



**Developpements Proximi-T Inc.
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H3H 1Y5**

**Phase II Environmental Site Assessment
157 Holland Avenue
Ottawa, Ontario**

MM2316

March 3rd, 2020

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1 INTRODUCTION

CM3 Environmental Inc. (CM3) was retained by Developpements Proximi-T Inc. to carry out a Phase II Environmental Site Assessment (ESA) located at 157 Holland Avenue in Ottawa, Ontario (site or subject property). The purpose of the Phase II ESA was to assess the presence of potential contaminants of concern identified in the Phase I ESA completed by CM3. The investigation was completed in support of a real estate transaction and not in support of a record of site condition.

1.1 Site Location and Description

The subject property is located on the east side of Holland Avenue near the intersection of Holland Avenue and Byron Avenue in Ottawa, Ontario (**Figure 1**). The civic address for the subject property is 157 Holland Avenue, Ottawa, Ontario. The legal description is Plan 157 Lot 1569. The property identification number for the subject property is 040350024. The subject property is zoned GM for General Mixed Use. The property is occupied by one two storey residential building and a detached garage (used as residential space).

2 BACKGROUND

CM3 completed a Phase I ESA on the subject property in February 2020 (Report dated March 3rd, 2020). The Phase I indicated the former presence of heating oil use at the subject property. In addition, petroleum storage/use and dry-cleaning operations were identified within the Phase I Study Area. The Phase II ESA was completed to address these potential environmental concerns.

3 APPLICABLE SITE CONDITION STANDARDS

The results of the soil and groundwater analyses were compared to the Ontario Ministry of Environment, Conservation and Parks (MECP) *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, under Ontario Regulation (O. Reg.) 153/04. The following site conditions were used in the selection of the appropriate site condition standards (SCS):

- No environmentally sensitive areas were located on site or in the immediate vicinity;
- The site was not considered a shallow soil property (i.e. bedrock greater than 2 metres below grade);
- The site was not located within 30 m of a water body;
- Groundwater was not used as a potable water source in the area; and
- Land use at the site was considered residential.

The Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition with coarse soils and institutional/residential land use were selected for evaluation of the analytical results, based on the above.

4 SCOPE OF WORK

The purpose of the investigation was to assess the presence of potential contaminants of concern identified in the Phase I ESA. The site investigation was completed following the Canadian Standards Association (CSA) Standard Z769-00 (R2008) and in general accordance with Ontario Regulation 153/04. The scope of work for the supplemental investigation included:

- The preparation of a site-specific health and safety plan;
- The determination of the locations of all underground utilities by a third-party utility locator;
- The advancement of three boreholes completed as monitoring wells;
- The continuous collection of soil samples during the drilling for soil logging and on-site field screening;
- The selection of soil samples from each borehole for laboratory analysis of petroleum hydrocarbons (PHCs), polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs) and metals;
- The measurement of the depth to liquid phase hydrocarbons (LPH) and groundwater in all newly installed monitoring wells; and
- The collection of groundwater samples from all newly installed monitoring wells for laboratory analysis of PHCs, PAHs, VOCs and metals.

4.1 Borehole Drilling

A total of three boreholes (MW1 to MW3) were completed between February 24th and 25th, 2020, under supervision of CM3. Boreholes were advanced by OGS Inc from Almonte, Ontario. All boreholes were advanced in the parking lot on the south side of the main building. The borehole locations are provided on **Figure 2**.

4.1.1 Soil Sampling

Boreholes were advanced using a CME-75 truck mount drill rig. The boreholes were advanced to a maximum depth of 8.4 m below grade using hollow stem augers and split spoon samplers.

Soil samples were collected continuously from grade to the maximum depth of each borehole using a 60 cm long, 5.1 cm diameter split spoon sampler. Soil samples were logged at the time of drilling for grain size, colour, moisture content, and visual or olfactory evidence of impacts. Each soil sample was split for combustible vapour analysis and possible laboratory analysis. The sampling equipment was washed and rinsed between each sample interval and borehole location to prevent cross-contamination.

At the time of recovery, a portion of each sample was placed into a polyethylene bag for relative combustible organic vapour analysis. The remainder of each sample was placed into the appropriate laboratory supplied sample containers for the required analyses, following MECP sampling protocols. The sample containers were placed into an iced chilled cooler pending submission to the laboratory for analysis. The bagged samples were used for field screening of relative combustible vapours.

4.1.2 Field Screening

The bagged soil samples were allowed to equilibrate to ambient temperature prior to combustible vapour measurements. The vapour concentrations were measured and recorded from the bag sample headspace using an RKI Eagle combustible vapour meter calibrated to hexane and operated in methane elimination mode. The intake probe of the vapour meter was inserted into the plastic bag and the highest vapour reading from each sample was recorded. The results of the vapour analysis and field screening were used in the selection of samples for laboratory analysis. A total of 7 borehole soil samples were submitted to Paracel Laboratories for laboratory analysis of PHCs F1 to F4 fractions, PAHS, VOCs and/or metals.

4.2 Monitoring Well Installation

All boreholes were completed as monitoring wells. Monitoring well construction consisted of 50 mm outside diameter, flush-threaded schedule 40 PVC well screens and risers. At each borehole, a 10-slot well screen was placed to intercept the water table to allow for the detection of LPH. A silica sand pack was placed around the outside of the well screen in the annular space of the borehole to a minimum of 0.3 m above the screened interval. A bentonite seal was placed above the sand pack to approximately 0.3 m bg. All monitoring wells were capped with lockable j-plugs and finished below grade in flush-mounted manhole protective casings.

4.3 LPH and Water Level Measurement

The depth to LPH and groundwater was measured in all monitoring wells on February 25th, 2020 using a Solinst® electronic oil/water interface meter. The depth to LPH (if present) and water were measured the nearest millimetre from the highest point of the well riser. The interface probe was cleaned and rinsed with distilled water between each well to prevent cross contamination.

4.4 Groundwater Sampling

Groundwater samples were collected from monitoring wells MW1 to MW3 on February 25th, 2020. Prior to sampling, each well was purged to remove stagnant water from within the well bore and surrounding annulus to obtain samples that were representative of formation groundwater. Groundwater purging and sampling was conducted using 3/8" O.D. low density polyethylene (LDPE) tubing and a peristaltic pump. Purging continued until a minimum of three standing well volumes were removed, or the purge waters were relatively free of sediment.

Groundwater samples were collected directly from the outlet of the LDPE tubing into the appropriate laboratory supplied containers for the required analyses, following MECP sampling protocols. The samples were placed into an iced chilled cooler pending submission to Paracel for analysis of PHCs F1-F4 fractions, PAHs and/or metals.

4.5 Site Survey

The locations of all newly installed boreholes/monitoring wells were referenced to existing site buildings and structures. The ground surface and monitoring well top of pipe elevations were referenced to existing monitoring well top of pipe elevations using a TopCon AT-B4 automatic level.

The ground surface and top of pipe elevations are included in **Table 1** and within the borehole logs (**Appendix A**).

5 RESULTS AND EVALUATION

5.1 Site Geology

The site geology was determined based on the borehole drilling and soil logging. Surface materials included asphalt underlain by sand, silt and gravel fills to approximately 0.6 m below grade. The overburden soil at the site consisted of clay (sandy and silty in some locations) to approximately 6.5 m bg underlain by till to borehole refusal at 8.38 m.

The site stratigraphy is provided on the borehole logs (**Appendix A**).

5.2 Site Hydrogeology

5.2.1 Groundwater Elevations and Flow

The depth to LPH and groundwater was measured in newly installed monitoring wells on February 25, 2020 (**Table 1**). LPH was not present in any of the monitoring wells. Please note that due to the compressed timeframe for the assessment, groundwater level measurements were obtained shortly after the drilling activities and are not representative of static levels.

The water levels were between 93.81 m arl and 97.93 m arl, at average elevation of 96.25 m arl (3.94 m bg).

Groundwater flow direction could not be calculated as static water levels were not achieved.

5.3 Soil Field Screening

A total of 32 soil samples were collected from the boreholes for field screening and combustible vapour analysis. All samples showed combustible vapour concentrations of 0 parts per million (ppm), with the exception of MW1 SA1 which was 300 ppm. The soil combustible vapour concentrations are included on the borehole logs (**Appendix A**).

5.4 Soil Quality

The concentrations of all soil samples submitted for laboratory analysis (PHCs F1-F4 fractions, PAHs, VOCs and metals) were below the MECP Table 3 SCS and as such are acceptable for the current land use.

The soil sample analytical results are summarized in **Table 2** through **Table 5**. The borehole soil sample locations and soil quality are provided on **Figure 3**. The soil sample laboratory reports are provided in **Appendix B**.

5.5 Groundwater Quality

The concentrations of all groundwater samples submitted for laboratory analysis (PHCs F1-F4 fractions, PAHs, VOCs and metals) were below the MECP Table 3 SCS and as such are acceptable for the current land use.

The groundwater sample analytical results are summarized in **Table 6** through **Table 9**. The monitoring well locations and groundwater quality are provided on **Figure 4**. The groundwater sample laboratory reports are provided in **Appendix B**.

6 SUMMARY AND CONCLUSIONS

CM3 Environmental Inc. was retained by retained by Developpements Proximi-T Inc. to carry out a Phase II Environmental Site Assessment (ESA) located at 157 Holland Avenue in Ottawa, Ontario (site or subject property). The purpose of the Phase II ESA was to assess the presence of potential contaminants of concern (PHCs F1-F4, PAHs, VOCs and metals) identified in the Phase I ESA completed by CM3.

The investigation included the advancement of three (3) boreholes completed as monitoring wells to assess the soil and groundwater conditions.

The results of the Phase II ESA are summarized as follows:

Site Characterization

- The overburden soil at the site consisted of clay (sandy and silty in some locations) to approximately 6.5 m bg underlain by till to borehole refusal at 8.38 m.
- Groundwater was present in the newly installed wells at an elevation of 93.81 m arl and 97.93 m arl, at average elevation of 96.25 m arl (3.94 m bg).
- An inferred groundwater flow direction could not be determined as the groundwater had not reached static levels at the time of the measurements.
- LPH was not present in any monitoring wells during the investigation.

Soil Impacts

- Seven (7) soil samples were submitted for analysis of one or more of PHCs F1-F4 fractions, PAHs, VOCs and metals;
 - All samples were either non-detectable or concentrations were present at levels below the MECP Table 3 SCS.

Groundwater Impacts

- The three (3) newly installed monitoring wells were sampled for PHCs F1-F4 fractions, PAHs, VOCs and metals;
 - All samples were either non-detectable or concentrations were present at levels below the MECP Table 3 SCS.

7 CLOSING

This report has been prepared and the work referred to in this report has been undertaken by CM3 Environmental Inc. for Developpements Proximi-T Inc. It is intended for the sole and exclusive use of Developpements Proximi-T Inc., its affiliated companies and partners and their respective insurers, agents, employees and advisors. Any use, reliance on, or decision made by any person other than Developpements Proximi-T Inc. based on this report is the sole responsibility of such other person. CM3 Environmental Inc. and Developpements Proximi-T Inc. make no representation or warranty to any other person with regard to this report and the work referred to in this report, and they 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.

The investigation undertaken by CM3 Environmental Inc. with respect to this report and any conclusions or recommendations made in this report reflect CM3 Environmental Inc.'s judgement based on the site conditions observed at the time of the site inspection on the date(s) set out in this report and on information available at the time of preparation of this report. This report has been prepared for specific application to this site and it is based, in part, upon visual observation of the site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the site, substances addressed by the investigation may exist in areas of the site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the location from which samples were taken.

If site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

Other than by Developpements Proximi-T Inc., 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 CM3 Environmental Inc. Nothing in this report is intended to constitute or provide a legal opinion.

We trust that the above is satisfactory for your purposes at this time. Please feel free to contact the undersigned if you have any questions.

Yours sincerely,

CM3 Environmental Inc.



Sean Parsons
Environmental Technician



Marc MacDonald, P.Eng. QP
Principal



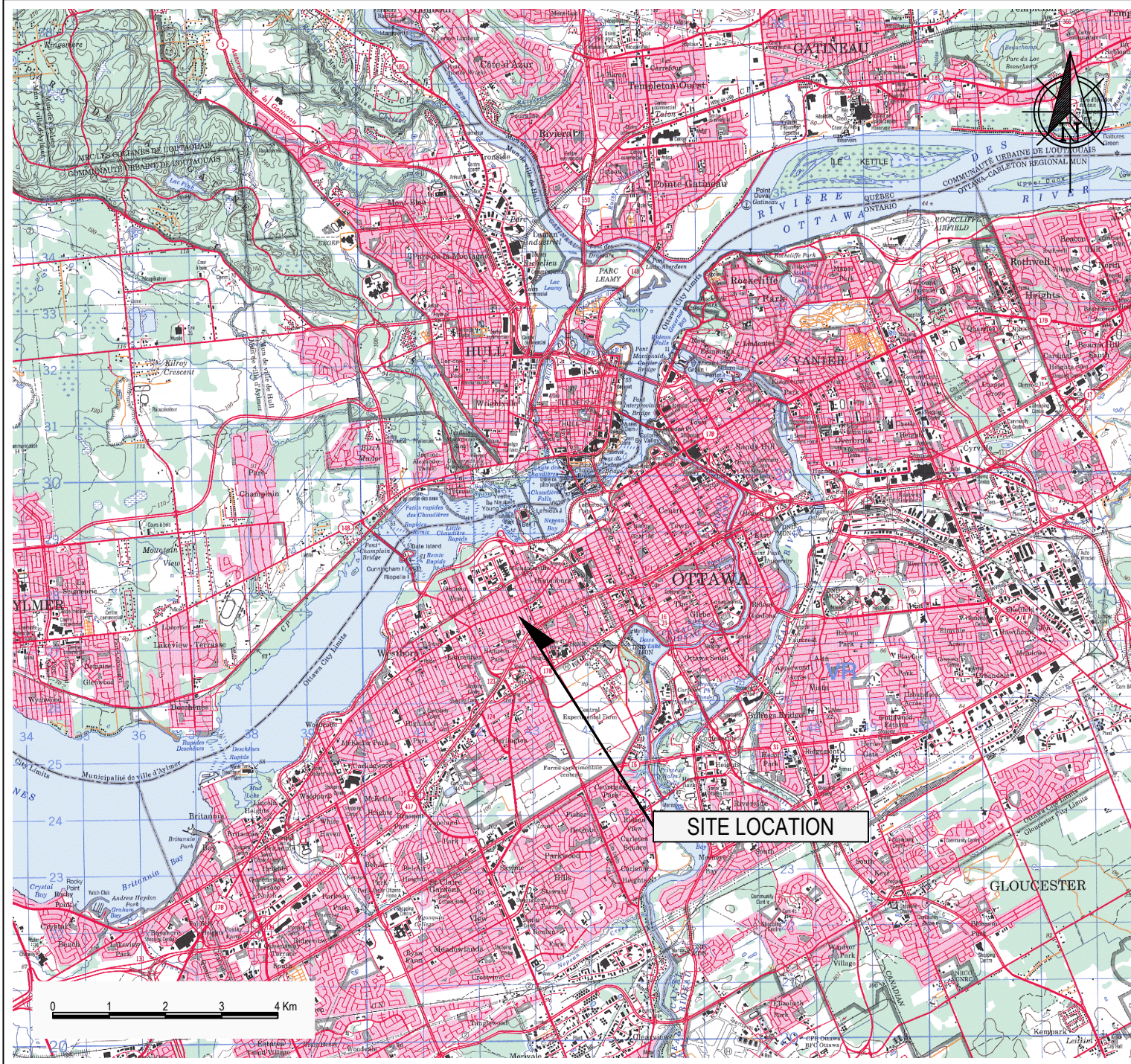
FIGURES

Developpements Proximi-T Inc.

Phase II ESA

157 Holland Avenue, Ottawa, Ontario

MM2316



CM3 ENVIRONMENTAL
5710 AKINS ROAD, OTTAWA, ON
K2S 1B8

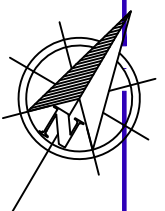
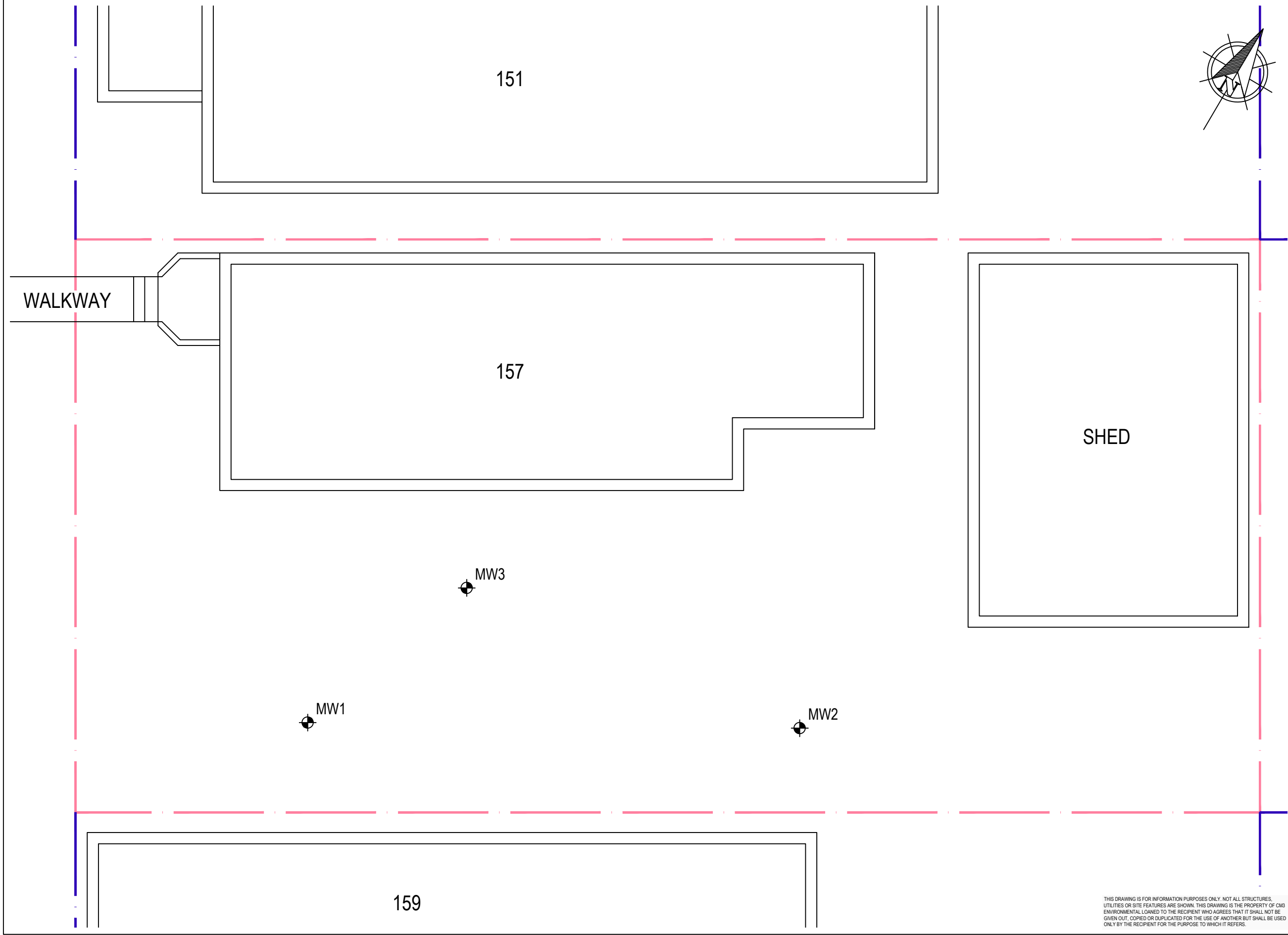
DEVELOPPEMENTS PROXIMI-T INC

PHASE II ENVIRONMENTAL SITE
ASSESSMENT

157 HOLLAND AVE
OTTAWA, ON

SITE LOCATION

Project:	MM2316	Drawn By:	KS
Date:	FEB 2020	Reviewed By:	MM
Scale:	AS SHOWN	Figure:	1



LEGEND

- PROPERTY BOUNDARY
- SUBJECT PROPERTY
- RESIDENCE/BUILDING
- BOREHOLE/MONITORING WELL

Scale 1:500

0 5 10 15 20 m

(Approx. When plotted 11x17)

CM3 ENVIRONMENTAL
5710 AKINS ROAD, OTTAWA, ON
K2S 1B8

DEVELOPPEMENTS PROXIMI-T INC

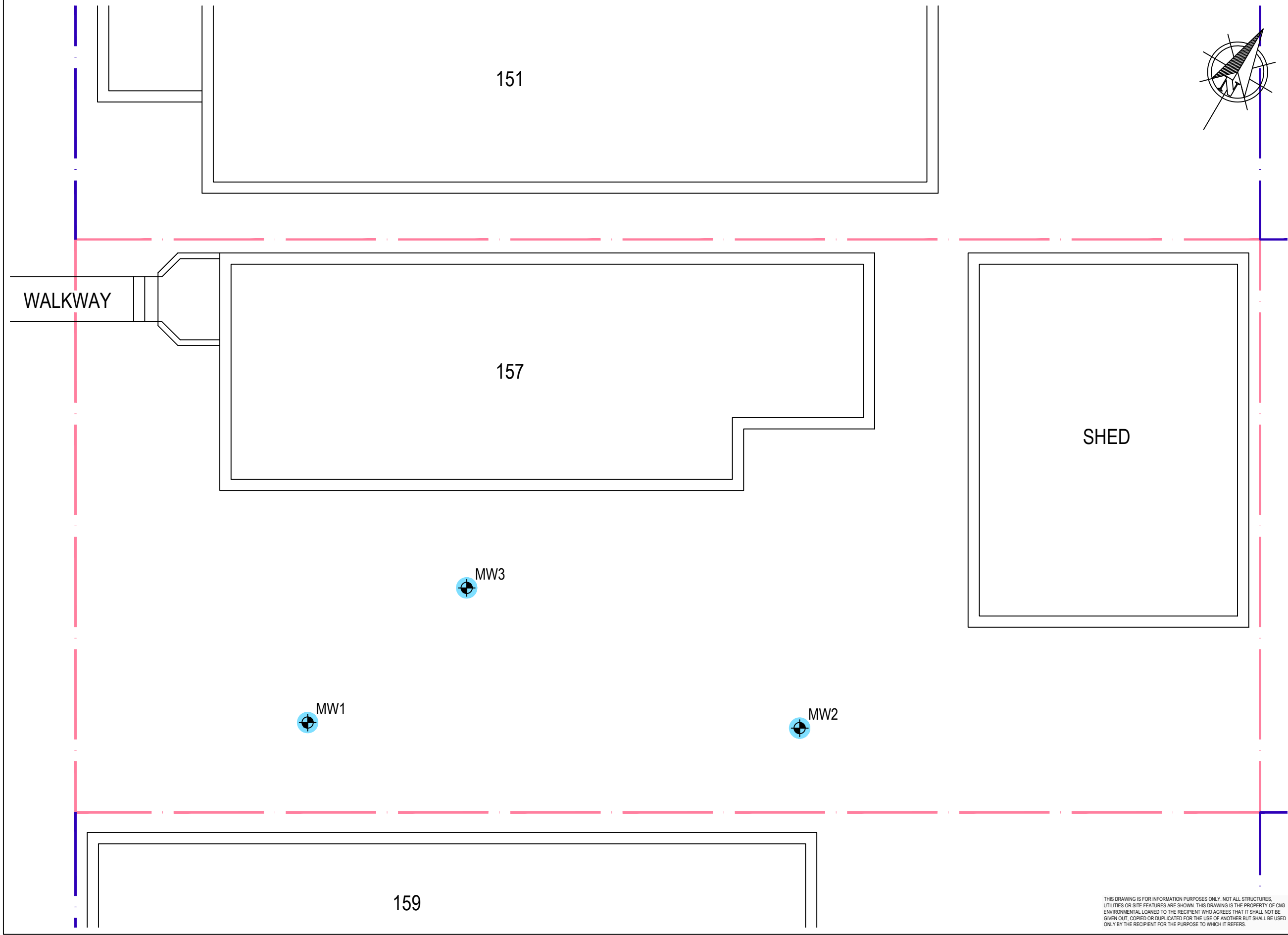
PHASE II ENVIRONMENTAL SITE
ASSESSMENT

157 HOLLAND AVE
OTTAWA, ON

SITE PLAN

Project:	MM2316	Drawn By:	KS
Date:	FEB 2020	Reviewed By:	MM
Scale:	1:500	Figure:	2

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LEGEND

- PROPERTY BOUNDARY
- SUBJECT PROPERTY
- RESIDENCE/BUILDING
- BOREHOLE/MONITORING WELL

SOIL SAMPLES ANALYSED*:

- CONTAMINANTS OF CONCERN NOT DETECTED
- ONE OR MORE CONTAMINANTS OF CONCERN < MECP TABLE 3 SCS
- ONE OR MORE CONTAMINANTS OF CONCERN > MECP TABLE 3 SCS

NS NO SOIL SAMPLES ANALYSED

* - REFER TO TABLE 1 FOR SAMPLING DATES AND RESULTS

Scale 1:100

0 1 2 3 4 m

(Approx. When plotted 11x17)

CM3 ENVIRONMENTAL
5710 AKINS ROAD, OTTAWA, ON
K2S 1B8

DEVELOPPEMENTS PROXIMI-T INC

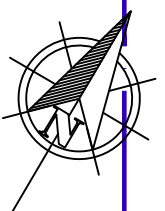
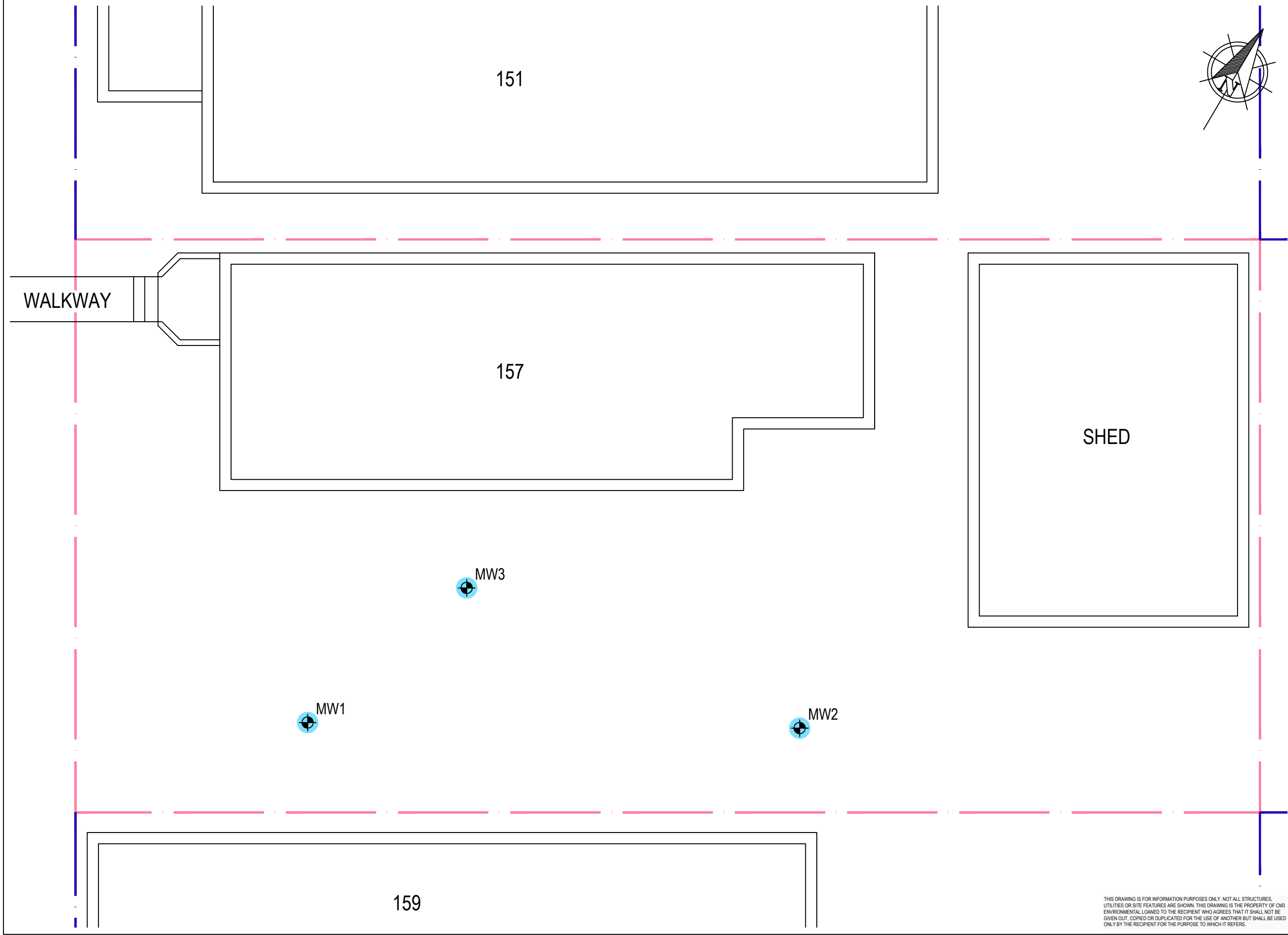
PHASE II ENVIRONMENTAL SITE ASSESSMENT

157 HOLLAND AVE
OTTAWA, ON

SOIL QUALITY

Project:	MM2316	Drawn By:	KS
Date:	FEB 2020	Reviewed By:	MM
Scale:	1:100	Figure:	3

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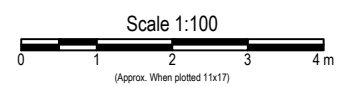
LEGEND

- PROPERTY BOUNDARY
- SUBJECT PROPERTY
- RESIDENCE/BUILDING
- BOREHOLE/MONITORING WELL

GROUNDWATER SAMPLES ANALYSED*:

- CONTAMINANTS OF CONCERN NOT DETECTED
- ONE OR MORE CONTAMINANTS OF CONCERN < MECP TABLE 3 SCS
- ONE OR MORE CONTAMINANTS OF CONCERN > MECP TABLE 3 SCS

* - REFER TO TABLE 1 FOR SAMPLING DATES AND RESULTS



CM3 ENVIRONMENTAL
5710 AKINS ROAD, OTTAWA, ON
K2S 1B8

DEVELOPPEMENTS PROXIMI-T INC

PHASE II ENVIRONMENTAL SITE ASSESSMENT
157 HOLLAND AVE
OTTAWA, ON
GROUNDWATER QUALITY

Project:	MM2316	Drawn By:	KS
Date:	FEB 2020	Reviewed By:	MM
Scale:	1:100	Figure:	4

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TABLES

Developpements Proximi-T Inc.

Phase II ESA

157 Holland Avenue, Ottawa, Ontario

MM2316

Table 1:
LPH and Groundwater Level Measurements
Phase II ESA
157 Holland Avenue
MM2316

Well ID	Date	TOC (marl)	Grade (marl)	Depth to		Elevation		Comments
				LPH (mbtoc)	GW (mbtoc)	LPH (marl)	GW (marl)	
MW1	9-Sep-18	100.000	100.097		6.195	--	93.805	
MW2	3-Feb-17	100.346	100.438		3.325	--	97.021	
MW3	10-Aug-17	100.224	100.262		2.295	--	97.929	

Notes:

TOC - top of casing
marl - metres above reference level
mbtoc - metres below top of casing
LPH - liquid phase hydrocarbons
GW - groundwater
NM - not measured
NV / -- - no value/LPH not present

TABLE 2: Summary of Soil Analytical Results
BTEX and Petroleum Hydrocarbons (PHCs) F1-F4 Fractions
Phase II ESA
157 Holland Avenue
MM2316

Sample ID	Sample Date	Depth (m bg)	HSVL (ppm)	Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	Xylene (Total)	PHC F1 (C6-C10)	PHC F2 (C10-C16)	PHC F3 (C16-C34)	PHC F4 (>C34)
MDL >				0.02	0.05	0.05	0.05	0.05	0.05	7	4	8	6
MECP Table 3 SCS >				0.21	2.3	2	NV	NV	3.1	55	98	300	2800
Boreholes/Monitoring wells													
MW1 SA4	24-Feb-20	2.3-3.0	0 ppm	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	ND (4)	ND (8)	ND (6)
MW2 SA4	24-Feb-20	2.3-3.0	0 ppm	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	ND (4)	ND (8)	ND (6)
MW3 SA2	25-Feb-20	0.6-1.2	0 ppm	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	ND (4)	ND (8)	ND (6)
MW3 SA3	25-Feb-20	1.2-1.8	0 ppm	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	ND (4)	ND (8)	ND (6)

Notes:
mg/kg - all concentrations provided in milligrams per kilogram (parts per million)
MDL - reported analytical method detection limit
HSVL - headspace vapour level (combustible vapour meter, calibrated to hexane)
m bg - metres below grade
ppm - parts per million
NV - no standard listed
"<" or "ND ()" - less than detection limits indicated (refer to laboratory report)
"NA" or "-" - not applicable or not analysed
MECP Table 3 SCS - Ontario Ministry of Environment, Conservation and Parks (MECP) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April, 2011.
Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, residential land use, coarse textured soil.
Bold / Italic - indicates concentration above applicable MECP Table 3 SCS
0.5 - MDL above applicable MECP Table 3 SCS (refer to laboratory reports)

**Table 3:
Summary of Soil Analytical Results
Metals
157 Holland Avenue
Phase II ESA
MM2316**

Parameter	MECP Table 3 SCS	MDL	MW1 SA1	MW2 SA1	MW3 SA1
date>			24-Feb-20	24-Feb-20	24-Feb-20
Borehole / Monitoring Well Soil Samples					
Metals					
Antimony	7.5	1	ND (1.0)	ND (1.0)	ND (1.0)
Arsenic	18	1	5.4	5.4	6.3
Barium	390	1	211	211	45.3
Beryllium	4	0.5	0.7	0.7	ND (0.5)
Boron	120	5	11.9	11.9	10.8
Cadmium	1.2	0.5	ND (0.5)	ND (0.5)	ND (0.5)
Chromium	160	5	64.7	64.7	13.8
Cobalt	22	1	13.9	13.9	12.4
Copper	140	5	61.6	61.6	51.8
Lead	120	1	47.5	47.5	30.4
Molybdenum	6.9	1	1.6	1.6	3.6
Nickel	100	5	37.6	37.6	13.8
Selenium	2.4	1	ND (1.0)	ND (1.0)	ND (1.0)
Silver	20	0.3	ND (0.3)	ND (0.3)	ND (0.3)
Thallium	1	1	ND (1.0)	ND (1.0)	ND (1.0)
Uranium	23	1	ND (1.0)	ND (1.0)	ND (1.0)
Vanadium	86	10	61.8	61.8	18.1
Zinc	340	20	98.3	98.3	45.5

Notes:

- ppm - All concentrations provided in parts per million (ppm or micrograms per gram - µg/g)
ND (0.05) - Non detects/Less than the 0.05 µg/g detection limits indicated (refer to laboratory report)
NV - No standard listed
NA - Not Analyzed

MECP Table 3 - Standards from the Ontario Ministry of Environment Conservation and Parks (MECP)
Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA (April 15, 2011)
(MECP, "Residential property use, coarse grained soil")

Bold / Italics - Concentration exceeds MECP Table 3 Standards

Table 4:
Summary of Soil Analytical Results
PAHs
157 Holland Avenue
Phase II ESA
MM2316

Parameter	MECP Table 3 SCS	MDL	MW1 SA1	MW2 SA1	MW3 SA2
date>			24-Feb-20	24-Feb-20	25-Feb-20
Monitoring Well Samples					
Metals					
Acenaphthene	600	0.05	0.03	0.04	0.03
Acenaphthylene	2	0.05	ND (0.02)	0.04	ND (0.02)
Anthracene	2	0.01	0.05	0.13	ND (0.02)
Benzo[a]anthracene	4.7	0.01	0.1	0.26	ND (0.02)
Benzo[a]pyrene	1	0.01	0.11	0.27	ND (0.02)
Benzo[b]fluoranthene	0.75	0.05	0.09	0.25	ND (0.02)
Benzo[g,h,i]perylene	0.2	0.05	0.06	0.15	ND (0.02)
Benzo[k]fluoranthene	0.4	0.05	0.05	0.12	ND (0.02)
Chrysene	1	0.05	0.13	0.31	ND (0.02)
Dibenzo[a,h]anthracene	0.52	0.05	ND (0.02)	0.04	ND (0.02)
Fluoranthene	130	0.01	0.23	0.54	ND (0.02)
Fluorene	400	0.05	0.02	0.06	0.04
Indeno[1,2,3-cd]pyrene	0.2	0.05	0.05	0.13	ND (0.02)
1-Methylnaphthalene	1,800	0.05	0.04	0.04	0.12
2-Methylnaphthalene	1,800	0.05	0.05	0.05	0.19
Methylnaphthalene (1&2)	1,800	0.1	0.08	0.08	0.31
Naphthalene	1,400	0.05	0.06	0.09	0.01
Phenanthrene	580	0.05	0.21	0.52	0.06
Pyrene	68	0.01	0.18	0.45	0.02

Notes:

mg/kg - all concentrations provided in milligrams per kilogram (parts per million)
MDL - reported analytical method detection limit
HSVL - headspace vapour level (combustible vapour meter, calibrated to hexane)
m bg - metres below grade
ppm - parts per million
NV - no standard listed

"<" or "ND ()" - less than detection limits indicated (refer to laboratory report)

"NA" or "-" - not applicable or not analysed

MECP Table 3 SCS - Ontario Ministry of Environment, Conservation and Parks (MECP) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April, 2011.

Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, residential land use, coarse textured soil.

Bold / Italic - indicates concentration above applicable MECP Table 3 SCS

0.5 - MDL above applicable MECP Table 3 SCS (refer to laboratory reports)

Table 5:
Summary of Soil Analytical Results
VOCs
157 Holland Avenue
Phase II ESA
MM2316

Parameter	MECP Table 3 SCS	MDL	MW1 SA4 24-Feb-20	MW2 SA4 24-Feb-20	MW3 SA2 25-Feb-20
date>					
Monitoring Well Samples					
Metals					
Acetone	16	0.5	ND (0.50)	ND (0.50)	ND (0.50)
Benzene	0	0.02	ND (0.02)	ND (0.02)	ND (0.02)
Bromodichloromethane	13	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Bromoform	0.27	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Bromomethane	0	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Carbon Tetrachloride	0.05	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Chlorobenzene	2.4	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Chloroform	0.05	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Dibromochloromethane	9.4	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Dichlorodifluoromethane	16	0.05	ND (0.05)	ND (0.05)	ND (0.05)
1,2-Dichlorobenzene	3	0.05	ND (0.05)	ND (0.05)	ND (0.05)
1,3-Dichlorobenzene	4.8	0.05	ND (0.05)	ND (0.05)	ND (0.05)
1,4-Dichlorobenzene	0.083	0.05	ND (0.05)	ND (0.05)	ND (0.05)
1,1-Dichloroethane	3.5	0.05	ND (0.05)	ND (0.05)	ND (0.05)
1,2-Dichloroethane	0	0.05	ND (0.05)	ND (0.05)	ND (0.05)
1,1-Dichloroethylene	0.05	0.05	ND (0.05)	ND (0.05)	ND (0.05)
cis-1,2-Dichloroethylene	3.4	0.05	ND (0.05)	ND (0.05)	ND (0.05)
trans-1,2-Dichloroethylene	0.084	0.05	ND (0.05)	ND (0.05)	ND (0.05)
1,2-Dichloropropane	0.05	0.05	ND (0.05)	ND (0.05)	ND (0.05)
cis-1,3-Dichloropropylene	NV	0.05	ND (0.05)	ND (0.05)	ND (0.05)
trans-1,3-Dichloropropylene	NV	0.05	ND (0.05)	ND (0.05)	ND (0.05)
1,3-Dichloropropene, total	0.05	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Ethylbenzene	2	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Ethylene dibromide (dibromoethane,	0.05	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Hexane	2.8	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Methyl Ethyl Ketone (2-Butanone)	16	0.5	ND (0.50)	ND (0.50)	ND (0.50)
Methyl Isobutyl Ketone	1.7	0.5	ND (0.50)	ND (0.50)	ND (0.50)
Methyl tert-butyl ether	0.75	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Methylene Chloride	0.1	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Styrene	0.7	0.05	ND (0.05)	ND (0.05)	ND (0.05)
1,1,1,2-Tetrachloroethane	0.058	0.05	ND (0.05)	ND (0.05)	ND (0.05)
1,1,2,2-Tetrachloroethane	0.05	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Tetrachloroethylene	0.28	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Toluene	2.3	0.05	ND (0.05)	ND (0.05)	ND (0.05)
1,1,1-Trichloroethane	0.38	0.05	ND (0.05)	ND (0.05)	ND (0.05)
1,1,2-Trichloroethane	0.05	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Trichloroethylene	0.061	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Trichlorofluoromethane	4	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Vinyl Chloride	0.02	0.02	ND (0.02)	ND (0.02)	ND (0.02)
m/p-Xylene	NV	0.05	ND (0.05)	ND (0.05)	ND (0.05)
o-Xylene	NV	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Xylenes, total	3.1	0.05	ND (0.05)	ND (0.05)	ND (0.05)

Notes:

mg/kg - all concentrations provided in milligrams per kilogram (parts per million)

MDL - reported analytical method detection limit

HSVL - headspace vapour level (combustible vapour meter, calibrated to hexane)

m bg - metres below grade

ppm - parts per million

NV - no standard listed

"<" or "ND ()" - less than detection limits indicated (refer to laboratory report)

"NA" or "-" - not applicable or not analysed

MECP Table 3 SCS - Ontario Ministry of Environment, Conservation and Parks (MECP) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April, 2011.

Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, residential land use, coarse textured soil.

Bold / Italic - indicates concentration above applicable MECP Table 3 SCS

0.5 - MDL above applicable MECP Table 3 SCS (refer to laboratory reports)

TABLE 6: Summary of Groundwater Analytical Results
BTEX and Petroleum Hydrocarbons (PHCs) F1-F4 Fractions
Phase II ESA
157 Holland Avenue
MM2316

Sample ID	Sample Date	Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	Xylene (Total)	PHC F1 (C6-C10)	PHC F2 (C10-C16)	PHC F3 (C16-C34)	PHC F4 (>C34)
MDL >											
MECP Table 3 SCS >		44	18000	2300	NV	NV	4200	750	150	500	500
Monitoring Wells											
MW1	25-Feb-20	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)
MW2	25-Feb-20	ND (0.5)	2.5	2.4	9	6.1	15.1	ND (25)	ND (100)	ND (100)	ND (100)
MW3	25-Feb-20	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)

Notes:

µg/L - all concentrations provided in micrograms per litre (parts per billion)

MDL - reported analytical method detection limit

ppm - parts per million

NV - no standard listed

"<" or "ND ()" - less than detection limits indicated (refer to laboratory report)

NA - not applicable

MECP Table 3 SCS - Ontario Ministry of Environment, Conservation and Parks (MECP) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April, 2011.

Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, residential land use, coarse textured soil.

Bold / Italic - indicates concentration above applicable MECP Table 3 SCS

0.5 - MDL above applicable MECP Table 3 SCS (refer to laboratory reports)

Table 7:
Summary of Groundwater Analytical Results
Metals
157 Holland Avenue
Phase II ESA
MM2316

Parameter	MECP Table 3 SCS	MDL	MW1	MW2	MW3
date>			25-Feb-20	25-Feb-20	25-Feb-20
Borehole / Monitoring Well Soil Samples					
Metals					
Antimony	20,000	0.5	0.6	ND (5.0)	ND (0.5)
Arsenic	1,900	1	1	ND (10)	ND (1)
Barium	29,000	1	107	395	39
Beryllium	67	0.5	ND (0.5)	ND (5.0)	ND (0.5)
Boron	45,000	10	545	106	55
Cadmium	2.7	0.1	ND (0.1)	ND (1.0)	ND (0.1)
Chromium	810	1	ND (1)	ND (10)	ND (1)
Cobalt	66	0.5	ND (0.5)	ND (5.0)	3
Copper	87	0.5	1.1	ND (5.0)	1.6
Lead	25	0.1	ND (0.1)	ND (1.0)	ND (0.1)
Molybdenum	9,200	0.5	5.9	9.6	4.3
Nickel	490	1	3	ND (10)	2
Selenium	63	1	ND (1)	ND (10)	2
Silver	1.5	0.1	ND (0.1)	ND (1.0)	ND (0.1)
Thallium	2,300,000	200	345000	1,130,000	625700
Uranium	510	0.1	ND (0.1)	ND (1.0)	ND (0.1)
Vanadium	420	0.1	0.7	3.8	1.1
Zinc	250	0.5	2.2	ND (5.0)	1.5
	1,100	5	19	ND (50)	15

Notes:

µg/L - all concentrations provided in micrograms per litre (parts per billion)

MDL - reported analytical method detection limit

NV - no standard listed

"<" or "ND ()" - less than detection limits indicated (refer to laboratory report)

NA - not applicable

MECP Table 3 SCS - Ontario Ministry of Environment, Conservation and Parks (MECP) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April, 2011.

Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, residential land use, coarse textured soil.

Bold / Italic - indicates concentration above applicable MECP Table 3 SCS

0.5 - MDL above applicable MECP Table 3 SCS (refer to laboratory reports)

Table 8:
Summary of Groundwater Analytical Results
PAHs
157 Holland Avenue
Phase II ESA
MM2316

Parameter	MECP Table 3 SCS	MDL	MW1	MW2	MW3
date>			25-Feb-20	25-Feb-20	25-Feb-20
Monitoring Well Samples					
Metals					
Acenaphthene	600	0.05	ND (0.05)	ND (0.05)	0.12
Acenaphthylene	2	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Anthracene	2	0.01	ND (0.01)	ND (0.01)	ND (0.01)
Benzo[a]anthracene	4.7	0.01	ND (0.01)	ND (0.01)	ND (0.01)
Benzo[a]pyrene	1	0.01	ND (0.01)	ND (0.01)	ND (0.01)
Benzo[b]fluoranthene	0.75	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Benzo[g,h,i]perylene	0.2	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Benzo[k]fluoranthene	0.4	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Chrysene	1	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Dibenzo[a,h]anthracene	0.52	0.05	ND (0.05)	ND (0.05)	ND (0.05)
Fluoranthene	130	0.01	ND (0.01)	ND (0.01)	ND (0.01)
Fluorene	400	0.05	ND (0.05)	ND (0.05)	0.13
Indeno[1,2,3-cd]pyrene	0.2	0.05	ND (0.05)	ND (0.05)	ND (0.05)
1-Methylnaphthalene	1800	0.05	ND (0.05)	0.23	0.29
2-Methylnaphthalene	1,800	0.05	ND (0.05)	0.45	0.36
Methylnaphthalene (1&2)	1800	0.1	ND (0.10)	0.68	0.66
Naphthalene	1400	0.05	ND (0.05)	0.22	0.06
Phenanthrene	580	0.05	ND (0.05)	0.06	0.12
Pyrene	68	0.01	ND (0.01)	ND (0.01)	ND (0.01)

Notes:

µg/L - all concentrations provided in micrograms per litre (parts per billion)

MDL - reported analytical method detection limit

NV - no standard listed

"<" or "ND ()" - less than detection limits indicated (refer to laboratory report)

NA - not applicable

MECP Table 3 SCS - Ontario Ministry of Environment, Conservation and Parks (MECP) Soil, Ground Water and Sediment Standards
for Use Under Part XV.1 of the Environmental Protection Act, April, 2011.

Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, residential land use, coarse textured soil.

Bold / Italic - indicates concentration above applicable MECP Table 3 SCS

0.5 - MDL above applicable MECP Table 3 SCS (refer to laboratory reports)

Table 9:
Summary of Soil Analytical Results
VOCs
157 Holland Avenue
Phase II ESA
MM2316

Parameter	MECP Table 3 SCS	MDL	MW1 SA4 24-Feb-20	MW2 SA4 24-Feb-20	MW3 SA2 25-Feb-20
date>					
Monitoring Well Samples					
Metals					
Acetone	130,000	5	ND (5.0)	ND (5.0)	ND (5.0)
Benzene	44	0.5	ND (0.5)	ND (0.5)	ND (0.5)
Bromodichloromethane	85,000	0.5	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	380	0.5	ND (0.5)	ND (0.5)	ND (0.5)
Bromomethane	6	0.5	ND (0.5)	ND (0.5)	ND (0.5)
Carbon Tetrachloride	0.79	0.2	ND (0.2)	ND (0.2)	ND (0.2)
Chlorobenzene	630	0.5	ND (0.5)	ND (0.5)	ND (0.5)
Chloroform	2.4	0.5	ND (0.5)	ND (0.5)	ND (0.5)
Dibromochloromethane	82000	0.5	ND (0.5)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	4400	1	ND (1.0)	ND (1.0)	ND (1.0)
1,2-Dichlorobenzene	4,600	0.5	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichlorobenzene	9600	0.5	ND (0.5)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	8	0.5	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethane	320	0.5	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	2	0.5	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethylene	1.6	0.5	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethylene	1.6	0.5	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,2-Dichloroethylene	1.6	0.5	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	16	0.5	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropylene	NV	0.5	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropylene	NV	0.5	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichloropropene, total	5.2	0.5	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	2300	0.5	ND (0.5)	2.4	ND (0.5)
Ethylene dibromide (dibromoethane,	0.25	0.2	ND (0.2)	ND (0.2)	ND (0.2)
Hexane	51	1	ND (1.0)	ND (1.0)	ND (1.0)
Methyl Ethyl Ketone (2-Butanone)	470000	5	ND (5.0)	ND (5.0)	ND (5.0)
Methyl Isobutyl Ketone	140000	5	ND (5.0)	ND (5.0)	ND (5.0)
Methyl tert-butyl ether	190	2	ND (2.0)	ND (2.0)	ND (2.0)
Methylene Chloride	610	5	ND (5.0)	ND (5.0)	ND (5.0)
Styrene	1300	0.5	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1,2-Tetrachloroethane	3.3	0.5	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	3.2	0.5	ND (0.5)	ND (0.5)	ND (0.5)
Tetrachloroethylene	1.6	0.5	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	18000	0.5	ND (0.5)	2.5	ND (0.5)
1,1,1-Trichloroethane	640	0.5	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	4.7	0.5	ND (0.5)	ND (0.5)	ND (0.5)
Trichloroethylene	1.6	0.5	ND (0.5)	ND (0.5)	ND (0.5)
Trichlorofluoromethane	2500	1	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl Chloride	0.5	0.5	ND (0.5)	ND (0.5)	ND (0.5)
m/p-Xylene	NV	0.5	ND (0.5)	9	ND (0.5)
o-Xylene	NV	0.5	ND (0.5)	6.1	ND (0.5)
Xylenes, total	4200	0.5	ND (0.5)	15.1	ND (0.5)

Notes:

Notes:

µg/L - all concentrations provided in micrograms per litre (parts per billion)

MDL - reported analytical method detection limit

NV - no standard listed

"<" or "ND ()" - less than detection limits indicated (refer to laboratory report)

NA - not applicable

MECP Table 3 SCS - Ontario Ministry of Environment, Conservation and Parks (MECP) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April, 2011.

Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, residential land use, coarse textured soil.

Bold / Italic - indicates concentration above applicable MECP Table 3 SCS

0.5 - MDL above applicable MECP Table 3 SCS (refer to laboratory reports)

APPENDIX A

BOREHOLE LOGS

Developpements Proximi-T Inc.

Phase II ESA

157 Holland Avenue, Ottawa, Ontario

MM2316



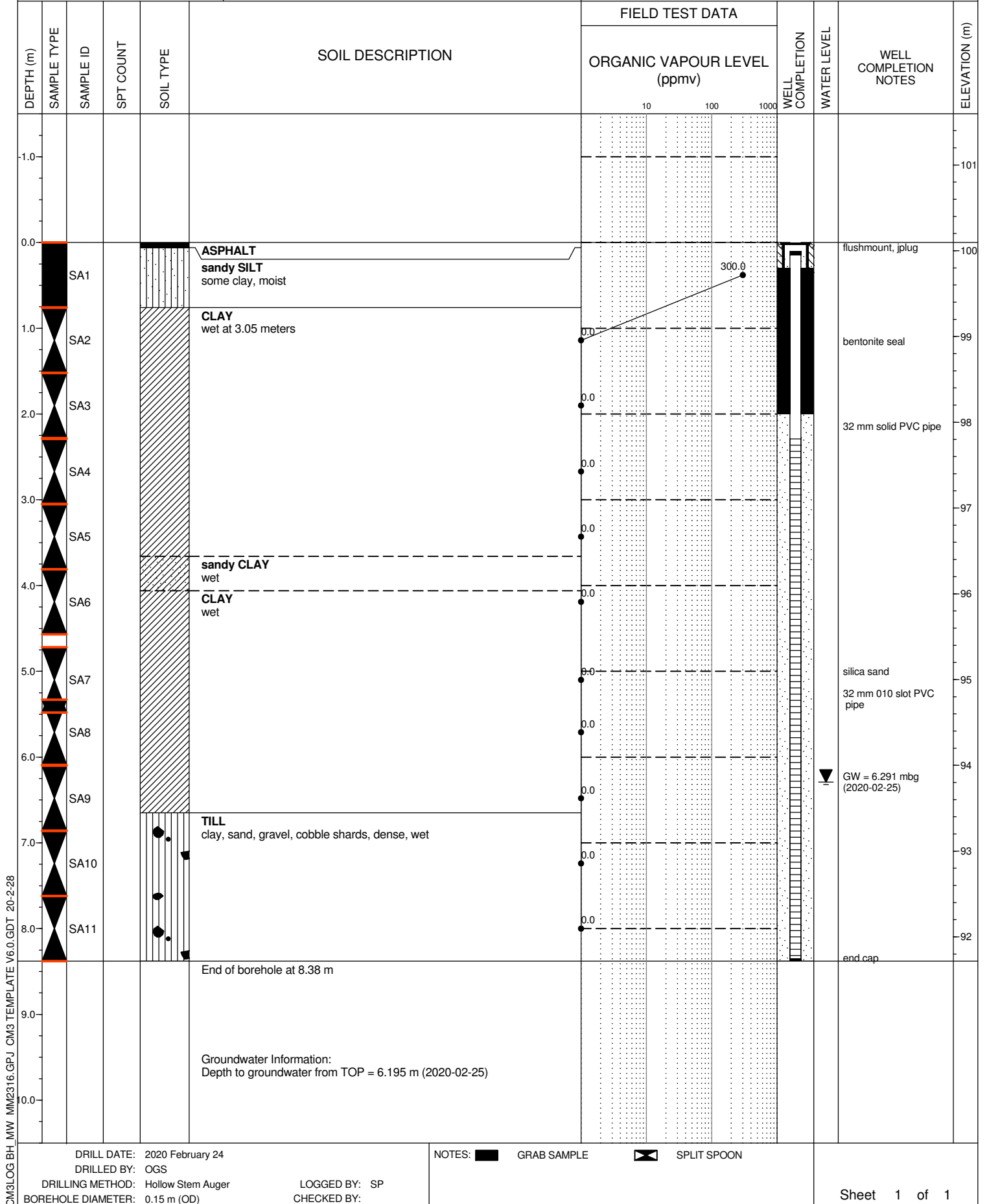
CLIENT: **Developpements Proximi-T Inc.**
PROJECT: **Phase II Environmental Site Assessment**
157 Holland
Ottawa, Ontario

BOREHOLE LOG

BOREHOLE NO: **MW1**

GROUND ELEVATION: *100.10 m*
TOP ELEVATION: *100.00 m*

CM³ JOB NO: **MM2316**



DRILL DATE: 2020 February 24

DRILLED BY: OGS

DRILLING METHOD: Hollow Stem Auger

BOREHOLE DIAMETER: 0.15 m (OD)

NOTES: GRAB SAMPLE

SPLIT SPOON

LOGGED BY: SP

CHECKED BY:



CLIENT: **Developpements Proximi-T Inc.**
PROJECT: **Phase II Environmental Site Assessment**
157 Holland
Ottawa, Ontario

BOREHOLE LOG

BOREHOLE NO: **MW2**

GROUND ELEVATION: *100.44 m*
TOP ELEVATION: *100.35 m*

CM³ JOB NO: **MM2316**

DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA			WELL COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	ELEVATION (m)
						ORGANIC VAPOUR LEVEL (ppmv)						
						10	100	1000				
-1.0												101
0.0		SA1			ASPHALT						flushmount, jplug	100
					SAND, SILT and GRAVEL dry	0.0						
1.0		SA2			CLAY	0.0					bentonite seal	99
					wet at 3.05 meters							
2.0		SA3				0.0					32 mm solid PVC pipe	98
3.0		SA4				0.0						97
4.0		SA5				0.0					GW = 3.417 mbg (2020-02-25)	96
5.0		SA6			sandy CLAY	0.0					32 mm 010 slot PVC pipe	95
					wet							
6.0		SA7			CLAY	0.0					silica sand	94
					wet							
7.0		SA8				0.0						
8.0		SA9				0.0						
9.0					TILL						end cap	
					clay, sand, gravel, cobble shards, dense, wet							
10.0					End of borehole at 6.96 m							

CM3LOG BH MW MM2316.GPJ CM3 TEMPLATE V6.0.GDT 20-2-28

DRILL DATE: 2020 February 24

DRILLED BY: OGS

DRILLING METHOD: Hollow Stem Auger

BOREHOLE DIAMETER: .15 m (OD)

LOGGED BY: SP

CHECKED BY:

NOTES:



GRAB SAMPLE
NO RECOVERY



SPLIT SPOON



CLIENT: **Developpements Proximi-T Inc.**
PROJECT: **Phase II Environmental Site Assessment**
157 Holland
Ottawa, Ontario

BOREHOLE LOG

BOREHOLE NO: **MW3**

GROUND ELEVATION: *100.26 m*
TOP ELEVATION: *100.22 m*

CM³ JOB NO: **MM2316**

CM3LOG BH MW MM2316.GPJ CM3 TEMPLATE V6.0.GDT 20-2-28

DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA			WELL COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	ELEVATION (m)
						ORGANIC VAPOUR LEVEL (ppmv)						
						10	100	1000				
-1.0												101
0.0		SA1			ASPHALT						flushmount, jplug	100
					SAND, SILT and GRAVEL	0.0					bentonite seal	
1.0		SA2				0.0					32 mm solid PVC pipe	99
		SA3				0.0						
2.0		SA4				0.0						
		SA5				0.0					GW = 2.333 mbg (2020-02-25)	98
3.0		SA6				0.0						
4.0		SA7			sandy CLAY wet	0.0					32 mm 010 slot PVC pipe	96
		SA8			CLAY wet	0.0					silica sand	95
5.0		SA9				0.0						
		SA10				0.0						
6.0		SA11				0.0						
7.0		SA12			TILL clay, sand, gravel, cobble shards, dense	0.0					end cap	93
8.0					End of borehole at 7.62 m							
9.0					Groundwater Information: Depth to groundwater from TOP = 2.295 m (2020-02-25)							
10.0												

DRILL DATE: 2020 February 25

DRILLED BY: OGS

DRILLING METHOD: Portable Drilling Equipment

BOREHOLE DIAMETER: .025 m (OD)

LOGGED BY: SP

CHECKED BY:

NOTES: GRAB SAMPLE

SPLIT SPOON

APPENDIX B

LABORATORY REPORTS

Developpements Proximi-T Inc.

Phase II ESA

157 Holland Avenue, Ottawa, Ontario

MM2316

Certificate of Analysis

CM3 Environmental Inc.

5710 Akins Road
Ottawa, ON K2S 1B8
Attn: Marc MacDonald

Client PO: 167 Holland
Project: MM2316
Custody: 53527

Report Date: 26-Feb-2020
Order Date: 24-Feb-2020

Order #: 2009114

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

Paracel ID	Client ID
2009114-01	MW1 SA1
2009114-02	MW1 SA4
2009114-03	MW2 SA1
2009114-04	MW2 SA4

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Client: CM3 Environmental Inc.

Client PO: 167 Holland

Report Date: 26-Feb-2020

Order Date: 24-Feb-2020

Project Description: MM2316

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	24-Feb-20	26-Feb-20
PHC F1	CWS Tier 1 - P&T GC-FID	25-Feb-20	26-Feb-20
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	24-Feb-20	26-Feb-20
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	25-Feb-20	26-Feb-20
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	25-Feb-20	26-Feb-20
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	25-Feb-20	26-Feb-20
Solids, %	Gravimetric, calculation	25-Feb-20	25-Feb-20

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Client PO: 167 Holland

Project Description: MM2316

	Client ID:	MW1 SA1	MW1 SA4	MW2 SA1	MW2 SA4
	Sample Date:	24-Feb-20 09:00	24-Feb-20 09:00	24-Feb-20 09:00	24-Feb-20 09:00
	Sample ID:	2009114-01	2009114-02	2009114-03	2009114-04
	MDL/Units	Soil	Soil	Soil	Soil

Physical Characteristics

% Solids	0.1 % by Wt.	82.4	66.0	87.1	59.2
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General Inorganics

pH	0.05 pH Units	-	7.33	-	-
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Metals

Antimony	1.0 ug/g dry	<1.0	-	<1.0	-
Arsenic	1.0 ug/g dry	5.4	-	5.6	-
Barium	1.0 ug/g dry	211	-	108	-
Beryllium	0.5 ug/g dry	0.7	-	0.6	-
Boron	5.0 ug/g dry	11.9	-	14.2	-
Cadmium	0.5 ug/g dry	<0.5	-	<0.5	-
Chromium	5.0 ug/g dry	64.7	-	31.7	-
Cobalt	1.0 ug/g dry	13.9	-	8.2	-
Copper	5.0 ug/g dry	61.6	-	27.3	-
Lead	1.0 ug/g dry	47.5	-	88.1	-
Molybdenum	1.0 ug/g dry	1.6	-	<1.0	-
Nickel	5.0 ug/g dry	37.6	-	17.7	-
Selenium	1.0 ug/g dry	<1.0	-	<1.0	-
Silver	0.3 ug/g dry	<0.3	-	<0.3	-
Thallium	1.0 ug/g dry	<1.0	-	<1.0	-
Uranium	1.0 ug/g dry	<1.0	-	<1.0	-
Vanadium	10.0 ug/g dry	61.8	-	38.8	-
Zinc	20.0 ug/g dry	98.3	-	66.9	-

Volatiles

Acetone	0.50 ug/g dry	-	<0.50	-	<0.50
Benzene	0.02 ug/g dry	-	<0.02	-	<0.02
Bromodichloromethane	0.05 ug/g dry	-	<0.05	-	<0.05
Bromoform	0.05 ug/g dry	-	<0.05	-	<0.05
Bromomethane	0.05 ug/g dry	-	<0.05	-	<0.05
Carbon Tetrachloride	0.05 ug/g dry	-	<0.05	-	<0.05
Chlorobenzene	0.05 ug/g dry	-	<0.05	-	<0.05
Chloroform	0.05 ug/g dry	-	<0.05	-	<0.05
Dibromochloromethane	0.05 ug/g dry	-	<0.05	-	<0.05
Dichlorodifluoromethane	0.05 ug/g dry	-	<0.05	-	<0.05
1,2-Dichlorobenzene	0.05 ug/g dry	-	<0.05	-	<0.05
1,3-Dichlorobenzene	0.05 ug/g dry	-	<0.05	-	<0.05

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	Client ID: Sample Date: Sample ID:	MW1 SA1 24-Feb-20 09:00 2009114-01 Soil	MW1 SA4 24-Feb-20 09:00 2009114-02 Soil	MW2 SA1 24-Feb-20 09:00 2009114-03 Soil	MW2 SA4 24-Feb-20 09:00 2009114-04 Soil
	MDL/Units				
1,4-Dichlorobenzene	0.05 ug/g dry	-	<0.05	-	<0.05
1,1-Dichloroethane	0.05 ug/g dry	-	<0.05	-	<0.05
1,2-Dichloroethane	0.05 ug/g dry	-	<0.05	-	<0.05
1,1-Dichloroethylene	0.05 ug/g dry	-	<0.05	-	<0.05
cis-1,2-Dichloroethylene	0.05 ug/g dry	-	<0.05	-	<0.05
trans-1,2-Dichloroethylene	0.05 ug/g dry	-	<0.05	-	<0.05
1,2-Dichloropropane	0.05 ug/g dry	-	<0.05	-	<0.05
cis-1,3-Dichloropropylene	0.05 ug/g dry	-	<0.05	-	<0.05
trans-1,3-Dichloropropylene	0.05 ug/g dry	-	<0.05	-	<0.05
1,3-Dichloropropene, total	0.05 ug/g dry	-	<0.05	-	<0.05
Ethylbenzene	0.05 ug/g dry	-	<0.05	-	<0.05
Ethylene dibromide (dibromoethane, 1,2-)	0.05 ug/g dry	-	<0.05	-	<0.05
Hexane	0.05 ug/g dry	-	<0.05	-	<0.05
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry	-	<0.50	-	<0.50
Methyl Isobutyl Ketone	0.50 ug/g dry	-	<0.50	-	<0.50
Methyl tert-butyl ether	0.05 ug/g dry	-	<0.05	-	<0.05
Methylene Chloride	0.05 ug/g dry	-	<0.05	-	<0.05
Styrene	0.05 ug/g dry	-	<0.05	-	<0.05
1,1,1,2-Tetrachloroethane	0.05 ug/g dry	-	<0.05	-	<0.05
1,1,2,2-Tetrachloroethane	0.05 ug/g dry	-	<0.05	-	<0.05
Tetrachloroethylene	0.05 ug/g dry	-	<0.05	-	<0.05
Toluene	0.05 ug/g dry	-	<0.05	-	<0.05
1,1,1-Trichloroethane	0.05 ug/g dry	-	<0.05	-	<0.05
1,1,2-Trichloroethane	0.05 ug/g dry	-	<0.05	-	<0.05
Trichloroethylene	0.05 ug/g dry	-	<0.05	-	<0.05
Trichlorofluoromethane	0.05 ug/g dry	-	<0.05	-	<0.05
Vinyl chloride	0.02 ug/g dry	-	<0.02	-	<0.02
m,p-Xylenes	0.05 ug/g dry	-	<0.05	-	<0.05
o-Xylene	0.05 ug/g dry	-	<0.05	-	<0.05
Xylenes, total	0.05 ug/g dry	-	<0.05	-	<0.05
4-Bromofluorobenzene	Surrogate	-	113%	-	98.4%
Dibromofluoromethane	Surrogate	-	106%	-	113%
Toluene-d8	Surrogate	-	113%	-	116%
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	-	<7	-	<7
F2 PHCs (C10-C16)	4 ug/g dry	-	<4	-	<4

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	MDL/Units				
F3 PHCs (C16-C34)	8 ug/g dry	-	<8	-	<8
F4 PHCs (C34-C50)	6 ug/g dry	-	<6	-	<6

Semi-Volatiles

Acenaphthene	0.02 ug/g dry	0.03	-	0.04	-
Acenaphthylene	0.02 ug/g dry	<0.02	-	0.04	-
Anthracene	0.02 ug/g dry	0.05	-	0.13	-
Benzo [a] anthracene	0.02 ug/g dry	0.10	-	0.26	-
Benzo [a] pyrene	0.02 ug/g dry	0.11	-	0.27	-
Benzo [b] fluoranthene	0.02 ug/g dry	0.09	-	0.25	-
Benzo [g,h,i] perylene	0.02 ug/g dry	0.06	-	0.15	-
Benzo [k] fluoranthene	0.02 ug/g dry	0.05	-	0.12	-
Chrysene	0.02 ug/g dry	0.13	-	0.31	-
Dibenzo [a,h] anthracene	0.02 ug/g dry	<0.02	-	0.04	-
Fluoranthene	0.02 ug/g dry	0.23	-	0.54	-
Fluorene	0.02 ug/g dry	0.02	-	0.06	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	0.05	-	0.13	-
1-Methylnaphthalene	0.02 ug/g dry	0.04	-	0.04	-
2-Methylnaphthalene	0.02 ug/g dry	0.05	-	0.05	-
Methylnaphthalene (1&2)	0.04 ug/g dry	0.08	-	0.08	-
Naphthalene	0.01 ug/g dry	0.06	-	0.09	-
Phenanthrene	0.02 ug/g dry	0.21	-	0.52	-
Pyrene	0.02 ug/g dry	0.18	-	0.45	-
2-Fluorobiphenyl	Surrogate	94.8%	-	136%	-
Terphenyl-d14	Surrogate	78.3%	-	121%	-

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Project Description: MM2316

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
Metals									
Antimony	ND	1.0	ug/g						
Arsenic	ND	1.0	ug/g						
Barium	ND	1.0	ug/g						
Beryllium	ND	0.5	ug/g						
Boron	ND	5.0	ug/g						
Cadmium	ND	0.5	ug/g						
Chromium	ND	5.0	ug/g						
Cobalt	ND	1.0	ug/g						
Copper	ND	5.0	ug/g						
Lead	ND	1.0	ug/g						
Molybdenum	ND	1.0	ug/g						
Nickel	ND	5.0	ug/g						
Selenium	ND	1.0	ug/g						
Silver	ND	0.3	ug/g						
Thallium	ND	1.0	ug/g						
Uranium	ND	1.0	ug/g						
Vanadium	ND	10.0	ug/g						
Zinc	ND	20.0	ug/g						
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g						
Acenaphthylene	ND	0.02	ug/g						
Anthracene	ND	0.02	ug/g						
Benzo [a] anthracene	ND	0.02	ug/g						
Benzo [a] pyrene	ND	0.02	ug/g						
Benzo [b] fluoranthene	ND	0.02	ug/g						
Benzo [g,h,i] perylene	ND	0.02	ug/g						
Benzo [k] fluoranthene	ND	0.02	ug/g						
Chrysene	ND	0.02	ug/g						
Dibenzo [a,h] anthracene	ND	0.02	ug/g						
Fluoranthene	ND	0.02	ug/g						
Fluorene	ND	0.02	ug/g						
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g						
1-Methylnaphthalene	ND	0.02	ug/g						
2-Methylnaphthalene	ND	0.02	ug/g						
Methylnaphthalene (1&2)	ND	0.04	ug/g						
Naphthalene	ND	0.01	ug/g						
Phenanthrene	ND	0.02	ug/g						
Pyrene	ND	0.02	ug/g						
Surrogate: 2-Fluorobiphenyl	1.18		ug/g		88.6	50-140			
Surrogate: Terphenyl-d14	0.877		ug/g		65.8	50-140			
Volatiles									
Acetone	ND	0.50	ug/g						
Benzene	ND	0.02	ug/g						
Bromodichloromethane	ND	0.05	ug/g						
Bromoform	ND	0.05	ug/g						
Bromomethane	ND	0.05	ug/g						
Carbon Tetrachloride	ND	0.05	ug/g						
Chlorobenzene	ND	0.05	ug/g						
Chloroform	ND	0.05	ug/g						
Dibromochloromethane	ND	0.05	ug/g						
Dichlorodifluoromethane	ND	0.05	ug/g						
1,2-Dichlorobenzene	ND	0.05	ug/g						
1,3-Dichlorobenzene	ND	0.05	ug/g						

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Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,4-Dichlorobenzene	ND	0.05	ug/g						
1,1-Dichloroethane	ND	0.05	ug/g						
1,2-Dichloroethane	ND	0.05	ug/g						
1,1-Dichloroethylene	ND	0.05	ug/g						
cis-1,2-Dichloroethylene	ND	0.05	ug/g						
trans-1,2-Dichloroethylene	ND	0.05	ug/g						
1,2-Dichloropropane	ND	0.05	ug/g						
cis-1,3-Dichloropropylene	ND	0.05	ug/g						
trans-1,3-Dichloropropylene	ND	0.05	ug/g						
1,3-Dichloropropene, total	ND	0.05	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Ethylene dibromide (dibromoethane, 1,2-	ND	0.05	ug/g						
Hexane	ND	0.05	ug/g						
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g						
Methyl Isobutyl Ketone	ND	0.50	ug/g						
Methyl tert-butyl ether	ND	0.05	ug/g						
Methylene Chloride	ND	0.05	ug/g						
Styrene	ND	0.05	ug/g						
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g						
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g						
Tetrachloroethylene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
1,1,1-Trichloroethane	ND	0.05	ug/g						
1,1,2-Trichloroethane	ND	0.05	ug/g						
Trichloroethylene	ND	0.05	ug/g						
Trichlorofluoromethane	ND	0.05	ug/g						
Vinyl chloride	ND	0.02	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: 4-Bromofluorobenzene	3.24		ug/g		101	50-140			
Surrogate: Dibromofluoromethane	3.82		ug/g		119	50-140			
Surrogate: Toluene-d8	3.52		ug/g		110	50-140			

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Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
pH	7.74	0.05	pH Units	7.79			0.6	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g dry	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g dry	ND			NC	30	
F3 PHCs (C16-C34)	ND	8	ug/g dry	ND			NC	30	
F4 PHCs (C34-C50)	ND	6	ug/g dry	ND			NC	30	
Metals									
Antimony	ND	1.0	ug/g dry	ND			NC	30	
Arsenic	1.5	1.0	ug/g dry	1.7			10.7	30	
Barium	15.7	1.0	ug/g dry	17.8			12.3	30	
Beryllium	ND	0.5	ug/g dry	ND			NC	30	
Boron	ND	5.0	ug/g dry	ND			NC	30	
Cadmium	ND	0.5	ug/g dry	ND			NC	30	
Chromium	7.3	5.0	ug/g dry	8.1			10.4	30	
Cobalt	1.8	1.0	ug/g dry	2.0			14.2	30	
Copper	ND	5.0	ug/g dry	ND			NC	30	
Lead	2.5	1.0	ug/g dry	2.7			6.6	30	
Molybdenum	ND	1.0	ug/g dry	ND			NC	30	
Nickel	ND	5.0	ug/g dry	ND			NC	30	
Selenium	ND	1.0	ug/g dry	ND			NC	30	
Silver	ND	0.3	ug/g dry	ND			NC	30	
Thallium	ND	1.0	ug/g dry	ND			NC	30	
Uranium	ND	1.0	ug/g dry	ND			NC	30	
Vanadium	16.6	10.0	ug/g dry	18.5			11.1	30	
Zinc	ND	20.0	ug/g dry	ND			NC	30	
Physical Characteristics									
% Solids	89.5	0.1	% by Wt.	84.6			5.7	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g dry				NC	40	
Acenaphthylene	ND	0.02	ug/g dry				NC	40	
Anthracene	ND	0.02	ug/g dry				NC	40	
Benzo [a] anthracene	ND	0.02	ug/g dry				NC	40	
Benzo [a] pyrene	ND	0.02	ug/g dry				NC	40	
Benzo [b] fluoranthene	ND	0.02	ug/g dry				NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g dry				NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g dry				NC	40	
Chrysene	ND	0.02	ug/g dry				NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g dry				NC	40	
Fluoranthene	ND	0.02	ug/g dry				NC	40	
Fluorene	ND	0.02	ug/g dry				NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g dry				NC	40	
1-Methylnaphthalene	ND	0.02	ug/g dry				NC	40	
2-Methylnaphthalene	ND	0.02	ug/g dry				NC	40	
Naphthalene	ND	0.01	ug/g dry				NC	40	
Phenanthrene	ND	0.02	ug/g dry				NC	40	
Pyrene	ND	0.02	ug/g dry				NC	40	
Surrogate: 2-Fluorobiphenyl	1.22		ug/g dry		82.3	50-140			
Surrogate: Terphenyl-d14	1.20		ug/g dry		80.9	50-140			
Volatiles									
Acetone	ND	0.50	ug/g dry	ND			NC	50	
Benzene	ND	0.02	ug/g dry	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g dry	ND			NC	50	
Bromoform	ND	0.05	ug/g dry	ND			NC	50	
Bromomethane	ND	0.05	ug/g dry	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g dry	ND			NC	50	

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Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Chlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
Chloroform	ND	0.05	ug/g dry	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g dry	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g dry	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g dry	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.05	ug/g dry	ND			NC	50	
Hexane	ND	0.05	ug/g dry	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g dry	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g dry	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g dry	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g dry	ND			NC	50	
Styrene	ND	0.05	ug/g dry	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g dry	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g dry	ND			NC	50	
Toluene	ND	0.05	ug/g dry	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g dry	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g dry	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g dry	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g dry	ND			NC	50	
o-Xylene	ND	0.05	ug/g dry	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	4.28		ug/g dry		111	50-140			
Surrogate: Dibromofluoromethane	4.59		ug/g dry		119	50-140			
Surrogate: Toluene-d8	4.45		ug/g dry		116	50-140			

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Project Description: MM2316

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	161	7	ug/g	ND	80.7	80-120			
F2 PHCs (C10-C16)	82	4	ug/g	ND	94.0	60-140			
F3 PHCs (C16-C34)	220	8	ug/g	ND	102	60-140			
F4 PHCs (C34-C50)	161	6	ug/g	ND	118	60-140			
Metals									
Antimony	49.8	1.0	ug/g	ND	99.1	70-130			
Arsenic	55.0	1.0	ug/g	ND	109	70-130			
Barium	59.8	1.0	ug/g	7.1	105	70-130			
Beryllium	55.9	0.5	ug/g	ND	111	70-130			
Boron	53.2	5.0	ug/g	ND	104	70-130			
Cadmium	51.6	0.5	ug/g	ND	103	70-130			
Chromium	59.5	5.0	ug/g	ND	112	70-130			
Cobalt	49.9	1.0	ug/g	ND	98.1	70-130			
Copper	55.3	5.0	ug/g	ND	109	70-130			
Lead	48.7	1.0	ug/g	1.1	95.2	70-130			
Molybdenum	52.6	1.0	ug/g	ND	105	70-130			
Nickel	55.7	5.0	ug/g	ND	108	70-130			
Selenium	53.1	1.0	ug/g	ND	106	70-130			
Silver	44.3	0.3	ug/g	ND	88.5	70-130			
Thallium	48.1	1.0	ug/g	ND	96.2	70-130			
Uranium	47.9	1.0	ug/g	ND	95.5	70-130			
Vanadium	62.7	10.0	ug/g	ND	111	70-130			
Zinc	57.5	20.0	ug/g	ND	105	70-130			
Semi-Volatiles									
Acenaphthene	0.156	0.02	ug/g	ND	93.5	50-140			
Acenaphthylene	0.139	0.02	ug/g	ND	83.3	50-140			
Anthracene	0.114	0.02	ug/g	ND	68.4	50-140			
Benzo [a] anthracene	0.133	0.02	ug/g	ND	79.6	50-140			
Benzo [a] pyrene	0.152	0.02	ug/g	ND	91.3	50-140			
Benzo [b] fluoranthene	0.167	0.02	ug/g	ND	100	50-140			
Benzo [g,h,i] perylene	0.145	0.02	ug/g	ND	86.8	50-140			
Benzo [k] fluoranthene	0.142	0.02	ug/g	ND	84.9	50-140			
Chrysene	0.172	0.02	ug/g	ND	103	50-140			
Dibenzo [a,h] anthracene	0.125	0.02	ug/g	ND	75.1	50-140			
Fluoranthene	0.131	0.02	ug/g	ND	78.7	50-140			
Fluorene	0.163	0.02	ug/g	ND	97.8	50-140			
Indeno [1,2,3-cd] pyrene	0.135	0.02	ug/g	ND	81.2	50-140			
1-Methylnaphthalene	0.188	0.02	ug/g	ND	113	50-140			
2-Methylnaphthalene	0.206	0.02	ug/g	ND	124	50-140			
Naphthalene	0.172	0.01	ug/g	ND	103	50-140			
Phenanthrene	0.151	0.02	ug/g	ND	90.5	50-140			
Pyrene	0.138	0.02	ug/g	ND	82.9	50-140			
Surrogate: 2-Fluorobiphenyl	1.39		ug/g		104	50-140			
Surrogate: Terphenyl-d14	1.14		ug/g		85.4	50-140			
Volatiles									
Acetone	10.8	0.50	ug/g	ND	108	50-140			
Benzene	3.98	0.02	ug/g	ND	99.5	60-130			
Bromodichloromethane	4.88	0.05	ug/g	ND	122	60-130			

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 24-Feb-2020

Client PO: 167 Holland

Project Description: MM2316

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromoform	5.09	0.05	ug/g	ND	127	60-130			
Bromomethane	3.70	0.05	ug/g	ND	92.6	50-140			
Carbon Tetrachloride	4.82	0.05	ug/g	ND	120	60-130			
Chlorobenzene	4.23	0.05	ug/g	ND	106	60-130			
Chloroform	4.89	0.05	ug/g	ND	122	60-130			
Dibromochloromethane	4.78	0.05	ug/g	ND	120	60-130			
Dichlorodifluoromethane	4.17	0.05	ug/g	ND	104	50-140			
1,2-Dichlorobenzene	3.61	0.05	ug/g	ND	90.4	60-130			
1,3-Dichlorobenzene	3.53	0.05	ug/g	ND	88.3	60-130			
1,4-Dichlorobenzene	3.65	0.05	ug/g	ND	91.2	60-130			
1,1-Dichloroethane	4.35	0.05	ug/g	ND	109	60-130			
1,2-Dichloroethane	4.52	0.05	ug/g	ND	113	60-130			
1,1-Dichloroethylene	5.17	0.05	ug/g	ND	129	60-130			
cis-1,2-Dichloroethylene	4.41	0.05	ug/g	ND	110	60-130			
trans-1,2-Dichloroethylene	4.40	0.05	ug/g	ND	110	60-130			
1,2-Dichloropropane	3.70	0.05	ug/g	ND	92.6	60-130			
cis-1,3-Dichloropropylene	4.33	0.05	ug/g	ND	108	60-130			
trans-1,3-Dichloropropylene	4.19	0.05	ug/g	ND	105	60-130			
Ethylbenzene	4.24	0.05	ug/g	ND	106	60-130			
Ethylene dibromide (dibromoethane, 1,2-	4.17	0.05	ug/g	ND	104	60-130			
Hexane	3.27	0.05	ug/g	ND	81.7	60-130			
Methyl Ethyl Ketone (2-Butanone)	9.10	0.50	ug/g	ND	91.0	50-140			
Methyl Isobutyl Ketone	9.15	0.50	ug/g	ND	91.5	50-140			
Methyl tert-butyl ether	7.66	0.05	ug/g	ND	76.6	50-140			
Methylene Chloride	4.86	0.05	ug/g	ND	122	60-130			
Styrene	4.15	0.05	ug/g	ND	104	60-130			
1,1,1,2-Tetrachloroethane	4.53	0.05	ug/g	ND	113	60-130			
1,1,2,2-Tetrachloroethane	3.14	0.05	ug/g	ND	78.6	60-130			
Tetrachloroethylene	4.20	0.05	ug/g	ND	105	60-130			
Toluene	4.22	0.05	ug/g	ND	105	60-130			
1,1,1-Trichloroethane	4.60	0.05	ug/g	ND	115	60-130			
1,1,2-Trichloroethane	4.21	0.05	ug/g	ND	105	60-130			
Trichloroethylene	4.57	0.05	ug/g	ND	114	60-130			
Trichlorofluoromethane	5.16	0.05	ug/g	ND	129	50-140			
Vinyl chloride	3.94	0.02	ug/g	ND	98.4	50-140			
m,p-Xylenes	8.70	0.05	ug/g	ND	109	60-130			
o-Xylene	4.51	0.05	ug/g	ND	113	60-130			
Surrogate: 4-Bromofluorobenzene	2.42		ug/g		75.5	50-140			
Surrogate: Dibromofluoromethane	4.06		ug/g		127	50-140			
Surrogate: Toluene-d8	3.13		ug/g		97.7	50-140			

Certificate of Analysis

Client: CM3 Environmental Inc.

Client PO: 167 Holland

Report Date: 26-Feb-2020

Order Date: 24-Feb-2020

Project Description: MM2316

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

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

Certificate of Analysis

CM3 Environmental Inc.

5710 Akins Road
Ottawa, ON K2S 1B8
Attn: Marc MacDonald

Client PO: Holland Ave
Project: MM2316
Custody: 52421

Report Date: 26-Feb-2020
Order Date: 25-Feb-2020

Order #: 2009231

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

Paracel ID	Client ID
2009231-01	MW3 SA1
2009231-02	MW3 SA2
2009231-03	MW3 SA3

Approved By:

Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	25-Feb-20	26-Feb-20
PHC F1	CWS Tier 1 - P&T GC-FID	25-Feb-20	26-Feb-20
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	25-Feb-20	26-Feb-20
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	26-Feb-20	26-Feb-20
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	25-Feb-20	26-Feb-20
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	25-Feb-20	26-Feb-20
Solids, %	Gravimetric, calculation	26-Feb-20	26-Feb-20

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

Client ID:	MW3 SA1	MW3 SA2	MW3 SA3	-
Sample Date:	25-Feb-20 09:00	25-Feb-20 09:00	25-Feb-20 09:00	-
Sample ID:	2009231-01	2009231-02	2009231-03	-
MDL/Units	Soil	Soil	Soil	-

Physical Characteristics

% Solids	0.1 % by Wt.	87.4	74.7	67.7	-
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Metals

Antimony	1.0 ug/g dry	<1.0	-	-	-
Arsenic	1.0 ug/g dry	6.3	-	-	-
Barium	1.0 ug/g dry	45.3	-	-	-
Beryllium	0.5 ug/g dry	<0.5	-	-	-
Boron	5.0 ug/g dry	10.8	-	-	-
Cadmium	0.5 ug/g dry	<0.5	-	-	-
Chromium	5.0 ug/g dry	13.8	-	-	-
Cobalt	1.0 ug/g dry	12.4	-	-	-
Copper	5.0 ug/g dry	51.8	-	-	-
Lead	1.0 ug/g dry	30.4	-	-	-
Molybdenum	1.0 ug/g dry	3.6	-	-	-
Nickel	5.0 ug/g dry	13.8	-	-	-
Selenium	1.0 ug/g dry	<1.0	-	-	-
Silver	0.3 ug/g dry	<0.3	-	-	-
Thallium	1.0 ug/g dry	<1.0	-	-	-
Uranium	1.0 ug/g dry	<1.0	-	-	-
Vanadium	10.0 ug/g dry	18.1	-	-	-
Zinc	20.0 ug/g dry	45.5	-	-	-

Volatiles

Acetone	0.50 ug/g dry	-	<0.50	-	-
Benzene	0.02 ug/g dry	-	<0.02	-	-
Bromodichloromethane	0.05 ug/g dry	-	<0.05	-	-
Bromoform	0.05 ug/g dry	-	<0.05	-	-
Bromomethane	0.05 ug/g dry	-	<0.05	-	-
Carbon Tetrachloride	0.05 ug/g dry	-	<0.05	-	-
Chlorobenzene	0.05 ug/g dry	-	<0.05	-	-
Chloroform	0.05 ug/g dry	-	<0.05	-	-
Dibromochloromethane	0.05 ug/g dry	-	<0.05	-	-
Dichlorodifluoromethane	0.05 ug/g dry	-	<0.05	-	-
1,2-Dichlorobenzene	0.05 ug/g dry	-	<0.05	-	-
1,3-Dichlorobenzene	0.05 ug/g dry	-	<0.05	-	-
1,4-Dichlorobenzene	0.05 ug/g dry	-	<0.05	-	-
1,1-Dichloroethane	0.05 ug/g dry	-	<0.05	-	-

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

	Client ID: Sample Date: Sample ID:	MW3 SA1 25-Feb-20 09:00 2009231-01 Soil	MW3 SA2 25-Feb-20 09:00 2009231-02 Soil	MW3 SA3 25-Feb-20 09:00 2009231-03 Soil	- - - -
	MDL/Units				
1,2-Dichloroethane	0.05 ug/g dry	-	<0.05	-	-
1,1-Dichloroethylene	0.05 ug/g dry	-	<0.05	-	-
cis-1,2-Dichloroethylene	0.05 ug/g dry	-	<0.05	-	-
trans-1,2-Dichloroethylene	0.05 ug/g dry	-	<0.05	-	-
1,2-Dichloropropane	0.05 ug/g dry	-	<0.05	-	-
cis-1,3-Dichloropropylene	0.05 ug/g dry	-	<0.05	-	-
trans-1,3-Dichloropropylene	0.05 ug/g dry	-	<0.05	-	-
1,3-Dichloropropene, total	0.05 ug/g dry	-	<0.05	-	-
Ethylbenzene	0.05 ug/g dry	-	<0.05	-	-
Ethylene dibromide (dibromoethane, 1,2-)	0.05 ug/g dry	-	<0.05	-	-
Hexane	0.05 ug/g dry	-	<0.05	-	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry	-	<0.50	-	-
Methyl Isobutyl Ketone	0.50 ug/g dry	-	<0.50	-	-
Methyl tert-butyl ether	0.05 ug/g dry	-	<0.05	-	-
Methylene Chloride	0.05 ug/g dry	-	<0.05	-	-
Styrene	0.05 ug/g dry	-	<0.05	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g dry	-	<0.05	-	-
1,1,2,2-Tetrachloroethane	0.05 ug/g dry	-	<0.05	-	-
Tetrachloroethylene	0.05 ug/g dry	-	<0.05	-	-
Toluene	0.05 ug/g dry	-	<0.05	-	-
1,1,1-Trichloroethane	0.05 ug/g dry	-	<0.05	-	-
1,1,2-Trichloroethane	0.05 ug/g dry	-	<0.05	-	-
Trichloroethylene	0.05 ug/g dry	-	<0.05	-	-
Trichlorofluoromethane	0.05 ug/g dry	-	<0.05	-	-
Vinyl chloride	0.02 ug/g dry	-	<0.02	-	-
m,p-Xylenes	0.05 ug/g dry	-	<0.05	-	-
o-Xylene	0.05 ug/g dry	-	<0.05	-	-
Xylenes, total	0.05 ug/g dry	-	<0.05	-	-
4-Bromofluorobenzene	Surrogate	-	108%	-	-
Dibromofluoromethane	Surrogate	-	79.5%	-	-
Toluene-d8	Surrogate	-	116%	-	-
Benzene	0.02 ug/g dry	-	-	<0.02	-
Ethylbenzene	0.05 ug/g dry	-	-	<0.05	-
Toluene	0.05 ug/g dry	-	-	<0.05	-
m,p-Xylenes	0.05 ug/g dry	-	-	<0.05	-
o-Xylene	0.05 ug/g dry	-	-	<0.05	-

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

	Client ID:	MW3 SA1	MW3 SA2	MW3 SA3	
	Sample Date:	25-Feb-20 09:00	25-Feb-20 09:00	25-Feb-20 09:00	-
	Sample ID:	2009231-01	2009231-02	2009231-03	-
	MDL/Units	Soil	Soil	Soil	-
Xylenes, total	0.05 ug/g dry	-	-	<0.05	-
Toluene-d8	Surrogate	-	-	113%	-

Hydrocarbons

F1 PHCs (C6-C10)	7 ug/g dry	-	<7	<7	-
F2 PHCs (C10-C16)	4 ug/g dry	-	<4	<4	-
F3 PHCs (C16-C34)	8 ug/g dry	-	<8	<8	-
F4 PHCs (C34-C50)	6 ug/g dry	-	<6	<6	-

Semi-Volatiles

Acenaphthene	0.02 ug/g dry	-	0.03	-	-
Acenaphthylene	0.02 ug/g dry	-	<0.02	-	-
Anthracene	0.02 ug/g dry	-	<0.02	-	-
Benzo [a] anthracene	0.02 ug/g dry	-	<0.02	-	-
Benzo [a] pyrene	0.02 ug/g dry	-	<0.02	-	-
Benzo [b] fluoranthene	0.02 ug/g dry	-	<0.02	-	-
Benzo [g,h,i] perylene	0.02 ug/g dry	-	<0.02	-	-
Benzo [k] fluoranthene	0.02 ug/g dry	-	<0.02	-	-
Chrysene	0.02 ug/g dry	-	<0.02	-	-
Dibenzo [a,h] anthracene	0.02 ug/g dry	-	<0.02	-	-
Fluoranthene	0.02 ug/g dry	-	<0.02	-	-
Fluorene	0.02 ug/g dry	-	0.04	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	-	<0.02	-	-
1-Methylnaphthalene	0.02 ug/g dry	-	0.12	-	-
2-Methylnaphthalene	0.02 ug/g dry	-	0.19	-	-
Methylnaphthalene (1&2)	0.04 ug/g dry	-	0.31	-	-
Naphthalene	0.01 ug/g dry	-	0.01	-	-
Phenanthrene	0.02 ug/g dry	-	0.06	-	-
Pyrene	0.02 ug/g dry	-	0.02	-	-
2-Fluorobiphenyl	Surrogate	-	118%	-	-
Terphenyl-d14	Surrogate	-	78.2%	-	-

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
Metals									
Antimony	ND	1.0	ug/g						
Arsenic	ND	1.0	ug/g						
Barium	ND	1.0	ug/g						
Beryllium	ND	0.5	ug/g						
Boron	ND	5.0	ug/g						
Cadmium	ND	0.5	ug/g						
Chromium	ND	5.0	ug/g						
Cobalt	ND	1.0	ug/g						
Copper	ND	5.0	ug/g						
Lead	ND	1.0	ug/g						
Molybdenum	ND	1.0	ug/g						
Nickel	ND	5.0	ug/g						
Selenium	ND	1.0	ug/g						
Silver	ND	0.3	ug/g						
Thallium	ND	1.0	ug/g						
Uranium	ND	1.0	ug/g						
Vanadium	ND	10.0	ug/g						
Zinc	ND	20.0	ug/g						
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g						
Acenaphthylene	ND	0.02	ug/g						
Anthracene	ND	0.02	ug/g						
Benzo [a] anthracene	ND	0.02	ug/g						
Benzo [a] pyrene	ND	0.02	ug/g						
Benzo [b] fluoranthene	ND	0.02	ug/g						
Benzo [g,h,i] perylene	ND	0.02	ug/g						
Benzo [k] fluoranthene	ND	0.02	ug/g						
Chrysene	ND	0.02	ug/g						
Dibenzo [a,h] anthracene	ND	0.02	ug/g						
Fluoranthene	ND	0.02	ug/g						
Fluorene	ND	0.02	ug/g						
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g						
1-Methylnaphthalene	ND	0.02	ug/g						
2-Methylnaphthalene	ND	0.02	ug/g						
Methylnaphthalene (1&2)	ND	0.04	ug/g						
Naphthalene	ND	0.01	ug/g						
Phenanthrene	ND	0.02	ug/g						
Pyrene	ND	0.02	ug/g						
Surrogate: 2-Fluorobiphenyl	1.18		ug/g		88.6	50-140			
Surrogate: Terphenyl-d14	0.877		ug/g		65.8	50-140			
Volatiles									
Acetone	ND	0.50	ug/g						
Benzene	ND	0.02	ug/g						
Bromodichloromethane	ND	0.05	ug/g						
Bromoform	ND	0.05	ug/g						
Bromomethane	ND	0.05	ug/g						
Carbon Tetrachloride	ND	0.05	ug/g						
Chlorobenzene	ND	0.05	ug/g						
Chloroform	ND	0.05	ug/g						
Dibromochloromethane	ND	0.05	ug/g						
Dichlorodifluoromethane	ND	0.05	ug/g						
1,2-Dichlorobenzene	ND	0.05	ug/g						
1,3-Dichlorobenzene	ND	0.05	ug/g						

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,4-Dichlorobenzene	ND	0.05	ug/g						
1,1-Dichloroethane	ND	0.05	ug/g						
1,2-Dichloroethane	ND	0.05	ug/g						
1,1-Dichloroethylene	ND	0.05	ug/g						
cis-1,2-Dichloroethylene	ND	0.05	ug/g						
trans-1,2-Dichloroethylene	ND	0.05	ug/g						
1,2-Dichloropropane	ND	0.05	ug/g						
cis-1,3-Dichloropropylene	ND	0.05	ug/g						
trans-1,3-Dichloropropylene	ND	0.05	ug/g						
1,3-Dichloropropene, total	ND	0.05	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Ethylene dibromide (dibromoethane, 1,2-	ND	0.05	ug/g						
Hexane	ND	0.05	ug/g						
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g						
Methyl Isobutyl Ketone	ND	0.50	ug/g						
Methyl tert-butyl ether	ND	0.05	ug/g						
Methylene Chloride	ND	0.05	ug/g						
Styrene	ND	0.05	ug/g						
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g						
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g						
Tetrachloroethylene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
1,1,1-Trichloroethane	ND	0.05	ug/g						
1,1,2-Trichloroethane	ND	0.05	ug/g						
Trichloroethylene	ND	0.05	ug/g						
Trichlorofluoromethane	ND	0.05	ug/g						
Vinyl chloride	ND	0.02	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: 4-Bromofluorobenzene	3.24		ug/g		101	50-140			
Surrogate: Dibromofluoromethane	3.82		ug/g		119	50-140			
Surrogate: Toluene-d8	3.52		ug/g		110	50-140			
Benzene	ND	0.02	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: Toluene-d8	3.52		ug/g		110	50-140			

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g dry	ND			NC	40	
Metals									
Antimony	ND	1.0	ug/g dry	ND			NC	30	
Arsenic	3.6	1.0	ug/g dry	3.7			1.9	30	
Barium	109	1.0	ug/g dry	112			2.8	30	
Beryllium	0.7	0.5	ug/g dry	0.7			0.9	30	
Boron	11.7	5.0	ug/g dry	11.8			0.9	30	
Cadmium	ND	0.5	ug/g dry	ND			NC	30	
Chromium	24.5	5.0	ug/g dry	24.8			1.4	30	
Cobalt	7.2	1.0	ug/g dry	7.3			1.8	30	
Copper	18.5	5.0	ug/g dry	19.0			2.7	30	
Lead	19.6	1.0	ug/g dry	18.6			5.2	30	
Molybdenum	1.3	1.0	ug/g dry	1.1			15.8	30	
Nickel	14.7	5.0	ug/g dry	14.9			1.5	30	
Selenium	ND	1.0	ug/g dry	ND			NC	30	
Silver	0.4	0.3	ug/g dry	0.3			28.4	30	
Thallium	ND	1.0	ug/g dry	ND			NC	30	
Uranium	ND	1.0	ug/g dry	ND			NC	30	
Vanadium	32.1	10.0	ug/g dry	33.6			4.7	30	
Zinc	49.2	20.0	ug/g dry	49.6			0.8	30	
Physical Characteristics									
% Solids	87.6	0.1	% by Wt.	87.4			0.2	25	
Volatiles									
Acetone	ND	0.50	ug/g dry	ND			NC	50	
Benzene	ND	0.02	ug/g dry	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g dry	ND			NC	50	
Bromoform	ND	0.05	ug/g dry	ND			NC	50	
Bromomethane	ND	0.05	ug/g dry	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g dry	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
Chloroform	ND	0.05	ug/g dry	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g dry	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g dry	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g dry	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.05	ug/g dry	ND			NC	50	
Hexane	ND	0.05	ug/g dry	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g dry	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g dry	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g dry	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g dry	ND			NC	50	
Styrene	ND	0.05	ug/g dry	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g dry	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g dry	ND			NC	50	
Toluene	ND	0.05	ug/g dry	ND			NC	50	

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g dry	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g dry	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g dry	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g dry	ND			NC	50	
o-Xylene	ND	0.05	ug/g dry	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	3.55		ug/g dry		111	50-140			
Surrogate: Dibromofluoromethane	3.81		ug/g dry		119	50-140			
Surrogate: Toluene-d8	3.70		ug/g dry		116	50-140			
Benzene	ND	0.02	ug/g dry	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g dry	ND			NC	50	
Toluene	ND	0.05	ug/g dry	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g dry	ND			NC	50	
o-Xylene	ND	0.05	ug/g dry	ND			NC	50	
Surrogate: Toluene-d8	3.70		ug/g dry		116	50-140			

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	161	7	ug/g	ND	80.7	80-120			
F2 PHCs (C10-C16)	90	4	ug/g	ND	112	80-120			
F3 PHCs (C16-C34)	225	8	ug/g	ND	115	80-120			
F4 PHCs (C34-C50)	139	6	ug/g	ND	112	80-120			
Metals									
Antimony	49.4	1.0	ug/g	ND	98.2	70-130			
Arsenic	56.5	1.0	ug/g	1.5	110	70-130			
Barium	96.1	1.0	ug/g	44.8	103	70-130			
Beryllium	55.3	0.5	ug/g	ND	110	70-130			
Boron	56.1	5.0	ug/g	ND	103	70-130			
Cadmium	50.3	0.5	ug/g	ND	100	70-130			
Chromium	66.2	5.0	ug/g	9.9	113	70-130			
Cobalt	49.7	1.0	ug/g	2.9	93.6	70-130			
Copper	61.0	5.0	ug/g	7.6	107	70-130			
Lead	54.0	1.0	ug/g	7.4	93.2	70-130			
Molybdenum	53.4	1.0	ug/g	ND	106	70-130			
Nickel	59.2	5.0	ug/g	6.0	106	70-130			
Selenium	53.5	1.0	ug/g	ND	107	70-130			
Silver	45.4	0.3	ug/g	ND	90.6	70-130			
Thallium	44.9	1.0	ug/g	ND	89.6	70-130			
Uranium	47.1	1.0	ug/g	ND	93.6	70-130			
Vanadium	68.9	10.0	ug/g	13.5	111	70-130			
Zinc	71.5	20.0	ug/g	ND	103	70-130			
Semi-Volatiles									
Acenaphthene	0.156	0.02	ug/g	ND	93.5	50-140			
Acenaphthylene	0.139	0.02	ug/g	ND	83.3	50-140			
Anthracene	0.114	0.02	ug/g	ND	68.4	50-140			
Benzo [a] anthracene	0.133	0.02	ug/g	ND	79.6	50-140			
Benzo [a] pyrene	0.152	0.02	ug/g	ND	91.3	50-140			
Benzo [b] fluoranthene	0.167	0.02	ug/g	ND	100	50-140			
Benzo [g,h,i] perylene	0.145	0.02	ug/g	ND	86.8	50-140			
Benzo [k] fluoranthene	0.142	0.02	ug/g	ND	84.9	50-140			
Chrysene	0.172	0.02	ug/g	ND	103	50-140			
Dibenzo [a,h] anthracene	0.125	0.02	ug/g	ND	75.1	50-140			
Fluoranthene	0.131	0.02	ug/g	ND	78.7	50-140			
Fluorene	0.163	0.02	ug/g	ND	97.8	50-140			
Indeno [1,2,3-cd] pyrene	0.135	0.02	ug/g	ND	81.2	50-140			
1-Methylnaphthalene	0.188	0.02	ug/g	ND	113	50-140			
2-Methylnaphthalene	0.206	0.02	ug/g	ND	124	50-140			
Naphthalene	0.172	0.01	ug/g	ND	103	50-140			
Phenanthrene	0.151	0.02	ug/g	ND	90.5	50-140			
Pyrene	0.138	0.02	ug/g	ND	82.9	50-140			
Surrogate: 2-Fluorobiphenyl	1.39		ug/g		104	50-140			
Surrogate: Terphenyl-d14	1.14		ug/g		85.4	50-140			
Volatiles									
Acetone	10.8	0.50	ug/g	ND	108	50-140			
Benzene	3.98	0.02	ug/g	ND	99.5	60-130			
Bromodichloromethane	4.88	0.05	ug/g	ND	122	60-130			

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromoform	5.09	0.05	ug/g	ND	127	60-130			
Bromomethane	3.70	0.05	ug/g	ND	92.6	50-140			
Carbon Tetrachloride	4.82	0.05	ug/g	ND	120	60-130			
Chlorobenzene	4.23	0.05	ug/g	ND	106	60-130			
Chloroform	4.89	0.05	ug/g	ND	122	60-130			
Dibromochloromethane	4.78	0.05	ug/g	ND	120	60-130			
Dichlorodifluoromethane	4.17	0.05	ug/g	ND	104	50-140			
1,2-Dichlorobenzene	3.61	0.05	ug/g	ND	90.4	60-130			
1,3-Dichlorobenzene	3.53	0.05	ug/g	ND	88.3	60-130			
1,4-Dichlorobenzene	3.65	0.05	ug/g	ND	91.2	60-130			
1,1-Dichloroethane	4.35	0.05	ug/g	ND	109	60-130			
1,2-Dichloroethane	4.52	0.05	ug/g	ND	113	60-130			
1,1-Dichloroethylene	5.17	0.05	ug/g	ND	129	60-130			
cis-1,2-Dichloroethylene	4.41	0.05	ug/g	ND	110	60-130			
trans-1,2-Dichloroethylene	4.40	0.05	ug/g	ND	110	60-130			
1,2-Dichloropropane	3.70	0.05	ug/g	ND	92.6	60-130			
cis-1,3-Dichloropropylene	4.33	0.05	ug/g	ND	108	60-130			
trans-1,3-Dichloropropylene	4.19	0.05	ug/g	ND	105	60-130			
Ethylbenzene	4.24	0.05	ug/g	ND	106	60-130			
Ethylene dibromide (dibromoethane, 1,2-	4.17	0.05	ug/g	ND	104	60-130			
Hexane	3.27	0.05	ug/g	ND	81.7	60-130			
Methyl Ethyl Ketone (2-Butanone)	9.10	0.50	ug/g	ND	91.0	50-140			
Methyl Isobutyl Ketone	9.15	0.50	ug/g	ND	91.5	50-140			
Methyl tert-butyl ether	7.66	0.05	ug/g	ND	76.6	50-140			
Methylene Chloride	4.86	0.05	ug/g	ND	122	60-130			
Styrene	4.15	0.05	ug/g	ND	104	60-130			
1,1,1,2-Tetrachloroethane	4.53	0.05	ug/g	ND	113	60-130			
1,1,2,2-Tetrachloroethane	3.14	0.05	ug/g	ND	78.6	60-130			
Tetrachloroethylene	4.20	0.05	ug/g	ND	105	60-130			
Toluene	4.22	0.05	ug/g	ND	105	60-130			
1,1,1-Trichloroethane	4.60	0.05	ug/g	ND	115	60-130			
1,1,2-Trichloroethane	4.21	0.05	ug/g	ND	105	60-130			
Trichloroethylene	4.57	0.05	ug/g	ND	114	60-130			
Trichlorofluoromethane	5.16	0.05	ug/g	ND	129	50-140			
Vinyl chloride	3.94	0.02	ug/g	ND	98.4	50-140			
m,p-Xylenes	8.70	0.05	ug/g	ND	109	60-130			
o-Xylene	4.51	0.05	ug/g	ND	113	60-130			
Surrogate: 4-Bromofluorobenzene	2.42		ug/g		75.5	50-140			
Surrogate: Dibromofluoromethane	4.06		ug/g		127	50-140			
Surrogate: Toluene-d8	3.13		ug/g		97.7	50-140			
Benzene	3.98	0.02	ug/g	ND	99.5	60-130			
Ethylbenzene	4.24	0.05	ug/g	ND	106	60-130			
Toluene	4.22	0.05	ug/g	ND	105	60-130			
m,p-Xylenes	8.70	0.05	ug/g	ND	109	60-130			
o-Xylene	4.51	0.05	ug/g	ND	113	60-130			
Surrogate: Toluene-d8	3.13		ug/g		97.7	50-140			

Certificate of Analysis

Client: CM3 Environmental Inc.

Client PO: Holland Ave

Report Date: 26-Feb-2020

Order Date: 25-Feb-2020

Project Description: MM2316

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

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

Certificate of Analysis

CM3 Environmental Inc.

5710 Akins Road
Ottawa, ON K2S 1B8
Attn: Marc MacDonald

Client PO: Holland Ave
Project: MM2316
Custody: 52422

Report Date: 26-Feb-2020
Order Date: 25-Feb-2020

Order #: 2009234

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

Paracel ID	Client ID
2009234-01	MW1
2009234-02	MW2
2009234-03	MW3

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Client: CM3 Environmental Inc.

Client PO: Holland Ave

Report Date: 26-Feb-2020

Order Date: 25-Feb-2020

Project Description: MM2316

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Metals, ICP-MS	EPA 200.8 - ICP-MS	26-Feb-20	26-Feb-20
PHC F1	CWS Tier 1 - P&T GC-FID	25-Feb-20	26-Feb-20
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	25-Feb-20	26-Feb-20
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	26-Feb-20	26-Feb-20
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	25-Feb-20	26-Feb-20

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

	Client ID:	MW1	MW2	MW3	-
	Sample Date:	25-Feb-20 09:00	25-Feb-20 09:00	25-Feb-20 09:00	-
	Sample ID:	2009234-01	2009234-02	2009234-03	-
	MDL/Units	Water	Water	Water	-

Metals

Antimony	0.5 ug/L	0.6	<5.0 [1]	<0.5	-
Arsenic	1 ug/L	1	<10 [1]	<1	-
Barium	1 ug/L	107	395 [1]	39	-
Beryllium	0.5 ug/L	<0.5	<5.0 [1]	<0.5	-
Boron	10 ug/L	545	106 [1]	55	-
Cadmium	0.1 ug/L	<0.1	<1.0 [1]	<0.1	-
Chromium	1 ug/L	<1	<10 [1]	<1	-
Cobalt	0.5 ug/L	<0.5	<5.0 [1]	3.0	-
Copper	0.5 ug/L	1.1	<5.0 [1]	1.6	-
Lead	0.1 ug/L	<0.1	<1.0 [1]	<0.1	-
Molybdenum	0.5 ug/L	5.9	9.6 [1]	4.3	-
Nickel	1 ug/L	3	<10 [1]	2	-
Selenium	1 ug/L	<1	<10 [1]	2	-
Silver	0.1 ug/L	<0.1	<1.0 [1]	<0.1	-
Sodium	200 ug/L	34000	1130000 [1]	62700	-
Thallium	0.1 ug/L	<0.1	<1.0 [1]	<0.1	-
Uranium	0.1 ug/L	0.7	3.8 [1]	1.1	-
Vanadium	0.5 ug/L	2.2	<5.0 [1]	1.5	-
Zinc	5 ug/L	19	<50 [1]	15	-

Volatiles

Acetone	5.0 ug/L	<5.0	<5.0	<5.0	-
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	-
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Chloroform	0.5 ug/L	<0.5	<0.5	<0.5	-
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

	Client ID: Sample Date: Sample ID:	MW1 25-Feb-20 09:00 2009234-01 Water	MW2 25-Feb-20 09:00 2009234-02 Water	MW3 25-Feb-20 09:00 2009234-03 Water	- - - -
	MDL/Units				
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	-
Ethylbenzene	0.5 ug/L	<0.5	2.4	<0.5	-
Ethylene dibromide (dibromoethane, 1,2-)	0.2 ug/L	<0.2	<0.2	<0.2	-
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	-
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	-
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Toluene	0.5 ug/L	<0.5	2.5	<0.5	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	-
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	-
m,p-Xylenes	0.5 ug/L	<0.5	9.0	<0.5	-
o-Xylene	0.5 ug/L	<0.5	6.1	<0.5	-
Xylenes, total	0.5 ug/L	<0.5	15.1	<0.5	-
4-Bromofluorobenzene	Surrogate	128%	113%	126%	-
Dibromofluoromethane	Surrogate	103%	101%	103%	-
Toluene-d8	Surrogate	110%	111%	109%	-

Hydrocarbons

F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	-
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100	-
F3 PHCs (C16-C34)	100 ug/L	<100	<100	<100	-
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	-

Semi-Volatiles

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

	Client ID:	MW1	MW2	MW3	
	Sample Date:	25-Feb-20 09:00	25-Feb-20 09:00	25-Feb-20 09:00	-
	Sample ID:	2009234-01	2009234-02	2009234-03	-
	MDL/Units	Water	Water	Water	-
Acenaphthene	0.05 ug/L	<0.05	<0.05	0.12	-
Acenaphthylene	0.05 ug/L	<0.05	<0.05	<0.05	-
Anthracene	0.01 ug/L	<0.01	<0.01	<0.01	-
Benzo [a] anthracene	0.01 ug/L	<0.01	<0.01	<0.01	-
Benzo [a] pyrene	0.01 ug/L	<0.01	<0.01	<0.01	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	<0.05	<0.05	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05	-
Chrysene	0.05 ug/L	<0.05	<0.05	<0.05	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	<0.05	-
Fluoranthene	0.01 ug/L	<0.01	<0.01	<0.01	-
Fluorene	0.05 ug/L	<0.05	<0.05	0.13	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	<0.05	<0.05	-
1-Methylnaphthalene	0.05 ug/L	<0.05	0.23	0.29	-
2-Methylnaphthalene	0.05 ug/L	<0.05	0.45	0.36	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	0.68	0.66	-
Naphthalene	0.05 ug/L	<0.05	0.22	0.06	-
Phenanthrene	0.05 ug/L	<0.05	0.06	0.12	-
Pyrene	0.01 ug/L	<0.01	<0.01	<0.01	-
2-Fluorobiphenyl	Surrogate	102%	90.0%	105%	-
Terphenyl-d14	Surrogate	95.7%	94.9%	112%	-

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Metals									
Antimony	ND	0.5	ug/L						
Arsenic	ND	1	ug/L						
Barium	ND	1	ug/L						
Beryllium	ND	0.5	ug/L						
Boron	ND	10	ug/L						
Cadmium	ND	0.1	ug/L						
Chromium	ND	1	ug/L						
Cobalt	ND	0.5	ug/L						
Copper	ND	0.5	ug/L						
Lead	ND	0.1	ug/L						
Molybdenum	ND	0.5	ug/L						
Nickel	ND	1	ug/L						
Selenium	ND	1	ug/L						
Silver	ND	0.1	ug/L						
Sodium	ND	200	ug/L						
Thallium	ND	0.1	ug/L						
Uranium	ND	0.1	ug/L						
Vanadium	ND	0.5	ug/L						
Zinc	ND	5	ug/L						
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	92.3		ug/L		115	50-140			
Surrogate: Dibromofluoromethane	82.8		ug/L		104	50-140			
Surrogate: Toluene-d8	93.0		ug/L		116	50-140			

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Metals									
Antimony	ND	0.5	ug/L	0.63			NC	20	
Arsenic	ND	1	ug/L	ND			NC	20	
Barium	178	1	ug/L	180			1.3	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	ND	10	ug/L	ND			NC	20	
Cadmium	0.11	0.1	ug/L	0.10			7.1	20	
Chromium	2.3	1	ug/L	2.3			0.5	20	
Cobalt	5.56	0.5	ug/L	5.66			1.8	20	
Copper	3.64	0.5	ug/L	3.62			0.6	20	
Lead	0.47	0.1	ug/L	0.49			3.2	20	
Molybdenum	ND	0.5	ug/L	ND			NC	20	
Nickel	9.8	1	ug/L	9.9			1.3	20	
Selenium	ND	1	ug/L	ND			NC	20	
Silver	ND	0.1	ug/L	1.07			NC	20	
Sodium	133000	200	ug/L	134000			0.8	20	
Thallium	ND	0.1	ug/L	ND			NC	20	
Uranium	ND	0.1	ug/L	ND			NC	20	
Vanadium	ND	0.5	ug/L	ND			NC	20	
Zinc	15	5	ug/L	14			0.3	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	ND			NC	30	
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2)	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	99.2		ug/L		124	50-140			
Surrogate: Dibromofluoromethane	82.6		ug/L		103	50-140			
Surrogate: Toluene-d8	87.1		ug/L		109	50-140			

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	1920	25	ug/L	ND	96.0	68-117			
F2 PHCs (C10-C16)	1590	100	ug/L	ND	99.2	60-140			
F3 PHCs (C16-C34)	4140	100	ug/L	ND	106	60-140			
F4 PHCs (C34-C50)	2420	100	ug/L	ND	97.4	60-140			
Metals									
Antimony	53.7	0.5	ug/L	ND	107	80-120			
Arsenic	55.8	1	ug/L	ND	112	80-120			
Barium	57.9	1	ug/L	ND	116	80-120			
Beryllium	58.4	0.5	ug/L	ND	117	80-120			
Boron	54	10	ug/L	ND	107	80-120			
Cadmium	57.1	0.1	ug/L	ND	114	80-120			
Chromium	57.7	1	ug/L	ND	115	80-120			
Cobalt	49.3	0.5	ug/L	ND	98.5	80-120			
Copper	55.4	0.5	ug/L	ND	111	80-120			
Lead	51.6	0.1	ug/L	ND	103	80-120			
Molybdenum	52.0	0.5	ug/L	ND	104	80-120			
Nickel	55.3	1	ug/L	ND	111	80-120			
Selenium	48.6	1	ug/L	ND	97.2	80-120			
Silver	51.8	0.1	ug/L	ND	104	80-120			
Sodium	8880	200	ug/L	ND	88.8	80-120			
Thallium	49.7	0.1	ug/L	ND	99.4	80-120			
Uranium	49.3	0.1	ug/L	ND	98.7	80-120			
Vanadium	56.6	0.5	ug/L	ND	113	80-120			
Zinc	54	5	ug/L	ND	109	80-120			
Volatiles									
Acetone	104	5.0	ug/L	ND	104	50-140			
Benzene	40.8	0.5	ug/L	ND	102	60-130			
Bromodichloromethane	41.9	0.5	ug/L	ND	105	60-130			
Bromoform	46.1	0.5	ug/L	ND	115	60-130			
Bromomethane	35.9	0.5	ug/L	ND	89.7	50-140			
Carbon Tetrachloride	43.1	0.2	ug/L	ND	108	60-130			
Chlorobenzene	41.6	0.5	ug/L	ND	104	60-130			
Chloroform	41.5	0.5	ug/L	ND	104	60-130			
Dibromochloromethane	43.6	0.5	ug/L	ND	109	60-130			
Dichlorodifluoromethane	42.6	1.0	ug/L	ND	106	50-140			
1,2-Dichlorobenzene	44.3	0.5	ug/L	ND	111	60-130			
1,3-Dichlorobenzene	43.4	0.5	ug/L	ND	108	60-130			
1,4-Dichlorobenzene	43.0	0.5	ug/L	ND	108	60-130			
1,1-Dichloroethane	35.0	0.5	ug/L	ND	87.6	60-130			
1,2-Dichloroethane	41.0	0.5	ug/L	ND	103	60-130			
1,1-Dichloroethylene	41.2	0.5	ug/L	ND	103	60-130			
cis-1,2-Dichloroethylene	41.1	0.5	ug/L	ND	103	60-130			
trans-1,2-Dichloroethylene	39.4	0.5	ug/L	ND	98.5	60-130			
1,2-Dichloropropane	40.2	0.5	ug/L	ND	100	60-130			
cis-1,3-Dichloropropylene	42.8	0.5	ug/L	ND	107	60-130			
trans-1,3-Dichloropropylene	44.3	0.5	ug/L	ND	111	60-130			
Ethylbenzene	44.3	0.5	ug/L	ND	111	60-130			
Ethylene dibromide (dibromoethane, 1,2-	40.8	0.2	ug/L	ND	102	60-130			

Certificate of Analysis

Report Date: 26-Feb-2020

Client: CM3 Environmental Inc.

Order Date: 25-Feb-2020

Client PO: Holland Ave

Project Description: MM2316

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hexane	40.2	1.0	ug/L	ND	101	60-130			
Methyl Ethyl Ketone (2-Butanone)	82.6	5.0	ug/L	ND	82.6	50-140			
Methyl Isobutyl Ketone	104	5.0	ug/L	ND	104	50-140			
Methyl tert-butyl ether	97.1	2.0	ug/L	ND	97.1	50-140			
Methylene Chloride	37.1	5.0	ug/L	ND	92.8	60-130			
Styrene	47.2	0.5	ug/L	ND	118	60-130			
1,1,1,2-Tetrachloroethane	42.8	0.5	ug/L	ND	107	60-130			
1,1,2,2-Tetrachloroethane	41.8	0.5	ug/L	ND	104	60-130			
Tetrachloroethylene	43.1	0.5	ug/L	ND	108	60-130			
Toluene	40.0	0.5	ug/L	ND	100	60-130			
1,1,1-Trichloroethane	42.2	0.5	ug/L	ND	106	60-130			
1,1,2-Trichloroethane	41.2	0.5	ug/L	ND	103	60-130			
Trichloroethylene	41.4	0.5	ug/L	ND	104	60-130			
Trichlorofluoromethane	41.5	1.0	ug/L	ND	104	60-130			
Vinyl chloride	41.0	0.5	ug/L	ND	103	50-140			
m,p-Xylenes	90.1	0.5	ug/L	ND	113	60-130			
o-Xylene	46.5	0.5	ug/L	ND	116	60-130			
Surrogate: 4-Bromofluorobenzene	82.2		ug/L		103	50-140			
Surrogate: Dibromofluoromethane	84.0		ug/L		105	50-140			
Surrogate: Toluene-d8	77.7		ug/L		97.1	50-140			

Certificate of Analysis

Client: CM3 Environmental Inc.

Client PO: Holland Ave

Report Date: 26-Feb-2020

Order Date: 25-Feb-2020

Project Description: MM2316

Qualifier Notes:

Sample Qualifiers :

1 : Elevated Reporting Limit due to matrix interference.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

CCME PHC additional information:

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