ba)	ug/g	23	0.50	8323456				36	0.50	8323456
Acid Extractable Beryllium (Be)	ug/g	0.22	0.20	8323456				0.41	0.20	8323456
Acid Extractable Boron (B)	ug/g	<5.0	5.0	8323456				7.8	5.0	8323456
Acid Extractable Cadmium (Cd)	ug/g	<0.10	0.10	8323456				0.12	0.10	8323456
Acid Extractable Chromium (Cr)	ug/g	8.6	1.0	8323456				15	1.0	8323456
Acid Extractable Cobalt (Co)	ug/g	3.4	0.10	8323456				8.0	0.10	8323456
Acid Extractable Copper (Cu)	ug/g	14	0.50	8323456				22	0.50	8323456
Acid Extractable Lead (Pb)	ug/g	5.3	1.0	8323456				7.7	1.0	8323456
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	0.50	8323456				<0.50	0.50	8323456
Acid Extractable Nickel (Ni)	ug/g	7.1	0.50	8323456				17	0.50	8323456
Acid Extractable Selenium (Se)	ug/g	<0.50	0.50	8323456				<0.50	0.50	8323456
Acid Extractable Silver (Ag)	ug/g	<0.20	0.20	8323456				<0.20	0.20	8323456
Acid Extractable Thallium (Tl)	ug/g	<0.050	0.050	8323456				0.099	0.050	8323456
Acid Extractable Uranium (U)	ug/g	0.32	0.050	8323456				0.55	0.050	8323456
Acid Extractable Vanadium (V)	ug/g	17	5.0	8323456				21	5.0	8323456
Acid Extractable Zinc (Zn)	ug/g	21	5.0	8323456				44	5.0	8323456

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 Lab-Dup = Laboratory Initiated Duplicate
 (1) Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.



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O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID		UDO704			UDO704			UDO706		
Sampling Date		2022/10/28 17:20			2022/10/28 17:20			2022/10/28 17:25		
COC Number		n/a			n/a			n/a		
	UNITS	BH-1 2FT	RDL	QC Batch	BH-1 2FT Lab-Dup	RDL	QC Batch	BH-2 1FT	RDL	QC Batch
Acid Extractable Mercury (Hg)	ug/g	<0.050	0.050	8323456				<0.050	0.050	8323456
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate										



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Sampler Initials: JG

O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID		UDO707			UDO708			UDO708		
Sampling Date		2022/10/28 17:30			2022/10/28 17:30			2022/10/28 17:30		
COC Number		n/a			n/a			n/a		
	UNITS	BH-3 2FT	RDL	QC Batch	DUP-01	RDL	QC Batch	DUP-01 Lab-Dup	RDL	QC Batch

Calculated Parameters

Sodium Adsorption Ratio	N/A	1.8		8316327	1.3		8316327			
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Inorganics

Conductivity	mS/cm	0.28	0.002	8323794	0.28	0.002	8325007			
Moisture	%	11	1.0	8320911						
Available (CaCl2) pH	pH	7.70		8324032	7.78		8324642			
WAD Cyanide (Free)	ug/g	<0.01	0.01	8323926	<0.01	0.01	8324663			
Chromium (VI)	ug/g	<0.18	0.18	8324418	<0.18	0.18	8324914	<0.18	0.18	8324914

Metals

Hot Water Ext. Boron (B)	ug/g	0.24	0.050	8323485	0.34	0.050	8323799			
Acid Extractable Antimony (Sb)	ug/g	<0.20	0.20	8323456	0.22	0.20	8323438			
Acid Extractable Arsenic (As)	ug/g	4.6	1.0	8323456	4.5	1.0	8323438			
Acid Extractable Barium (Ba)	ug/g	52	0.50	8323456	50	0.50	8323438			
Acid Extractable Beryllium (Be)	ug/g	0.48	0.20	8323456	0.46	0.20	8323438			
Acid Extractable Boron (B)	ug/g	8.5	5.0	8323456	7.4	5.0	8323438			
Acid Extractable Cadmium (Cd)	ug/g	0.10	0.10	8323456	0.13	0.10	8323438			
Acid Extractable Chromium (Cr)	ug/g	15	1.0	8323456	15	1.0	8323438			
Acid Extractable Cobalt (Co)	ug/g	7.8	0.10	8323456	7.2	0.10	8323438			
Acid Extractable Copper (Cu)	ug/g	30	0.50	8323456	33	0.50	8323438			
Acid Extractable Lead (Pb)	ug/g	12	1.0	8323456	13	1.0	8323438			
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	0.50	8323456	<0.50	0.50	8323438			
Acid Extractable Nickel (Ni)	ug/g	18	0.50	8323456	17	0.50	8323438			
Acid Extractable Selenium (Se)	ug/g	<0.50	0.50	8323456	<0.50	0.50	8323438			
Acid Extractable Silver (Ag)	ug/g	<0.20	0.20	8323456	<0.20	0.20	8323438			
Acid Extractable Thallium (Tl)	ug/g	0.12	0.050	8323456	0.11	0.050	8323438			
Acid Extractable Uranium (U)	ug/g	0.49	0.050	8323456	0.49	0.050	8323438			
Acid Extractable Vanadium (V)	ug/g	23	5.0	8323456	22	5.0	8323438			
Acid Extractable Zinc (Zn)	ug/g	46	5.0	8323456	47	5.0	8323438			
Acid Extractable Mercury (Hg)	ug/g	<0.050	0.050	8323456	<0.050	0.050	8323438			

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 Lab-Dup = Laboratory Initiated Duplicate



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Sampler Initials: JG

O.REG 153 PAHS (SOIL)

Bureau Veritas ID		UDO704	UDO706	UDO707	UDO708		
Sampling Date		2022/10/28 17:20	2022/10/28 17:25	2022/10/28 17:30	2022/10/28 17:30		
COC Number		n/a	n/a	n/a	n/a		
	UNITS	BH-1 2FT	BH-2 1FT	BH-3 2FT	DUP-01	RDL	QC Batch
Calculated Parameters							
Methylnaphthalene, 2-(1-)	ug/g	0.012	<0.0071	0.011	<0.0071	0.0071	8318235
Polyaromatic Hydrocarbons							
Acenaphthene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8334782
Acenaphthylene	ug/g	<0.0050	<0.0050	0.0087	<0.0050	0.0050	8334782
Anthracene	ug/g	<0.0050	<0.0050	0.0060	<0.0050	0.0050	8334782
Benzo(a)anthracene	ug/g	<0.0050	<0.0050	0.022	0.011	0.0050	8334782
Benzo(a)pyrene	ug/g	0.0059	0.0055	0.025	0.012	0.0050	8334782
Benzo(b/j)fluoranthene	ug/g	0.010	0.012	0.038	0.020	0.0050	8334782
Benzo(g,h,i)perylene	ug/g	0.0090	0.0075	0.020	0.011	0.0050	8334782
Benzo(k)fluoranthene	ug/g	<0.0050	<0.0050	0.014	0.0061	0.0050	8334782
Chrysene	ug/g	<0.0050	0.0063	0.020	0.011	0.0050	8334782
Dibenzo(a,h)anthracene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8334782
Fluoranthene	ug/g	0.0072	0.0073	0.021	0.017	0.0050	8334782
Fluorene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8334782
Indeno(1,2,3-cd)pyrene	ug/g	0.0075	0.0055	0.019	0.0099	0.0050	8334782
1-Methylnaphthalene	ug/g	0.0059	<0.0050	0.0055	<0.0050	0.0050	8334782
2-Methylnaphthalene	ug/g	0.0061	<0.0050	0.0050	<0.0050	0.0050	8334782
Naphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8334782
Phenanthrene	ug/g	<0.0050	<0.0050	0.0059	<0.0050	0.0050	8334782
Pyrene	ug/g	0.0068	0.0089	0.029	0.022	0.0050	8334782
Surrogate Recovery (%)							
D10-Anthracene	%	104	108	103	103		8334782
D14-Terphenyl (FS)	%	102	108	101	101		8334782
D8-Acenaphthylene	%	103	111	107	104		8334782
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							



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Sampler Initials: JG

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

Bureau Veritas ID		UDO704	UDO706	UDO707		UDO708		
Sampling Date		2022/10/28 17:20	2022/10/28 17:25	2022/10/28 17:30		2022/10/28 17:30		
COC Number		n/a	n/a	n/a		n/a		
	UNITS	BH-1 2FT	BH-2 1FT	BH-3 2FT	QC Batch	DUP-01	RDL	QC Batch
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	<0.050	<0.050	8315946	<0.050	0.050	8315946
Volatile Organics								
Acetone (2-Propanone)	ug/g	<0.49	<0.49	<0.49	8318938	<0.49	0.49	8319062
Benzene	ug/g	<0.0060	<0.0060	<0.0060	8318938	<0.0060	0.0060	8319062
Bromodichloromethane	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
Bromoform	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
Bromomethane	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
Carbon Tetrachloride	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
Chlorobenzene	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
Chloroform	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
Dibromochloromethane	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
1,2-Dichlorobenzene	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
1,3-Dichlorobenzene	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
1,4-Dichlorobenzene	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
Dichlorodifluoromethane (FREON 12)	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
1,1-Dichloroethane	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
1,2-Dichloroethane	ug/g	<0.049	<0.049	<0.049	8318938	<0.049	0.049	8319062
1,1-Dichloroethylene	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
cis-1,2-Dichloroethylene	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
trans-1,2-Dichloroethylene	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
1,2-Dichloropropane	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
cis-1,3-Dichloropropene	ug/g	<0.030	<0.030	<0.030	8318938	<0.030	0.030	8319062
trans-1,3-Dichloropropene	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
Ethylbenzene	ug/g	<0.010	<0.010	<0.010	8318938	<0.010	0.010	8319062
Ethylene Dibromide	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
Hexane	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
Methylene Chloride(Dichloromethane)	ug/g	<0.049	<0.049	<0.049	8318938	<0.049	0.049	8319062
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.40	<0.40	<0.40	8318938	<0.40	0.40	8319062
Methyl Isobutyl Ketone	ug/g	<0.40	<0.40	<0.40	8318938	<0.40	0.40	8319062
Methyl t-butyl ether (MTBE)	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
Styrene	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
RDL = Reportable Detection Limit QC Batch = Quality Control Batch								



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Sampler Initials: JG

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

Bureau Veritas ID		UDO704	UDO706	UDO707		UDO708		
Sampling Date		2022/10/28 17:20	2022/10/28 17:25	2022/10/28 17:30		2022/10/28 17:30		
COC Number		n/a	n/a	n/a		n/a		
	UNITS	BH-1 2FT	BH-2 1FT	BH-3 2FT	QC Batch	DUP-01	RDL	QC Batch
1,1,1,2-Tetrachloroethane	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
1,1,2,2-Tetrachloroethane	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
Tetrachloroethylene	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
Toluene	ug/g	<0.020	<0.020	<0.020	8318938	<0.020	0.020	8319062
1,1,1-Trichloroethane	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
1,1,2-Trichloroethane	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
Trichloroethylene	ug/g	<0.010	<0.010	<0.010	8318938	<0.010	0.010	8319062
Trichlorofluoromethane (FREON 11)	ug/g	<0.040	<0.040	<0.040	8318938	<0.040	0.040	8319062
Vinyl Chloride	ug/g	<0.019	<0.019	<0.019	8318938	<0.019	0.019	8319062
p+m-Xylene	ug/g	<0.020	<0.020	<0.020	8318938	<0.020	0.020	8319062
o-Xylene	ug/g	<0.020	<0.020	<0.020	8318938	<0.020	0.020	8319062
Total Xylenes	ug/g	<0.020	<0.020	<0.020	8318938	<0.020	0.020	8319062
F1 (C6-C10)	ug/g	<10	<10	<10	8318938	<10	10	8319062
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	8318938	<10	10	8319062
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	8334796	<10	10	8334796
F3 (C16-C34 Hydrocarbons)	ug/g	<50	<50	<50	8334796	<50	50	8334796
F4 (C34-C50 Hydrocarbons)	ug/g	<50	<50	<50	8334796	<50	50	8334796
Reached Baseline at C50	ug/g	Yes	Yes	Yes	8334796	Yes		8334796
Surrogate Recovery (%)								
o-Terphenyl	%	91	89	90	8334796	93		8334796
4-Bromofluorobenzene	%	97	96	96	8318938	97		8319062
D10-o-Xylene	%	78	84	87	8318938	105		8319062
D4-1,2-Dichloroethane	%	86	85	86	8318938	98		8319062
D8-Toluene	%	100	101	100	8318938	94		8319062
RDL = Reportable Detection Limit QC Batch = Quality Control Batch								



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ARCADIS Canada Inc
Client Project #: 30150141
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Sampler Initials: JG

RESULTS OF ANALYSES OF SOIL

Bureau Veritas ID		UDO705		
Sampling Date		2022/10/28 17:35		
COC Number		n/a		
	UNITS	BH-1 1FT	RDL	QC Batch
Miscellaneous Parameters				
Grain Size	%	COARSE	N/A	8325213
Sieve - #200 (<0.075mm)	%	24	1	8325213
Sieve - #200 (>0.075mm)	%	76	1	8325213
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable				



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TEST SUMMARY

Bureau Veritas ID: UDO704
Sample ID: BH-1 2FT
Matrix: Soil

Collected: 2022/10/28
Shipped:
Received: 2022/10/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8318235	N/A	2022/11/10	Automated Statchk
Hot Water Extractable Boron	ICP	8323485	2022/11/03	2022/11/05	Thuy Linh Nguyen
1,3-Dichloropropene Sum	CALC	8315946	N/A	2022/11/03	Automated Statchk
Free (WAD) Cyanide	TECH	8323428	2022/11/03	2022/11/03	Kruti Jitesh Patel
Conductivity	AT	8323794	2022/11/03	2022/11/03	Surinder Rai
Acid Extractables by GC/MS	GC/MS	8326259	2022/11/04	2022/11/04	May Yin Mak
Hexavalent Chromium in Soil by IC	IC/SPEC	8324396	2022/11/03	2022/11/06	Surleen Kaur Romana
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8334796	2022/11/09	2022/11/10	Dennis Ngondou
Acid Extractable Metals by ICPMS	ICP/MS	8323456	2022/11/03	2022/11/04	Azita Fazaeli
Moisture	BAL	8320911	N/A	2022/11/02	Simrat Bhathal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8334782	2022/11/09	2022/11/09	Mitesh Raj
pH CaCl2 EXTRACT	AT	8323786	2022/11/03	2022/11/03	Taslina Aktar
Sodium Adsorption Ratio (SAR)	CALC/MET	8316327	N/A	2022/11/04	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8318938	N/A	2022/11/03	Xueming Jiang

Bureau Veritas ID: UDO704 Dup
Sample ID: BH-1 2FT
Matrix: Soil

Collected: 2022/10/28
Shipped:
Received: 2022/10/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	8320911	N/A	2022/11/02	Simrat Bhathal

Bureau Veritas ID: UDO705
Sample ID: BH-1 1FT
Matrix: Soil

Collected: 2022/10/28
Shipped:
Received: 2022/10/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sieve, 75um	SIEV	8325213	N/A	2022/11/03	Muhammad Chhaidan

Bureau Veritas ID: UDO706
Sample ID: BH-2 1FT
Matrix: Soil

Collected: 2022/10/28
Shipped:
Received: 2022/10/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8318235	N/A	2022/11/10	Automated Statchk
Hot Water Extractable Boron	ICP	8323799	2022/11/03	2022/11/03	Jolly John
1,3-Dichloropropene Sum	CALC	8315946	N/A	2022/11/03	Automated Statchk
Free (WAD) Cyanide	TECH	8323428	2022/11/03	2022/11/03	Kruti Jitesh Patel
Conductivity	AT	8323860	2022/11/03	2022/11/03	Surinder Rai
Acid Extractables by GC/MS	GC/MS	8326259	2022/11/04	2022/11/04	May Yin Mak
Hexavalent Chromium in Soil by IC	IC/SPEC	8324396	2022/11/03	2022/11/06	Surleen Kaur Romana
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8334796	2022/11/09	2022/11/10	Dennis Ngondou
Acid Extractable Metals by ICPMS	ICP/MS	8323456	2022/11/03	2022/11/04	Azita Fazaeli
Moisture	BAL	8320911	N/A	2022/11/02	Simrat Bhathal



BUREAU
VERITAS

Bureau Veritas Job #: C2V6578
Report Date: 2022/11/11

ARCADIS Canada Inc
Client Project #: 30150141
Site Location: WALDORF WAY TRIANGLE
Sampler Initials: JG

TEST SUMMARY

Bureau Veritas ID: UDO706
Sample ID: BH-2 1FT
Matrix: Soil

Collected: 2022/10/28
Shipped:
Received: 2022/10/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8334782	2022/11/09	2022/11/09	Mitesh Raj
pH CaCl2 EXTRACT	AT	8323786	2022/11/03	2022/11/03	Taslina Aktar
Sodium Adsorption Ratio (SAR)	CALC/MET	8316327	N/A	2022/11/05	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8318938	N/A	2022/11/03	Xueming Jiang

Bureau Veritas ID: UDO707
Sample ID: BH-3 2FT
Matrix: Soil

Collected: 2022/10/28
Shipped:
Received: 2022/10/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8318235	N/A	2022/11/10	Automated Statchk
Hot Water Extractable Boron	ICP	8323485	2022/11/03	2022/11/05	Thuy Linh Nguyen
1,3-Dichloropropene Sum	CALC	8315946	N/A	2022/11/03	Automated Statchk
Free (WAD) Cyanide	TECH	8323926	2022/11/03	2022/11/03	Prgya Panchal
Conductivity	AT	8323794	2022/11/03	2022/11/03	Surinder Rai
Acid Extractables by GC/MS	GC/MS	8326259	2022/11/04	2022/11/04	May Yin Mak
Hexavalent Chromium in Soil by IC	IC/SPEC	8324418	2022/11/03	2022/11/05	Sousan Besharatlou
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8334796	2022/11/09	2022/11/10	Dennis Ngondou
Acid Extractable Metals by ICPMS	ICP/MS	8323456	2022/11/03	2022/11/04	Azita Fazaeli
Moisture	BAL	8320911	N/A	2022/11/02	Simrat Bhathal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8334782	2022/11/09	2022/11/09	Mitesh Raj
pH CaCl2 EXTRACT	AT	8324032	2022/11/03	2022/11/03	Taslina Aktar
Sodium Adsorption Ratio (SAR)	CALC/MET	8316327	N/A	2022/11/04	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8318938	N/A	2022/11/03	Xueming Jiang

Bureau Veritas ID: UDO708
Sample ID: DUP-01
Matrix: Soil

Collected: 2022/10/28
Shipped:
Received: 2022/10/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8318235	N/A	2022/11/10	Automated Statchk
Hot Water Extractable Boron	ICP	8323799	2022/11/03	2022/11/03	Jolly John
1,3-Dichloropropene Sum	CALC	8315946	N/A	2022/11/06	Automated Statchk
Free (WAD) Cyanide	TECH	8324663	2022/11/03	2022/11/04	Kruti Jitesh Patel
Conductivity	AT	8325007	2022/11/03	2022/11/04	Surinder Rai
Acid Extractables by GC/MS	GC/MS	8326259	2022/11/04	2022/11/04	May Yin Mak
Hexavalent Chromium in Soil by IC	IC/SPEC	8324914	2022/11/03	2022/11/05	Surleen Kaur Romana
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8334796	2022/11/09	2022/11/10	Dennis Ngondou
Acid Extractable Metals by ICPMS	ICP/MS	8323438	2022/11/03	2022/11/03	Daniel Teclu
Moisture	BAL	8320182	N/A	2022/11/01	Simrat Bhathal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8334782	2022/11/09	2022/11/09	Mitesh Raj
pH CaCl2 EXTRACT	AT	8324642	2022/11/03	2022/11/03	Taslina Aktar
Sodium Adsorption Ratio (SAR)	CALC/MET	8316327	N/A	2022/11/05	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8319062	N/A	2022/11/05	Juan Pangilinan



**BUREAU
VERITAS**

Bureau Veritas Job #: C2V6578
Report Date: 2022/11/11

ARCADIS Canada Inc
Client Project #: 30150141
Site Location: WALDORF WAY TRIANGLE
Sampler Initials: JG

TEST SUMMARY

Bureau Veritas ID: UDO708 Dup
Sample ID: DUP-01
Matrix: Soil

Collected: 2022/10/28
Shipped:
Received: 2022/10/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hexavalent Chromium in Soil by IC	IC/SPEC	8324914	2022/11/03	2022/11/05	Surleen Kaur Romana



GENERAL COMMENTS

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

Package 1	8.3°C
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The following changes were requested by Karl Williams on 2022/11/08.
Site Location changed to WALDORF WAY TRIANGLE
Cooler custody seal present and intact.

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C2V6578

Report Date: 2022/11/11

QUALITY ASSURANCE REPORT

ARCADIS Canada Inc

Client Project #: 30150141

Site Location: WALDORF WAY TRIANGLE

Sampler Initials: JG

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8318938	4-Bromofluorobenzene	2022/11/03	95	60 - 140	97	60 - 140	94	%				
8318938	D10-o-Xylene	2022/11/03	104	60 - 130	97	60 - 130	90	%				
8318938	D4-1,2-Dichloroethane	2022/11/03	86	60 - 140	87	60 - 140	89	%				
8318938	D8-Toluene	2022/11/03	102	60 - 140	104	60 - 140	99	%				
8319062	4-Bromofluorobenzene	2022/11/05	102	60 - 140	103	60 - 140	98	%				
8319062	D10-o-Xylene	2022/11/05	126	60 - 130	104	60 - 130	106	%				
8319062	D4-1,2-Dichloroethane	2022/11/05	98	60 - 140	97	60 - 140	98	%				
8319062	D8-Toluene	2022/11/05	101	60 - 140	100	60 - 140	94	%				
8326259	2,4,6-Tribromophenol	2022/11/04	83	50 - 130	85	50 - 130	87	%				
8326259	2-Fluorophenol	2022/11/04	72	50 - 130	57	50 - 130	61	%				
8326259	D5-Phenol	2022/11/04	65	30 - 130	91	30 - 130	92	%				
8334782	D10-Anthracene	2022/11/09	102	50 - 130	105	50 - 130	103	%				
8334782	D14-Terphenyl (FS)	2022/11/09	100	50 - 130	102	50 - 130	102	%				
8334782	D8-Acenaphthylene	2022/11/09	104	50 - 130	108	50 - 130	102	%				
8334796	o-Terphenyl	2022/11/10	87	60 - 130	89	60 - 130	94	%				
8318938	1,1,1,2-Tetrachloroethane	2022/11/03	88	60 - 140	93	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	1,1,1-Trichloroethane	2022/11/03	81	60 - 140	87	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	1,1,2,2-Tetrachloroethane	2022/11/03	99	60 - 140	100	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	1,1,2-Trichloroethane	2022/11/03	89	60 - 140	92	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	1,1-Dichloroethane	2022/11/03	93	60 - 140	99	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	1,1-Dichloroethylene	2022/11/03	91	60 - 140	98	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	1,2-Dichlorobenzene	2022/11/03	84	60 - 140	94	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	1,2-Dichloroethane	2022/11/03	81	60 - 140	82	60 - 130	<0.049	ug/g	NC (1)	50		
8318938	1,2-Dichloropropane	2022/11/03	101	60 - 140	102	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	1,3-Dichlorobenzene	2022/11/03	84	60 - 140	93	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	1,4-Dichlorobenzene	2022/11/03	96	60 - 140	105	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	Acetone (2-Propanone)	2022/11/03	89	60 - 140	87	60 - 140	<0.49	ug/g	NC (1)	50		
8318938	Benzene	2022/11/03	94	60 - 140	98	60 - 130	<0.0060	ug/g	2.8 (1)	50		
8318938	Bromodichloromethane	2022/11/03	93	60 - 140	92	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	Bromoform	2022/11/03	89	60 - 140	92	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	Bromomethane	2022/11/03	94	60 - 140	98	60 - 140	<0.040	ug/g	NC (1)	50		



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VERITAS

Bureau Veritas Job #: C2V6578

Report Date: 2022/11/11

QUALITY ASSURANCE REPORT(CONT'D)

ARCADIS Canada Inc

Client Project #: 30150141

Site Location: WALDORF WAY TRIANGLE

Sampler Initials: JG

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8318938	Carbon Tetrachloride	2022/11/03	78	60 - 140	84	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	Chlorobenzene	2022/11/03	94	60 - 140	97	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	Chloroform	2022/11/03	89	60 - 140	93	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	cis-1,2-Dichloroethylene	2022/11/03	96	60 - 140	100	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	cis-1,3-Dichloropropene	2022/11/03	80	60 - 140	75	60 - 130	<0.030	ug/g	NC (1)	50		
8318938	Dibromochloromethane	2022/11/03	87	60 - 140	89	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	Dichlorodifluoromethane (FREON 12)	2022/11/03	106	60 - 140	122	60 - 140	<0.040	ug/g	NC (1)	50		
8318938	Ethylbenzene	2022/11/03	85	60 - 140	87	60 - 130	<0.010	ug/g	1.6 (1)	50		
8318938	Ethylene Dibromide	2022/11/03	93	60 - 140	92	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	F1 (C6-C10) - BTEX	2022/11/03					<10	ug/g	3.1 (1)	30		
8318938	F1 (C6-C10)	2022/11/03	NC	60 - 140	92	80 - 120	<10	ug/g	3.1 (1)	30		
8318938	Hexane	2022/11/03	91	60 - 140	108	60 - 130	<0.040	ug/g	7.5 (1)	50		
8318938	Methyl Ethyl Ketone (2-Butanone)	2022/11/03	107	60 - 140	102	60 - 140	<0.40	ug/g	NC (1)	50		
8318938	Methyl Isobutyl Ketone	2022/11/03	94	60 - 140	90	60 - 130	<0.40	ug/g	NC (1)	50		
8318938	Methyl t-butyl ether (MTBE)	2022/11/03	87	60 - 140	88	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	Methylene Chloride(Dichloromethane)	2022/11/03	101	60 - 140	106	60 - 130	<0.049	ug/g	NC (1)	50		
8318938	o-Xylene	2022/11/03	85	60 - 140	88	60 - 130	<0.020	ug/g	0.55 (1)	50		
8318938	p+m-Xylene	2022/11/03	88	60 - 140	90	60 - 130	<0.020	ug/g	0.23 (1)	50		
8318938	Styrene	2022/11/03	97	60 - 140	97	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	Tetrachloroethylene	2022/11/03	84	60 - 140	91	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	Toluene	2022/11/03	90	60 - 140	93	60 - 130	<0.020	ug/g	5.9 (1)	50		
8318938	Total Xylenes	2022/11/03					<0.020	ug/g	0.41 (1)	50		
8318938	trans-1,2-Dichloroethylene	2022/11/03	96	60 - 140	101	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	trans-1,3-Dichloropropene	2022/11/03	81	60 - 140	74	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	Trichloroethylene	2022/11/03	97	60 - 140	101	60 - 130	<0.010	ug/g	NC (1)	50		
8318938	Trichlorofluoromethane (FREON 11)	2022/11/03	80	60 - 140	89	60 - 130	<0.040	ug/g	NC (1)	50		
8318938	Vinyl Chloride	2022/11/03	97	60 - 140	106	60 - 130	<0.019	ug/g	NC (1)	50		
8319062	1,1,1,2-Tetrachloroethane	2022/11/05	109	60 - 140	92	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	1,1,1-Trichloroethane	2022/11/05	114	60 - 140	99	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	1,1,2,2-Tetrachloroethane	2022/11/05	100	60 - 140	84	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	1,1,2-Trichloroethane	2022/11/05	107	60 - 140	89	60 - 130	<0.040	ug/g	NC (1)	50		



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VERITAS

Bureau Veritas Job #: C2V6578

Report Date: 2022/11/11

QUALITY ASSURANCE REPORT(CONT'D)

ARCADIS Canada Inc

Client Project #: 30150141

Site Location: WALDORF WAY TRIANGLE

Sampler Initials: JG

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8319062	1,1-Dichloroethane	2022/11/05	105	60 - 140	90	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	1,1-Dichloroethylene	2022/11/05	115	60 - 140	100	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	1,2-Dichlorobenzene	2022/11/05	107	60 - 140	89	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	1,2-Dichloroethane	2022/11/05	102	60 - 140	88	60 - 130	<0.049	ug/g	NC (1)	50		
8319062	1,2-Dichloropropane	2022/11/05	107	60 - 140	92	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	1,3-Dichlorobenzene	2022/11/05	107	60 - 140	90	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	1,4-Dichlorobenzene	2022/11/05	124	60 - 140	104	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	Acetone (2-Propanone)	2022/11/05	107	60 - 140	92	60 - 140	<0.49	ug/g	NC (1)	50		
8319062	Benzene	2022/11/05	104	60 - 140	89	60 - 130	<0.0060	ug/g	NC (1)	50		
8319062	Bromodichloromethane	2022/11/05	110	60 - 140	94	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	Bromoform	2022/11/05	108	60 - 140	91	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	Bromomethane	2022/11/05	106	60 - 140	90	60 - 140	<0.040	ug/g	NC (1)	50		
8319062	Carbon Tetrachloride	2022/11/05	112	60 - 140	98	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	Chlorobenzene	2022/11/05	109	60 - 140	92	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	Chloroform	2022/11/05	108	60 - 140	93	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	cis-1,2-Dichloroethylene	2022/11/05	113	60 - 140	97	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	cis-1,3-Dichloropropene	2022/11/05	94	60 - 140	81	60 - 130	<0.030	ug/g	NC (1)	50		
8319062	Dibromochloromethane	2022/11/05	105	60 - 140	89	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	Dichlorodifluoromethane (FREON 12)	2022/11/05	109	60 - 140	95	60 - 140	<0.040	ug/g	NC (1)	50		
8319062	Ethylbenzene	2022/11/05	99	60 - 140	85	60 - 130	<0.010	ug/g	NC (1)	50		
8319062	Ethylene Dibromide	2022/11/05	103	60 - 140	87	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	F1 (C6-C10) - BTEX	2022/11/05					<10	ug/g	NC (1)	30		
8319062	F1 (C6-C10)	2022/11/05	107	60 - 140	103	80 - 120	<10	ug/g	NC (1)	30		
8319062	Hexane	2022/11/05	117	60 - 140	101	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	Methyl Ethyl Ketone (2-Butanone)	2022/11/05	104	60 - 140	90	60 - 140	<0.40	ug/g	NC (1)	50		
8319062	Methyl Isobutyl Ketone	2022/11/05	101	60 - 140	88	60 - 130	<0.40	ug/g	NC (1)	50		
8319062	Methyl t-butyl ether (MTBE)	2022/11/05	102	60 - 140	89	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	Methylene Chloride(Dichloromethane)	2022/11/05	112	60 - 140	96	60 - 130	<0.049	ug/g	NC (1)	50		
8319062	o-Xylene	2022/11/05	104	60 - 140	88	60 - 130	<0.020	ug/g	NC (1)	50		
8319062	p+m-Xylene	2022/11/05	104	60 - 140	88	60 - 130	<0.020	ug/g	NC (1)	50		
8319062	Styrene	2022/11/05	116	60 - 140	98	60 - 130	<0.040	ug/g	NC (1)	50		



BUREAU
VERITAS

Bureau Veritas Job #: C2V6578

Report Date: 2022/11/11

QUALITY ASSURANCE REPORT(CONT'D)

ARCADIS Canada Inc

Client Project #: 30150141

Site Location: WALDORF WAY TRIANGLE

Sampler Initials: JG

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8319062	Tetrachloroethylene	2022/11/05	106	60 - 140	91	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	Toluene	2022/11/05	102	60 - 140	86	60 - 130	<0.020	ug/g	NC (1)	50		
8319062	Total Xylenes	2022/11/05					<0.020	ug/g	NC (1)	50		
8319062	trans-1,2-Dichloroethylene	2022/11/05	113	60 - 140	99	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	trans-1,3-Dichloropropene	2022/11/05	97	60 - 140	80	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	Trichloroethylene	2022/11/05	118	60 - 140	103	60 - 130	<0.010	ug/g	NC (1)	50		
8319062	Trichlorofluoromethane (FREON 11)	2022/11/05	110	60 - 140	96	60 - 130	<0.040	ug/g	NC (1)	50		
8319062	Vinyl Chloride	2022/11/05	101	60 - 140	87	60 - 130	<0.019	ug/g	NC (1)	50		
8320182	Moisture	2022/11/01							7.3 (1)	20		
8320911	Moisture	2022/11/02							14 (2)	20		
8323428	WAD Cyanide (Free)	2022/11/03	97	75 - 125	101	80 - 120	<0.01	ug/g	NC (1)	35		
8323438	Acid Extractable Antimony (Sb)	2022/11/03	95	75 - 125	108	80 - 120	<0.20	ug/g	NC (1)	30		
8323438	Acid Extractable Arsenic (As)	2022/11/03	102	75 - 125	107	80 - 120	<1.0	ug/g	6.0 (1)	30		
8323438	Acid Extractable Barium (Ba)	2022/11/03	NC	75 - 125	108	80 - 120	<0.50	ug/g	2.8 (1)	30		
8323438	Acid Extractable Beryllium (Be)	2022/11/03	99	75 - 125	104	80 - 120	<0.20	ug/g	1.6 (1)	30		
8323438	Acid Extractable Boron (B)	2022/11/03	95	75 - 125	105	80 - 120	<5.0	ug/g	3.5 (1)	30		
8323438	Acid Extractable Cadmium (Cd)	2022/11/03	103	75 - 125	106	80 - 120	<0.10	ug/g	6.0 (1)	30		
8323438	Acid Extractable Chromium (Cr)	2022/11/03	NC	75 - 125	106	80 - 120	<1.0	ug/g	3.3 (1)	30		
8323438	Acid Extractable Cobalt (Co)	2022/11/03	102	75 - 125	107	80 - 120	<0.10	ug/g	5.2 (1)	30		
8323438	Acid Extractable Copper (Cu)	2022/11/03	100	75 - 125	107	80 - 120	<0.50	ug/g	3.4 (1)	30		
8323438	Acid Extractable Lead (Pb)	2022/11/03	100	75 - 125	109	80 - 120	<1.0	ug/g	28 (1)	30		
8323438	Acid Extractable Mercury (Hg)	2022/11/03	91	75 - 125	93	80 - 120	<0.050	ug/g				
8323438	Acid Extractable Molybdenum (Mo)	2022/11/03	103	75 - 125	106	80 - 120	<0.50	ug/g	NC (1)	30		
8323438	Acid Extractable Nickel (Ni)	2022/11/03	NC	75 - 125	104	80 - 120	<0.50	ug/g	1.1 (1)	30		
8323438	Acid Extractable Selenium (Se)	2022/11/03	101	75 - 125	107	80 - 120	<0.50	ug/g	NC (1)	30		
8323438	Acid Extractable Silver (Ag)	2022/11/03	103	75 - 125	109	80 - 120	<0.20	ug/g	NC (1)	30		
8323438	Acid Extractable Thallium (Tl)	2022/11/03	100	75 - 125	108	80 - 120	<0.050	ug/g	0.88 (1)	30		
8323438	Acid Extractable Uranium (U)	2022/11/03	105	75 - 125	108	80 - 120	<0.050	ug/g	5.1 (1)	30		
8323438	Acid Extractable Vanadium (V)	2022/11/03	NC	75 - 125	104	80 - 120	<5.0	ug/g	0.37 (1)	30		
8323438	Acid Extractable Zinc (Zn)	2022/11/03	NC	75 - 125	107	80 - 120	<5.0	ug/g	1.7 (1)	30		
8323456	Acid Extractable Antimony (Sb)	2022/11/04	78	75 - 125	99	80 - 120	<0.20	ug/g	NC (1)	30		



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VERITAS

Bureau Veritas Job #: C2V6578

Report Date: 2022/11/11

QUALITY ASSURANCE REPORT(CONT'D)

ARCADIS Canada Inc

Client Project #: 30150141

Site Location: WALDORF WAY TRIANGLE

Sampler Initials: JG

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8323456	Acid Extractable Arsenic (As)	2022/11/04	92	75 - 125	103	80 - 120	<1.0	ug/g	8.8 (1)	30		
8323456	Acid Extractable Barium (Ba)	2022/11/04	NC	75 - 125	100	80 - 120	<0.50	ug/g	2.3 (1)	30		
8323456	Acid Extractable Beryllium (Be)	2022/11/04	93	75 - 125	100	80 - 120	<0.20	ug/g	0.66 (1)	30		
8323456	Acid Extractable Boron (B)	2022/11/04	88	75 - 125	105	80 - 120	<5.0	ug/g	8.9 (1)	30		
8323456	Acid Extractable Cadmium (Cd)	2022/11/04	90	75 - 125	97	80 - 120	<0.10	ug/g	NC (1)	30		
8323456	Acid Extractable Chromium (Cr)	2022/11/04	89	75 - 125	101	80 - 120	<1.0	ug/g	1.3 (1)	30		
8323456	Acid Extractable Cobalt (Co)	2022/11/04	90	75 - 125	99	80 - 120	<0.10	ug/g	1.5 (1)	30		
8323456	Acid Extractable Copper (Cu)	2022/11/04	NC	75 - 125	102	80 - 120	<0.50	ug/g	2.0 (1)	30		
8323456	Acid Extractable Lead (Pb)	2022/11/04	89	75 - 125	97	80 - 120	<1.0	ug/g	0.096 (1)	30		
8323456	Acid Extractable Mercury (Hg)	2022/11/04	79	75 - 125	85	80 - 120	<0.050	ug/g	NC (1)	30		
8323456	Acid Extractable Molybdenum (Mo)	2022/11/04	89	75 - 125	98	80 - 120	<0.50	ug/g	NC (1)	30		
8323456	Acid Extractable Nickel (Ni)	2022/11/04	NC	75 - 125	101	80 - 120	<0.50	ug/g	2.2 (1)	30		
8323456	Acid Extractable Selenium (Se)	2022/11/04	92	75 - 125	102	80 - 120	<0.50	ug/g	NC (1)	30		
8323456	Acid Extractable Silver (Ag)	2022/11/04	91	75 - 125	98	80 - 120	<0.20	ug/g	NC (1)	30		
8323456	Acid Extractable Thallium (Tl)	2022/11/04	88	75 - 125	98	80 - 120	<0.050	ug/g	5.3 (1)	30		
8323456	Acid Extractable Uranium (U)	2022/11/04	92	75 - 125	98	80 - 120	<0.050	ug/g	4.1 (1)	30		
8323456	Acid Extractable Vanadium (V)	2022/11/04	NC	75 - 125	98	80 - 120	<5.0	ug/g	0.67 (1)	30		
8323456	Acid Extractable Zinc (Zn)	2022/11/04	NC	75 - 125	96	80 - 120	<5.0	ug/g	0.31 (1)	30		
8323485	Hot Water Ext. Boron (B)	2022/11/05	94	75 - 125	98	75 - 125	<0.050	ug/g	16 (1)	40		
8323786	Available (CaCl2) pH	2022/11/03			100	97 - 103			0.32 (1)	N/A		
8323794	Conductivity	2022/11/03			104	90 - 110	<0.002	mS/cm	0 (1)	10		
8323799	Hot Water Ext. Boron (B)	2022/11/03	86	75 - 125	97	75 - 125	<0.050	ug/g	11 (1)	40		
8323860	Conductivity	2022/11/03			103	90 - 110	<0.002	mS/cm	0.91 (1)	10		
8323926	WAD Cyanide (Free)	2022/11/03	93	75 - 125	96	80 - 120	<0.01	ug/g	NC (1)	35		
8324032	Available (CaCl2) pH	2022/11/03			100	97 - 103			0 (1)	N/A		
8324396	Chromium (VI)	2022/11/06	92	70 - 130	92	80 - 120	<0.18	ug/g	NC (1)	35		
8324418	Chromium (VI)	2022/11/05	102	70 - 130	88	80 - 120	<0.18	ug/g	NC (1)	35		
8324642	Available (CaCl2) pH	2022/11/03			100	97 - 103			0.42 (1)	N/A		
8324663	WAD Cyanide (Free)	2022/11/04	98	75 - 125	103	80 - 120	<0.01	ug/g	NC (1)	35		
8324914	Chromium (VI)	2022/11/05	82 (3)	70 - 130	86	80 - 120	<0.18	ug/g	NC (4)	35		
8325007	Conductivity	2022/11/04			102	90 - 110	<0.002	mS/cm	1.1 (1)	10		



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Report Date: 2022/11/11

QUALITY ASSURANCE REPORT(CONT'D)

ARCADIS Canada Inc

Client Project #: 30150141

Site Location: WALDORF WAY TRIANGLE

Sampler Initials: JG

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8325213	Sieve - #200 (<0.075mm)	2022/11/03							0.31 (1)	20	56	53 - 58
8325213	Sieve - #200 (>0.075mm)	2022/11/03							0.37 (1)	20	44	42 - 47
8326259	2,4,5-Trichlorophenol	2022/11/04	90	50 - 130	85	50 - 130	<0.05	ug/g	NC (1)	50		
8326259	2,4,6-Trichlorophenol	2022/11/04	66	50 - 130	86	50 - 130	<0.05	ug/g	NC (1)	50		
8326259	2,4-Dichlorophenol	2022/11/04	81	50 - 130	88	50 - 130	<0.05	ug/g	NC (1)	50		
8326259	2-Chlorophenol	2022/11/04	75	50 - 130	79	50 - 130	<0.05	ug/g	NC (1)	50		
8326259	Pentachlorophenol	2022/11/04	85	50 - 130	90	50 - 130	<0.05	ug/g	NC (1)	50		
8334782	1-Methylnaphthalene	2022/11/09	99	50 - 130	105	50 - 130	<0.0050	ug/g	NC (1)	40		
8334782	2-Methylnaphthalene	2022/11/09	93	50 - 130	101	50 - 130	<0.0050	ug/g	NC (1)	40		
8334782	Acenaphthene	2022/11/09	101	50 - 130	104	50 - 130	<0.0050	ug/g	NC (1)	40		
8334782	Acenaphthylene	2022/11/09	113	50 - 130	119	50 - 130	<0.0050	ug/g	NC (1)	40		
8334782	Anthracene	2022/11/09	113	50 - 130	116	50 - 130	<0.0050	ug/g	NC (1)	40		
8334782	Benzo(a)anthracene	2022/11/09	112	50 - 130	116	50 - 130	<0.0050	ug/g	NC (1)	40		
8334782	Benzo(a)pyrene	2022/11/09	101	50 - 130	103	50 - 130	<0.0050	ug/g	NC (1)	40		
8334782	Benzo(b,j)fluoranthene	2022/11/09	98	50 - 130	103	50 - 130	<0.0050	ug/g	NC (1)	40		
8334782	Benzo(g,h,i)perylene	2022/11/09	109	50 - 130	114	50 - 130	<0.0050	ug/g	NC (1)	40		
8334782	Benzo(k)fluoranthene	2022/11/09	100	50 - 130	100	50 - 130	<0.0050	ug/g	NC (1)	40		
8334782	Chrysene	2022/11/09	106	50 - 130	109	50 - 130	<0.0050	ug/g	NC (1)	40		
8334782	Dibenzo(a,h)anthracene	2022/11/09	110	50 - 130	114	50 - 130	<0.0050	ug/g	NC (1)	40		
8334782	Fluoranthene	2022/11/09	109	50 - 130	113	50 - 130	<0.0050	ug/g	NC (1)	40		
8334782	Fluorene	2022/11/09	109	50 - 130	111	50 - 130	<0.0050	ug/g	NC (1)	40		
8334782	Indeno(1,2,3-cd)pyrene	2022/11/09	113	50 - 130	117	50 - 130	<0.0050	ug/g	NC (1)	40		
8334782	Naphthalene	2022/11/09	87	50 - 130	97	50 - 130	<0.0050	ug/g	NC (1)	40		
8334782	Phenanthrene	2022/11/09	103	50 - 130	106	50 - 130	<0.0050	ug/g	NC (1)	40		
8334782	Pyrene	2022/11/09	108	50 - 130	112	50 - 130	<0.0050	ug/g	NC (1)	40		
8334796	F2 (C10-C16 Hydrocarbons)	2022/11/10	89	60 - 130	90	80 - 120	<10	ug/g	NC (1)	30		
8334796	F3 (C16-C34 Hydrocarbons)	2022/11/10	88	60 - 130	89	80 - 120	<50	ug/g	NC (1)	30		



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Bureau Veritas Job #: C2V6578

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QUALITY ASSURANCE REPORT(CONT'D)

ARCADIS Canada Inc

Client Project #: 30150141

Site Location: WALDORF WAY TRIANGLE

Sampler Initials: JG

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8334796	F4 (C34-C50 Hydrocarbons)	2022/11/10	91	60 - 130	91	80 - 120	<50	ug/g	NC (1)	30		

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.

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

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).

(1) Duplicate Parent ID

(2) Duplicate Parent ID [UDO704-04]

(3) Matrix Spike Parent ID [UDO708-02]

(4) Duplicate Parent ID [UDO708-02]



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Bureau Veritas Job #: C2V6578
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ARCADIS Canada Inc
Client Project #: 30150141
Site Location: WALDORF WAY TRIANGLE
Sampler Initials: JG

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Anastassia Hamanov, Scientific Specialist

Bureau Veritas 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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.



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CHAIN OF CUSTODY RECORD
ENV COC - 00014v3

Page 1 of 1

Invoice Information		Report Information (if differs from invoice)		Project Information		LAB USE ONLY - PLACE STICKER HERE	
Company: <u>Arcadis Canada</u>		Company:		Quotation #:			
Contact Name: <u>Sumon Chatterjee</u>		Contact Name:		P.O. #/ AFE#:			
Street Address: <u>121 Granton Dr</u>		Street Address:		Project #:			
City: <u>Richmond Hill</u>	Prov: <u>ON</u>	Postal Code: <u>L4B3M1</u>	City:	Prov:	Postal Code:		Site #:
Phone: <u>Hill</u>	Phone:		Site Location:		Rush Confirmation #:		
Email: <u>Sumon.Chatterjee@arcadis.com</u>		Email:		Site Location Province:		Sampled By:	
Copies:		Copies:		Copies:			

REG 153		Regulatory Criteria		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22		Regular Turnaround Time (TAT)		
<input type="checkbox"/> Table 1	<input checked="" type="checkbox"/> Res/Park	<input type="checkbox"/> Med/Fine	<input type="checkbox"/> LCME	<input type="checkbox"/> Reg 406, Table:			<input checked="" type="checkbox"/> 5 to 7 Day	
<input checked="" type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Course	<input checked="" type="checkbox"/> Reg 558*	<input type="checkbox"/> Sanitary Sewer Bylaw			<input type="checkbox"/> 10 Day	
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/other	<input type="checkbox"/> For RSC	*min 3 day TAT	<input type="checkbox"/> Storm Sewer Bylaw			Rush Turnaround Time (TAT)	
<input type="checkbox"/> Table			MISA	<input type="checkbox"/> Municipality			Surcharges apply	
		OTHER		PWQO			<input type="checkbox"/> Same Day	<input type="checkbox"/> 1 Day
				Other:			<input type="checkbox"/> 2 Day	<input type="checkbox"/> 3 Day
							<input type="checkbox"/> 4 Day	
							Date Required: YY MM DD	
							Comments	

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

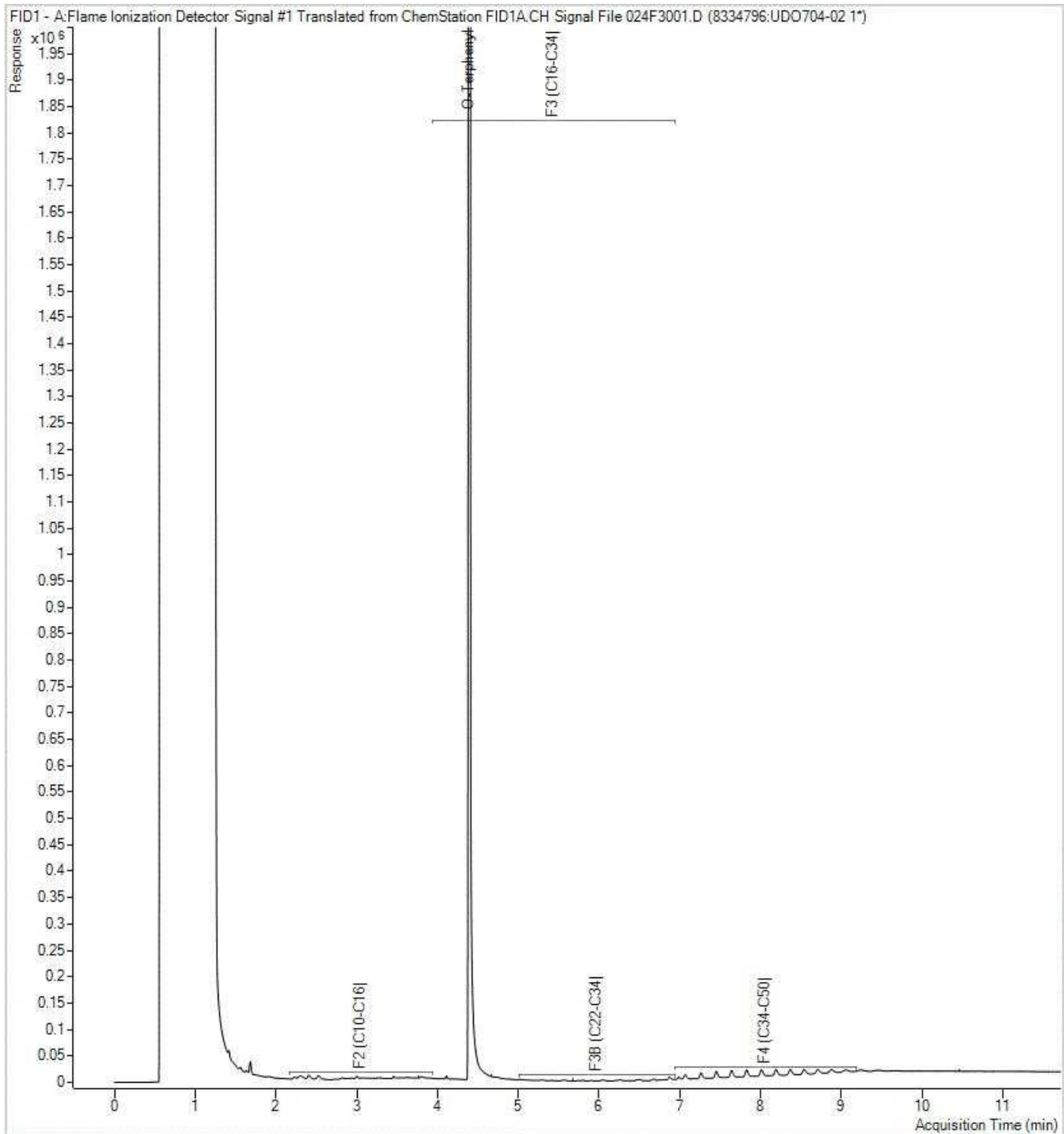
Sample Identification	Date Sampled			Time (24hr)		Matrix	FIELD FILTERED	FIELD PRESERVED	LAB FILTRATION REQUIRED	STEX / L	F2 - F4	VOCs	Reg 153 metals and inorganics	Reg 153 metals	Reg. Cr-VI, ICPMS metals -HWS-BI	CPS	Grain Size	# OF CONTAINERS SUBMITTED	HOLD - DO NOT ANALYZE
	YY	MM	DD	HH	MM														
1 BH-1 2ft	2022	10	28	17	20	Soil							X	X					4
2 BH-1 1ft					17 35														1
3 BH-2 1ft					17 25								X	X					4
4 BH-3 2ft					17 30								X	X					4
5 DUP-01					17 30								X	X					4

28-Oct-22 18:47
 Marijane Cruz
 C2V6578
 RJM ENV-410

*UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS AND CONDITIONS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/TERMS-AND-CONDITIONS OR BY CALLING THE LABORATORY LISTED ABOVE TO OBTAIN A COPY.

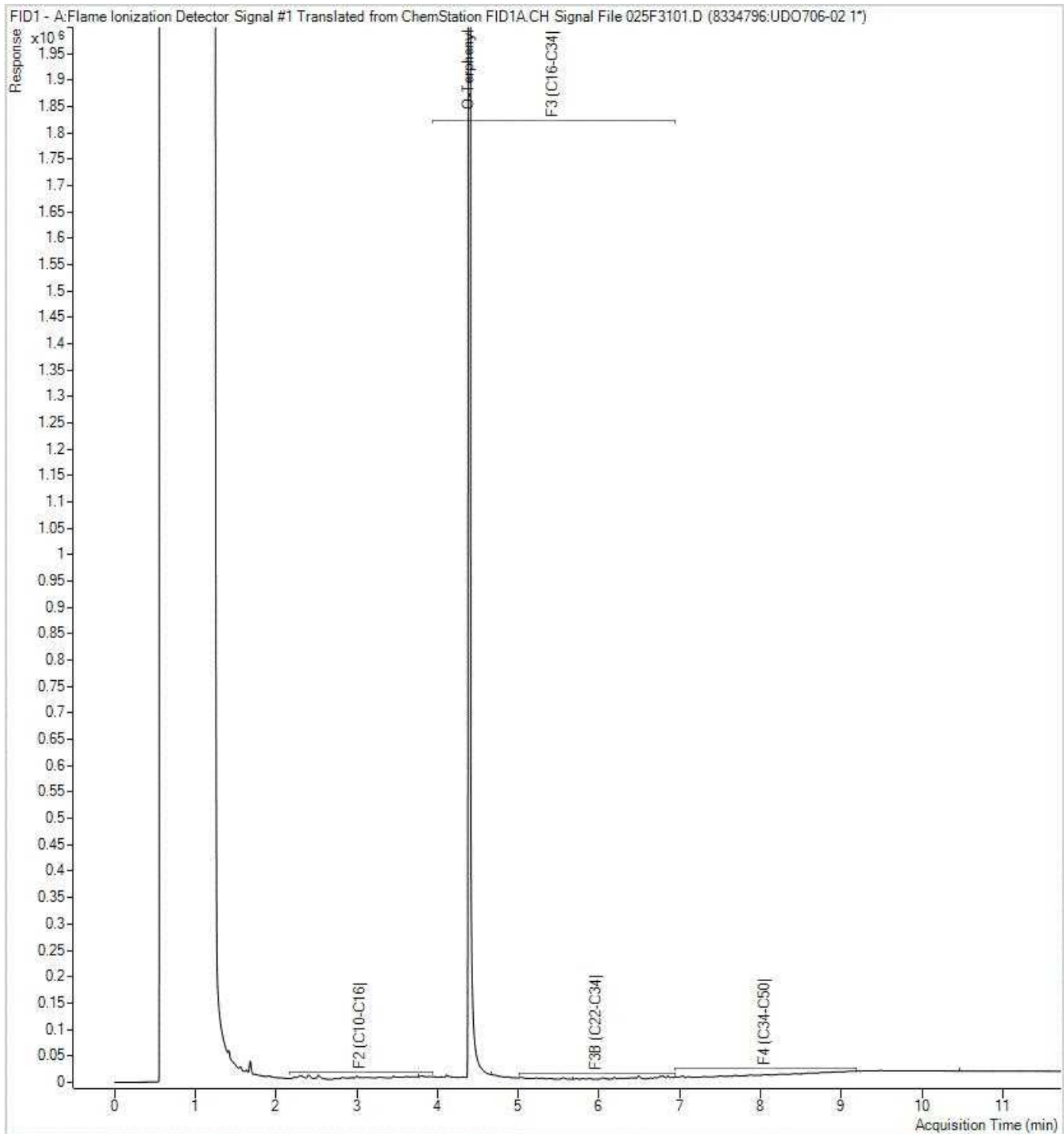
LAB USE ONLY		Yes	No	°C	LAB USE ONLY			Yes	No	°C	LAB USE ONLY			Yes	No	°C	Temperature reading by:
Seal present	<input checked="" type="checkbox"/>				Seal present	<input type="checkbox"/>			Seal present		<input type="checkbox"/>						
Seal intact	<input checked="" type="checkbox"/>				Seal intact	<input type="checkbox"/>			Seal intact		<input type="checkbox"/>						
Cooling media present	<input checked="" type="checkbox"/>			Cooling media present	<input type="checkbox"/>			Cooling media present	<input type="checkbox"/>								
Relinquished by: (Signature/ Print)		Date			Time		Received by: (Signature/ Print)		Date			Time		Special instructions			
1 Jody Goodin / Joey Goodin		2022	10	28	18	45	1 Ruppel / RUPINDER		2022	10	28	18	47				

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



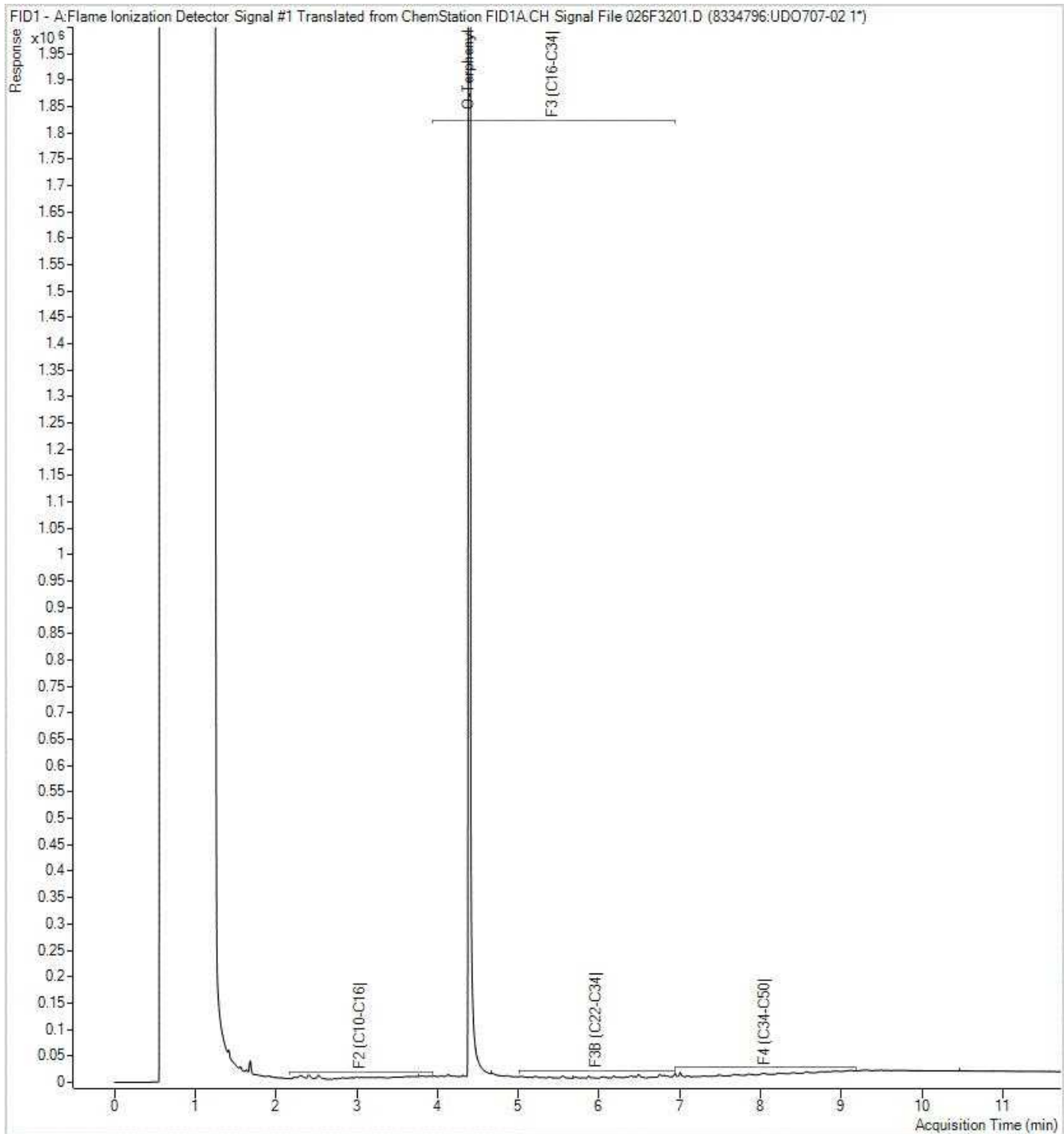
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



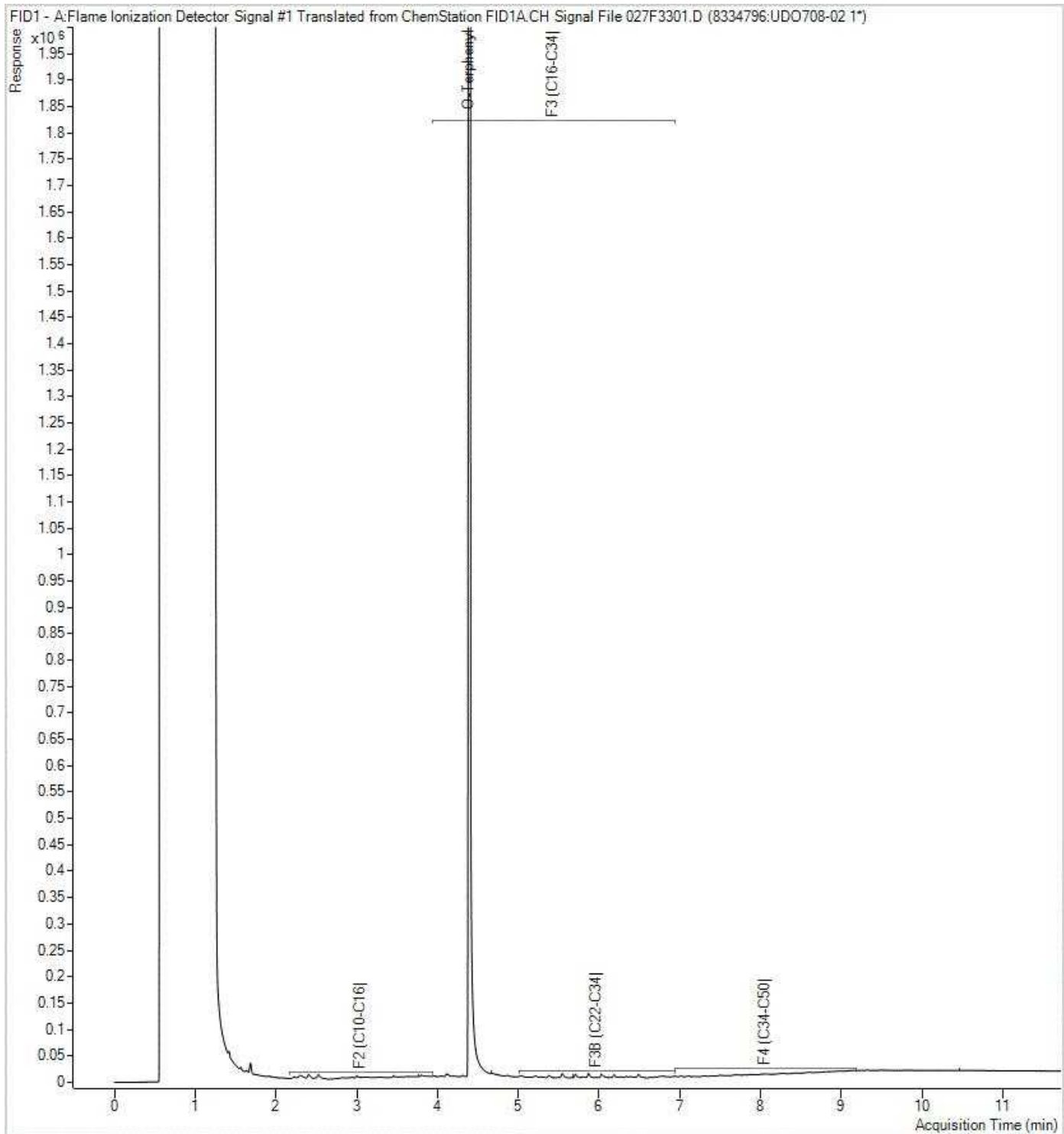
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

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.

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.

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