CHUNG & VANDER DOELEN
ENGINEERING LTD.

PHASE II ENVIRONMENTAL SITE ASSESSMENT

295 MOUNTAIN ROAD

COLLINGWOOD, ONTARIO

SUBMITTED TO:
Mr. Pete Graham
Ted North (295 Mountain Road) Ltd.
7 Edinburgh Road South
Guelph, Ontario
N1H 5N8

FILE NO.: E19858 / March 6, 2020

CHUNG & VANDER DOELEN
ENGINEERING LTD.

311 VICTORIA STREET NORTH
KITCHENER / ONTARIO / N2H 5E1
519-742-8979

March 6, 2020
FILE NO.: E19858

Mr. Pete Graham
Ted North (295 Mountain Road) Ltd.
7 Edinburgh Road South
Guelph, Ontario
N1H 5N8

Dear Mr. Graham:

RE: PHASE II ENVIRONMENTAL SITE ASSESSMENT
295 MOUNTAIN ROAD
COLLINGWOOD, ONTARIO

We are enclosing one (1) copy of our Phase II ESA report conducted for the above-referenced property.

If you have any questions or clarifications are required, please contact the undersigned at your convenience.

We thank you for giving us this opportunity to be of service to you.

Yours truly,

CHUNG & VANDER DOELEN ENGINEERING LTD.

Michael J. Lefebvre, P.Geo.
Manager, Environmental Services

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1.0 EXECUTIVE SUMMARY

Chung and Vander Doelen Engineering Ltd. (CVD) was retained by Mr. Pete Graham of Ted North (295 Mountain Road) Ltd. to complete a Phase II Environmental Site Assessment (ESA) on the property at 295 Mountain Road in Collingwood, Ontario (hereinafter referred to as the "Site").

The purpose of the Phase II ESA is to evaluate the soil and groundwater related to the historical application of pesticides and insecticides in order to support proposed residential redevelopment of the Site. It is understood that a Record of Site Condition (RSC) is not intended for the Site at this time.

The Site is a vacant and undeveloped, irregular-shaped property approximately 50 acres in area located on the northwest corner of Mountain Road and Tenth Line in an area of residential, commercial, industrial and agricultural land uses. The Site extends around a property (279 Mountain Road) that is occupied by All Stone Landscaping and Banff Sport Collingwood Ski & Snowboard Rentals.

Historical agricultural activities on the property included fruit farming. Orchards were previously located on the eastern portion of the Site. A previous environmental investigation on the property identified elevated arsenic concentrations in the surface soil related to historical application of pesticides and insecticides on the fruit trees.

A key plan of the Site is provided in Figure 1. A borehole location plan is enclosed in Figure 2.

The Phase II ESA scope of work was based on providing an overall evaluation of the soil and groundwater conditions related to the historical application of pesticides and insecticides on the eastern portion of the Site as documented in the previous CRA and CVD Phase I ESAs and identified in the Peto MacCallum Ltd. (PML) soil investigations from December 2017 and December 2018. As such, CVD conducted the following scope of work:

- Twelve (12) boreholes (BH1 to BH12) were advanced on the eastern portion of the Site to evaluate the underlying soil and groundwater conditions. Monitoring wells were installed in three (3) of the boreholes to assess the groundwater conditions (BH1, BH2 and BH3).

- The soil samples were submitted from the surface soil (0.0 m to 0.50 m) for chemical analyses which included metals & inorganics and organochlorine (OC) pesticides.

- Groundwater samples were submitted for chemical analyses, including metals & inorganics and organochlorine (OC) pesticides.

- Additional groundwater samples were submitted from the two (2) PML monitoring wells (BH108 and BH110) installed on the eastern portion of the Site as part of the previous geotechnical investigation.

- A report of findings and conclusions was prepared.

The boreholes were located in the following areas with the following rationale (Figure 2):

- BH1, BH2 and BH3 are evenly distributed across the eastern portion of the Site where fruit trees (orchards) are currently and were previously located. All three (3) boreholes were installed with monitoring wells. The purpose of BH1 to BH3 was to assess the soil and groundwater related to the historical application of pesticide and insecticides on the Site.

- BH4 to BH12 were evenly distributed across the eastern portion of the Site where fruit trees (orchards) are currently and were previously located. The purpose of the boreholes was to assess the shallow soil conditions (0.0 m to 0.50 m) related to historical application of pesticide and insecticides on the Site.

The Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act dated April 15, 2011 established in accordance with the amended Ontario Regulation 153/04 was consulted in the assessment of the soil and groundwater on the property.

The Town of Collingwood relies on Georgian Bay as the source of its potable water, however it is the understanding of CVD that Town services do not extend to the Site. 279 Mountain Road is serviced by a private well. The shallow groundwater table at the Site was identified at less than 3 m below grade. The analytical results were therefore compared to the Ministry of the Environment, Conservation and Parks (MECP) Table 6, Generic Site Condition Standards for Shallow Soils in a Potable Groundwater Condition.

According to the Town of Collingwood Zoning By-Law, the Site is currently residentially zoned R2 (H1) and R3 (H1). Therefore, the soil and groundwater results were compared to the residential/parkland/ institutional Property Use for a coarse textured soil based on the surface soil conditions observed during the drilling activities (herein referred to as the "applicable Table 6 standards").

The overall findings of the Phase II ESA conclude the following:

- Twelve (12) boreholes (BH1 to BH12) were advanced on the eastern portion of the Site to evaluate the underlying soil and groundwater conditions. Monitoring wells were installed in three (3) of the boreholes to assess the groundwater conditions (BH1, BH2 and BH3).

- The analytical results of surface soil samples selected for analysis from BH4, BH8, BH9 and BH11 had detectable concentrations of metals (arsenic) and organochlorine pesticides that exceeded the applicable Table 6 standards. All other organochlorine pesticides, metals & inorganic concentrations were below the applicable Table 6 standards.

- The analytical results of the groundwater samples selected for analysis from the monitoring wells located in the potential areas of historical pesticide and insecticides application, had no chemical parameters that exceeded the applicable Table 6 standards. All organochlorine pesticides, metals & inorganic concentrations were below the applicable Table 6 standards.

- Based on the groundwater elevations included as part of the previous PML geotechnical investigation, the interpreted direction of shallow groundwater flow on the Site is in an easterly direction towards Black Ash Creek and Georgian Bay.

2.0 INTRODUCTION

2.1 Site Description

Chung and Vander Doelen Engineering Ltd. (CVD) was retained by Mr. Pete Graham of Ted North (295 Mountain Road) Ltd. to complete a Phase II Environmental Site Assessment (ESA) on the property at 295 Mountain Road in Collingwood, Ontario (hereinafter referred to as the "Site").

The purpose of the Phase II ESA is to evaluate the soil and groundwater related to the historical application of pesticides and insecticides in order to support proposed residential redevelopment of the Site. It is understood that a Record of Site Condition (RSC) is not intended for the Site at this time.

The Site is a vacant and undeveloped, irregular-shaped property approximately 50 acres in area located on the northwest corner of Mountain Road and Tenth Line in an area of residential, commercial, industrial and agricultural land uses. The Site extends around a property (279 Mountain Road) that is occupied by All Stone Landscaping and Banff Sport Collingwood Ski & Snowboard Rentals.

Historical agricultural activities on the property included fruit farming. Orchards were previously located on the eastern portion of the Site. A previous environmental investigation on the property identified elevated arsenic concentrations in the surface soil related to historical application of pesticides and insecticides on the fruit trees.

A key plan of the Site is provided in Figure 1. A borehole location plan is enclosed in Figure 2.

2.2 Applicable Site Condition Standard

The Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act dated April 15, 2011 established in accordance with the amended Ontario Regulation 153/04 was consulted in the assessment of the soil and groundwater on the property.

The Town of Collingwood relies on Georgian Bay as the source of its potable water, however it is the understanding of CVD that Town services do not extend to the Site. 279 Mountain Road is serviced by a private well. The shallow groundwater table at the Site was identified at less than 3 m below grade. The analytical results were therefore compared to the Ministry of the Environment, Conservation and Parks (MECP) Table 6, Generic Site Condition Standards for Shallow Soils in a Potable Groundwater Condition.

According to the Town of Collingwood Zoning By-Law, the Site is currently residentially zoned R2 (H1) and R3 (H1). Therefore, the soil and groundwater results were compared to the residential/parkland/ institutional Property Use for a coarse textured soil based on the surface soil conditions observed during the drilling activities (herein referred to as the “applicable Table 6 standards”).

3.0 BACKGROUND INFORMATION

3.1 Physical Setting

The Atlas of Canada Toporama interactive map and the County of Simcoe Interactive Mapping Application were accessed to retrieve spatial data relevant to the Site. Map contours reveal geodetic elevations of the Site to be at 190 m.a.s.l. (metres above sea-level). The local topography slopes towards Black Ash Creek and Georgian Bay to the east.

The nearest surficial body of water is Black Ash Creek located 925 m to the east. Georgian Bay is located 1.73 km to the east. It is anticipated that shallow groundwater flow in the area of the Site is in an easterly direction.

According to the Ministry of Northern Development and Mines, "Quaternary Geology of the Collingwood Area", Map P3815, the western portion of the Site is predominately located in an area of foreshore deposits of very fine-to-medium-grained sand with minor silt and clay. The eastern portion of the property is predominately located in an area of Newmarket-Catfish Creek-Elma Till consisting of moderately to highly consolidated silt-to-sand-rich till. A deposit of coarse-grained lacustrine deposits of sand and gravel extends onto the northeast corner of the Site.

According to Map 2544, "Bedrock Geology of Southern Ontario, Southern Sheet", the bedrock in the area generally consists of shale, limestone, dolostone and siltstone of the Georgian Bay Formation (Collingwood Member).

3.2 Past Investigations

A previous Phase I ESA for the property was conducted by Conestoga Rovers and Associates (CRA) in 2006. The findings and the conclusions of the Phase I ESA are documented in the following report:

- "Phase I Environmental Site Assessment, Vacant Lot, Part of Lot 45 Concession 11, Town of Collingwood, Ontario" dated February 2006.

The 2006 report concluded a potential environmental issue related to the presence of an orchard on the Site may have resulted in impacts from the past use of pesticides such as arsenicals and organochloride pesticides.

In response to the conclusions of the Phase I ESA, an arsenic testing program was conducted by Peto MacCallum Ltd. (PML) in December 2017 and December 2018. The findings and the conclusions of the investigation are documented in the following report:

- "Arsenic Testing, Proposed Panorama North Residential Development, 295 Mountain Road, Collingwood, Ontario" dated June 7, 2019.

The 2019 report concluded that based on the soil results the measured concentrations of arsenic in the near surface soil (0.0 m – 0.50 m) on the Site meets the applicable Ministry of the Environment Conservation and Parks (MECP) Table 1 site condition standard.

An updated Phase I ESA Letter was provided by CVD in June 2019. The findings and the conclusions of the investigation are documented in the following letter:

- "Phase I Environmental Site Assessment Update, 295 Mountain Road, Collingwood, Ontario" dated June 28, 2019.

The findings of the Phase I ESA update did not identify any actual or potential sources of contamination on the property located at 295 Mountain Road in Collingwood or surrounding properties since the previous Phase I ESA investigation was conducted in 2006.

A geotechnical investigation for the property was conducted by PML in February 2020. The findings and the conclusions of the investigation are documented in the following report:

- "Geotechnical Investigation, Proposed Panorama North Residential Development, 295 Mountain Road, Collingwood, Ontario" dated February 26, 2020.

The geotechnical investigation included the installation of five (5) monitoring wells on the property in 2017 to permit groundwater level monitoring. Two (2) of the monitoring wells were advanced on the eastern portion of the property (BH108 and BH110).

4.0 SCOPE OF THE INVESTIGATION

4.1 Overview of the Investigation

The Phase II ESA scope of work was based on providing an overall evaluation of the soil and groundwater conditions related to the historical application of pesticides and insecticides on the eastern portion of the Site as documented in the previous CRA and CVD Phase I ESAs and identified in the Peto MacCallum Ltd. (PML) soil investigations from December 2017 and December 2018. As such, CVD conducted the following scope of work:

- Twelve (12) boreholes (BH1 to BH12) were advanced on the eastern portion of the Site to evaluate the underlying soil and groundwater conditions. Monitoring wells were installed in three (3) of the boreholes to assess the groundwater conditions (BH1, BH2 and BH3).

- The soil samples were submitted from the surface soil (0.0 m to 0.50 m) for chemical analyses which included metals & inorganics and organochlorine (OC) pesticides.

- Groundwater samples were submitted for chemical analyses, including metals & inorganics and organochlorine (OC) pesticides.

- Additional groundwater samples were submitted from the two (2) PML monitoring wells (BH108 and BH110) installed on the eastern portion of the Site as part of the previous geotechnical investigation.

- A report of findings and conclusions was prepared.

4.2 Media Investigated

The boreholes were located in the following areas with the following rationale (Figure 2):

- BH1, BH2 and BH3 are evenly distributed across the eastern portion of the Site where fruit trees (orchards) are currently and were previously located. All three (3) boreholes were installed with monitoring wells. The purpose of BH1 to BH3 was to assess the soil and groundwater related to the historical application of pesticide and insecticides on the Site.

- BH4 to BH12 were evenly distributed across the eastern portion of the Site where fruit trees (orchards) are currently and were previously located. The purpose of the boreholes was to assess the shallow soil conditions (0.0 m to 0.50 m) related to historical application of pesticide and insecticides on the Site.

5.0 INVESTIGATION METHOD

5.1 General

The Phase II ESA was completed using standard engineering and scientific judgement, principles and practices, and was conducted in general accordance with the amended Ontario Regulation 153/04.

A drilling program was conducted on February 12th, 2020. The work was overseen by a representative of CVD and was conducted using standard field protocols. Photographs of the drilling activities are provided in Appendix E.

Prior to commencing the drilling activities, the locations of natural gas, sewer, water, telephone and electrical services were located and cleared by contacting Ontario One Call and a private utility locator (G-Tel Engineering).

5.2 Borehole Drilling

CVD directed and supervised the advancement of twelve (12) boreholes (BH1 to BH12) using a Diedrich D-50 Turbo, track-mounted drill rig operated by London Soil Test Ltd. of London, Ontario. Where Site access was restricted due to dense tree cover, soil sampling split-spoons were manually advanced with the assistance of a 10 lb hammer. The borehole locations are provided on Figure 2.

Soil samples were collected from each spilt spoon interval. Soil samples selected for further evaluation were collected in laboratory supplied glass jars based on field observations and depths related to associated potentially contaminating activities (PCAs). The boreholes were advanced to depths of 1.0 to 4.57 metres below ground surface (mbgs) where sufficient groundwater was available for sampling, and native soil deposits were fully exposed.

5.3 Soil Sampling / Field Screen Measurements

Soil samples from the boreholes were logged for physical characteristics, as well as olfactory and visual evidence of contamination. In addition to visual and olfactory observations, soil samples were field screened for head space VOC concentrations using the MiniRAE 3000 PID to further direct the investigation. Soil vapour readings were not detected above 0.0 ppm. Soil vapour readings are provided on borehole logs included in Appendix B.

Where soil samples were suspected of being impacted a portion of the soil sample was place directly into a laboratory supplied glass jar. The samples were either kept in a refrigerated environment or on ice until such time as they could be delivered to an accredited laboratory for chemical analysis.

5.4 Groundwater Monitoring Well Installation

Monitoring wells were installed in three (3) of the twelve (12) boreholes (BH1 to BH3) advanced on the property. The groundwater monitoring wells installed were constructed of a clean 38 mm diameter 'Triloc' PVC pipe with a 1.5 m to 3 m long screened interval. The riser portion of the well was backfilled with bentonite. A 0.3 m concrete seal was placed above the backfill. The monitoring wells were capped and covered with steel stick-up well casings.

5.5 Groundwater Sampling

Groundwater sampling was conducted in accordance with the Ministry of the Environment, Conservation and Parks (MECP) document entitled "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario" dated December 1996 and the amended Ontario Regulation 153/04.

The monitoring wells were developed and purged prior to sampling using a low-density polyethylene tubing and a foot valve sampling device (Waterra®) to remove standing water, filter pack water and to allow for the influx of fresh formation water. In accordance with standard operating procedures, the monitoring wells were purged dry and allowed to recover, or three to ten well volumes were removed prior to sampling.

Groundwater sampling was conducted using low-flow sampling techniques involving the use of a Waterra® Field Pro peristaltic pump. The groundwater samples were placed in laboratory prepared containers and either refrigerated or stored in a cooler with ice from the time of sampling until delivery to the laboratory.

5.6 Analytical Testing

Soil and groundwater samples were submitted to ALS Laboratory Group (CAEAL accredited laboratory) in Waterloo, Ontario, for chemical analyses. The soil and groundwater samples submitted to the laboratory were representative of the conditions encountered during the drilling program. The following table summarizes the selected soil and groundwater samples tested:

Sample Id.	Depth (m)	Matrix	Testing Rationale	Laboratory Analyses
BH1-1	0.0 – 0.50	Soil	Chemical characterization of the surface soil where historical application of pesticides and insecticides potentially occurred. Verify pH value in surficial soil is within the acceptable range of 5.0 to 9.0.	O/C Pesticides, pH, Metals Inorganics
BH1-5	3.05 – 3.66	Soil	Verify pH value in subsurface soil is within the acceptable range of 5.0 to 11.0.	pH
BH2-1	0.0 – 0.50	Soil	Chemical characterization of the surface soil where historical application of pesticides and insecticides potentially occurred.	O/C Pesticides, Metals & Inorganics
BH3-1	0.0 – 0.50	Soil	Chemical characterization of the surface soil where historical application of pesticides and insecticides potentially occurred.	O/C Pesticides, Metals & Inorganics
BH4-1	0.0 – 0.50	Soil	Chemical characterization of the surface soil where historical application of pesticides and insecticides potentially occurred.	O/C Pesticides, Metals & Inorganics
BH5-1	0.0 – 0.50	Soil	Chemical characterization of the surface soil where historical application of pesticides and insecticides potentially occurred.	O/C Pesticides, Metals & Inorganics
BH6-1	0.0 – 0.50	Soil	Chemical characterization of the surface soil where historical application of pesticides and insecticides potentially occurred.	O/C Pesticides, Metals & Inorganics
BH7-1	0.0 – 0.50	Soil	Chemical characterization of the surface soil where historical application of pesticides and insecticides potentially occurred.	O/C Pesticides, Metals & Inorganics
BH8-1	0.0 – 0.50	Soil	Chemical characterization of the surface soil where historical application of pesticides and insecticides potentially occurred.	O/C Pesticides, Metals & Inorganics
BH9-1	0.0 – 0.50	Soil	Chemical characterization of the surface soil where historical application of pesticides and insecticides potentially occurred.	O/C Pesticides, Metals & Inorganics
BH10-1	0.0 – 0.50	Soil	Chemical characterization of the surface soil where historical application of pesticides and insecticides potentially occurred.	O/C Pesticides, Metals & Inorganics
BH11-1	0.0 – 0.50	Soil	Chemical characterization of the surface soil where historical application of pesticides and insecticides potentially occurred.	O/C Pesticides, Metals & Inorganics
BH12-1	0.0 – 0.50	Soil	Chemical characterization of the surface soil where historical application of pesticides and insecticides potentially occurred.	O/C Pesticides, Metals & Inorganics

Sample Id.	Depth (m)	Matrix	Testing Rationale	Laboratory Analyses
BH1	0.84	Groundwater	Groundwater quality assessment related to historical application of pesticides and insecticides.	O/C Pesticides, Metals & Inorganics
BH2	0.60	Groundwater	Groundwater quality assessment related to historical application of pesticides and insecticides.	O/C Pesticides, Metals & Inorganics
BH3	0.30	Groundwater	Groundwater quality assessment related to historical application of pesticides and insecticides.	O/C Pesticides, Metals & Inorganics
BH108	0.76	Groundwater	Groundwater quality assessment related to historical application of pesticides and insecticides.	O/C Pesticides, Metals & Inorganics
BH110	0.50	Groundwater	Groundwater quality assessment related to historical application of pesticides and insecticides.	O/C Pesticides, Metals & Inorganics

6.0 REVIEW AND EVALUATION

6.1 Geology

According to the Ministry of Northern Development and Mines, "Quaternary Geology of the Collingwood Area", Map P3815, the western portion of the Site is predominately located in an area of foreshore deposits of very fine-to-medium-grained sand with minor silt and clay. The eastern portion of the property is predominately located in an area of Newmarket-Catfish Creek-Elma Till consisting of moderately to highly consolidated silt-to-sand-rich till. A deposit of coarse-grained lacustrine deposits of sand and gravel extends onto the northeast corner of the Site.

According to Map 2544, "Bedrock Geology of Southern Ontario, Southern Sheet", the bedrock in the area generally consists of shale, limestone, dolostone and siltstone of the Georgian Bay Formation (Collingwood Member).

As determined from the borehole logs, the Site stratigraphy generally consists of a surface layer of topsoil with silt and organics to a depth of 0.45 mbgs to 0.61 mbgs that is underlain by native deposits of silt to silt till. Silty sand was encountered to a maximum borehole termination depth of 4.57 mbgs at BH1. Borehole logs are provided in Appendix B.

6.2 Groundwater Elevations and Flow Direction

The groundwater level and free product level was measured at the monitoring well location utilizing a Heron H.01 interface meter. The water level was determined by referenced the existing ground surface. No free product was detected on the surface of the water table or at the bottom of the monitoring well on February 19th, 2020.

Based on the groundwater measurements, the groundwater is located within the native soil at a depth between 0.30 mbgs and 0.84 mbgs.

The nearest surficial body of water is Black Ash Creek located 925 m to the east. Georgian Bay is located 1.73 km to the east.

Groundwater elevations were calculated on all previously installed PML monitoring wells as part of the previous PML geotechnical investigation. Groundwater elevations were observed between 197.55 mbgs at the west end of the Site to 189.65 at the northeast corner of the Site (BH108) in December 2017. Based on the 2017 groundwater elevations, the shallow groundwater flow on the Site is in an easterly direction towards Black Ash Creek and Georgian Bay. Recently installed CVD monitoring well locations are to be surveyed as part of future engineering activities to be completed on the Site.

6.3 Soil Quality

The analytical results of surface soil samples selected for analysis from BH4, BH8, BH9 and BH11 had detectable concentrations of metals (arsenic) and organochlorine pesticides that exceeded the applicable Table 6 standards. All other organochlorine pesticides, metals & inorganic concentrations were below the applicable Table 6 standards. Observations are recorded in borehole logs included in Appendix B.

Soil samples exceeding the applicable Table 6 standards are summarized in the table below:

Location	Depth (m)	Parameter	Table 6 standard (ug/g)	Concentrations in Soil (ug/g)
BH4	0.0 – 0.50	*Arsenic (As)*	18	32.9
		Total DDE	0.26	11.5
		Total DDT	1.4	2.32
		Dieldrin	0.05	0.092
BH8	0.0 – 0.50	*Total DDE*	0.26	12.9
		Dieldrin	0.05	0.094
BH9	0.0 – 0.50	*Total DDE*	0.26	2.37
BH11	0.0 – 0.50	*Total DDE*	0.26	2.97
		Dieldrin	0.05	0.07

Highly acidic or alkaline soil can cause contaminants to behave differently from the manner assumed in the generic models, making the generic standard inappropriate for use at a property with pH levels outside the acceptable pH range.

The pH result from BH1-1 (7.33) indicates that the surface soil chemistry on the Site is within the acceptable pH range of 5.0 to 9.0. The pH result from BH1-5 (7.97) indicates that the subsurface soil chemistry on the Site is within the acceptable pH range of 5.0 to 11.0. Surface soil is defined as soil that is no more than 1.5 metres beneath the soil surface. Subsurface soil is defined as soil that is more than 1.5 metres beneath the soil surface.

The certificates of chemical analysis and results are enclosed in Appendix D. A comparison of the soil chemistry results to the applicable Table 6 standards is included in Appendix C.

6.4 Groundwater Quality

The analytical results of the groundwater samples selected for analysis from the monitoring wells located in the potential areas of historical pesticide and insecticides application, had no chemical parameters that exceeded the applicable Table 6 standards. All organochlorine pesticides, metals & inorganic concentrations were below the applicable Table 6 standards.

The certificates of chemical analysis and results are enclosed in Appendix D. A comparison of the groundwater chemistry results to the applicable Table 6 standards is included in Appendix C.

6.5 Quality Assurance and Quality Control Results

Soil and groundwater samples are submitted to ALS Laboratory Group (CAEAL accredited laboratory) in Waterloo, Ontario, for chemical analyses. CAEAL accredited laboratories provide internal quality control measures. Quality control measures include instrument quality control and method quality control.

Instrument QC samples demonstrate control for the instrumental portion of a method. Instrument QC requirements must be successfully met before the analysis of method QC or samples may proceed. Instrument QC includes the following:

- Verification of initial calibration - criteria varies with each test.
- Second source Calibration Verification Standard (CVS) – at minimum, with each initial calibration.
- Continuing Calibration Verification (CCV) – frequency varies by test
- Instrument blanks – usage and frequency varies by test.

Results of laboratory analyses are carefully examined and compared to field observations including headspace readings. Where appropriate, re-sampling is conducted to ensure validity of all results. CVD followed standard QA/QC field protocols, which included dedicated sampling equipment, gloves, sample preservation, etc.

CVD has reviewed the Report of Analysis and QC Summary furnished by ALS Laboratory Group, and has determined that sampling, data, and reporting quality requirements were fulfilled. The results of the chemical analyses are therefore considered reliable and complete.

7.0 CONCLUSIONS

CVD conducted a Phase II ESA on the property at 295 Mountain Road in Collingwood, Ontario. The purpose of the Phase II ESA was to evaluate the soil and groundwater related to the historical application of pesticides/insecticides in order to support proposed residential redevelopment of the Site. The overall findings of the Phase II ESA conclude the following:

- Twelve (12) boreholes (BH1 to BH12) were advanced on the eastern portion of the Site to evaluate the underlying soil and groundwater conditions. Monitoring wells were installed in three (3) of the boreholes to assess the groundwater conditions (BH1, BH2 and BH3).

- The analytical results of surface soil samples selected for analysis from BH4, BH8, BH9 and BH11 had detectable concentrations of metals (arsenic) and organochlorine pesticides that exceeded the applicable Table 6 standards. All other organochlorine pesticides, metals & inorganic concentrations were below the applicable Table 6 standards.

- The analytical results of the groundwater samples selected for analysis from the monitoring wells located in the potential areas of historical pesticide and insecticides application, had no chemical parameters that exceeded the applicable Table 6 standards. All organochlorine pesticides, metals & inorganic concentrations were below the applicable Table 6 standards.

- Based on the groundwater elevations included as part of the previous PML geotechnical investigation, the interpreted direction of shallow groundwater flow on the Site is in an easterly direction towards Black Ash Creek and Georgian Bay.

8.0 CLOSURE

This report has been prepared for the exclusive use of Ted North (295 Mountain Road) Ltd. for specific application to this project property. The environmental investigation was conducted in accordance with the verbal and written requests from the Client, and generally accepted assessment practices. No other warranty, expressed or implied, is made. The limitations of this report are specified in Appendix A.

Respectfully submitted,

CHUNG & VANDER DOELEN ENGINEERING LTD.

Jared Barclay, B.A. (Hons)
Senior Environmental Scientist

Eric Y. Chung, M.Eng., P.Eng.
Principal Engineer

9.0 REFERENCES

The following documents, maps, or other publications may have been used in the preparation of this report.

- Conestoga Rovers and Associates (CRA), "Phase I Environmental Site Assessment, Vacant Lot, Part of Lot 45 Concession 11, Town of Collingwood, Ontario". February 2006.

- County of Simcoe Interactive Mapping Application, https://maps.simcoe.ca/public/

- Chung & Vander Doelen Engineering Ltd., "Phase I Environmental Site Assessment Update, 295 Mountain Road, Collingwood, Ontario". June 28, 2019.

- Mulligan, R.P.M., "Quaternary geology of the Collingwood area; Ontario Geological Survey, Preliminary Map P.3815, scale 1:50 000." 2017.

- Natural Resources Canada Canadian Center Mapping and Earth Observation, "The Atlas of Canada Toporama interactive map", http://atlas.gc.ca/toporama

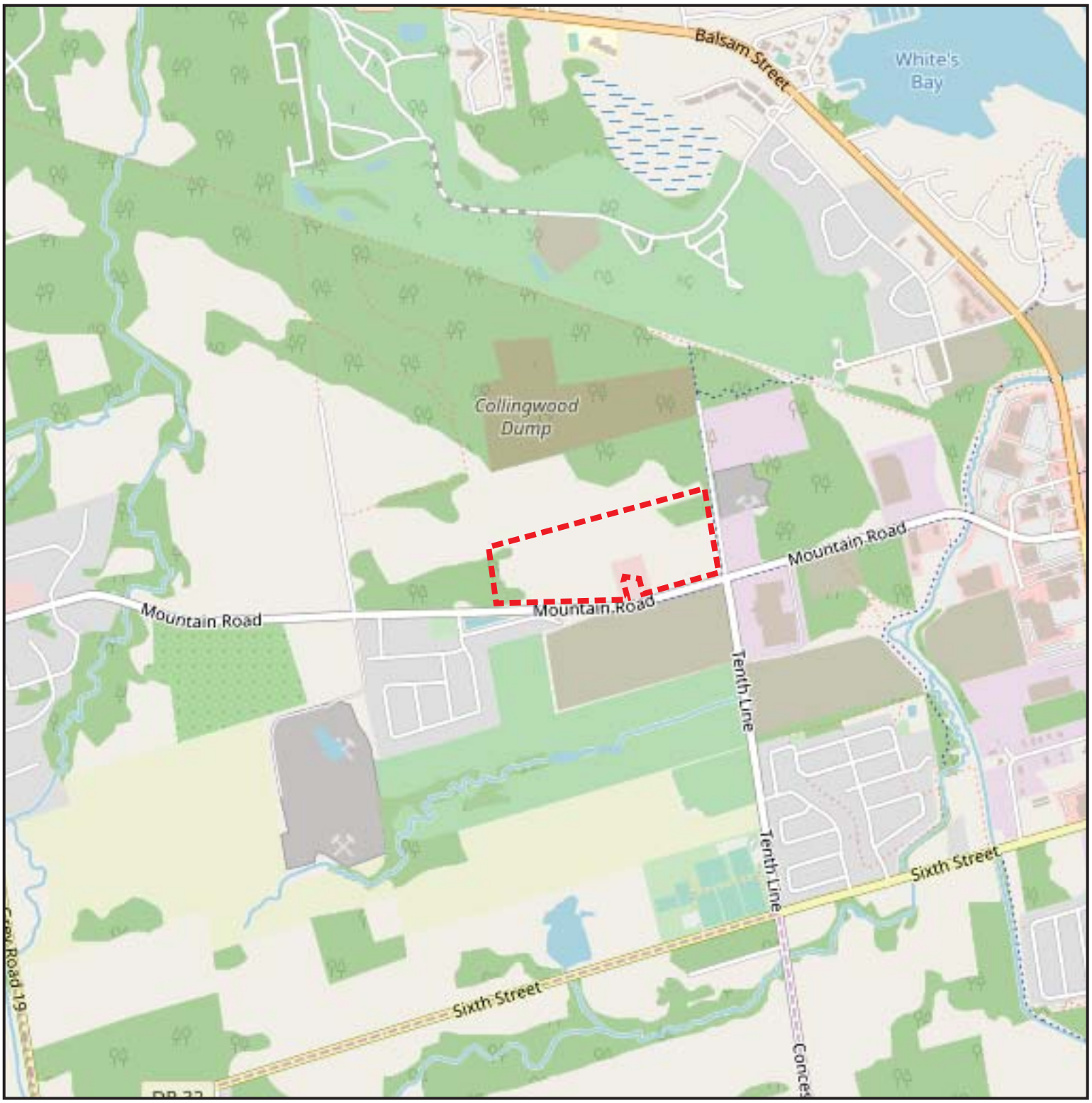
- Ontario Ministry of the Environment, "well records", www.ontario.ca/page/well-records

- Ontario Geological Survey, "Bedrock geology of Ontario, southern sheet; Ontario Geological Survey, Map 2544, scale 1: 1 000 000", 1991.

- Peto MacCallum Ltd. (PML), "Arsenic Testing, Proposed Panorama North Residential Development, 295 Mountain Road, Collingwood, Ontario". June 7, 2019.

- Peto MacCallum Ltd. (PML), "Geotechnical Investigation, Proposed Panorama North Residential Development, 295 Mountain Road, Collingwood, Ontario". February 26, 2020.

FIGURE 1
KEY PLAN



LEGEND

Approximate Site Boundary - - - - -

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KEY PLAN 295 MOUNTAIN ROAD COLLINGWOOD, ONTARIO	Date:	March 2020
	Scale:	NTS
	File No.:	E19858
	Figure:	1

FIGURE 2
BOREHOLE LOCATION PLAN

Reference: County of Simcoe Interactive Mapping Application - 1989 Imagery

Legend

- Phase II ESA Property Boundary
- CVD Monitoring Well Location (all chemical concentrations in *soil* reported *below* the applicable table 6 standards)
- CVD Monitoring Well Location (chemical concentrations in *soil* reported *above* the applicable table 6 standards)
- CVD Borehole Location (all chemical concentrations in *soil* reported *below* the applicable table 6 standards)
- CVD Borehole Location (chemical concentrations in *soil* reported *above* the applicable table 6 standards)
- Existing Peto MacCallum Monitoring Well

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BOREHOLE LOCATION PLAN 295 MOUNTAIN ROAD COLLINGWOOD, ONTARIO	Date:	March 2020
	Scale:	1:850
	File No.:	E19858
	Figure:	2

APPENDIX A
LIMITATIONS

STATEMENT OF LIMITATIONS

1. The work performed in this report was carried out in accordance with the Standard Terms of Conditions made part of our contract. The conclusions presented herein are based solely upon the scope of services and time and budgetary limitations described in our contract.

2. The report has been prepared in accordance with generally accepted environmental study and/or engineering practices. No other warranties, either expressed or implied, are made as to the professional services provided under the terms of our contract and included in this report.

3. The services performed and outlined in this report were based, in part, upon visual observations of the site and attendant structures. Our opinion cannot be extended to portions of the site which were unavailable for direct observation, reasonably beyond the control of CHUNG & VANDER DOELEN ENGINEERING LTD.

4. The objective of this report was to assess environmental conditions at the site, within the context of our contract and existing environmental regulations within the applicable jurisdiction. Evaluating compliance of past or future owners with applicable local, provincial and federal government laws and regulations was not included in our contract for services.

5. CHUNG & VANDER DOELEN ENGINEERING LTD. has relied in good faith on information and services provided by others while conducting the record search. We accept no responsibility for any deficiency, misstatements or inaccuracies contained in this report as a result of omission, misinterpretation or fraudulent acts of the services used.

6. It should be noted that the observations and recommendations presented in this report are limited to the actual locations explored. The information presented in terms of the thickness and types of the subsoils encountered, groundwater levels, and chemical testing results, etc., are only applicable to the actual locations explored. Variations may be present between these locations. Should significant variation become apparent during later investigations, it may be necessary to reevaluate the findings of this report.

7. The conclusions of this report are based in part, on the information provided by others. The possibility remains that unexpected environmental conditions may be encountered at the site in locations not specifically investigated. Should such an event occur, CHUNG & VANDER DOELEN ENGINEERING LTD. must be notified in order that we may determine if modifications to our conclusions are necessary.

APPENDIX B
BOREHOLE LOGS

FILE No: E19858

BOREHOLE No. 1

Enclosure No.:
Sheet 1 of 1

Client: **Mr. Pete Graham, Ted North (295 Mountain Road) Ltd.**
Project: **Phase II Environmental Site Assessment**
Location: **295 Mountain Road, Collingwood, Ontario**

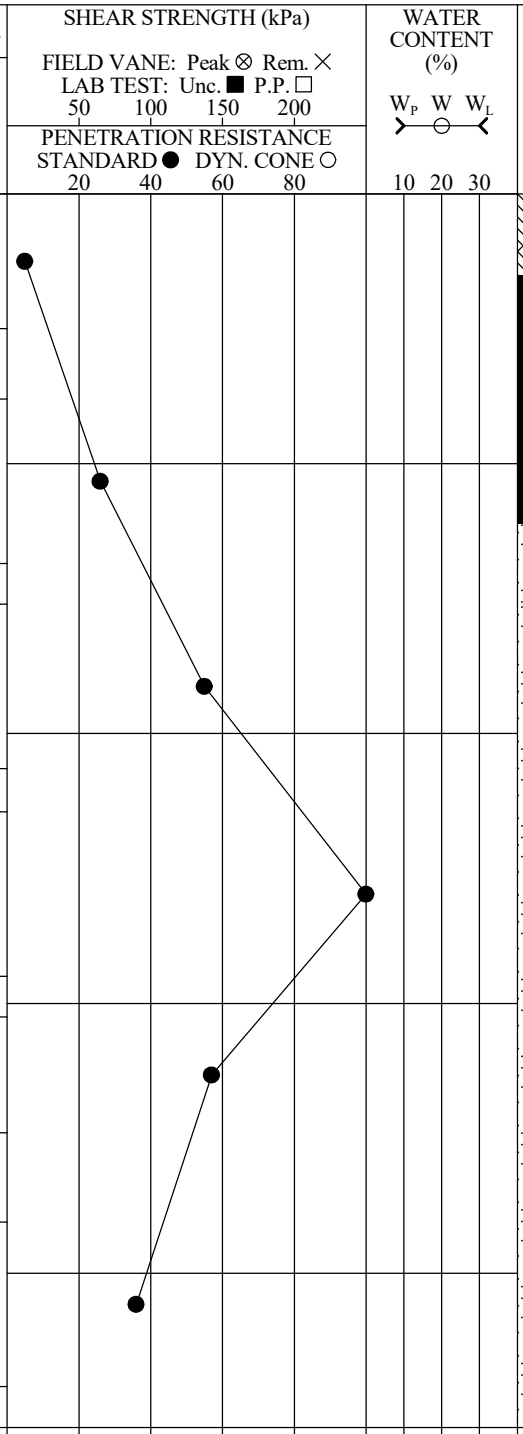
EQUIPMENT DATA
Machine: **Diedrich D50T**
Method: **Solid Stem Auger**
Size: **100 mm**
Date: **Feb 12 - 20** TO **Feb 12 - 20**

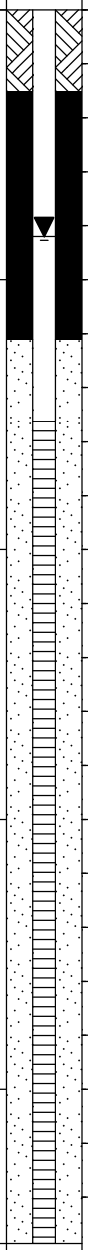
SOIL LITHOLOGY

ELEV./ DEPTH (m)	DESCRIPTION (Ground Elevation:)
	TOPSOIL organics & silt black, wet
0.61	SILT brown, damp
1.52	SILT TILL brown, damp, hard
3.35	SILTY SAND brown, saturated
4.57	END OF BOREHOLE

SAMPLE

SAMPLE ID	TYPE	N-VALUE
1-1	SS	5
1-2	SS	26
1-3	SS	55
1-4	SS	100
1-5	SS	57
1-6	SS	36





DEPTH (m): 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5

REMARKS
- Steel 'stick-up' well casing and concrete seal
- bentonite seal
- 50 mm PVC pipe
- water level measured at 0.84 mbgs on February 19, 2020
- silica sand pack
- 3 m long well screen

Soil samples field screened for head space VOC concentrations using MiniRAE 3000 PID. Soil vapour readings were not registered above 0.0 ppm unless otherwise noted

PROJECT MANAGER: **JB**

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FILE No: E19858

BOREHOLE No. 2

Enclosure No.:
Sheet 1 of 1

Client: **Mr. Pete Graham, Ted North (295 Mountain Road) Ltd.**
Project: **Phase II Environmental Site Assessment**
Location: **295 Mountain Road, Collingwood, Ontario**

EQUIPMENT DATA
Machine: **Diedrich D50T**
Method: **Solid Stem Auger**
Size: **100 mm**
Date: **Feb 12 - 20** TO **Feb 12 - 20**

SOIL LITHOLOGY

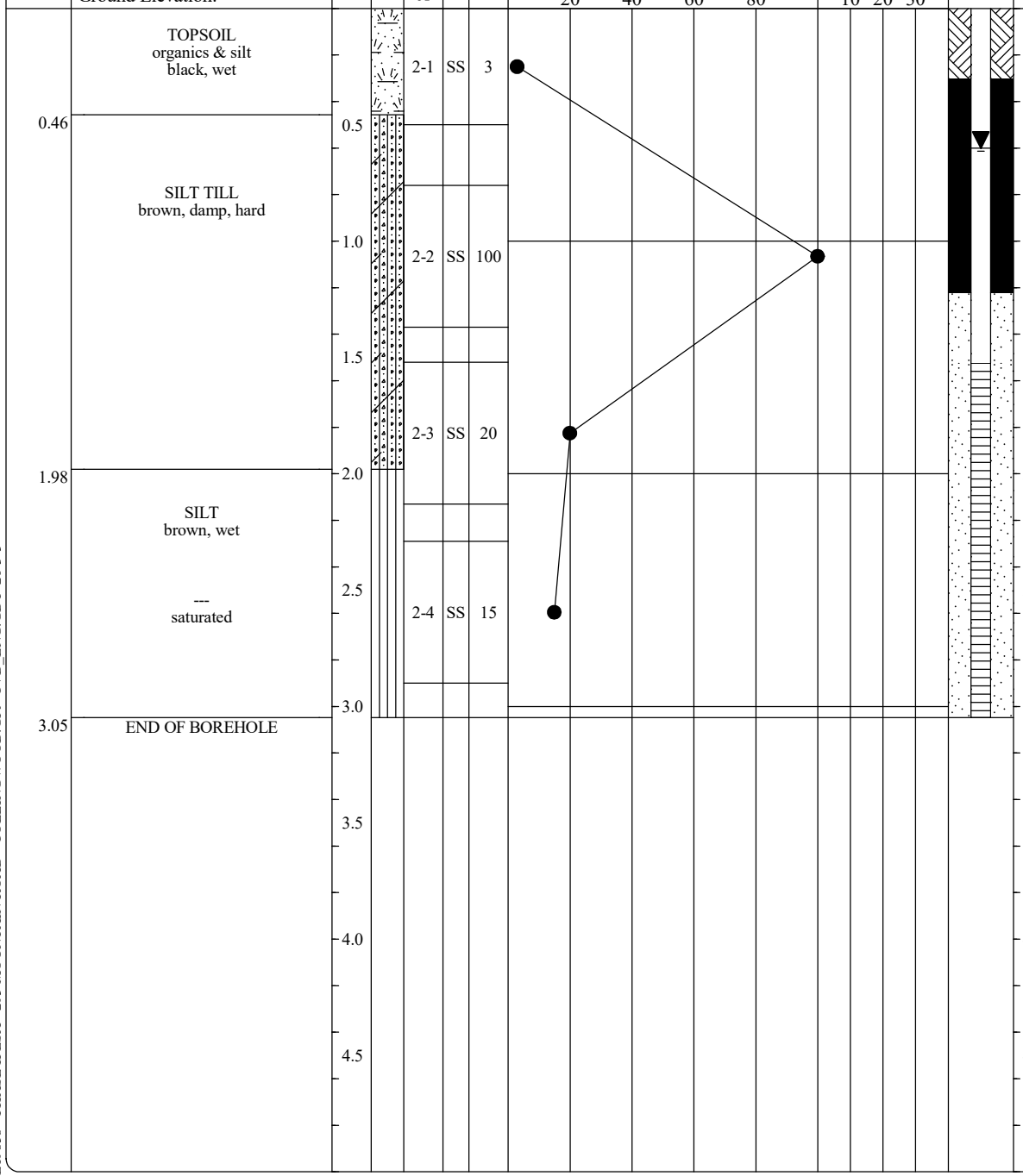
ELEV./ DEPTH (m)	DESCRIPTION (Ground Elevation:)
	TOPSOIL organics & silt black, wet
0.46	SILT TILL brown, damp, hard
1.98	SILT brown, wet --- saturated
3.05	END OF BOREHOLE

SAMPLE

SAMPLE ID	TYPE	N-VALUE
2-1	SS	3
2-2	SS	100
2-3	SS	20
2-4	SS	15

SHEAR STRENGTH (kPa)
FIELD VANE: Peak ⊗ Rem. ×
LAB TEST: Unc. ■ P.P. □
50 100 150 200
PENETRATION RESISTANCE
STANDARD ● DYN. CONE ○
20 40 60 80

WATER CONTENT (%)
W_P W W_L
10 20 30



REMARKS
- Steel 'stick-up' well casing and concrete seal
- bentonite seal
- water level measured at 0.60 mbgs on February 19, 2020
- 50 mm PVC pipe
- silica sand pack
- 1.5 m long well screen

Soil samples field screened for head space VOC concentrations using MiniRAE 3000 PID. Soil vapour readings were not registered above 0.0 ppm unless otherwise noted

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FILE No: E19858

BOREHOLE No. 3

Enclosure No.:
Sheet 1 of 1

Client: **Mr. Pete Graham, Ted North (295 Mountain Road) Ltd.**
Project: **Phase II Environmental Site Assessment**
Location: **295 Mountain Road, Collingwood, Ontario**

EQUIPMENT DATA
Machine: **Diedrich D50T**
Method: **Solid Stem Auger**
Size: **100 mm**
Date: **Feb 12 - 20** TO **Feb 12 - 20**

SOIL LITHOLOGY

Ground Elevation:

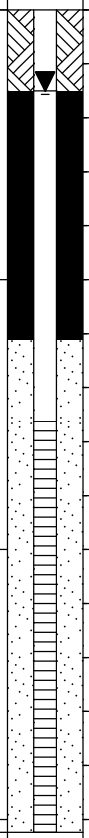
ELEV./ DEPTH (m)	DESCRIPTION
	TOPSOIL organics & silt black, wet
0.46	SILT brown, damp
1.52	SILT TILL brown, damp --- grey --- saturated
3.05	END OF BOREHOLE

SAMPLE

SAMPLE ID	TYPE	N-VALUE
3-1	SS	4
3-2	SS	14
3-3	SS	15
3-4	SS	6

SHEAR STRENGTH (kPa)
FIELD VANE: Peak ⊗ Rem. ×
LAB TEST: Unc. ■ P.P. □
50 100 150 200
PENETRATION RESISTANCE
STANDARD ● DYN. CONE ○
20 40 60 80

WATER CONTENT (%)
W_P W W_L
10 20 30



DEPTH (m): 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5

REMARKS
- Steel 'stick-up' well casing and concrete seal
- water level measured at 0.30 mbgs on February 19, 2020
- bentonite seal
- 50 mm PVC pipe
- silica sand pack
- 1.5 m long well screen

Soil samples field screened for head space VOC concentrations using MiniRAE 3000 PID. Soil vapour readings were not registered above 0.0 ppm unless otherwise noted

PROJECT MANAGER: **JB**

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FILE No: E19858

BOREHOLE No. 4

Enclosure No.:
Sheet 1 of 1

Client: **Mr. Pete Graham, Ted North (295 Mountain Road) Ltd.**
Project: **Phase II Environmental Site Assessment**
Location: **295 Mountain Road, Collingwood, Ontario**

EQUIPMENT DATA
Machine: **Manual Split Spoon**
Method: **Direct Push**
Size: **25 mm**
Date: **Feb 12 - 20** TO **Feb 12 - 20**

SOIL LITHOLOGY				SAMPLE			SHEAR STRENGTH (kPa) / PENETRATION RESISTANCE	WATER CONTENT (%)	WELL DATA		
ELEV./ DEPTH (m)	DESCRIPTION Ground Elevation:	DEPTH (m)	SYMBOL	SAMPLE ID	TYPE	N-VALUE	FIELD VANE: Peak ⊗ Rem. × LAB TEST: Unc. ■ P.P. □ 50 100 150 200 STANDARD ● DYN. CONE ○ 20 40 60 80	W_P W W_L 10 20 30		DEPTH (m)	REMARKS
	TOPSOIL organics & silt black, wet			4-1	SS						
0.46	SILT TILL brown, damp, hard	0.5		4-2	SS					0.5	
1.00	END OF BOREHOLE	1.0								1.0	**Soil samples field screened for head space VOC concentrations using MiniRAE 3000 PID. Soil vapour readings were not registered above 0.0 ppm unless otherwise noted**
		1.5								1.5	
		2.0								2.0	
		2.5								2.5	
		3.0								3.0	
		3.5								3.5	
		4.0								4.0	
		4.5								4.5	

PROJECT MANAGER: **JB**

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FILE No: E19858

BOREHOLE No. 5

Enclosure No.:
Sheet 1 of 1

Client: **Mr. Pete Graham, Ted North (295 Mountain Road) Ltd.**
Project: **Phase II Environmental Site Assessment**
Location: **295 Mountain Road, Collingwood, Ontario**

EQUIPMENT DATA
Machine: **Diedrich D50T**
Method: **Solid Stem Auger**
Size: **100 mm**
Date: **Feb 12 - 20** TO **Feb 12 - 20**

ELEV./ DEPTH (m)	DESCRIPTION (Ground Elevation:)	DEPTH (m)	SYMBOL	SAMPLE ID	TYPE	N-VALUE	SHEAR STRENGTH (kPa) / PENETRATION RESISTANCE	WATER CONTENT (%)	WELL DATA	DEPTH (m)	REMARKS
	TOPSOIL organics & silt black, wet			5-1	SS	13					
0.46	SILT TILL brown, damp, hard	0.5								0.5	
		1.0		5-2	SS	18				1.0	
1.37	END OF BOREHOLE	1.5								1.5	Soil samples field screened for head space VOC concentrations using MiniRAE 3000 PID. Soil vapour readings were not registered above 0.0 ppm unless otherwise noted
		2.0								2.0	
		2.5								2.5	
		3.0								3.0	
		3.5								3.5	
		4.0								4.0	
		4.5								4.5	

SHEAR STRENGTH (kPa): FIELD VANE: Peak ⊗ Rem. ×; LAB TEST: Unc. ■ P.P. □; 50 100 150 200
PENETRATION RESISTANCE: STANDARD ● DYN. CONE ○; 20 40 60 80
WATER CONTENT (%): W_P W W_L; 10 20 30

PROJECT MANAGER: **JB**

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FILE No: E19858

BOREHOLE No. 6

Enclosure No.:
Sheet 1 of 1

Client: **Mr. Pete Graham, Ted North (295 Mountain Road) Ltd.**
Project: **Phase II Environmental Site Assessment**
Location: **295 Mountain Road, Collingwood, Ontario**

EQUIPMENT DATA
Machine: **Diedrich D50T**
Method: **Solid Stem Auger**
Size: **100 mm**
Date: **Feb 12 - 20** TO **Feb 12 - 20**

ELEV./ DEPTH (m)	DESCRIPTION (Ground Elevation:)	DEPTH (m)	SYMBOL	SAMPLE ID	TYPE	N-VALUE	SHEAR STRENGTH (kPa) / PENETRATION RESISTANCE	WATER CONTENT (%)	WELL DATA	DEPTH (m)	REMARKS
	TOPSOIL organics & silt black, wet			6-1	SS	18					
0.46	SILT TILL brown, damp, hard	0.5								0.5	
		1.0		6-2	SS	22				1.0	
1.37	END OF BOREHOLE	1.5								1.5	Soil samples field screened for head space VOC concentrations using MiniRAE 3000 PID. Soil vapour readings were not registered above 0.0 ppm unless otherwise noted
		2.0								2.0	
		2.5								2.5	
		3.0								3.0	
		3.5								3.5	
		4.0								4.0	
		4.5								4.5	

SHEAR STRENGTH (kPa)
FIELD VANE: Peak ⊗ Rem. ×
LAB TEST: Unc. ■ P.P. □
50 100 150 200
PENETRATION RESISTANCE
STANDARD ● DYN. CONE ○
20 40 60 80

WATER CONTENT (%)
W_P W W_L
10 20 30

PROJECT MANAGER: **JB**

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FILE No: E19858

BOREHOLE No. 7

Enclosure No.:
Sheet 1 of 1

Client: **Mr. Pete Graham, Ted North (295 Mountain Road) Ltd.**
Project: **Phase II Environmental Site Assessment**
Location: **295 Mountain Road, Collingwood, Ontario**

EQUIPMENT DATA
Machine: **Manual Split Spoon**
Method: **Direct Push**
Size: **25 mm**
Date: **Feb 12 - 20** TO **Feb 12 - 20**

SOIL LITHOLOGY				SAMPLE			SHEAR STRENGTH (kPa) FIELD VANE: Peak ⊗ Rem. × LAB TEST: Unc. ■ P.P. □ 50 100 150 200 / PENETRATION RESISTANCE STANDARD ● DYN. CONE ○ 20 40 60 80	WATER CONTENT (%) W_P W W_L 10 20 30	WELL DATA	DEPTH (m)	REMARKS
ELEV./ DEPTH (m)	DESCRIPTION Ground Elevation:	DEPTH (m)	SYMBOL	SAMPLE ID	TYPE	N-VALUE					
	TOPSOIL organics & silt black, saturated			7-1	SS						
		0.5								0.5	
0.61	SILT brown, damp, hard			7-2	SS						
1.00	END OF BOREHOLE	1.0								1.0	**Soil samples field screened for head space VOC concentrations using MiniRAE 3000 PID. Soil vapour readings were not registered above 0.0 ppm unless otherwise noted**
		1.5								1.5	
		2.0								2.0	
		2.5								2.5	
		3.0								3.0	
		3.5								3.5	
		4.0								4.0	
		4.5								4.5	

PROJECT MANAGER: **JB**

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FILE No: E19858

BOREHOLE No. 8

Enclosure No.:
Sheet 1 of 1

Client: **Mr. Pete Graham, Ted North (295 Mountain Road) Ltd.**
Project: **Phase II Environmental Site Assessment**
Location: **295 Mountain Road, Collingwood, Ontario**

EQUIPMENT DATA
Machine: **Manual Split Spoon**
Method: **Direct Push**
Size: **25 mm**
Date: **Feb 12 - 20** TO **Feb 12 - 20**

SOIL LITHOLOGY				SAMPLE			SHEAR STRENGTH (kPa) FIELD VANE: Peak ⊗ Rem. × LAB TEST: Unc. ■ P.P. □ 50 100 150 200 / PENETRATION RESISTANCE STANDARD ● DYN. CONE ○ 20 40 60 80	WATER CONTENT (%) W_P W W_L 10 20 30	WELL DATA	DEPTH (m)	REMARKS
ELEV./ DEPTH (m)	DESCRIPTION Ground Elevation:	DEPTH (m)	SYMBOL	SAMPLE ID	TYPE	N-VALUE					
	TOPSOIL organics & silt black, saturated			8-1	SS						
		0.5								0.5	
0.61	SILT brown, damp, hard			8-2	SS						
1.00	END OF BOREHOLE	1.0								1.0	**Soil samples field screened for head space VOC concentrations using MiniRAE 3000 PID. Soil vapour readings were not registered above 0.0 ppm unless otherwise noted**
		1.5								1.5	
		2.0								2.0	
		2.5								2.5	
		3.0								3.0	
		3.5								3.5	
		4.0								4.0	
		4.5								4.5	

PROJECT MANAGER: **JB**

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FILE No: E19858

BOREHOLE No. 9

Enclosure No.:
Sheet 1 of 1

Client: **Mr. Pete Graham, Ted North (295 Mountain Road) Ltd.**

Project: **Phase II Environmental Site Assessment**

Location: **295 Mountain Road, Collingwood, Ontario**

EQUIPMENT DATA

Machine: **Manual Split Spoon**
Method: **Direct Push**
Size: **25 mm**
Date: **Feb 12 - 20** TO **Feb 12 - 20**

SOIL LITHOLOGY				SAMPLE			SHEAR STRENGTH (kPa) FIELD VANE: Peak ⊗ Rem. × LAB TEST: Unc. ■ P.P. □ 50 100 150 200 PENETRATION RESISTANCE STANDARD ● DYN. CONE ○ 20 40 60 80	WATER CONTENT (%) W_P W W_L 10 20 30	WELL DATA		
ELEV./ DEPTH (m)	DESCRIPTION Ground Elevation:	DEPTH (m)	SYMBOL	SAMPLE ID	TYPE	N-VALUE				DEPTH (m)	REMARKS
	TOPSOIL organics & silt black, saturated			9-1	SS						
		0.5								0.5	
0.61	SILT TILL brown, damp, hard			9-2	SS						
1.00	END OF BOREHOLE	1.0								1.0	**Soil samples field screened for head space VOC concentrations using MiniRAE 3000 PID. Soil vapour readings were not registered above 0.0 ppm unless otherwise noted**
		1.5								1.5	
		2.0								2.0	
		2.5								2.5	
		3.0								3.0	
		3.5								3.5	
		4.0								4.0	
		4.5								4.5	

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FILE No: E19858

BOREHOLE No. 10

Enclosure No.:
Sheet 1 of 1

Client: **Mr. Pete Graham, Ted North (295 Mountain Road) Ltd.**
Project: **Phase II Environmental Site Assessment**
Location: **295 Mountain Road, Collingwood, Ontario**

EQUIPMENT DATA
Machine: **Diedrich D50T**
Method: **Solid Stem Auger**
Size: **100 mm**
Date: **Feb 12 - 20** TO **Feb 12 - 20**

ELEV./ DEPTH (m)	DESCRIPTION (Ground Elevation:)	SAMPLE ID	TYPE	N-VALUE	WELL DATA	REMARKS
	TOPSOIL organics & silt black, wet	10-1	SS	6		
0.46	SILT brown, wet					
1.00	SILT TILL brown, damp, hard	10-2	SS	16		
1.37	END OF BOREHOLE					**Soil samples field screened for head space VOC concentrations using MiniRAE 3000 PID. Soil vapour readings were not registered above 0.0 ppm unless otherwise noted**

SHEAR STRENGTH (kPa)
FIELD VANE: Peak ⊗ Rem. ×
LAB TEST: Unc. ■ P.P. □
50 100 150 200
PENETRATION RESISTANCE
STANDARD ● DYN. CONE ○
20 40 60 80

WATER CONTENT (%)
W_P W W_L
10 20 30

DEPTH (m): 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5

PROJECT MANAGER: **JB**

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FILE No: E19858

BOREHOLE No. 11

Enclosure No.:
Sheet 1 of 1

Client: **Mr. Pete Graham, Ted North (295 Mountain Road) Ltd.**
Project: **Phase II Environmental Site Assessment**
Location: **295 Mountain Road, Collingwood, Ontario**

EQUIPMENT DATA
Machine: **Diedrich D50T**
Method: **Solid Stem Auger**
Size: **100 mm**
Date: **Feb 12 - 20** TO **Feb 12 - 20**

SOIL LITHOLOGY				SAMPLE			SHEAR STRENGTH (kPa) / PENETRATION RESISTANCE	WATER CONTENT (%)	WELL DATA		
ELEV./ DEPTH (m)	DESCRIPTION Ground Elevation:	DEPTH (m)	SYMBOL	SAMPLE ID	TYPE	N-VALUE	FIELD VANE: Peak ⊗ Rem. × LAB TEST: Unc. ■ P.P. □ 50 100 150 200 STANDARD ● DYN. CONE ○ 20 40 60 80	W_P W W_L 10 20 30		DEPTH (m)	REMARKS
	TOPSOIL organics & silt black, saturated			11-1	SS	3					
		0.5								0.5	
0.61	SILT TILL brown, damp, hard										
		1.0		11-2	SS	32				1.0	
1.37	END OF BOREHOLE										Soil samples field screened for head space VOC concentrations using MiniRAE 3000 PID. Soil vapour readings were not registered above 0.0 ppm unless otherwise noted
		1.5								1.5	
		2.0								2.0	
		2.5								2.5	
		3.0								3.0	
		3.5								3.5	
		4.0								4.0	
		4.5								4.5	

PROJECT MANAGER: **JB**

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FILE No: E19858

BOREHOLE No. 12

Enclosure No.:
Sheet 1 of 1

Client: **Mr. Pete Graham, Ted North (295 Mountain Road) Ltd.**
Project: **Phase II Environmental Site Assessment**
Location: **295 Mountain Road, Collingwood, Ontario**

EQUIPMENT DATA
Machine: **Diedrich D50T**
Method: **Solid Stem Auger**
Size: **100 mm**
Date: **Feb 12 - 20** TO **Feb 12 - 20**

SOIL LITHOLOGY				SAMPLE			SHEAR STRENGTH (kPa) / PENETRATION RESISTANCE	WATER CONTENT (%)	WELL DATA		
ELEV./ DEPTH (m)	DESCRIPTION Ground Elevation:	DEPTH (m)	SYMBOL	SAMPLE ID	TYPE	N-VALUE	FIELD VANE: Peak ⊗ Rem. × LAB TEST: Unc. ■ P.P. □ 50 100 150 200 STANDARD ● DYN. CONE ○ 20 40 60 80	W_P W W_L 10 20 30		DEPTH (m)	REMARKS
	TOPSOIL organics & silt black, wet			12-1	SS	17					
0.46	SILT TILL brown, damp, hard	0.5								0.5	
		1.0		12-2	SS	100				1.0	
1.37	END OF BOREHOLE	1.5								1.5	**Soil samples field screened for head space VOC concentrations using MiniRAE 3000 PID. Soil vapour readings were not registered above 0.0 ppm unless otherwise noted**
		2.0								2.0	
		2.5								2.5	
		3.0								3.0	
		3.5								3.5	
		4.0								4.0	
		4.5								4.5	

PROJECT MANAGER: **JB**

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ENGINEERING LTD.
311 Victoria Street North
Kitchener, Ontario N2H 5E1
ph. (519) 742-8979, fx. (519) 742-7739

APPENDIX C
COMPARISON OF CHEMISTRY RESULTS TO THE APPLICABLE REGULATORY STANDARDS

ANALYTICAL RESULTS FOR SOIL

MECP Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011

Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Groundwater Condition - Residential/Parkland/Institutional Property Use

		O.Reg. 153/04 Table 6 R/P/I	BH1-1 (0.0 m - 0.61 m)	BH1-1 (3.05 m - 3.66 m)	BH2-1 (0.0 m - 0.61 m)	BH3-1 (0.0 m - 0.61 m)	BH4-1 (0.0 m - 0.61 m)	BH5-1 (0.0 m - 0.61 m)	BH6-1 (0.0 m - 0.61 m)	BH7-1 (0.0 m - 0.61 m)	BH8-1 (0.0 m - 0.61 m)	BH9-1 (0.0 m - 0.61 m)	BH10-1 (0.0 m - 0.61 m)	BH11-1 (0.0 m - 0.61 m)	BH12-1 (0.0 m - 0.61 m)
Physical Tests	Conductivity	0.7	0.121	-	0.28	0.262	0.681	0.595	0.365	0.529	**0.793**	0.614	0.236	**0.754**	0.581
	% Moisture	-	17.3	-	21.5	25.6	16.9	28.1	23.9	30	43.4	31.7	20.9	29.7	16.8
	pH	-	7.33	7.97	7.43	7.35	7.03	7.56	7.4	7.48	7.23	7.12	7.22	6.98	7.16
Cyanides	Cyanide, Weak Acid Diss	0.051	<0.050	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Saturated Paste Extractables	SAR	5	<0.10	-	0.27	0.4	<0.10	0.34	0.36	0.13	<0.10	<0.10	0.32	0.33	0.28
	Calcium (Ca)	-	16.9	-	25.3	23.5	59.2	35.9	30.9	45.4	80.5	58.3	20.1	67.2	46.1
	Magnesium (Mg)	-	0.72	-	1.67	2.12	2.65	1.68	2.83	3.95	7.08	4.88	1.95	4.89	2.9
	Sodium (Na)	-	1.1	-	5.28	7.52	0.9	7.69	7.84	3.31	3.19	2.36	5.69	10.3	7.32
Metals	Antimony (Sb)	7.5	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Arsenic (As)	18	8.4	-	3.7	3.3	**32.9**	8.8	7.1	5.9	16.1	9.8	3.8	11.1	3.5
	Barium (Ba)	390	44.7	-	41.5	46.4	39.4	22.1	41.5	47.5	28	26.7	52.1	25.3	29.8
	Beryllium (Be)	4	0.5	-	<0.50	<0.50	<0.50	<0.50	0.53	0.54	<0.50	<0.50	<0.50	<0.50	<0.50
	Boron (B)	120	8	-	9.4	11.6	7.8	7	12.8	14.4	11.7	8.4	11.3	10	10.9
	Boron (B), Hot Water Ext. Available	1.5	0.24	-	0.29	0.27	0.55	0.4	0.37	0.41	1.33	0.61	0.13	0.64	0.51
	Cadmium (Cd)	1.2	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Chromium (Cr)	160	17.3	-	18.5	21	14.4	10.6	17.8	20	11.1	12.9	18.9	13.1	14.3
	Cobalt (Co)	22	5.5	-	6	7.2	4	2.7	7.1	7.4	3.9	5.1	7.3	4.6	4.4
	Copper (Cu)	140	13.6	-	16.5	14.9	23	8.9	16.6	15.1	21.3	14.2	15.6	13.4	9.9
	Lead (Pb)	120	17.2	-	8.4	8.5	96.4	24.8	18.3	16.8	95.6	37.7	7.1	39.6	9.9
	Mercury (Hg)	0.27	0.0501	-	0.0268	0.0292	0.129	0.0347	0.0255	0.0297	0.0571	0.035	0.0149	0.0336	0.0357
	Molybdenum (Mo)	6.9	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Nickel (Ni)	100	12.2	-	13.4	15.5	9.9	6.7	15.1	16.2	9.3	11.8	16.1	10.4	9.3
	Selenium (Se)	2.4	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Silver (Ag)	20	<0.20	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	Thallium (Tl)	1	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Uranium (U)	23	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Vanadium (V)	86	27.5	-	29	32.6	21.4	17.1	27.1	29.1	16.3	18.8	27.8	19.7	25.1
	Zinc (Zn)	340	42.8	-	37.4	38.4	59.6	31.9	34	44	39.3	31.1	33.1	32.4	40.5
Speciated Metals	Chromium, Hexavalent	8	<0.20	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.39	<0.20	<0.20
Organochlorine Pesticides	Aldrin	0.05	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
	gamma-hexachlorocyclohexane	-	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
	a-chlordane	-	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
	Chlordane (Total)	0.05	<0.028	-	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
	g-chlordane	-	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
	op-DDD	-	<0.020	-	<0.020	<0.020	0.222	<0.020	<0.020	<0.020	0.487	0.028	<0.020	0.043	<0.020
	pp-DDD	-	<0.020	-	<0.020	<0.020	0.68	<0.020	<0.020	<0.020	1.85	0.18	<0.020	0.282	<0.020
	Total DDD	3.3	<0.028	-	<0.028	<0.028	0.901	<0.028	<0.028	<0.028	2.33	0.208	<0.028	0.325	<0.028
	o,p-DDE	-	<0.020	-	<0.020	<0.020	0.084	<0.020	<0.020	<0.020	0.078	<0.020	<0.020	<0.020	<0.020
	pp-DDE	-	0.232	-	0.032	<0.020	11.5	0.089	0.233	0.236	12.8	2.37	0.029	2.97	<0.020
	Total DDE	0.26	0.232	-	0.032	<0.028	**11.5**	0.089	0.233	0.236	**12.9**	**2.37**	0.029	**2.97**	<0.028
	op-DDT	-	<0.020	-	<0.020	<0.020	0.371	<0.020	<0.020	<0.020	0.053	<0.020	<0.020	0.04	<0.020
	pp-DDT	-	0.057	-	<0.020	<0.020	1.95	0.033	0.021	0.045	0.429	0.149	<0.020	0.41	<0.020
	Total DDT	1.4	0.057	-	<0.028	<0.028	**2.32**	0.033	<0.028	0.045	0.481	0.149	<0.028	0.449	<0.028
	Dieldrin	0.05	<0.020	-	<0.020	<0.020	**0.092**	<0.020	<0.020	<0.020	**0.094**	0.025	<0.020	**0.07**	<0.020
	Endosulfan I	-	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
	Endosulfan II	-	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
	Endosulfan (Total)	0.04	<0.028	-	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
	Endrin	0.04	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.040	<0.020	<0.020	<0.020	<0.020
	Heptachlor	0.15	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
	Heptachlor Epoxide	0.05	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
	Hexachlorobenzene	0.52	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
	Hexachlorobutadiene	0.012	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
	Hexachloroethane	0.089	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
	Methoxychlor	0.13	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

NOTES: Units = µg/g unless otherwise noted

Concentrations above Table 6: R/P/I- **BOLD** & HIGHLIGHTED

ANALYTICAL RESULTS FOR GROUNDWATER

MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011

Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition

		Amended O. Reg. 153/04 (Table 6)	BH1	BH2	BH3	BH108	BH110
Physical Tests	*Conductivity*	-	0.798	0.652	0.719	2.35	2.01
	pH	-	7.53	7.82	7.6	7.46	8.12
Anions & Nutrients	*Chloride (Cl)*	*790*	16.3	17	7.59	465	298
Cyanides	*Cyanide, Weak Acid Diss*	*52*	<2.0	<2.0	<2.0	<2.0	<2.0
Dissolved Metals	*Antimony (Sb)-Dissolved*	*6*	0.11	0.23	<0.10	<0.10	<1.0
	Arsenic (As)-Dissolved	*25*	0.34	0.39	0.72	0.28	1.3
	Barium (Ba)-Dissolved	*1000*	26.1	80.5	51.2	111	38.4
	Beryllium (Be)-Dissolved	*4*	<0.10	<0.10	<0.10	<0.10	<1.0
	Boron (B)-Dissolved	*5000*	52	87	23	48	110
	Cadmium (Cd)-Dissolved	*2.1*	<0.010	<0.010	<0.010	<0.010	<0.050
	Chromium (Cr)-Dissolved	*50*	<0.50	<0.50	0.73	<0.50	<5.0
	Cobalt (Co)-Dissolved	*3.8*	0.22	0.27	0.48	<0.10	<1.0
	Copper (Cu)-Dissolved	*69*	0.87	0.41	1.91	1.51	6.4
	Lead (Pb)-Dissolved	*10*	<0.050	<0.050	0.818	<0.050	<0.50
	Mercury (Hg)-Dissolved	*0.1*	<0.0050	<0.0050	0.0074	<0.0050	<0.0050
	Molybdenum (Mo)-Dissolved	*70*	2.07	1.99	0.619	0.959	25.1
	Nickel (Ni)-Dissolved	*100*	3.09	0.86	1.61	1.86	<5.0
	Selenium (Se)-Dissolved	*10*	0.427	0.339	0.551	0.083	<0.50
	Silver (Ag)-Dissolved	*1.2*	<0.050	<0.050	<0.050	<0.050	<0.50
	Sodium (Na)-Dissolved	*490000*	9560	26500	15000	232000	385000
	Thallium (Tl)-Dissolved	*2*	0.019	<0.010	0.012	<0.010	<0.10
	Uranium (U)-Dissolved	*20*	1.64	1.43	3.11	1.92	3.24
	Vanadium (V)-Dissolved	*6.2*	<0.50	<0.50	1.29	0.63	<5.0
	Zinc (Zn)-Dissolved	*890*	<1.0	<1.0	2.6	1.5	<10
Speciated Metals	*Chromium, Hexavalent*	*25*	<0.50	<0.50	<0.50	<0.50	<0.50
Organochlorine Pesticides	*Aldrin*	*0.35*	<0.010	<0.010	<0.010	<0.010	<0.010
	gamma-hexachlorocyclohexane	-	<0.015	<0.350	<0.200	<0.010	<0.010
	a-chlordane	-	<0.040	<0.040	<0.040	<0.040	<0.040
	Chlordane (Total)	*0.06*	<0.057	<0.057	<0.057	<0.057	<0.057
	g-chlordane	-	<0.040	<0.040	<0.040	<0.040	<0.040
	o,p-DDD	-	<0.030	<0.030	<0.030	<0.030	<0.030
	pp-DDD	-	<0.030	<0.030	<0.030	<0.030	<0.030
	Total DDD	*1.8*	<0.042	<0.042	<0.042	<0.042	<0.042
	o,p-DDE	-	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080
	pp-DDE	-	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080
	Total DDE	*10*	<0.011	<0.011	<0.011	<0.011	<0.011
	op-DDT	-	<0.030	<0.030	<0.030	<0.030	<0.030
	pp-DDT	-	<0.030	<0.030	<0.030	<0.030	<0.030
	Total DDT	*0.05*	<0.042	<0.042	<0.042	<0.042	<0.042
	Dieldrin	*0.35*	<0.050	<0.050	<0.050	<0.050	<0.050
	Endosulfan I	-	<0.030	<0.030	<0.030	<0.030	<0.030
	Endosulfan II	-	<0.030	<0.030	<0.030	<0.030	<0.030
	Endosulfan (Total)	*0.56*	<0.042	<0.042	<0.042	<0.042	<0.042
	Endrin	*0.36*	<0.040	<0.040	<0.040	<0.040	<0.040
	Heptachlor	*0.038*	<0.010	<0.010	<0.010	<0.010	<0.010
	Heptachlor Epoxide	*0.038*	<0.010	<0.010	<0.010	<0.010	<0.010
	Hexachlorobenzene	*1*	<0.010	<0.010	<0.010	<0.010	<0.010
	Hexachlorobutadiene	*0.012*	<0.010	<0.010	<0.010	<0.010	<0.010
	Hexachloroethane	*0.17*	<0.010	<0.010	<0.010	<0.010	<0.010
	Methoxychlor	*0.3*	<0.150	<0.200	<0.150	<0.050	<0.050

NOTES: Units = ug/L unless otherwise noted

Concentrations above regulatory criteria **BOLD** & HIGHLIGHTED

APPENDIX D
CERTIFICATES OF ANALYSIS

CHUNG AND VANDER DOELEN
ATTN: JARED BARCLAY
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Date Received: 14-FEB-20
Report Date: 24-FEB-20 12:54 (MT)
Version: FINAL

Client Phone: 519-742-8979

Certificate of Analysis

Lab Work Order #: L2417205
Project P.O. #: E19858
Job Reference: BLUE MOUNTAIN PHASE II ESA
C of C Numbers: 17-619908
Legal Site Desc:

Emily Hansen
Account Manager

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ANALYTICAL GUIDELINE REPORT

BLUE MOUNTAIN PHASE II ESA

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L2417205-1 BH1-1								
Sampled By: J.B on 12-FEB-20								
Matrix: SOIL								
Physical Tests								
Conductivity	0.121		0.0040	mS/cm	21-FEB-20	0.7	0.7	
% Moisture	17.3		0.25	%	15-FEB-20			
pH	7.33		0.10	pH units	18-FEB-20			
Cyanides								
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	18-FEB-20	0.051	0.051	0.1
Saturated Paste Extractables								
SAR	<0.10		0.10	SAR	21-FEB-20	5	5	
Calcium (Ca)	16.9		0.50	mg/L	21-FEB-20			
Magnesium (Mg)	0.72		0.50	mg/L	21-FEB-20			
Sodium (Na)	1.10		0.50	mg/L	21-FEB-20			
Metals								
Antimony (Sb)	<1.0		1.0	ug/g	19-FEB-20	1	1.3	
Arsenic (As)	8.4		1.0	ug/g	19-FEB-20	11	18	*6
Barium (Ba)	44.7		1.0	ug/g	19-FEB-20	210	220	
Beryllium (Be)	0.50		0.50	ug/g	19-FEB-20	2.5	2.5	
Boron (B)	8.0		5.0	ug/g	19-FEB-20	36	36	
Boron (B), Hot Water Ext.	0.24		0.10	ug/g	19-FEB-20	1.5	1.5	
Cadmium (Cd)	<0.50		0.50	ug/g	19-FEB-20	1	1.2	0.6
Chromium (Cr)	17.3		1.0	ug/g	19-FEB-20	67	70	26
Cobalt (Co)	5.5		1.0	ug/g	19-FEB-20	22	22	50
Copper (Cu)	13.6		1.0	ug/g	19-FEB-20	62	92	16
Lead (Pb)	17.2		1.0	ug/g	19-FEB-20	45	120	31
Mercury (Hg)	0.0501		0.0050	ug/g	19-FEB-20	0.2	0.27	0.2
Molybdenum (Mo)	<1.0		1.0	ug/g	19-FEB-20	2	2	
Nickel (Ni)	12.2		1.0	ug/g	19-FEB-20	37	82	16
Selenium (Se)	<1.0		1.0	ug/g	19-FEB-20	1.2	1.5	
Silver (Ag)	<0.20		0.20	ug/g	19-FEB-20	0.5	0.5	0.5
Thallium (Tl)	<0.50		0.50	ug/g	19-FEB-20	1	1	
Uranium (U)	<1.0		1.0	ug/g	19-FEB-20	1.9	2.5	
Vanadium (V)	27.5		1.0	ug/g	19-FEB-20	86	86	
Zinc (Zn)	42.8		5.0	ug/g	19-FEB-20	290	290	120
Speciated Metals								
Chromium, Hexavalent	<0.20		0.20	ug/g	19-FEB-20	0.66	0.66	
Organochlorine Pesticides								
Aldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002
gamma-hexachlorocyclohexane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
a-chlordane	<0.020		0.020	ug/g	21-FEB-20			
Chlordane (Total)	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.007
g-chlordane	<0.020		0.020	ug/g	21-FEB-20			
op-DDD	<0.020		0.020	ug/g	21-FEB-20			**0.008
pp-DDD	<0.020		0.020	ug/g	21-FEB-20			**0.008
Total DDD	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.008
o,p-DDE	<0.020		0.020	ug/g	21-FEB-20			**0.005
pp-DDE	0.232		0.020	ug/g	21-FEB-20			*0.005
Total DDE	0.232		0.028	ug/g	21-FEB-20	*0.05	*0.05	*0.005

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T8-ALL-SOIL-CATEGORIES

#1: T8-Soil-Agricultural or Other Property Use

#2: T8-Soil-Res/Park/Inst/Ind/Com/Commu Property Use

#3: T8-Sediment-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

BLUE MOUNTAIN PHASE II ESA

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L2417205-1	BH1-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Organochlorine Pesticides									
	op-DDT	<0.020		0.020	ug/g	21-FEB-20			**0.007
	pp-DDT	0.057		0.020	ug/g	21-FEB-20			*0.007
	Total DDT	0.057		0.028	ug/g	21-FEB-20	0.078	1.4	*0.007
	Dieldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002
	Endosulfan I	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan II	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan (Total)	<0.028		0.028	ug/g	21-FEB-20	0.04	0.04	
	Endrin	<0.020		0.020	ug/g	21-FEB-20	0.04	0.04	**0.003
	Heptachlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
	Heptachlor Epoxide	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.005
	Hexachlorobenzene	<0.010		0.010	ug/g	21-FEB-20	0.02	0.02	0.02
	Hexachlorobutadiene	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	Hexachloroethane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	Methoxychlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
	Surrogate: 2-Fluorobiphenyl	95.7		50-140	%	21-FEB-20			
	Surrogate: d14-Terphenyl	89.4		50-140	%	21-FEB-20			
L2417205-2	BH2-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Physical Tests									
	Conductivity	0.280		0.0040	mS/cm	20-FEB-20	0.7	0.7	
	% Moisture	21.5		0.25	%	15-FEB-20			
	pH	7.43		0.10	pH units	18-FEB-20			
Cyanides									
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	18-FEB-20	0.051	0.051	0.1
Saturated Paste Extractables									
	SAR	0.27		0.10	SAR	19-FEB-20	5	5	
	Calcium (Ca)	25.3		0.50	mg/L	19-FEB-20			
	Magnesium (Mg)	1.67		0.50	mg/L	19-FEB-20			
	Sodium (Na)	5.28		0.50	mg/L	19-FEB-20			
Metals									
	Antimony (Sb)	<1.0		1.0	ug/g	19-FEB-20	1	1.3	
	Arsenic (As)	3.7		1.0	ug/g	19-FEB-20	11	18	6
	Barium (Ba)	41.5		1.0	ug/g	19-FEB-20	210	220	
	Beryllium (Be)	<0.50		0.50	ug/g	19-FEB-20	2.5	2.5	
	Boron (B)	9.4		5.0	ug/g	19-FEB-20	36	36	
	Boron (B), Hot Water Ext.	0.29		0.10	ug/g	19-FEB-20	1.5	1.5	
	Cadmium (Cd)	<0.50		0.50	ug/g	19-FEB-20	1	1.2	0.6
	Chromium (Cr)	18.5		1.0	ug/g	19-FEB-20	67	70	26
	Cobalt (Co)	6.0		1.0	ug/g	19-FEB-20	22	22	50
	Copper (Cu)	16.5		1.0	ug/g	19-FEB-20	62	92	*16
	Lead (Pb)	8.4		1.0	ug/g	19-FEB-20	45	120	31
	Mercury (Hg)	0.0268		0.0050	ug/g	19-FEB-20	0.2	0.27	0.2
	Molybdenum (Mo)	<1.0		1.0	ug/g	19-FEB-20	2	2	
	Nickel (Ni)	13.4		1.0	ug/g	19-FEB-20	37	82	16

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T8-ALL-SOIL-CATEGORIES

#1: T8-Soil-Agricultural or Other Property Use

#2: T8-Soil-Res/Park/Inst/Ind/Com/Commu Property Use

#3: T8-Sediment-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

BLUE MOUNTAIN PHASE II ESA

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L2417205-2	BH2-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Metals									
	Selenium (Se)	<1.0		1.0	ug/g	19-FEB-20	1.2	1.5	
	Silver (Ag)	<0.20		0.20	ug/g	19-FEB-20	0.5	0.5	0.5
	Thallium (Tl)	<0.50		0.50	ug/g	19-FEB-20	1	1	
	Uranium (U)	<1.0		1.0	ug/g	19-FEB-20	1.9	2.5	
	Vanadium (V)	29.0		1.0	ug/g	19-FEB-20	86	86	
	Zinc (Zn)	37.4		5.0	ug/g	19-FEB-20	290	290	120
Speciated Metals									
	Chromium, Hexavalent	<0.20		0.20	ug/g	19-FEB-20	0.66	0.66	
Organochlorine Pesticides									
	Aldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002
	gamma-hexachlorocyclohexane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	a-chlordane	<0.020		0.020	ug/g	21-FEB-20			
	Chlordane (Total)	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.007
	g-chlordane	<0.020		0.020	ug/g	21-FEB-20			
	op-DDD	<0.020		0.020	ug/g	21-FEB-20			**0.008
	pp-DDD	<0.020		0.020	ug/g	21-FEB-20			**0.008
	Total DDD	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.008
	o,p-DDE	<0.020		0.020	ug/g	21-FEB-20			**0.005
	pp-DDE	0.032		0.020	ug/g	21-FEB-20			*0.005
	Total DDE	0.032		0.028	ug/g	21-FEB-20	0.05	0.05	*0.005
	op-DDT	<0.020		0.020	ug/g	21-FEB-20			**0.007
	pp-DDT	<0.020		0.020	ug/g	21-FEB-20			**0.007
	Total DDT	<0.028		0.028	ug/g	21-FEB-20	0.078	1.4	**0.007
	Dieldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002
	Endosulfan I	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan II	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan (Total)	<0.028		0.028	ug/g	21-FEB-20	0.04	0.04	
	Endrin	<0.020		0.020	ug/g	21-FEB-20	0.04	0.04	**0.003
	Heptachlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
	Heptachlor Epoxide	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.005
	Hexachlorobenzene	<0.010		0.010	ug/g	21-FEB-20	0.02	0.02	0.02
	Hexachlorobutadiene	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	Hexachloroethane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	Methoxychlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
	Surrogate: 2-Fluorobiphenyl	93.8		50-140	%	21-FEB-20			
	Surrogate: d14-Terphenyl	86.6		50-140	%	21-FEB-20			
L2417205-3	BH3-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Physical Tests									
	Conductivity	0.262		0.0040	mS/cm	20-FEB-20	0.7	0.7	
	% Moisture	25.6		0.25	%	15-FEB-20			
	pH	7.35		0.10	pH units	18-FEB-20			
Cyanides									
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	18-FEB-20			

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#2: T8-Soil-Res/Park/Inst/Ind/Com/Commu Property Use

#3: T8-Sediment-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

BLUE MOUNTAIN PHASE II ESA

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L2417205-3	BH3-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Cyanides									
							0.051	0.051	0.1
Saturated Paste Extractables									
	SAR	0.40		0.10	SAR	19-FEB-20	5	5	
	Calcium (Ca)	23.5		0.50	mg/L	19-FEB-20			
	Magnesium (Mg)	2.12		0.50	mg/L	19-FEB-20			
	Sodium (Na)	7.52		0.50	mg/L	19-FEB-20			
Metals									
	Antimony (Sb)	<1.0		1.0	ug/g	19-FEB-20	1	1.3	
	Arsenic (As)	3.3		1.0	ug/g	19-FEB-20	11	18	6
	Barium (Ba)	46.4		1.0	ug/g	19-FEB-20	210	220	
	Beryllium (Be)	<0.50		0.50	ug/g	19-FEB-20	2.5	2.5	
	Boron (B)	11.6		5.0	ug/g	19-FEB-20	36	36	
	Boron (B), Hot Water Ext.	0.27		0.10	ug/g	19-FEB-20	1.5	1.5	
	Cadmium (Cd)	<0.50		0.50	ug/g	19-FEB-20	1	1.2	0.6
	Chromium (Cr)	21.0		1.0	ug/g	19-FEB-20	67	70	26
	Cobalt (Co)	7.2		1.0	ug/g	19-FEB-20	22	22	50
	Copper (Cu)	14.9		1.0	ug/g	19-FEB-20	62	92	16
	Lead (Pb)	8.5		1.0	ug/g	19-FEB-20	45	120	31
	Mercury (Hg)	0.0292		0.0050	ug/g	19-FEB-20	0.2	0.27	0.2
	Molybdenum (Mo)	<1.0		1.0	ug/g	19-FEB-20	2	2	
	Nickel (Ni)	15.5		1.0	ug/g	19-FEB-20	37	82	16
	Selenium (Se)	<1.0		1.0	ug/g	19-FEB-20	1.2	1.5	
	Silver (Ag)	<0.20		0.20	ug/g	19-FEB-20	0.5	0.5	0.5
	Thallium (Tl)	<0.50		0.50	ug/g	19-FEB-20	1	1	
	Uranium (U)	<1.0		1.0	ug/g	19-FEB-20	1.9	2.5	
	Vanadium (V)	32.6		1.0	ug/g	19-FEB-20	86	86	
	Zinc (Zn)	38.4		5.0	ug/g	19-FEB-20	290	290	120
Speciated Metals									
	Chromium, Hexavalent	<0.20		0.20	ug/g	19-FEB-20	0.66	0.66	
Organochlorine Pesticides									
	Aldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002
	gamma-hexachlorocyclohexane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	a-chlordane	<0.020		0.020	ug/g	21-FEB-20			
	Chlordane (Total)	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.007
	g-chlordane	<0.020		0.020	ug/g	21-FEB-20			
	op-DDD	<0.020		0.020	ug/g	21-FEB-20			**0.008
	pp-DDD	<0.020		0.020	ug/g	21-FEB-20			**0.008
	Total DDD	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.008
	o,p-DDE	<0.020		0.020	ug/g	21-FEB-20			**0.005
	pp-DDE	<0.020		0.020	ug/g	21-FEB-20			**0.005
	Total DDE	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.005
	op-DDT	<0.020		0.020	ug/g	21-FEB-20			**0.007
	pp-DDT	<0.020		0.020	ug/g	21-FEB-20			**0.007
	Total DDT	<0.028		0.028	ug/g	21-FEB-20	0.078	1.4	**0.007
	Dieldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T8-ALL-SOIL-CATEGORIES

#1: T8-Soil-Agricultural or Other Property Use

#2: T8-Soil-Res/Park/Inst/Ind/Com/Commu Property Use

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ANALYTICAL GUIDELINE REPORT

BLUE MOUNTAIN PHASE II ESA

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L2417205-3	BH3-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Organochlorine Pesticides									
	Endosulfan I	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan II	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan (Total)	<0.028		0.028	ug/g	21-FEB-20	0.04	0.04	
	Endrin	<0.020		0.020	ug/g	21-FEB-20	0.04	0.04	**0.003
	Heptachlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
	Heptachlor Epoxide	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.005
	Hexachlorobenzene	<0.010		0.010	ug/g	21-FEB-20	0.02	0.02	0.02
	Hexachlorobutadiene	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	Hexachloroethane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	Methoxychlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
	Surrogate: 2-Fluorobiphenyl	93.8		50-140	%	21-FEB-20			
	Surrogate: d14-Terphenyl	95.2		50-140	%	21-FEB-20			
L2417205-4	BH4-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Physical Tests									
	Conductivity	0.681		0.0040	mS/cm	20-FEB-20	0.7	0.7	
	% Moisture	16.9		0.25	%	15-FEB-20			
	pH	7.03		0.10	pH units	18-FEB-20			
Cyanides									
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	18-FEB-20	0.051	0.051	0.1
Saturated Paste Extractables									
	SAR	<0.10		0.10	SAR	19-FEB-20	5	5	
	Calcium (Ca)	59.2		0.50	mg/L	19-FEB-20			
	Magnesium (Mg)	2.65		0.50	mg/L	19-FEB-20			
	Sodium (Na)	0.90		0.50	mg/L	19-FEB-20			
Metals									
	Antimony (Sb)	<1.0		1.0	ug/g	19-FEB-20	1	1.3	
	Arsenic (As)	32.9		1.0	ug/g	19-FEB-20	*11	*18	*6
	Barium (Ba)	39.4		1.0	ug/g	19-FEB-20	210	220	
	Beryllium (Be)	<0.50		0.50	ug/g	19-FEB-20	2.5	2.5	
	Boron (B)	7.8		5.0	ug/g	19-FEB-20	36	36	
	Boron (B), Hot Water Ext.	0.55		0.10	ug/g	19-FEB-20	1.5	1.5	
	Cadmium (Cd)	<0.50		0.50	ug/g	19-FEB-20	1	1.2	0.6
	Chromium (Cr)	14.4		1.0	ug/g	19-FEB-20	67	70	26
	Cobalt (Co)	4.0		1.0	ug/g	19-FEB-20	22	22	50
	Copper (Cu)	23.0		1.0	ug/g	19-FEB-20	62	92	*16
	Lead (Pb)	96.4		1.0	ug/g	19-FEB-20	*45	120	*31
	Mercury (Hg)	0.129		0.0050	ug/g	19-FEB-20	0.2	0.27	0.2
	Molybdenum (Mo)	<1.0		1.0	ug/g	19-FEB-20	2	2	
	Nickel (Ni)	9.9		1.0	ug/g	19-FEB-20	37	82	16
	Selenium (Se)	<1.0		1.0	ug/g	19-FEB-20	1.2	1.5	
	Silver (Ag)	<0.20		0.20	ug/g	19-FEB-20	0.5	0.5	0.5
	Thallium (Tl)	<0.50		0.50	ug/g	19-FEB-20	1	1	
	Uranium (U)	<1.0		1.0	ug/g	19-FEB-20	1.9	2.5	

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ANALYTICAL GUIDELINE REPORT

BLUE MOUNTAIN PHASE II ESA

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L2417205-4	BH4-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Metals									
	Vanadium (V)	21.4		1.0	ug/g	19-FEB-20	86	86	
	Zinc (Zn)	59.6		5.0	ug/g	19-FEB-20	290	290	120
Speciated Metals									
	Chromium, Hexavalent	<0.20		0.20	ug/g	20-FEB-20	0.66	0.66	
Organochlorine Pesticides									
	Aldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002
	gamma-hexachlorocyclohexane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	a-chlordane	<0.020		0.020	ug/g	21-FEB-20			
	Chlordane (Total)	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.007
	g-chlordane	<0.020		0.020	ug/g	21-FEB-20			
	op-DDD	0.222		0.020	ug/g	21-FEB-20			*0.008
	pp-DDD	0.680		0.020	ug/g	21-FEB-20			*0.008
	Total DDD	0.901		0.028	ug/g	21-FEB-20	*0.05	*0.05	*0.008
	o,p-DDE	0.084		0.020	ug/g	21-FEB-20			*0.005
	pp-DDE	11.5		0.020	ug/g	21-FEB-20			*0.005
	Total DDE	11.5		0.028	ug/g	21-FEB-20	*0.05	*0.05	*0.005
	op-DDT	0.371		0.020	ug/g	21-FEB-20			*0.007
	pp-DDT	1.95		0.020	ug/g	21-FEB-20			*0.007
	Total DDT	2.32		0.028	ug/g	21-FEB-20	*0.078	*1.4	*0.007
	Dieldrin	0.092		0.020	ug/g	21-FEB-20	*0.05	*0.05	*0.002
	Endosulfan I	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan II	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan (Total)	<0.028		0.028	ug/g	21-FEB-20	0.04	0.04	
	Endrin	<0.020		0.020	ug/g	21-FEB-20	0.04	0.04	**0.003
	Heptachlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
	Heptachlor Epoxide	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.005
	Hexachlorobenzene	<0.010		0.010	ug/g	21-FEB-20	0.02	0.02	0.02
	Hexachlorobutadiene	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	Hexachloroethane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	Methoxychlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
	Surrogate: 2-Fluorobiphenyl	91.8		50-140	%	21-FEB-20			
	Surrogate: d14-Terphenyl	104.4		50-140	%	21-FEB-20			
L2417205-5	BH5-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Physical Tests									
	Conductivity	0.595		0.0040	mS/cm	20-FEB-20	0.7	0.7	
	% Moisture	28.1		0.25	%	15-FEB-20			
	pH	7.56		0.10	pH units	18-FEB-20			
Cyanides									
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	18-FEB-20	0.051	0.051	0.1
Saturated Paste Extractables									
	SAR	0.34		0.10	SAR	19-FEB-20	5	5	
	Calcium (Ca)	35.9		0.50	mg/L	19-FEB-20			

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#2: T8-Soil-Res/Park/Inst/Ind/Com/Commu Property Use

#3: T8-Sediment-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

BLUE MOUNTAIN PHASE II ESA

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L2417205-5	BH5-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Saturated Paste Extractables									
	Magnesium (Mg)	1.68		0.50	mg/L	19-FEB-20			
	Sodium (Na)	7.69		0.50	mg/L	19-FEB-20			
Metals									
	Antimony (Sb)	<1.0		1.0	ug/g	19-FEB-20	1	1.3	
	Arsenic (As)	8.8		1.0	ug/g	19-FEB-20	11	18	*6
	Barium (Ba)	22.1		1.0	ug/g	19-FEB-20	210	220	
	Beryllium (Be)	<0.50		0.50	ug/g	19-FEB-20	2.5	2.5	
	Boron (B)	7.0		5.0	ug/g	19-FEB-20	36	36	
	Boron (B), Hot Water Ext.	0.40		0.10	ug/g	19-FEB-20	1.5	1.5	
	Cadmium (Cd)	<0.50		0.50	ug/g	19-FEB-20	1	1.2	0.6
	Chromium (Cr)	10.6		1.0	ug/g	19-FEB-20	67	70	26
	Cobalt (Co)	2.7		1.0	ug/g	19-FEB-20	22	22	50
	Copper (Cu)	8.9		1.0	ug/g	19-FEB-20	62	92	16
	Lead (Pb)	24.8		1.0	ug/g	19-FEB-20	45	120	31
	Mercury (Hg)	0.0347		0.0050	ug/g	19-FEB-20	0.2	0.27	0.2
	Molybdenum (Mo)	<1.0		1.0	ug/g	19-FEB-20	2	2	
	Nickel (Ni)	6.7		1.0	ug/g	19-FEB-20	37	82	16
	Selenium (Se)	<1.0		1.0	ug/g	19-FEB-20	1.2	1.5	
	Silver (Ag)	<0.20		0.20	ug/g	19-FEB-20	0.5	0.5	0.5
	Thallium (Tl)	<0.50		0.50	ug/g	19-FEB-20	1	1	
	Uranium (U)	<1.0		1.0	ug/g	19-FEB-20	1.9	2.5	
	Vanadium (V)	17.1		1.0	ug/g	19-FEB-20	86	86	
	Zinc (Zn)	31.9		5.0	ug/g	19-FEB-20	290	290	120
Speciated Metals									
	Chromium, Hexavalent	<0.20		0.20	ug/g	20-FEB-20	0.66	0.66	
Organochlorine Pesticides									
	Aldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002
	gamma-hexachlorocyclohexane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	a-chlordane	<0.020		0.020	ug/g	21-FEB-20			
	Chlordane (Total)	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.007
	g-chlordane	<0.020		0.020	ug/g	21-FEB-20			
	op-DDD	<0.020		0.020	ug/g	21-FEB-20			**0.008
	pp-DDD	<0.020		0.020	ug/g	21-FEB-20			**0.008
	Total DDD	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.008
	o,p-DDE	<0.020		0.020	ug/g	21-FEB-20			**0.005
	pp-DDE	0.089		0.020	ug/g	21-FEB-20			*0.005
	Total DDE	0.089		0.028	ug/g	21-FEB-20	*0.05	*0.05	*0.005
	op-DDT	<0.020		0.020	ug/g	21-FEB-20			**0.007
	pp-DDT	0.033		0.020	ug/g	21-FEB-20			*0.007
	Total DDT	0.033		0.028	ug/g	21-FEB-20	0.078	1.4	*0.007
	Dieldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002
	Endosulfan I	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan II	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan (Total)	<0.028		0.028	ug/g	21-FEB-20	0.04	0.04	
	Endrin	<0.020		0.020	ug/g	21-FEB-20	0.04	0.04	**0.003
	Heptachlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T8-ALL-SOIL-CATEGORIES

#1: T8-Soil-Agricultural or Other Property Use

#2: T8-Soil-Res/Park/Inst/Ind/Com/Commu Property Use

#3: T8-Sediment-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

BLUE MOUNTAIN PHASE II ESA

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L2417205-5 BH5-1								
Sampled By: J.B on 12-FEB-20								
Matrix: SOIL								
Organochlorine Pesticides								
Heptachlor Epoxide	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.005
Hexachlorobenzene	<0.010		0.010	ug/g	21-FEB-20	0.02	0.02	0.02
Hexachlorobutadiene	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
Hexachloroethane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
Methoxychlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
Surrogate: 2-Fluorobiphenyl	90.1		50-140	%	21-FEB-20			
Surrogate: d14-Terphenyl	84.2		50-140	%	21-FEB-20			
L2417205-6 BH6-1								
Sampled By: J.B on 12-FEB-20								
Matrix: SOIL								
Physical Tests								
Conductivity	0.365		0.0040	mS/cm	20-FEB-20	0.7	0.7	
% Moisture	23.9		0.25	%	15-FEB-20			
pH	7.40		0.10	pH units	18-FEB-20			
Cyanides								
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	18-FEB-20	0.051	0.051	0.1
Saturated Paste Extractables								
SAR	0.36		0.10	SAR	19-FEB-20	5	5	
Calcium (Ca)	30.9		0.50	mg/L	19-FEB-20			
Magnesium (Mg)	2.83		0.50	mg/L	19-FEB-20			
Sodium (Na)	7.84		0.50	mg/L	19-FEB-20			
Metals								
Antimony (Sb)	<1.0		1.0	ug/g	19-FEB-20	1	1.3	
Arsenic (As)	7.1		1.0	ug/g	19-FEB-20	11	18	*6
Barium (Ba)	41.5		1.0	ug/g	19-FEB-20	210	220	
Beryllium (Be)	0.53		0.50	ug/g	19-FEB-20	2.5	2.5	
Boron (B)	12.8		5.0	ug/g	19-FEB-20	36	36	
Boron (B), Hot Water Ext.	0.37		0.10	ug/g	19-FEB-20	1.5	1.5	
Cadmium (Cd)	<0.50		0.50	ug/g	19-FEB-20	1	1.2	0.6
Chromium (Cr)	17.8		1.0	ug/g	19-FEB-20	67	70	26
Cobalt (Co)	7.1		1.0	ug/g	19-FEB-20	22	22	50
Copper (Cu)	16.6		1.0	ug/g	19-FEB-20	62	92	*16
Lead (Pb)	18.3		1.0	ug/g	19-FEB-20	45	120	31
Mercury (Hg)	0.0255		0.0050	ug/g	19-FEB-20	0.2	0.27	0.2
Molybdenum (Mo)	<1.0		1.0	ug/g	19-FEB-20	2	2	
Nickel (Ni)	15.1		1.0	ug/g	19-FEB-20	37	82	16
Selenium (Se)	<1.0		1.0	ug/g	19-FEB-20	1.2	1.5	
Silver (Ag)	<0.20		0.20	ug/g	19-FEB-20	0.5	0.5	0.5
Thallium (Tl)	<0.50		0.50	ug/g	19-FEB-20	1	1	
Uranium (U)	<1.0		1.0	ug/g	19-FEB-20	1.9	2.5	
Vanadium (V)	27.1		1.0	ug/g	19-FEB-20	86	86	
Zinc (Zn)	34.0		5.0	ug/g	19-FEB-20	290	290	120
Speciated Metals								
Chromium, Hexavalent	<0.20		0.20	ug/g	20-FEB-20	0.66	0.66	

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ANALYTICAL GUIDELINE REPORT

BLUE MOUNTAIN PHASE II ESA

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L2417205-6	BH6-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Organochlorine Pesticides									
	Aldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002
	gamma-hexachlorocyclohexane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	a-chlordane	<0.020		0.020	ug/g	21-FEB-20			
	Chlordane (Total)	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.007
	g-chlordane	<0.020		0.020	ug/g	21-FEB-20			
	op-DDD	<0.020		0.020	ug/g	21-FEB-20			**0.008
	pp-DDD	<0.020		0.020	ug/g	21-FEB-20			**0.008
	Total DDD	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.008
	o,p-DDE	<0.020		0.020	ug/g	21-FEB-20			**0.005
	pp-DDE	0.233		0.020	ug/g	21-FEB-20			*0.005
	Total DDE	0.233		0.028	ug/g	21-FEB-20	*0.05	*0.05	*0.005
	op-DDT	<0.020		0.020	ug/g	21-FEB-20			**0.007
	pp-DDT	0.021		0.020	ug/g	21-FEB-20			*0.007
	Total DDT	<0.028		0.028	ug/g	21-FEB-20	0.078	1.4	**0.007
	Dieldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002
	Endosulfan I	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan II	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan (Total)	<0.028		0.028	ug/g	21-FEB-20	0.04	0.04	
	Endrin	<0.020		0.020	ug/g	21-FEB-20	0.04	0.04	**0.003
	Heptachlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
	Heptachlor Epoxide	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.005
	Hexachlorobenzene	<0.010		0.010	ug/g	21-FEB-20	0.02	0.02	0.02
	Hexachlorobutadiene	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	Hexachloroethane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	Methoxychlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
	Surrogate: 2-Fluorobiphenyl	94.8		50-140	%	21-FEB-20			
	Surrogate: d14-Terphenyl	92.8		50-140	%	21-FEB-20			
L2417205-7	BH7-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Physical Tests									
	Conductivity	0.529		0.0040	mS/cm	20-FEB-20	0.7	0.7	
	% Moisture	30.0		0.25	%	15-FEB-20			
	pH	7.48		0.10	pH units	18-FEB-20			
Cyanides									
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	18-FEB-20	0.051	0.051	0.1
Saturated Paste Extractables									
	SAR	0.13		0.10	SAR	19-FEB-20	5	5	
	Calcium (Ca)	45.4		0.50	mg/L	19-FEB-20			
	Magnesium (Mg)	3.95		0.50	mg/L	19-FEB-20			
	Sodium (Na)	3.31		0.50	mg/L	19-FEB-20			
Metals									
	Antimony (Sb)	<1.0		1.0	ug/g	19-FEB-20	1	1.3	
	Arsenic (As)	5.9		1.0	ug/g	19-FEB-20	11	18	6
	Barium (Ba)	47.5		1.0	ug/g	19-FEB-20	210	220	

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ANALYTICAL GUIDELINE REPORT

BLUE MOUNTAIN PHASE II ESA

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L2417205-7 BH7-1								
Sampled By: J.B on 12-FEB-20								
Matrix: SOIL								
Metals								
Beryllium (Be)	0.54		0.50	ug/g	19-FEB-20	2.5	2.5	
Boron (B)	14.4		5.0	ug/g	19-FEB-20	36	36	
Boron (B), Hot Water Ext.	0.41		0.10	ug/g	19-FEB-20	1.5	1.5	
Cadmium (Cd)	<0.50		0.50	ug/g	19-FEB-20	1	1.2	0.6
Chromium (Cr)	20.0		1.0	ug/g	19-FEB-20	67	70	26
Cobalt (Co)	7.4		1.0	ug/g	19-FEB-20	22	22	50
Copper (Cu)	15.1		1.0	ug/g	19-FEB-20	62	92	16
Lead (Pb)	16.8		1.0	ug/g	19-FEB-20	45	120	31
Mercury (Hg)	0.0297		0.0050	ug/g	19-FEB-20	0.2	0.27	0.2
Molybdenum (Mo)	<1.0		1.0	ug/g	19-FEB-20	2	2	
Nickel (Ni)	16.2		1.0	ug/g	19-FEB-20	37	82	*16
Selenium (Se)	<1.0		1.0	ug/g	19-FEB-20	1.2	1.5	
Silver (Ag)	<0.20		0.20	ug/g	19-FEB-20	0.5	0.5	0.5
Thallium (Tl)	<0.50		0.50	ug/g	19-FEB-20	1	1	
Uranium (U)	<1.0		1.0	ug/g	19-FEB-20	1.9	2.5	
Vanadium (V)	29.1		1.0	ug/g	19-FEB-20	86	86	
Zinc (Zn)	44.0		5.0	ug/g	19-FEB-20	290	290	120
Speciated Metals								
Chromium, Hexavalent	<0.20		0.20	ug/g	20-FEB-20	0.66	0.66	
Organochlorine Pesticides								
Aldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002
gamma-hexachlorocyclohexane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
a-chlordane	<0.020		0.020	ug/g	21-FEB-20			
Chlordane (Total)	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.007
g-chlordane	<0.020		0.020	ug/g	21-FEB-20			
op-DDD	<0.020		0.020	ug/g	21-FEB-20			**0.008
pp-DDD	<0.020		0.020	ug/g	21-FEB-20			**0.008
Total DDD	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.008
o,p-DDE	<0.020		0.020	ug/g	21-FEB-20			**0.005
pp-DDE	0.236		0.020	ug/g	21-FEB-20			*0.005
Total DDE	0.236		0.028	ug/g	21-FEB-20	*0.05	*0.05	*0.005
op-DDT	<0.020		0.020	ug/g	21-FEB-20			**0.007
pp-DDT	0.045		0.020	ug/g	21-FEB-20			*0.007
Total DDT	0.045		0.028	ug/g	21-FEB-20	0.078	1.4	*0.007
Dieldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002
Endosulfan I	<0.020		0.020	ug/g	21-FEB-20			
Endosulfan II	<0.020		0.020	ug/g	21-FEB-20			
Endosulfan (Total)	<0.028		0.028	ug/g	21-FEB-20	0.04	0.04	
Endrin	<0.020		0.020	ug/g	21-FEB-20	0.04	0.04	**0.003
Heptachlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
Heptachlor Epoxide	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.005
Hexachlorobenzene	<0.010		0.010	ug/g	21-FEB-20	0.02	0.02	0.02
Hexachlorobutadiene	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
Hexachloroethane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
Methoxychlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
Surrogate: 2-Fluorobiphenyl	92.9		50-140	%	21-FEB-20			

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T8-ALL-SOIL-CATEGORIES

#1: T8-Soil-Agricultural or Other Property Use

#2: T8-Soil-Res/Park/Inst/Ind/Com/Commu Property Use

#3: T8-Sediment-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

BLUE MOUNTAIN PHASE II ESA

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L2417205-7 BH7-1								
Sampled By: J.B on 12-FEB-20								
Matrix: SOIL								
Organochlorine Pesticides								
Surrogate: d14-Terphenyl	91.4		50-140	%	21-FEB-20			
L2417205-8 BH8-1								
Sampled By: J.B on 12-FEB-20								
Matrix: SOIL								
Physical Tests								
Conductivity	0.793		0.0040	mS/cm	20-FEB-20	*0.7	*0.7	
% Moisture	43.4		0.25	%	15-FEB-20			
pH	7.23		0.10	pH units	18-FEB-20			
Cyanides								
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	20-FEB-20	0.051	0.051	0.1
Saturated Paste Extractables								
SAR	<0.10		0.10	SAR	19-FEB-20	5	5	
Calcium (Ca)	80.5		0.50	mg/L	19-FEB-20			
Magnesium (Mg)	7.08		0.50	mg/L	19-FEB-20			
Sodium (Na)	3.19		0.50	mg/L	19-FEB-20			
Metals								
Antimony (Sb)	<1.0		1.0	ug/g	19-FEB-20	1	1.3	
Arsenic (As)	16.1		1.0	ug/g	19-FEB-20	*11	18	*6
Barium (Ba)	28.0		1.0	ug/g	19-FEB-20	210	220	
Beryllium (Be)	<0.50		0.50	ug/g	19-FEB-20	2.5	2.5	
Boron (B)	11.7		5.0	ug/g	19-FEB-20	36	36	
Boron (B), Hot Water Ext.	1.33		0.10	ug/g	19-FEB-20	1.5	1.5	
Cadmium (Cd)	<0.50		0.50	ug/g	19-FEB-20	1	1.2	0.6
Chromium (Cr)	11.1		1.0	ug/g	19-FEB-20	67	70	26
Cobalt (Co)	3.9		1.0	ug/g	19-FEB-20	22	22	50
Copper (Cu)	21.3		1.0	ug/g	19-FEB-20	62	92	*16
Lead (Pb)	95.6		1.0	ug/g	19-FEB-20	*45	120	*31
Mercury (Hg)	0.0571		0.0050	ug/g	19-FEB-20	0.2	0.27	0.2
Molybdenum (Mo)	<1.0		1.0	ug/g	19-FEB-20	2	2	
Nickel (Ni)	9.3		1.0	ug/g	19-FEB-20	37	82	16
Selenium (Se)	<1.0		1.0	ug/g	19-FEB-20	1.2	1.5	
Silver (Ag)	<0.20		0.20	ug/g	19-FEB-20	0.5	0.5	0.5
Thallium (Tl)	<0.50		0.50	ug/g	19-FEB-20	1	1	
Uranium (U)	<1.0		1.0	ug/g	19-FEB-20	1.9	2.5	
Vanadium (V)	16.3		1.0	ug/g	19-FEB-20	86	86	
Zinc (Zn)	39.3		5.0	ug/g	19-FEB-20	290	290	120
Speciated Metals								
Chromium, Hexavalent	<0.20		0.20	ug/g	20-FEB-20	0.66	0.66	
Organochlorine Pesticides								
Aldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002
gamma-hexachlorocyclohexane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
a-chlordane	<0.020		0.020	ug/g	21-FEB-20			
Chlordane (Total)	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.007
g-chlordane	<0.020		0.020	ug/g	21-FEB-20			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T8-ALL-SOIL-CATEGORIES

#1: T8-Soil-Agricultural or Other Property Use

#2: T8-Soil-Res/Park/Inst/Ind/Com/Commu Property Use

#3: T8-Sediment-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

BLUE MOUNTAIN PHASE II ESA

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L2417205-8	BH8-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Organochlorine Pesticides									
	op-DDD	0.487		0.020	ug/g	21-FEB-20			*0.008
	pp-DDD	1.85		0.020	ug/g	21-FEB-20			*0.008
	Total DDD	2.33		0.028	ug/g	21-FEB-20	*0.05	*0.05	*0.008
	o,p-DDE	0.078		0.020	ug/g	21-FEB-20			*0.005
	pp-DDE	12.8		0.020	ug/g	21-FEB-20			*0.005
	Total DDE	12.9		0.028	ug/g	21-FEB-20	*0.05	*0.05	*0.005
	op-DDT	0.053		0.020	ug/g	21-FEB-20			*0.007
	pp-DDT	0.429		0.020	ug/g	21-FEB-20			*0.007
	Total DDT	0.481		0.028	ug/g	21-FEB-20	*0.078	1.4	*0.007
	Dieldrin	0.094		0.020	ug/g	21-FEB-20	*0.05	*0.05	*0.002
	Endosulfan I	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan II	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan (Total)	<0.028		0.028	ug/g	21-FEB-20	0.04	0.04	
	Endrin	<0.040	DLM	0.040	ug/g	21-FEB-20	0.04	0.04	**0.003
	Heptachlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
	Heptachlor Epoxide	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.005
	Hexachlorobenzene	<0.010		0.010	ug/g	21-FEB-20	0.02	0.02	0.02
	Hexachlorobutadiene	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	Hexachloroethane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	Methoxychlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
	Surrogate: 2-Fluorobiphenyl	91.0		50-140	%	21-FEB-20			
	Surrogate: d14-Terphenyl	100.7		50-140	%	21-FEB-20			
L2417205-9	BH9-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Physical Tests									
	Conductivity	0.614		0.0040	mS/cm	20-FEB-20	0.7	0.7	
	% Moisture	31.7		0.25	%	15-FEB-20			
	pH	7.12		0.10	pH units	18-FEB-20			
Cyanides									
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	18-FEB-20	0.051	0.051	0.1
Saturated Paste Extractables									
	SAR	<0.10		0.10	SAR	19-FEB-20	5	5	
	Calcium (Ca)	58.3		0.50	mg/L	19-FEB-20			
	Magnesium (Mg)	4.88		0.50	mg/L	19-FEB-20			
	Sodium (Na)	2.36		0.50	mg/L	19-FEB-20			
Metals									
	Antimony (Sb)	<1.0		1.0	ug/g	19-FEB-20	1	1.3	
	Arsenic (As)	9.8		1.0	ug/g	19-FEB-20	11	18	*6
	Barium (Ba)	26.7		1.0	ug/g	19-FEB-20	210	220	
	Beryllium (Be)	<0.50		0.50	ug/g	19-FEB-20	2.5	2.5	
	Boron (B)	8.4		5.0	ug/g	19-FEB-20	36	36	
	Boron (B), Hot Water Ext.	0.61		0.10	ug/g	19-FEB-20	1.5	1.5	
	Cadmium (Cd)	<0.50		0.50	ug/g	19-FEB-20	1	1.2	0.6
	Chromium (Cr)	12.9		1.0	ug/g	19-FEB-20	67	70	26

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T8-ALL-SOIL-CATEGORIES

#1: T8-Soil-Agricultural or Other Property Use

#2: T8-Soil-Res/Park/Inst/Ind/Com/Commu Property Use

#3: T8-Sediment-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

BLUE MOUNTAIN PHASE II ESA

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L2417205-9	BH9-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Metals									
	Cobalt (Co)	5.1		1.0	ug/g	19-FEB-20	22	22	50
	Copper (Cu)	14.2		1.0	ug/g	19-FEB-20	62	92	16
	Lead (Pb)	37.7		1.0	ug/g	19-FEB-20	45	120	*31
	Mercury (Hg)	0.0350		0.0050	ug/g	19-FEB-20	0.2	0.27	0.2
	Molybdenum (Mo)	<1.0		1.0	ug/g	19-FEB-20	2	2	
	Nickel (Ni)	11.8		1.0	ug/g	19-FEB-20	37	82	16
	Selenium (Se)	<1.0		1.0	ug/g	19-FEB-20	1.2	1.5	
	Silver (Ag)	<0.20		0.20	ug/g	19-FEB-20	0.5	0.5	0.5
	Thallium (Tl)	<0.50		0.50	ug/g	19-FEB-20	1	1	
	Uranium (U)	<1.0		1.0	ug/g	19-FEB-20	1.9	2.5	
	Vanadium (V)	18.8		1.0	ug/g	19-FEB-20	86	86	
	Zinc (Zn)	31.1		5.0	ug/g	19-FEB-20	290	290	120
Speciated Metals									
	Chromium, Hexavalent	<0.20		0.20	ug/g	20-FEB-20	0.66	0.66	
Organochlorine Pesticides									
	Aldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002
	gamma-hexachlorocyclohexane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	a-chlordane	<0.020		0.020	ug/g	21-FEB-20			
	Chlordane (Total)	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.007
	g-chlordane	<0.020		0.020	ug/g	21-FEB-20			
	op-DDD	0.028		0.020	ug/g	21-FEB-20			*0.008
	pp-DDD	0.180		0.020	ug/g	21-FEB-20			*0.008
	Total DDD	0.208		0.028	ug/g	21-FEB-20	*0.05	*0.05	*0.008
	o,p-DDE	<0.020		0.020	ug/g	21-FEB-20			**0.005
	pp-DDE	2.37		0.020	ug/g	21-FEB-20			*0.005
	Total DDE	2.37		0.028	ug/g	21-FEB-20	*0.05	*0.05	*0.005
	op-DDT	<0.020		0.020	ug/g	21-FEB-20			**0.007
	pp-DDT	0.149		0.020	ug/g	21-FEB-20			*0.007
	Total DDT	0.149		0.028	ug/g	21-FEB-20	*0.078	1.4	*0.007
	Dieldrin	0.025		0.020	ug/g	21-FEB-20	0.05	0.05	*0.002
	Endosulfan I	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan II	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan (Total)	<0.028		0.028	ug/g	21-FEB-20	0.04	0.04	
	Endrin	<0.020		0.020	ug/g	21-FEB-20	0.04	0.04	**0.003
	Heptachlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
	Heptachlor Epoxide	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.005
	Hexachlorobenzene	<0.010		0.010	ug/g	21-FEB-20	0.02	0.02	0.02
	Hexachlorobutadiene	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	Hexachloroethane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	Methoxychlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
	Surrogate: 2-Fluorobiphenyl	91.7		50-140	%	21-FEB-20			
	Surrogate: d14-Terphenyl	93.4		50-140	%	21-FEB-20			
L2417205-10	BH10-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T8-ALL-SOIL-CATEGORIES

#1: T8-Soil-Agricultural or Other Property Use

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ANALYTICAL GUIDELINE REPORT

BLUE MOUNTAIN PHASE II ESA

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L2417205-10 BH10-1								
Sampled By: J.B on 12-FEB-20								
Matrix: SOIL								
Physical Tests								
Conductivity	0.236		0.0040	mS/cm	20-FEB-20	0.7	0.7	
% Moisture	20.9		0.25	%	15-FEB-20			
pH	7.22		0.10	pH units	18-FEB-20			
Cyanides								
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	19-FEB-20	0.051	0.051	0.1
Saturated Paste Extractables								
SAR	0.32		0.10	SAR	19-FEB-20	5	5	
Calcium (Ca)	20.1		0.50	mg/L	19-FEB-20			
Magnesium (Mg)	1.95		0.50	mg/L	19-FEB-20			
Sodium (Na)	5.69		0.50	mg/L	19-FEB-20			
Metals								
Antimony (Sb)	<1.0		1.0	ug/g	19-FEB-20	1	1.3	
Arsenic (As)	3.8		1.0	ug/g	19-FEB-20	11	18	6
Barium (Ba)	52.1		1.0	ug/g	19-FEB-20	210	220	
Beryllium (Be)	<0.50		0.50	ug/g	19-FEB-20	2.5	2.5	
Boron (B)	11.3		5.0	ug/g	19-FEB-20	36	36	
Boron (B), Hot Water Ext.	0.13		0.10	ug/g	19-FEB-20	1.5	1.5	
Cadmium (Cd)	<0.50		0.50	ug/g	19-FEB-20	1	1.2	0.6
Chromium (Cr)	18.9		1.0	ug/g	19-FEB-20	67	70	26
Cobalt (Co)	7.3		1.0	ug/g	19-FEB-20	22	22	50
Copper (Cu)	15.6		1.0	ug/g	19-FEB-20	62	92	16
Lead (Pb)	7.1		1.0	ug/g	19-FEB-20	45	120	31
Mercury (Hg)	0.0149		0.0050	ug/g	19-FEB-20	0.2	0.27	0.2
Molybdenum (Mo)	<1.0		1.0	ug/g	19-FEB-20	2	2	
Nickel (Ni)	16.1		1.0	ug/g	19-FEB-20	37	82	*16
Selenium (Se)	<1.0		1.0	ug/g	19-FEB-20	1.2	1.5	
Silver (Ag)	<0.20		0.20	ug/g	19-FEB-20	0.5	0.5	0.5
Thallium (Tl)	<0.50		0.50	ug/g	19-FEB-20	1	1	
Uranium (U)	<1.0		1.0	ug/g	19-FEB-20	1.9	2.5	
Vanadium (V)	27.8		1.0	ug/g	19-FEB-20	86	86	
Zinc (Zn)	33.1		5.0	ug/g	19-FEB-20	290	290	120
Speciated Metals								
Chromium, Hexavalent	0.39		0.20	ug/g	20-FEB-20	0.66	0.66	
Organochlorine Pesticides								
Aldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002
gamma-hexachlorocyclohexane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
a-chlordane	<0.020		0.020	ug/g	21-FEB-20			
Chlordane (Total)	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.007
g-chlordane	<0.020		0.020	ug/g	21-FEB-20			
op-DDD	<0.020		0.020	ug/g	21-FEB-20			**0.008
pp-DDD	<0.020		0.020	ug/g	21-FEB-20			**0.008
Total DDD	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.008
o,p-DDE	<0.020		0.020	ug/g	21-FEB-20			**0.005
pp-DDE	0.029		0.020	ug/g	21-FEB-20			*0.005
Total DDE	0.029		0.028	ug/g	21-FEB-20	0.05	0.05	*0.005

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T8-ALL-SOIL-CATEGORIES

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ANALYTICAL GUIDELINE REPORT

BLUE MOUNTAIN PHASE II ESA

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L2417205-10	BH10-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Organochlorine Pesticides									
	op-DDT	<0.020		0.020	ug/g	21-FEB-20			**0.007
	pp-DDT	<0.020		0.020	ug/g	21-FEB-20			**0.007
	Total DDT	<0.028		0.028	ug/g	21-FEB-20	0.078	1.4	**0.007
	Dieldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002
	Endosulfan I	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan II	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan (Total)	<0.028		0.028	ug/g	21-FEB-20	0.04	0.04	
	Endrin	<0.020		0.020	ug/g	21-FEB-20	0.04	0.04	**0.003
	Heptachlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
	Heptachlor Epoxide	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.005
	Hexachlorobenzene	<0.010		0.010	ug/g	21-FEB-20	0.02	0.02	0.02
	Hexachlorobutadiene	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	Hexachloroethane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	Methoxychlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
	Surrogate: 2-Fluorobiphenyl	96.5		50-140	%	21-FEB-20			
	Surrogate: d14-Terphenyl	90.5		50-140	%	21-FEB-20			
L2417205-11	BH11-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Physical Tests									
	Conductivity	0.754		0.0040	mS/cm	20-FEB-20	*0.7	*0.7	
	% Moisture	29.7		0.25	%	15-FEB-20			
	pH	6.98		0.10	pH units	18-FEB-20			
Cyanides									
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	19-FEB-20	0.051	0.051	0.1
Saturated Paste Extractables									
	SAR	0.33		0.10	SAR	19-FEB-20	5	5	
	Calcium (Ca)	67.2		0.50	mg/L	19-FEB-20			
	Magnesium (Mg)	4.89		0.50	mg/L	19-FEB-20			
	Sodium (Na)	10.3		0.50	mg/L	19-FEB-20			
Metals									
	Antimony (Sb)	<1.0		1.0	ug/g	19-FEB-20	1	1.3	
	Arsenic (As)	11.1		1.0	ug/g	19-FEB-20	*11	18	*6
	Barium (Ba)	25.3		1.0	ug/g	19-FEB-20	210	220	
	Beryllium (Be)	<0.50		0.50	ug/g	19-FEB-20	2.5	2.5	
	Boron (B)	10.0		5.0	ug/g	19-FEB-20	36	36	
	Boron (B), Hot Water Ext.	0.64		0.10	ug/g	19-FEB-20	1.5	1.5	
	Cadmium (Cd)	<0.50		0.50	ug/g	19-FEB-20	1	1.2	0.6
	Chromium (Cr)	13.1		1.0	ug/g	19-FEB-20	67	70	26
	Cobalt (Co)	4.6		1.0	ug/g	19-FEB-20	22	22	50
	Copper (Cu)	13.4		1.0	ug/g	19-FEB-20	62	92	16
	Lead (Pb)	39.6		1.0	ug/g	19-FEB-20	45	120	*31
	Mercury (Hg)	0.0336		0.0050	ug/g	19-FEB-20	0.2	0.27	0.2
	Molybdenum (Mo)	<1.0		1.0	ug/g	19-FEB-20	2	2	
	Nickel (Ni)	10.4		1.0	ug/g	19-FEB-20	37	82	16

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Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T8-ALL-SOIL-CATEGORIES

#1: T8-Soil-Agricultural or Other Property Use

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#3: T8-Sediment-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

BLUE MOUNTAIN PHASE II ESA

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L2417205-11	BH11-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Metals									
	Selenium (Se)	<1.0		1.0	ug/g	19-FEB-20	1.2	1.5	
	Silver (Ag)	<0.20		0.20	ug/g	19-FEB-20	0.5	0.5	0.5
	Thallium (Tl)	<0.50		0.50	ug/g	19-FEB-20	1	1	
	Uranium (U)	<1.0		1.0	ug/g	19-FEB-20	1.9	2.5	
	Vanadium (V)	19.7		1.0	ug/g	19-FEB-20	86	86	
	Zinc (Zn)	32.4		5.0	ug/g	19-FEB-20	290	290	120
Speciated Metals									
	Chromium, Hexavalent	<0.20		0.20	ug/g	20-FEB-20	0.66	0.66	
Organochlorine Pesticides									
	Aldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002
	gamma-hexachlorocyclohexane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	a-chlordane	<0.020		0.020	ug/g	21-FEB-20			
	Chlordane (Total)	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.007
	g-chlordane	<0.020		0.020	ug/g	21-FEB-20			
	op-DDD	0.043		0.020	ug/g	21-FEB-20			*0.008
	pp-DDD	0.282		0.020	ug/g	21-FEB-20			*0.008
	Total DDD	0.325		0.028	ug/g	21-FEB-20	*0.05	*0.05	*0.008
	o,p-DDE	<0.020		0.020	ug/g	21-FEB-20			**0.005
	pp-DDE	2.97		0.020	ug/g	21-FEB-20			*0.005
	Total DDE	2.97		0.028	ug/g	21-FEB-20	*0.05	*0.05	*0.005
	op-DDT	0.040		0.020	ug/g	21-FEB-20			*0.007
	pp-DDT	0.410		0.020	ug/g	21-FEB-20			*0.007
	Total DDT	0.449		0.028	ug/g	21-FEB-20	*0.078	1.4	*0.007
	Dieldrin	0.070		0.020	ug/g	21-FEB-20	*0.05	*0.05	*0.002
	Endosulfan I	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan II	<0.020		0.020	ug/g	21-FEB-20			
	Endosulfan (Total)	<0.028		0.028	ug/g	21-FEB-20	0.04	0.04	
	Endrin	<0.020		0.020	ug/g	21-FEB-20	0.04	0.04	**0.003
	Heptachlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
	Heptachlor Epoxide	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.005
	Hexachlorobenzene	<0.010		0.010	ug/g	21-FEB-20	0.02	0.02	0.02
	Hexachlorobutadiene	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	Hexachloroethane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	Methoxychlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
	Surrogate: 2-Fluorobiphenyl	90.6		50-140	%	21-FEB-20			
	Surrogate: d14-Terphenyl	88.6		50-140	%	21-FEB-20			
L2417205-12	BH12-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Physical Tests									
	Conductivity	0.581		0.0040	mS/cm	20-FEB-20	0.7	0.7	
	% Moisture	16.8		0.25	%	15-FEB-20			
	pH	7.16		0.10	pH units	18-FEB-20			
Cyanides									
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	19-FEB-20			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T8-ALL-SOIL-CATEGORIES

#1: T8-Soil-Agricultural or Other Property Use

#2: T8-Soil-Res/Park/Inst/Ind/Com/Commu Property Use

#3: T8-Sediment-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

BLUE MOUNTAIN PHASE II ESA

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L2417205-12	BH12-1								
Sampled By:	J.B on 12-FEB-20								
Matrix:	SOIL								
Cyanides									
							0.051	0.051	0.1
Saturated Paste Extractables									
	SAR	0.28		0.10	SAR	19-FEB-20	5	5	
	Calcium (Ca)	46.1		0.50	mg/L	19-FEB-20			
	Magnesium (Mg)	2.90		0.50	mg/L	19-FEB-20			
	Sodium (Na)	7.32		0.50	mg/L	19-FEB-20			
Metals									
	Antimony (Sb)	<1.0		1.0	ug/g	19-FEB-20	1	1.3	
	Arsenic (As)	3.5		1.0	ug/g	19-FEB-20	11	18	6
	Barium (Ba)	29.8		1.0	ug/g	19-FEB-20	210	220	
	Beryllium (Be)	<0.50		0.50	ug/g	19-FEB-20	2.5	2.5	
	Boron (B)	10.9		5.0	ug/g	19-FEB-20	36	36	
	Boron (B), Hot Water Ext.	0.51		0.10	ug/g	19-FEB-20	1.5	1.5	
	Cadmium (Cd)	<0.50		0.50	ug/g	19-FEB-20	1	1.2	0.6
	Chromium (Cr)	14.3		1.0	ug/g	19-FEB-20	67	70	26
	Cobalt (Co)	4.4		1.0	ug/g	19-FEB-20	22	22	50
	Copper (Cu)	9.9		1.0	ug/g	19-FEB-20	62	92	16
	Lead (Pb)	9.9		1.0	ug/g	19-FEB-20	45	120	31
	Mercury (Hg)	0.0357		0.0050	ug/g	19-FEB-20	0.2	0.27	0.2
	Molybdenum (Mo)	<1.0		1.0	ug/g	19-FEB-20	2	2	
	Nickel (Ni)	9.3		1.0	ug/g	19-FEB-20	37	82	16
	Selenium (Se)	<1.0		1.0	ug/g	19-FEB-20	1.2	1.5	
	Silver (Ag)	<0.20		0.20	ug/g	19-FEB-20	0.5	0.5	0.5
	Thallium (Tl)	<0.50		0.50	ug/g	19-FEB-20	1	1	
	Uranium (U)	<1.0		1.0	ug/g	19-FEB-20	1.9	2.5	
	Vanadium (V)	25.1		1.0	ug/g	19-FEB-20	86	86	
	Zinc (Zn)	40.5		5.0	ug/g	19-FEB-20	290	290	120
Speciated Metals									
	Chromium, Hexavalent	<0.20		0.20	ug/g	20-FEB-20	0.66	0.66	
Organochlorine Pesticides									
	Aldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002
	gamma-hexachlorocyclohexane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
	a-chlordane	<0.020		0.020	ug/g	21-FEB-20			
	Chlordane (Total)	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.007
	g-chlordane	<0.020		0.020	ug/g	21-FEB-20			
	op-DDD	<0.020		0.020	ug/g	21-FEB-20			**0.008
	pp-DDD	<0.020		0.020	ug/g	21-FEB-20			**0.008
	Total DDD	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.008
	o,p-DDE	<0.020		0.020	ug/g	21-FEB-20			**0.005
	pp-DDE	<0.020		0.020	ug/g	21-FEB-20			**0.005
	Total DDE	<0.028		0.028	ug/g	21-FEB-20	0.05	0.05	**0.005
	op-DDT	<0.020		0.020	ug/g	21-FEB-20			**0.007
	pp-DDT	<0.020		0.020	ug/g	21-FEB-20			**0.007
	Total DDT	<0.028		0.028	ug/g	21-FEB-20	0.078	1.4	**0.007
	Dieldrin	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.002

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T8-ALL-SOIL-CATEGORIES

#1: T8-Soil-Agricultural or Other Property Use

#2: T8-Soil-Res/Park/Inst/Ind/Com/Commu Property Use

#3: T8-Sediment-All Types of Property Uses

ANALYTICAL GUIDELINE REPORT

BLUE MOUNTAIN PHASE II ESA

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L2417205-12 BH12-1								
Sampled By: J.B on 12-FEB-20								
Matrix: SOIL								
Organochlorine Pesticides								
Endosulfan I	<0.020		0.020	ug/g	21-FEB-20			
Endosulfan II	<0.020		0.020	ug/g	21-FEB-20			
Endosulfan (Total)	<0.028		0.028	ug/g	21-FEB-20	0.04	0.04	
Endrin	<0.020		0.020	ug/g	21-FEB-20	0.04	0.04	**0.003
Heptachlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
Heptachlor Epoxide	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	**0.005
Hexachlorobenzene	<0.010		0.010	ug/g	21-FEB-20	0.02	0.02	0.02
Hexachlorobutadiene	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
Hexachloroethane	<0.010		0.010	ug/g	21-FEB-20	0.01	0.01	
Methoxychlor	<0.020		0.020	ug/g	21-FEB-20	0.05	0.05	
Surrogate: 2-Fluorobiphenyl	94.4		50-140	%	21-FEB-20			
Surrogate: d14-Terphenyl	88.5		50-140	%	21-FEB-20			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T8-ALL-SOIL-CATEGORIES

#1: T8-Soil-Agricultural or Other Property Use

#2: T8-Soil-Res/Park/Inst/Ind/Com/Commu Property Use

#3: T8-Sediment-All Types of Property Uses

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).

Methods Listed (if applicable):

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

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

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

CHLORDANE-T-CALC-WT	Soil	Chlordane Total sums	CALCULATION

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

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

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

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

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

DDD-DDE-DDT-CALC-WT	Soil	DDD, DDE, DDT sums	CALCULATION

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

EC-WT	Soil	Conductivity (EC)	MOEE E3138

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

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

ENDOSULFAN-T-CALC-WT	Soil	Endosulfan Total sums	CALCULATION

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

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

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

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

Reference Information

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

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

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

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

MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
PEST-OC-511-WT	Soil	OC Pesticides-O.Reg 153/04 (July 2011)	SW846 8270 (511)

Soil sample is extracted in a solvent, after extraction a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

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

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

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

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

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

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

Chain of Custody numbers:

17-619908

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

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

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

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

Quality Control Report

Workorder: L2417205 Report Date: 24-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Contact: JARED BARCLAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R4998153								
WG3277461-4 DUP		**L2417205-1**						
Boron (B), Hot Water Ext.		0.24	0.28		ug/g	17	30	19-FEB-20
WG3277461-2 IRM		**WT SAR3**						
Boron (B), Hot Water Ext.			97.9		%		70-130	19-FEB-20
WG3277461-3 LCS								
Boron (B), Hot Water Ext.			95.9		%		70-130	19-FEB-20
WG3277461-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	19-FEB-20
Batch R4998371								
WG3277457-4 DUP		**L2417315-1**						
Boron (B), Hot Water Ext.		<0.10	<0.10	RPD-NA	ug/g	N/A	30	19-FEB-20
WG3277457-2 IRM		**WT SAR3**						
Boron (B), Hot Water Ext.			96.6		%		70-130	19-FEB-20
WG3277457-3 LCS								
Boron (B), Hot Water Ext.			98.4		%		70-130	19-FEB-20
WG3277457-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	19-FEB-20
CN-WAD-R511-WT	**Soil**							
Batch R4997737								
WG3275632-5 DUP		**L2416901-10**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	18-FEB-20
WG3275632-2 LCS								
Cyanide, Weak Acid Diss			99.3		%		80-120	18-FEB-20
WG3275632-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	18-FEB-20
WG3275632-6 MS		**L2416901-10**						
Cyanide, Weak Acid Diss			101.7		%		70-130	18-FEB-20
Batch R4998276								
WG3275990-3 DUP		**L2417205-10**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	19-FEB-20
WG3275990-2 LCS								
Cyanide, Weak Acid Diss			98.5		%		80-120	19-FEB-20
WG3275990-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	19-FEB-20
WG3275990-4 MS		**L2417205-10**						
Cyanide, Weak Acid Diss			102.1		%		70-130	19-FEB-20

Quality Control Report

Workorder: L2417205 Report Date: 24-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Contact: JARED BARCLAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-WAD-R511-WT	**Soil**							
Batch R4998881								
WG3278128-3 DUP		**L2418373-4**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	20-FEB-20
WG3278128-2 LCS								
Cyanide, Weak Acid Diss			97.4		%		80-120	20-FEB-20
WG3278128-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	20-FEB-20
WG3278128-4 MS		**L2418373-4**						
Cyanide, Weak Acid Diss			100.1		%		70-130	20-FEB-20
CR-CR6-IC-WT	**Soil**							
Batch R4998292								
WG3277046-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			92.0		%		70-130	19-FEB-20
WG3277046-3 DUP		**L2416679-1**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	19-FEB-20
WG3277046-2 LCS								
Chromium, Hexavalent			90.3		%		80-120	19-FEB-20
WG3277046-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	19-FEB-20
Batch R4998952								
WG3275972-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			89.0		%		70-130	20-FEB-20
WG3275972-3 DUP		**L2417205-4**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	20-FEB-20
WG3275972-2 LCS								
Chromium, Hexavalent			99.1		%		80-120	20-FEB-20
WG3275972-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	20-FEB-20
Batch R4998964								
WG3276737-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			89.0		%		70-130	19-FEB-20
WG3276737-3 DUP		**L2417481-49**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	19-FEB-20
WG3276737-2 LCS								
Chromium, Hexavalent			99.4		%		80-120	19-FEB-20
WG3276737-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	19-FEB-20
EC-WT	**Soil**							

Quality Control Report

Workorder: L2417205 Report Date: 24-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Contact: JARED BARCLAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	**Soil**							
Batch R4998836								
WG3277468-4 DUP		**WG3277468-3**						
Conductivity		0.119	0.121		mS/cm	1.9	20	20-FEB-20
WG3277468-2 IRM		**WT SAR3**						
Conductivity			109.2		%		70-130	20-FEB-20
WG3278447-1 LCS								
Conductivity			100.4		%		90-110	20-FEB-20
WG3277468-1 MB								
Conductivity			<0.0040		mS/cm		0.004	20-FEB-20
Batch R4999520								
WG3279078-4 DUP		**WG3279078-3**						
Conductivity		0.123	0.118		mS/cm	4.4	20	21-FEB-20
WG3279078-2 IRM		**WT SAR3**						
Conductivity			109.7		%		70-130	21-FEB-20
WG3279389-1 LCS								
Conductivity			99.7		%		90-110	21-FEB-20
WG3279078-1 MB								
Conductivity			<0.0040		mS/cm		0.004	21-FEB-20
HG-200.2-CVAA-WT	**Soil**							
Batch R4998234								
WG3277458-2 CRM		**WT-CANMET-TILL2**						
Mercury (Hg)			110.5		%		70-130	19-FEB-20
WG3277458-6 DUP		**WG3277458-5**						
Mercury (Hg)		<0.0050	<0.0050	RPD-NA	ug/g	N/A	40	19-FEB-20
WG3277458-3 LCS								
Mercury (Hg)			109.0		%		80-120	19-FEB-20
WG3277458-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	19-FEB-20
Batch R4998236								
WG3277453-2 CRM		**WT-CANMET-TILL2**						
Mercury (Hg)			98.5		%		70-130	19-FEB-20
WG3277453-6 DUP		**WG3277453-5**						
Mercury (Hg)		0.0089	0.0086		ug/g	4.3	40	19-FEB-20
WG3277453-3 LCS								
Mercury (Hg)			112.0		%		80-120	19-FEB-20
WG3277453-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	19-FEB-20
MET-200.2-CCMS-WT	**Soil**							

Quality Control Report

Workorder: L2417205 Report Date: 24-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Contact: JARED BARCLAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4998332								
WG3277458-2 CRM		**WT-CANMET-TILL2**						
Antimony (Sb)			95.0		%		70-130	19-FEB-20
Arsenic (As)			97.4		%		70-130	19-FEB-20
Barium (Ba)			98.3		%		70-130	19-FEB-20
Beryllium (Be)			92.0		%		70-130	19-FEB-20
Boron (B)			3.3		mg/kg		0-8.6	19-FEB-20
Cadmium (Cd)			91.4		%		70-130	19-FEB-20
Chromium (Cr)			100.1		%		70-130	19-FEB-20
Cobalt (Co)			97.7		%		70-130	19-FEB-20
Copper (Cu)			96.5		%		70-130	19-FEB-20
Lead (Pb)			97.0		%		70-130	19-FEB-20
Molybdenum (Mo)			97.7		%		70-130	19-FEB-20
Nickel (Ni)			97.9		%		70-130	19-FEB-20
Selenium (Se)			0.33		mg/kg		0.15-0.55	19-FEB-20
Silver (Ag)			0.25		mg/kg		0.16-0.36	19-FEB-20
Thallium (Tl)			96.2		%		70-130	19-FEB-20
Uranium (U)			96.0		%		70-130	19-FEB-20
Vanadium (V)			100.2		%		70-130	19-FEB-20
Zinc (Zn)			92.9		%		70-130	19-FEB-20
WG3277458-6 DUP		**WG3277458-5**						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	19-FEB-20
Arsenic (As)		1.27	1.35		ug/g	5.6	30	19-FEB-20
Barium (Ba)		23.6	23.8		ug/g	0.9	40	19-FEB-20
Beryllium (Be)		0.15	0.14		ug/g	6.2	30	19-FEB-20
Boron (B)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	19-FEB-20
Cadmium (Cd)		0.026	0.026		ug/g	1.6	30	19-FEB-20
Chromium (Cr)		8.30	8.29		ug/g	0.1	30	19-FEB-20
Cobalt (Co)		2.35	2.39		ug/g	1.7	30	19-FEB-20
Copper (Cu)		4.09	4.44		ug/g	8.1	30	19-FEB-20
Lead (Pb)		2.11	2.09		ug/g	1.1	40	19-FEB-20
Molybdenum (Mo)		0.24	0.24		ug/g	2.4	40	19-FEB-20
Nickel (Ni)		4.53	4.43		ug/g	2.1	30	19-FEB-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	19-FEB-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	19-FEB-20

Quality Control Report

Workorder: L2417205 Report Date: 24-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Contact: JARED BARCLAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4998332								
WG3277458-6 DUP		**WG3277458-5**						
Thallium (Tl)		<0.050	<0.050	RPD-NA	ug/g	N/A	30	19-FEB-20
Uranium (U)		0.391	0.415		ug/g	6.1	30	19-FEB-20
Vanadium (V)		18.5	19.0		ug/g	2.6	30	19-FEB-20
Zinc (Zn)		10.7	12.0		ug/g	12	30	19-FEB-20
WG3277458-4 LCS								
Antimony (Sb)			104.4		%		80-120	19-FEB-20
Arsenic (As)			95.6		%		80-120	19-FEB-20
Barium (Ba)			99.1		%		80-120	19-FEB-20
Beryllium (Be)			93.2		%		80-120	19-FEB-20
Boron (B)			92.4		%		80-120	19-FEB-20
Cadmium (Cd)			92.8		%		80-120	19-FEB-20
Chromium (Cr)			99.1		%		80-120	19-FEB-20
Cobalt (Co)			96.8		%		80-120	19-FEB-20
Copper (Cu)			93.9		%		80-120	19-FEB-20
Lead (Pb)			97.0		%		80-120	19-FEB-20
Molybdenum (Mo)			101.0		%		80-120	19-FEB-20
Nickel (Ni)			95.1		%		80-120	19-FEB-20
Selenium (Se)			90.4		%		80-120	19-FEB-20
Silver (Ag)			98.7		%		80-120	19-FEB-20
Thallium (Tl)			97.3		%		80-120	19-FEB-20
Uranium (U)			94.8		%		80-120	19-FEB-20
Vanadium (V)			101.0		%		80-120	19-FEB-20
Zinc (Zn)			91.4		%		80-120	19-FEB-20
WG3277458-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	19-FEB-20
Arsenic (As)			<0.10		mg/kg		0.1	19-FEB-20
Barium (Ba)			<0.50		mg/kg		0.5	19-FEB-20
Beryllium (Be)			<0.10		mg/kg		0.1	19-FEB-20
Boron (B)			<5.0		mg/kg		5	19-FEB-20
Cadmium (Cd)			<0.020		mg/kg		0.02	19-FEB-20
Chromium (Cr)			<0.50		mg/kg		0.5	19-FEB-20
Cobalt (Co)			<0.10		mg/kg		0.1	19-FEB-20
Copper (Cu)			<0.50		mg/kg		0.5	19-FEB-20
Lead (Pb)			<0.50		mg/kg		0.5	19-FEB-20

Quality Control Report

Workorder: L2417205 Report Date: 24-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Contact: JARED BARCLAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4998332								
WG3277458-1 MB								
Molybdenum (Mo)			<0.10		mg/kg		0.1	19-FEB-20
Nickel (Ni)			<0.50		mg/kg		0.5	19-FEB-20
Selenium (Se)			<0.20		mg/kg		0.2	19-FEB-20
Silver (Ag)			<0.10		mg/kg		0.1	19-FEB-20
Thallium (Tl)			<0.050		mg/kg		0.05	19-FEB-20
Uranium (U)			<0.050		mg/kg		0.05	19-FEB-20
Vanadium (V)			0.22	B	mg/kg		0.2	19-FEB-20
Zinc (Zn)			<2.0		mg/kg		2	19-FEB-20
Batch R4998348								
WG3277453-2 CRM		**WT-CANMET-TILL2**						
Antimony (Sb)			97.0		%		70-130	19-FEB-20
Arsenic (As)			101.0		%		70-130	19-FEB-20
Barium (Ba)			101.3		%		70-130	19-FEB-20
Beryllium (Be)			95.2		%		70-130	19-FEB-20
Boron (B)			2.9		mg/kg		0-8.6	19-FEB-20
Cadmium (Cd)			99.0		%		70-130	19-FEB-20
Chromium (Cr)			98.4		%		70-130	19-FEB-20
Cobalt (Co)			99.6		%		70-130	19-FEB-20
Copper (Cu)			98.8		%		70-130	19-FEB-20
Lead (Pb)			99.2		%		70-130	19-FEB-20
Molybdenum (Mo)			102.4		%		70-130	19-FEB-20
Nickel (Ni)			99.2		%		70-130	19-FEB-20
Selenium (Se)			0.37		mg/kg		0.15-0.55	19-FEB-20
Silver (Ag)			0.26		mg/kg		0.16-0.36	19-FEB-20
Thallium (Tl)			94.9		%		70-130	19-FEB-20
Uranium (U)			97.3		%		70-130	19-FEB-20
Vanadium (V)			98.6		%		70-130	19-FEB-20
Zinc (Zn)			94.2		%		70-130	19-FEB-20
WG3277453-6 DUP		**WG3277453-5**						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	19-FEB-20
Arsenic (As)		2.17	2.22		ug/g	2.1	30	19-FEB-20
Barium (Ba)		19.7	20.6		ug/g	4.7	40	19-FEB-20
Beryllium (Be)		0.21	0.24		ug/g	13	30	19-FEB-20
Boron (B)		5.1	5.8		ug/g	12	30	19-FEB-20

Quality Control Report

Workorder: L2417205 Report Date: 24-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Contact: JARED BARCLAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4998348								
WG3277453-6 DUP		**WG3277453-5**						
Cadmium (Cd)		0.084	0.095		ug/g	12	30	19-FEB-20
Chromium (Cr)		8.64	8.94		ug/g	3.5	30	19-FEB-20
Cobalt (Co)		3.16	3.13		ug/g	0.8	30	19-FEB-20
Copper (Cu)		10.2	10.1		ug/g	0.2	30	19-FEB-20
Lead (Pb)		7.37	7.59		ug/g	3.0	40	19-FEB-20
Molybdenum (Mo)		0.23	0.22		ug/g	0.7	40	19-FEB-20
Nickel (Ni)		6.64	6.58		ug/g	1.0	30	19-FEB-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	19-FEB-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	19-FEB-20
Thallium (Tl)		<0.050	<0.050	RPD-NA	ug/g	N/A	30	19-FEB-20
Uranium (U)		0.425	0.392		ug/g	8.0	30	19-FEB-20
Vanadium (V)		18.1	18.4		ug/g	1.9	30	19-FEB-20
Zinc (Zn)		41.3	42.2		ug/g	2.1	30	19-FEB-20
WG3277453-4 LCS								
Antimony (Sb)			99.1		%		80-120	19-FEB-20
Arsenic (As)			98.4		%		80-120	19-FEB-20
Barium (Ba)			101.5		%		80-120	19-FEB-20
Beryllium (Be)			94.4		%		80-120	19-FEB-20
Boron (B)			91.9		%		80-120	19-FEB-20
Cadmium (Cd)			97.8		%		80-120	19-FEB-20
Chromium (Cr)			98.6		%		80-120	19-FEB-20
Cobalt (Co)			98.2		%		80-120	19-FEB-20
Copper (Cu)			97.1		%		80-120	19-FEB-20
Lead (Pb)			97.6		%		80-120	19-FEB-20
Molybdenum (Mo)			97.9		%		80-120	19-FEB-20
Nickel (Ni)			96.8		%		80-120	19-FEB-20
Selenium (Se)			97.5		%		80-120	19-FEB-20
Silver (Ag)			96.7		%		80-120	19-FEB-20
Thallium (Tl)			95.9		%		80-120	19-FEB-20
Uranium (U)			95.3		%		80-120	19-FEB-20
Vanadium (V)			101.3		%		80-120	19-FEB-20
Zinc (Zn)			92.7		%		80-120	19-FEB-20
WG3277453-1 MB								
							0.1	

Quality Control Report

Workorder: L2417205 Report Date: 24-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Contact: JARED BARCLAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R4998348								
WG3277453-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	19-FEB-20
Arsenic (As)			<0.10		mg/kg		0.1	19-FEB-20
Barium (Ba)			<0.50		mg/kg		0.5	19-FEB-20
Beryllium (Be)			<0.10		mg/kg		0.1	19-FEB-20
Boron (B)			<5.0		mg/kg		5	19-FEB-20
Cadmium (Cd)			<0.020		mg/kg		0.02	19-FEB-20
Chromium (Cr)			<0.50		mg/kg		0.5	19-FEB-20
Cobalt (Co)			<0.10		mg/kg		0.1	19-FEB-20
Copper (Cu)			<0.50		mg/kg		0.5	19-FEB-20
Lead (Pb)			<0.50		mg/kg		0.5	19-FEB-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	19-FEB-20
Nickel (Ni)			<0.50		mg/kg		0.5	19-FEB-20
Selenium (Se)			<0.20		mg/kg		0.2	19-FEB-20
Silver (Ag)			<0.10		mg/kg		0.1	19-FEB-20
Thallium (Tl)			<0.050		mg/kg		0.05	19-FEB-20
Uranium (U)			<0.050		mg/kg		0.05	19-FEB-20
Vanadium (V)			<0.20		mg/kg		0.2	19-FEB-20
Zinc (Zn)			<2.0		mg/kg		2	19-FEB-20
MOISTURE-WT	**Soil**							
Batch R4996935								
WG3276047-3 DUP		**L2417216-1**						
% Moisture		9.62	9.54		%	0.9	20	15-FEB-20
WG3276047-2 LCS								
% Moisture			100.4		%		90-110	15-FEB-20
WG3276047-1 MB								
% Moisture			<0.25		%		0.25	15-FEB-20
PEST-OC-511-WT	**Soil**							
Batch R4999484								
WG3275891-3 DUP		**WG3275891-5**						
Aldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-FEB-20
a-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-FEB-20
g-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-FEB-20
op-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-FEB-20
pp-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-FEB-20

Quality Control Report

Workorder: L2417205 Report Date: 24-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Contact: JARED BARCLAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT	**Soil**							
Batch	**R4999484**							
WG3275891-3	**DUP**	**WG3275891-5**						
o,p-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-FEB-20
pp-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-FEB-20
op-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-FEB-20
pp-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-FEB-20
Dieldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-FEB-20
Endosulfan I		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-FEB-20
Endosulfan II		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-FEB-20
Endrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-FEB-20
gamma-hexachlorocyclohexane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	21-FEB-20
Heptachlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-FEB-20
Heptachlor Epoxide		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-FEB-20
Hexachlorobenzene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	21-FEB-20
Hexachlorobutadiene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	21-FEB-20
Hexachloroethane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	21-FEB-20
Methoxychlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-FEB-20
WG3275891-2	**LCS**							
Aldrin			126.1		%		50-140	20-FEB-20
a-chlordane			127.4		%		50-140	20-FEB-20
g-chlordane			132.9		%		50-140	20-FEB-20
op-DDD			129.8		%		50-140	20-FEB-20
pp-DDD			118.1		%		50-140	20-FEB-20
o,p-DDE			127.1		%		50-140	20-FEB-20
pp-DDE			118.7		%		50-140	20-FEB-20
op-DDT			118.0		%		50-140	20-FEB-20
pp-DDT			107.4		%		50-140	20-FEB-20
Dieldrin			137.8		%		50-140	20-FEB-20
Endosulfan I			119.5		%		50-140	20-FEB-20
Endosulfan II			116.0		%		50-140	20-FEB-20
Endrin			134.2		%		50-140	20-FEB-20
gamma-hexachlorocyclohexane			104.0		%		50-140	20-FEB-20
Heptachlor			111.8		%		50-140	20-FEB-20
Heptachlor Epoxide			115.6		%		50-140	20-FEB-20
Hexachlorobenzene			110.3		%		50-140	20-FEB-20

Quality Control Report

Workorder: L2417205 Report Date: 24-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Contact: JARED BARCLAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT	**Soil**							
Batch	**R4999484**							
WG3275891-2	**LCS**							
Hexachlorobutadiene			100.3		%		50-140	20-FEB-20
Hexachloroethane			114.6		%		50-140	20-FEB-20
Methoxychlor			107.2		%		50-140	20-FEB-20
WG3275891-1	**MB**							
Aldrin			<0.020		ug/g		0.02	21-FEB-20
a-chlordane			<0.020		ug/g		0.02	21-FEB-20
g-chlordane			<0.020		ug/g		0.02	21-FEB-20
op-DDD			<0.020		ug/g		0.02	21-FEB-20
pp-DDD			<0.020		ug/g		0.02	21-FEB-20
o,p-DDE			<0.020		ug/g		0.02	21-FEB-20
pp-DDE			<0.020		ug/g		0.02	21-FEB-20
op-DDT			<0.020		ug/g		0.02	21-FEB-20
pp-DDT			<0.020		ug/g		0.02	21-FEB-20
Dieldrin			<0.020		ug/g		0.02	21-FEB-20
Endosulfan I			<0.020		ug/g		0.02	21-FEB-20
Endosulfan II			<0.020		ug/g		0.02	21-FEB-20
Endrin			<0.020		ug/g		0.02	21-FEB-20
gamma-hexachlorocyclohexane			<0.010		ug/g		0.01	21-FEB-20
Heptachlor			<0.020		ug/g		0.02	21-FEB-20
Heptachlor Epoxide			<0.020		ug/g		0.02	21-FEB-20
Hexachlorobenzene			<0.010		ug/g		0.01	21-FEB-20
Hexachlorobutadiene			<0.010		ug/g		0.01	21-FEB-20
Hexachloroethane			<0.010		ug/g		0.01	21-FEB-20
Methoxychlor			<0.020		ug/g		0.02	21-FEB-20
Surrogate: 2-Fluorobiphenyl			102.2		%		50-140	21-FEB-20
Surrogate: d14-Terphenyl			97.8		%		50-140	21-FEB-20
WG3275891-4	**MS**	**WG3275891-5**						
Aldrin			134.8		%		50-140	21-FEB-20
a-chlordane			93.9		%		50-140	21-FEB-20
g-chlordane			96.6		%		50-140	21-FEB-20
op-DDD			101.8		%		50-140	21-FEB-20
pp-DDD			107.3		%		50-140	21-FEB-20
o,p-DDE			94.6		%		50-140	21-FEB-20
pp-DDE			91.7		%		50-140	21-FEB-20

Quality Control Report

Workorder: L2417205 Report Date: 24-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Contact: JARED BARCLAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT	**Soil**							
Batch R4999484								
WG3275891-4 MS		**WG3275891-5**						
op-DDT			116.4		%		50-140	21-FEB-20
pp-DDT			119.6		%		50-140	21-FEB-20
Dieldrin			102.8		%		50-140	21-FEB-20
Endosulfan I			91.9		%		50-140	21-FEB-20
Endosulfan II			105.4		%		50-140	21-FEB-20
Endrin			123.7		%		50-140	21-FEB-20
gamma-hexachlorocyclohexane			105.8		%		50-140	21-FEB-20
Heptachlor			113.1		%		50-140	21-FEB-20
Heptachlor Epoxide			84.1		%		50-140	21-FEB-20
Hexachlorobenzene			109.7		%		50-140	21-FEB-20
Hexachlorobutadiene			103.1		%		50-140	21-FEB-20
Hexachloroethane			120.2		%		50-140	21-FEB-20
Methoxychlor			126.0		%		50-140	21-FEB-20
PH-WT	**Soil**							
Batch R4997918								
WG3275645-1 DUP		**L2416679-3**						
pH		7.85	7.83	J	pH units	0.02	0.3	18-FEB-20
WG3276958-1 LCS								
pH			6.98		pH units		6.9-7.1	18-FEB-20
Batch R4997924								
WG3275874-1 DUP		**L2417205-9**						
pH		7.12	7.15	J	pH units	0.03	0.3	18-FEB-20
WG3277056-1 LCS								
pH			6.97		pH units		6.9-7.1	18-FEB-20
SAR-R511-WT	**Soil**							
Batch R4998380								
WG3277468-4 DUP		**WG3277468-3**						
Calcium (Ca)		10.4	10.7		mg/L	2.8	30	19-FEB-20
Sodium (Na)		2.40	2.38		mg/L	0.8	30	19-FEB-20
Magnesium (Mg)		1.35	1.39		mg/L	2.9	30	19-FEB-20
WG3277468-2 IRM		**WT SAR3**						
Calcium (Ca)			106.4		%		70-130	19-FEB-20
Sodium (Na)			103.2		%		70-130	19-FEB-20
Magnesium (Mg)			112.0		%		70-130	19-FEB-20
WG3277468-5 LCS								

Quality Control Report

Workorder: L2417205 Report Date: 24-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Contact: JARED BARCLAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT	**Soil**							
Batch R4998380								
WG3277468-5 LCS								
Calcium (Ca)			100.3		%		80-120	19-FEB-20
Sodium (Na)			98.2		%		80-120	19-FEB-20
Magnesium (Mg)			98.6		%		80-120	19-FEB-20
WG3277468-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	19-FEB-20
Sodium (Na)			<0.50		mg/L		0.5	19-FEB-20
Magnesium (Mg)			<0.50		mg/L		0.5	19-FEB-20
Batch R4999497								
WG3279078-4 DUP		**WG3279078-3**						
Calcium (Ca)		11.2	10.9		mg/L	2.7	30	21-FEB-20
Sodium (Na)		3.57	3.48		mg/L	2.6	30	21-FEB-20
Magnesium (Mg)		1.59	1.55		mg/L	2.5	30	21-FEB-20
WG3279078-2 IRM		**WT SAR3**						
Calcium (Ca)			117.5		%		70-130	21-FEB-20
Sodium (Na)			119.0		%		70-130	21-FEB-20
Magnesium (Mg)			126.3		%		70-130	21-FEB-20
WG3279078-5 LCS								
Calcium (Ca)			103.3		%		80-120	21-FEB-20
Sodium (Na)			101.2		%		80-120	21-FEB-20
Magnesium (Mg)			102.8		%		80-120	21-FEB-20
WG3279078-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	21-FEB-20
Sodium (Na)			<0.50		mg/L		0.5	21-FEB-20
Magnesium (Mg)			<0.50		mg/L		0.5	21-FEB-20

Quality Control Report

Workorder: L2417205 Report Date: 24-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1
Contact: JARED BARCLAY

Legend:

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

Sample Parameter Qualifier Definitions:

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

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

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

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

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

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2417205-COFC

COC Number: 17 - 619908

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	CVD
Contact:	Jared Barclay
Phone:	
Company address below will appear on the final report	
Street:	
City/Province:	
Postal Code:	

Report Fo	
Select Report Format:	☑ PDF ☐ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report	☐ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	
Email 3	

... Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4-20%]	☐	1 Business day [E-100%]	☐
3 day [P3-25%]	☐	Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)]	☐
2 day [P2-50%]	☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To	Same as Report To	☐ YES ☐ NO
	Copy of Invoice with Report	☐ YES ☐ NO
Company:		
Contact:		

Invoice Distribution	
Select Invoice Distribution:	☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Project Information	
ALS Account # / Quote #:	
Job #:	Blue Mountain Phase II ESA
PO / AFE:	E19858
LSD:	

Additional Fields (ALS use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2417205KM

ALS Contact: E.H.

Sampler: J.B.

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	METALS / INORGANICS	PESTICIDES (OC)	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	BH 1-1	FEB-12		SOIL	✓	✓			1
	BH 2-1				✓	✓			1
	BH 3-1				✓	✓			1
	BH 4-1				✓	✓			2
	BH 5-1				✓	✓			1
	BH 6-1				✓	✓			1
	BH 7-1				✓	✓			2
	BH 8-1				✓	✓			2
	BH 9-1				✓	✓			2
	BH 10-1				✓	✓			1
	BH 11-1				✓	✓			2
	BH 12-1				✓	✓			1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

O.REG 153/04: Table 8 - ALL
NOTE: Limited Sample (1-250ml) for Some Samples -- Call JB if more is absolutely required

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐
Ice Packs ☐ Ice Cubes ☒ Custody seal intact Yes ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C
				8.2

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Jared Barclay	Date: Feb 14-2020	Time:	Received by:	Date:	Time:	Received by: SH	Date: 14 Feb 20	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY JULY 2017 FRONT

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

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

CHUNG AND VANDER DOELEN
ATTN: JARED BARCLAY
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Date Received: 21-FEB-20
Report Date: 27-FEB-20 11:39 (MT)
Version: FINAL

Client Phone: 519-742-8979

Certificate of Analysis

Lab Work Order #: L2419503

Project P.O. #: E19858
Job Reference: BLUEMOUNTAIN PHASE II ESA-GW
C of C Numbers: 17-619842
Legal Site Desc:

Emily Hansen
Account Manager

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ANALYTICAL GUIDELINE REPORT

BLUEMOUNTAIN PHASE II ESA-GW

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1			
L2419503-1 BH1									
Sampled By: J.B on 19-FEB-20									
Matrix: WATER									
Physical Tests									
Conductivity	0.798		0.0030	mS/cm	21-FEB-20				
pH	7.53		0.10	pH units	21-FEB-20				
Anions and Nutrients									
Chloride (Cl)	16.3		0.50	mg/L	24-FEB-20	790			
Cyanides									
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	21-FEB-20	52			
Dissolved Metals									
Dissolved Mercury Filtration Location	FIELD			No Unit	24-FEB-20				
Dissolved Metals Filtration Location	FIELD			No Unit	21-FEB-20				
Antimony (Sb)-Dissolved	0.11		0.10	ug/L	24-FEB-20	6			
Arsenic (As)-Dissolved	0.34		0.10	ug/L	24-FEB-20	25			
Barium (Ba)-Dissolved	26.1		0.10	ug/L	24-FEB-20	1000			
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	24-FEB-20	4			
Boron (B)-Dissolved	52		10	ug/L	24-FEB-20	5000			
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	24-FEB-20	2.1			
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	24-FEB-20	50			
Cobalt (Co)-Dissolved	0.22		0.10	ug/L	24-FEB-20	3.8			
Copper (Cu)-Dissolved	0.87		0.20	ug/L	24-FEB-20	69			
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	24-FEB-20	10			
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	24-FEB-20	0.29			
Molybdenum (Mo)-Dissolved	2.07		0.050	ug/L	24-FEB-20	70			
Nickel (Ni)-Dissolved	3.09		0.50	ug/L	24-FEB-20	100			
Selenium (Se)-Dissolved	0.427		0.050	ug/L	24-FEB-20	10			
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	24-FEB-20	1.2			
Sodium (Na)-Dissolved	9560		500	ug/L	24-FEB-20	490000			
Thallium (Tl)-Dissolved	0.019		0.010	ug/L	24-FEB-20	2			
Uranium (U)-Dissolved	1.64		0.010	ug/L	24-FEB-20	20			
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	24-FEB-20	6.2			
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	24-FEB-20	890			
Speciated Metals									
Chromium, Hexavalent	<0.50		0.50	ug/L	24-FEB-20	25			
Organochlorine Pesticides									
Aldrin	<0.010		0.010	ug/L	26-FEB-20	0.35			
gamma-hexachlorocyclohexane	<0.015	DLM	0.015	ug/L	26-FEB-20	0.95			
a-chlordane	<0.040		0.040	ug/L	26-FEB-20				
Chlordane (Total)	<0.057		0.057	ug/L	26-FEB-20	0.06			
g-chlordane	<0.040		0.040	ug/L	26-FEB-20				
o,p-DDD	<0.030		0.030	ug/L	26-FEB-20				
pp-DDD	<0.030		0.030	ug/L	26-FEB-20				
Total DDD	<0.042		0.042	ug/L	26-FEB-20	1.8			
o,p-DDE	<0.0080		0.0080	ug/L	26-FEB-20				
pp-DDE	<0.0080		0.0080	ug/L	26-FEB-20				
Total DDE	<0.011		0.011	ug/L	26-FEB-20	10			
op-DDT	<0.030		0.030	ug/L	26-FEB-20				
pp-DDT	<0.030		0.030	ug/L	26-FEB-20				
Total DDT	<0.042		0.042	ug/L	26-FEB-20	0.05			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T8-Ground Water - All Types of Property Use

#1: T8-Ground Water - All Types of Property Use

ANALYTICAL GUIDELINE REPORT

BLUEMOUNTAIN PHASE II ESA-GW

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2419503-1	BH1									
Sampled By:	J.B on 19-FEB-20									
Matrix:	WATER						#1			
Organochlorine Pesticides										
	Dieldrin	<0.050		0.050	ug/L	26-FEB-20	0.35			
	Endosulfan I	<0.030		0.030	ug/L	26-FEB-20				
	Endosulfan II	<0.030		0.030	ug/L	26-FEB-20				
	Endosulfan (Total)	<0.042		0.042	ug/L	26-FEB-20	0.56			
	Endrin	<0.040		0.040	ug/L	26-FEB-20	0.36			
	Heptachlor	<0.010		0.010	ug/L	26-FEB-20	0.038			
	Heptachlor Epoxide	<0.010		0.010	ug/L	26-FEB-20	0.038			
	Hexachlorobenzene	<0.010		0.010	ug/L	26-FEB-20	1			
	Hexachlorobutadiene	<0.010		0.010	ug/L	26-FEB-20	0.44			
	Hexachloroethane	<0.010		0.010	ug/L	26-FEB-20	2.1			
	Methoxychlor	<0.150	RRR	0.15	ug/L	26-FEB-20	0.3			
	Surrogate: Decachlorobiphenyl	32.6	RRR	50-150	%	26-FEB-20				
	Surrogate: Tetrachloro-m-xylene	100.7		50-150	%	26-FEB-20				
L2419503-2	BH2									
Sampled By:	J.B on 19-FEB-20									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	0.652		0.0030	mS/cm	21-FEB-20				
	pH	7.82		0.10	pH units	21-FEB-20				
Anions and Nutrients										
	Chloride (Cl)	17.0		0.50	mg/L	24-FEB-20	790			
Cyanides										
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	21-FEB-20	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	24-FEB-20				
	Dissolved Metals Filtration Location	FIELD			No Unit	21-FEB-20				
	Antimony (Sb)-Dissolved	0.23		0.10	ug/L	24-FEB-20	6			
	Arsenic (As)-Dissolved	0.39		0.10	ug/L	24-FEB-20	25			
	Barium (Ba)-Dissolved	80.5		0.10	ug/L	24-FEB-20	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	24-FEB-20	4			
	Boron (B)-Dissolved	87		10	ug/L	24-FEB-20	5000			
	Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	24-FEB-20	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	24-FEB-20	50			
	Cobalt (Co)-Dissolved	0.27		0.10	ug/L	24-FEB-20	3.8			
	Copper (Cu)-Dissolved	0.41		0.20	ug/L	24-FEB-20	69			
	Lead (Pb)-Dissolved	<0.050		0.050	ug/L	24-FEB-20	10			
	Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	24-FEB-20	0.29			
	Molybdenum (Mo)-Dissolved	1.99		0.050	ug/L	24-FEB-20	70			
	Nickel (Ni)-Dissolved	0.86		0.50	ug/L	24-FEB-20	100			
	Selenium (Se)-Dissolved	0.339		0.050	ug/L	24-FEB-20	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	24-FEB-20	1.2			
	Sodium (Na)-Dissolved	26500		500	ug/L	24-FEB-20	490000			
	Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	24-FEB-20	2			
	Uranium (U)-Dissolved	1.43		0.010	ug/L	24-FEB-20	20			
	Vanadium (V)-Dissolved	<0.50		0.50	ug/L	24-FEB-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T8-Ground Water - All Types of Property Use

#1: T8-Ground Water - All Types of Property Use

ANALYTICAL GUIDELINE REPORT

BLUEMOUNTAIN PHASE II ESA-GW

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2419503-2 BH2									
Sampled By: J.B on 19-FEB-20									
Matrix: WATER						#1			
Dissolved Metals									
						6.2			
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	24-FEB-20	890			
Speciated Metals									
Chromium, Hexavalent	<0.50		0.50	ug/L	24-FEB-20	25			
Organochlorine Pesticides									
Aldrin	<0.010		0.010	ug/L	26-FEB-20	0.35			
gamma-hexachlorocyclohexane	<0.350	DLM	0.35	ug/L	26-FEB-20	0.95			
a-chlordane	<0.040		0.040	ug/L	26-FEB-20				
Chlordane (Total)	<0.057		0.057	ug/L	26-FEB-20	0.06			
g-chlordane	<0.040		0.040	ug/L	26-FEB-20				
o,p-DDD	<0.030		0.030	ug/L	26-FEB-20				
pp-DDD	<0.030		0.030	ug/L	26-FEB-20				
Total DDD	<0.042		0.042	ug/L	26-FEB-20	1.8			
o,p-DDE	<0.0080		0.0080	ug/L	26-FEB-20				
pp-DDE	<0.0080		0.0080	ug/L	26-FEB-20				
Total DDE	<0.011		0.011	ug/L	26-FEB-20	10			
op-DDT	<0.030		0.030	ug/L	26-FEB-20				
pp-DDT	<0.030		0.030	ug/L	26-FEB-20				
Total DDT	<0.042		0.042	ug/L	26-FEB-20	0.05			
Dieldrin	<0.050		0.050	ug/L	26-FEB-20	0.35			
Endosulfan I	<0.030		0.030	ug/L	26-FEB-20				
Endosulfan II	<0.030		0.030	ug/L	26-FEB-20				
Endosulfan (Total)	<0.042		0.042	ug/L	26-FEB-20	0.56			
Endrin	<0.040		0.040	ug/L	26-FEB-20	0.36			
Heptachlor	<0.010		0.010	ug/L	26-FEB-20	0.038			
Heptachlor Epoxide	<0.010		0.010	ug/L	26-FEB-20	0.038			
Hexachlorobenzene	<0.010		0.010	ug/L	26-FEB-20	1			
Hexachlorobutadiene	<0.010		0.010	ug/L	26-FEB-20	0.44			
Hexachloroethane	<0.010		0.010	ug/L	26-FEB-20	2.1			
Methoxychlor	<0.200	RRR	0.20	ug/L	26-FEB-20	0.3			
Surrogate: Decachlorobiphenyl	22.6	RRR	50-150	%	26-FEB-20				
Surrogate: Tetrachloro-m-xylene	83.1		50-150	%	26-FEB-20				
L2419503-3 BH3									
Sampled By: J.B on 19-FEB-20									
Matrix: WATER						#1			
Physical Tests									
Conductivity	0.719		0.0030	mS/cm	21-FEB-20				
pH	7.60		0.10	pH units	21-FEB-20				
Anions and Nutrients									
Chloride (Cl)	7.59		0.50	mg/L	24-FEB-20	790			
Cyanides									
Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	21-FEB-20	52			
Dissolved Metals									
Dissolved Mercury Filtration Location	FIELD			No Unit	24-FEB-20				
Dissolved Metals Filtration Location	FIELD			No Unit	21-FEB-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T8-Ground Water - All Types of Property Use

#1: T8-Ground Water - All Types of Property Use

ANALYTICAL GUIDELINE REPORT

BLUEMOUNTAIN PHASE II ESA-GW

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2419503-3	BH3									
Sampled By:	J.B on 19-FEB-20									
Matrix:	WATER						#1			
Dissolved Metals										
	Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	24-FEB-20	6			
	Arsenic (As)-Dissolved	0.72		0.10	ug/L	24-FEB-20	25			
	Barium (Ba)-Dissolved	51.2		0.10	ug/L	24-FEB-20	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	24-FEB-20	4			
	Boron (B)-Dissolved	23		10	ug/L	24-FEB-20	5000			
	Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	24-FEB-20	2.1			
	Chromium (Cr)-Dissolved	0.73		0.50	ug/L	24-FEB-20	50			
	Cobalt (Co)-Dissolved	0.48		0.10	ug/L	24-FEB-20	3.8			
	Copper (Cu)-Dissolved	1.91		0.20	ug/L	24-FEB-20	69			
	Lead (Pb)-Dissolved	0.818		0.050	ug/L	24-FEB-20	10			
	Mercury (Hg)-Dissolved	0.0074		0.0050	ug/L	24-FEB-20	0.29			
	Molybdenum (Mo)-Dissolved	0.619		0.050	ug/L	24-FEB-20	70			
	Nickel (Ni)-Dissolved	1.61		0.50	ug/L	24-FEB-20	100			
	Selenium (Se)-Dissolved	0.551		0.050	ug/L	24-FEB-20	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	24-FEB-20	1.2			
	Sodium (Na)-Dissolved	15000		500	ug/L	24-FEB-20	490000			
	Thallium (Tl)-Dissolved	0.012		0.010	ug/L	24-FEB-20	2			
	Uranium (U)-Dissolved	3.11		0.010	ug/L	24-FEB-20	20			
	Vanadium (V)-Dissolved	1.29		0.50	ug/L	24-FEB-20	6.2			
	Zinc (Zn)-Dissolved	2.6		1.0	ug/L	24-FEB-20	890			
Speciated Metals										
	Chromium, Hexavalent	<0.50		0.50	ug/L	24-FEB-20	25			
Organochlorine Pesticides										
	Aldrin	<0.010		0.010	ug/L	26-FEB-20	0.35			
	gamma-hexachlorocyclohexane	<0.200	DLM	0.20	ug/L	26-FEB-20	0.95			
	a-chlordane	<0.040		0.040	ug/L	26-FEB-20				
	Chlordane (Total)	<0.057		0.057	ug/L	26-FEB-20	0.06			
	g-chlordane	<0.040		0.040	ug/L	26-FEB-20				
	o,p-DDD	<0.030		0.030	ug/L	26-FEB-20				
	pp-DDD	<0.030		0.030	ug/L	26-FEB-20				
	Total DDD	<0.042		0.042	ug/L	26-FEB-20	1.8			
	o,p-DDE	<0.0080		0.0080	ug/L	26-FEB-20				
	pp-DDE	<0.0080		0.0080	ug/L	26-FEB-20				
	Total DDE	<0.011		0.011	ug/L	26-FEB-20	10			
	op-DDT	<0.030		0.030	ug/L	26-FEB-20				
	pp-DDT	<0.030		0.030	ug/L	26-FEB-20				
	Total DDT	<0.042		0.042	ug/L	26-FEB-20	0.05			
	Dieldrin	<0.050		0.050	ug/L	26-FEB-20	0.35			
	Endosulfan I	<0.030		0.030	ug/L	26-FEB-20				
	Endosulfan II	<0.030		0.030	ug/L	26-FEB-20				
	Endosulfan (Total)	<0.042		0.042	ug/L	26-FEB-20	0.56			
	Endrin	<0.040		0.040	ug/L	26-FEB-20	0.36			
	Heptachlor	<0.010		0.010	ug/L	26-FEB-20	0.038			
	Heptachlor Epoxide	<0.010		0.010	ug/L	26-FEB-20	0.038			
	Hexachlorobenzene	<0.010		0.010	ug/L	26-FEB-20	1			
	Hexachlorobutadiene	<0.010		0.010	ug/L	26-FEB-20	0.44			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T8-Ground Water - All Types of Property Use

#1: T8-Ground Water - All Types of Property Use

ANALYTICAL GUIDELINE REPORT

BLUEMOUNTAIN PHASE II ESA-GW

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2419503-3	BH3									
Sampled By:	J.B on 19-FEB-20									
Matrix:	WATER						#1			
Organochlorine Pesticides										
	Hexachloroethane	<0.010		0.010	ug/L	26-FEB-20	2.1			
	Methoxychlor	<0.150	RRR	0.15	ug/L	26-FEB-20	0.3			
	Surrogate: Decachlorobiphenyl	32.2	RRR	50-150	%	26-FEB-20				
	Surrogate: Tetrachloro-m-xylene	98.7		50-150	%	26-FEB-20				
L2419503-4	BH108									
Sampled By:	J.B on 19-FEB-20									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	2.35		0.0030	mS/cm	21-FEB-20				
	pH	7.46		0.10	pH units	21-FEB-20				
Anions and Nutrients										
	Chloride (Cl)	465	DLHC	2.5	mg/L	24-FEB-20	790			
Cyanides										
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	21-FEB-20	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	24-FEB-20				
	Dissolved Metals Filtration Location	FIELD			No Unit	21-FEB-20				
	Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	24-FEB-20	6			
	Arsenic (As)-Dissolved	0.28		0.10	ug/L	24-FEB-20	25			
	Barium (Ba)-Dissolved	111		0.10	ug/L	24-FEB-20	1000			
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	24-FEB-20	4			
	Boron (B)-Dissolved	48		10	ug/L	24-FEB-20	5000			
	Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	24-FEB-20	2.1			
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	24-FEB-20	50			
	Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	24-FEB-20	3.8			
	Copper (Cu)-Dissolved	1.51		0.20	ug/L	24-FEB-20	69			
	Lead (Pb)-Dissolved	<0.050		0.050	ug/L	24-FEB-20	10			
	Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	24-FEB-20	0.29			
	Molybdenum (Mo)-Dissolved	0.959		0.050	ug/L	24-FEB-20	70			
	Nickel (Ni)-Dissolved	1.86		0.50	ug/L	24-FEB-20	100			
	Selenium (Se)-Dissolved	0.083		0.050	ug/L	24-FEB-20	10			
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	24-FEB-20	1.2			
	Sodium (Na)-Dissolved	232000	DLHC	500	ug/L	21-FEB-20	490000			
	Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	24-FEB-20	2			
	Uranium (U)-Dissolved	1.92		0.010	ug/L	24-FEB-20	20			
	Vanadium (V)-Dissolved	0.63		0.50	ug/L	24-FEB-20	6.2			
	Zinc (Zn)-Dissolved	1.5		1.0	ug/L	24-FEB-20	890			
Speciated Metals										
	Chromium, Hexavalent	<0.50		0.50	ug/L	24-FEB-20	25			
Organochlorine Pesticides										
	Aldrin	<0.010		0.010	ug/L	26-FEB-20	0.35			
	gamma-hexachlorocyclohexane	<0.010		0.010	ug/L	26-FEB-20	0.95			
	a-chlordane	<0.040		0.040	ug/L	26-FEB-20				
	Chlordane (Total)	<0.057		0.057	ug/L	26-FEB-20	0.06			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T8-Ground Water - All Types of Property Use

#1: T8-Ground Water - All Types of Property Use

ANALYTICAL GUIDELINE REPORT

BLUEMOUNTAIN PHASE II ESA-GW

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2419503-4	BH108									
Sampled By:	J.B on 19-FEB-20									
Matrix:	WATER						#1			
Organochlorine Pesticides										
	g-chlordane	<0.040		0.040	ug/L	26-FEB-20				
	o,p-DDD	<0.030		0.030	ug/L	26-FEB-20				
	pp-DDD	<0.030		0.030	ug/L	26-FEB-20				
	Total DDD	<0.042		0.042	ug/L	26-FEB-20	1.8			
	o,p-DDE	<0.0080		0.0080	ug/L	26-FEB-20				
	pp-DDE	<0.0080		0.0080	ug/L	26-FEB-20				
	Total DDE	<0.011		0.011	ug/L	26-FEB-20	10			
	op-DDT	<0.030		0.030	ug/L	26-FEB-20				
	pp-DDT	<0.030		0.030	ug/L	26-FEB-20				
	Total DDT	<0.042		0.042	ug/L	26-FEB-20	0.05			
	Dieldrin	<0.050		0.050	ug/L	26-FEB-20	0.35			
	Endosulfan I	<0.030		0.030	ug/L	26-FEB-20				
	Endosulfan II	<0.030		0.030	ug/L	26-FEB-20				
	Endosulfan (Total)	<0.042		0.042	ug/L	26-FEB-20	0.56			
	Endrin	<0.040		0.040	ug/L	26-FEB-20	0.36			
	Heptachlor	<0.010		0.010	ug/L	26-FEB-20	0.038			
	Heptachlor Epoxide	<0.010		0.010	ug/L	26-FEB-20	0.038			
	Hexachlorobenzene	<0.010		0.010	ug/L	26-FEB-20	1			
	Hexachlorobutadiene	<0.010		0.010	ug/L	26-FEB-20	0.44			
	Hexachloroethane	<0.010		0.010	ug/L	26-FEB-20	2.1			
	Methoxychlor	<0.050		0.050	ug/L	26-FEB-20	0.3			
	Surrogate: Decachlorobiphenyl	72.9		50-150	%	26-FEB-20				
	Surrogate: Tetrachloro-m-xylene	99.0		50-150	%	26-FEB-20				
L2419503-5	BH110									
Sampled By:	J.B on 19-FEB-20									
Matrix:	WATER						#1			
Physical Tests										
	Conductivity	2.01		0.0030	mS/cm	21-FEB-20				
	pH	8.12		0.10	pH units	21-FEB-20				
Anions and Nutrients										
	Chloride (Cl)	298	DLHC	2.5	mg/L	24-FEB-20	790			
Cyanides										
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	21-FEB-20	52			
Dissolved Metals										
	Dissolved Mercury Filtration Location	FIELD			No Unit	24-FEB-20				
	Dissolved Metals Filtration Location	FIELD			No Unit	21-FEB-20				
	Antimony (Sb)-Dissolved	<1.0	DLHC	1.0	ug/L	21-FEB-20	6			
	Arsenic (As)-Dissolved	1.3	DLHC	1.0	ug/L	21-FEB-20	25			
	Barium (Ba)-Dissolved	38.4	DLHC	1.0	ug/L	21-FEB-20	1000			
	Beryllium (Be)-Dissolved	<1.0	DLHC	1.0	ug/L	21-FEB-20	4			
	Boron (B)-Dissolved	110	DLHC	100	ug/L	21-FEB-20	5000			
	Cadmium (Cd)-Dissolved	<0.050	DLHC	0.050	ug/L	21-FEB-20	2.1			
	Chromium (Cr)-Dissolved	<5.0	DLHC	5.0	ug/L	21-FEB-20	50			
	Cobalt (Co)-Dissolved	<1.0	DLHC	1.0	ug/L	21-FEB-20	3.8			
	Copper (Cu)-Dissolved	6.4	DLHC	2.0	ug/L	21-FEB-20	69			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T8-Ground Water - All Types of Property Use

#1: T8-Ground Water - All Types of Property Use

ANALYTICAL GUIDELINE REPORT

BLUEMOUNTAIN PHASE II ESA-GW

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
L2419503-5	BH110									
Sampled By:	J.B on 19-FEB-20									
Matrix:	WATER						#1			
Dissolved Metals										
	Lead (Pb)-Dissolved	<0.50	DLHC	0.50	ug/L	21-FEB-20	10			
	Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	24-FEB-20	0.29			
	Molybdenum (Mo)-Dissolved	25.1	DLHC	0.50	ug/L	21-FEB-20	70			
	Nickel (Ni)-Dissolved	<5.0	DLHC	5.0	ug/L	21-FEB-20	100			
	Selenium (Se)-Dissolved	<0.50	DLHC	0.50	ug/L	21-FEB-20	10			
	Silver (Ag)-Dissolved	<0.50	DLHC	0.50	ug/L	21-FEB-20	1.2			
	Sodium (Na)-Dissolved	385000	DLHC	500	ug/L	21-FEB-20	490000			
	Thallium (Tl)-Dissolved	<0.10	DLHC	0.10	ug/L	21-FEB-20	2			
	Uranium (U)-Dissolved	3.24	DLHC	0.10	ug/L	21-FEB-20	20			
	Vanadium (V)-Dissolved	<5.0	DLHC	5.0	ug/L	21-FEB-20	6.2			
	Zinc (Zn)-Dissolved	<10	DLHC	10	ug/L	21-FEB-20	890			
Speciated Metals										
	Chromium, Hexavalent	<0.50		0.50	ug/L	24-FEB-20	25			
Organochlorine Pesticides										
	Aldrin	<0.010		0.010	ug/L	26-FEB-20	0.35			
	gamma-hexachlorocyclohexane	<0.010		0.010	ug/L	26-FEB-20	0.95			
	a-chlordane	<0.040		0.040	ug/L	26-FEB-20				
	Chlordane (Total)	<0.057		0.057	ug/L	26-FEB-20	0.06			
	g-chlordane	<0.040		0.040	ug/L	26-FEB-20				
	o,p-DDD	<0.030		0.030	ug/L	26-FEB-20				
	pp-DDD	<0.030		0.030	ug/L	26-FEB-20				
	Total DDD	<0.042		0.042	ug/L	26-FEB-20	1.8			
	o,p-DDE	<0.0080		0.0080	ug/L	26-FEB-20				
	pp-DDE	<0.0080		0.0080	ug/L	26-FEB-20				
	Total DDE	<0.011		0.011	ug/L	26-FEB-20	10			
	op-DDT	<0.030		0.030	ug/L	26-FEB-20				
	pp-DDT	<0.030		0.030	ug/L	26-FEB-20				
	Total DDT	<0.042		0.042	ug/L	26-FEB-20	0.05			
	Dieldrin	<0.050		0.050	ug/L	26-FEB-20	0.35			
	Endosulfan I	<0.030		0.030	ug/L	26-FEB-20				
	Endosulfan II	<0.030		0.030	ug/L	26-FEB-20				
	Endosulfan (Total)	<0.042		0.042	ug/L	26-FEB-20	0.56			
	Endrin	<0.040		0.040	ug/L	26-FEB-20	0.36			
	Heptachlor	<0.010		0.010	ug/L	26-FEB-20	0.038			
	Heptachlor Epoxide	<0.010		0.010	ug/L	26-FEB-20	0.038			
	Hexachlorobenzene	<0.010		0.010	ug/L	26-FEB-20	1			
	Hexachlorobutadiene	<0.010		0.010	ug/L	26-FEB-20	0.44			
	Hexachloroethane	<0.010		0.010	ug/L	26-FEB-20	2.1			
	Methoxychlor	<0.050		0.050	ug/L	26-FEB-20	0.3			
	Surrogate: Decachlorobiphenyl	73.6		50-150	%	26-FEB-20				
	Surrogate: Tetrachloro-m-xylene	97.3		50-150	%	26-FEB-20				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

T8-Ground Water - All Types of Property Use

#1: T8-Ground Water - All Types of Property Use

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
RRR	Refer to Report Remarks for issues regarding this analysis

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
CHLORDANE-T-CALC-WT	Water	Chlordane Total sums	CALCULATION

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

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

CN-WAD-R511-WT	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

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

CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

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

DDD-DDE-DDT-CALC-WT	Water	DDD, DDE, DDT sums	CALCULATION

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

EC-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

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

EC-SCREEN-WT	Water	Conductivity Screen (Internal Use Only)	APHA 2510

Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.

ENDOSULFAN-T-CALC-WT	Water	Endosulfan Total sums	CALCULATION

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

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

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

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

Reference Information

PEST-OC-511-WT	Water	OC Pesticides-O. Reg 153/04 (July 2011)	SW846 8270 (511)

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

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

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

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

Chain of Custody numbers:

17-619842

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

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

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

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

Quality Control Report

Workorder: L2419503 Report Date: 27-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Contact: JARED BARCLAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT	**Water**							
Batch R5004968								
WG3280528-4 DUP		**WG3280528-3**						
Chloride (Cl)		17.1	17.1		mg/L	0.2	20	24-FEB-20
WG3280528-2 LCS								
Chloride (Cl)			99.3		%		90-110	24-FEB-20
WG3280528-1 MB								
Chloride (Cl)			<0.50		mg/L		0.5	24-FEB-20
WG3280528-5 MS		**WG3280528-3**						
Chloride (Cl)			101.1		%		75-125	24-FEB-20
CN-WAD-R511-WT	**Water**							
Batch R5000350								
WG3279458-3 DUP		**L2419503-1**						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	21-FEB-20
WG3279458-2 LCS								
Cyanide, Weak Acid Diss			99.3		%		80-120	21-FEB-20
WG3279458-1 MB								
Cyanide, Weak Acid Diss			<2.0		ug/L		2	21-FEB-20
WG3279458-4 MS		**L2419503-1**						
Cyanide, Weak Acid Diss			85.8		%		75-125	21-FEB-20
CR-CR6-IC-R511-WT	**Water**							
Batch R5006651								
WG3280705-4 DUP		**WG3280705-3**						
Chromium, Hexavalent		78.3	76.6		ug/L	2.2	20	24-FEB-20
WG3280705-2 LCS								
Chromium, Hexavalent			97.8		%		80-120	24-FEB-20
WG3280705-1 MB								
Chromium, Hexavalent			<0.50		ug/L		0.5	24-FEB-20
WG3280705-5 MS		**WG3280705-3**						
Chromium, Hexavalent			N/A	MS-B	%		-	24-FEB-20
EC-R511-WT	**Water**							
Batch R5000772								
WG3279521-4 DUP		**WG3279521-3**						
Conductivity		0.590	0.590		mS/cm	0.0	10	21-FEB-20
WG3279521-2 LCS								
Conductivity			101.9		%		90-110	21-FEB-20
WG3279521-1 MB								
Conductivity			<0.0030		mS/cm		0.003	21-FEB-20
HG-D-UG/L-CVAA-WT	**Water**							

Quality Control Report

Workorder: L2419503 Report Date: 27-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Contact: JARED BARCLAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT	**Water**							
Batch R5002619								
WG3280365-3 DUP		**L2419503-1**						
Mercury (Hg)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	24-FEB-20
WG3280365-2 LCS								
Mercury (Hg)-Dissolved			106.0		%		80-120	24-FEB-20
WG3280365-1 MB								
Mercury (Hg)-Dissolved			<0.0050		ug/L		0.005	24-FEB-20
WG3280365-4 MS		**L2419503-2**						
Mercury (Hg)-Dissolved			117.7		%		70-130	24-FEB-20
MET-D-UG/L-MS-WT	**Water**							
Batch R4999767								
WG3279806-4 DUP		**WG3279806-3**						
Antimony (Sb)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	21-FEB-20
Arsenic (As)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	21-FEB-20
Barium (Ba)-Dissolved		116	117		ug/L	1.0	20	21-FEB-20
Beryllium (Be)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	21-FEB-20
Boron (B)-Dissolved		<100	<100	RPD-NA	ug/L	N/A	20	21-FEB-20
Cadmium (Cd)-Dissolved		0.052	<0.050	RPD-NA	ug/L	N/A	20	21-FEB-20
Chromium (Cr)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	21-FEB-20
Cobalt (Co)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	21-FEB-20
Copper (Cu)-Dissolved		5.0	5.4		ug/L	7.3	20	21-FEB-20
Lead (Pb)-Dissolved		1.27	1.38		ug/L	8.2	20	21-FEB-20
Molybdenum (Mo)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	21-FEB-20
Nickel (Ni)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	21-FEB-20
Selenium (Se)-Dissolved		1.24	1.42		ug/L	14	20	21-FEB-20
Silver (Ag)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	21-FEB-20
Sodium (Na)-Dissolved		540000	545000		ug/L	0.8	20	21-FEB-20
Thallium (Tl)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	21-FEB-20
Uranium (U)-Dissolved		0.46	0.46		ug/L	0.8	20	21-FEB-20
Vanadium (V)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	21-FEB-20
Zinc (Zn)-Dissolved		15	15		ug/L	0.1	20	21-FEB-20
WG3279806-2 LCS								
Antimony (Sb)-Dissolved			95.0		%		80-120	21-FEB-20
Arsenic (As)-Dissolved			97.0		%		80-120	21-FEB-20
Barium (Ba)-Dissolved			101.5		%		80-120	21-FEB-20
Beryllium (Be)-Dissolved			90.8		%		80-120	21-FEB-20

Quality Control Report

Workorder: L2419503 Report Date: 27-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Contact: JARED BARCLAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch	**R4999767**							
WG3279806-2	**LCS**							
Boron (B)-Dissolved			93.1		%		80-120	21-FEB-20
Cadmium (Cd)-Dissolved			97.4		%		80-120	21-FEB-20
Chromium (Cr)-Dissolved			97.1		%		80-120	21-FEB-20
Cobalt (Co)-Dissolved			94.7		%		80-120	21-FEB-20
Copper (Cu)-Dissolved			91.6		%		80-120	21-FEB-20
Lead (Pb)-Dissolved			96.9		%		80-120	21-FEB-20
Molybdenum (Mo)-Dissolved			94.3		%		80-120	21-FEB-20
Nickel (Ni)-Dissolved			96.0		%		80-120	21-FEB-20
Selenium (Se)-Dissolved			94.7		%		80-120	21-FEB-20
Silver (Ag)-Dissolved			99.1		%		80-120	21-FEB-20
Sodium (Na)-Dissolved			98.6		%		80-120	21-FEB-20
Thallium (Tl)-Dissolved			95.1		%		80-120	21-FEB-20
Uranium (U)-Dissolved			91.4		%		80-120	21-FEB-20
Vanadium (V)-Dissolved			99.8		%		80-120	21-FEB-20
Zinc (Zn)-Dissolved			92.9		%		80-120	21-FEB-20
WG3279806-1	**MB**							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	21-FEB-20
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	21-FEB-20
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	21-FEB-20
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	21-FEB-20
Boron (B)-Dissolved			<10		ug/L		10	21-FEB-20
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	21-FEB-20
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	21-FEB-20
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	21-FEB-20
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	21-FEB-20
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	21-FEB-20
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	21-FEB-20
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	21-FEB-20
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	21-FEB-20
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	21-FEB-20
Sodium (Na)-Dissolved			<50		ug/L		50	21-FEB-20
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	21-FEB-20
Uranium (U)-Dissolved			<0.010		ug/L		0.01	21-FEB-20
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	21-FEB-20

Quality Control Report

Workorder: L2419503 Report Date: 27-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Contact: JARED BARCLAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch	**R4999767**							
WG3279806-1	**MB**							
Zinc (Zn)-Dissolved			<1.0		ug/L		1	21-FEB-20
WG3279806-5	**MS**	**WG3279806-3**						
Antimony (Sb)-Dissolved			106.9		%		70-130	21-FEB-20
Arsenic (As)-Dissolved			109.5		%		70-130	21-FEB-20
Barium (Ba)-Dissolved			N/A	MS-B	%		-	21-FEB-20
Beryllium (Be)-Dissolved			105.1		%		70-130	21-FEB-20
Cadmium (Cd)-Dissolved			101.8		%		70-130	21-FEB-20
Chromium (Cr)-Dissolved			93.0		%		70-130	21-FEB-20
Cobalt (Co)-Dissolved			102.4		%		70-130	21-FEB-20
Lead (Pb)-Dissolved			100.1		%		70-130	21-FEB-20
Molybdenum (Mo)-Dissolved			107.5		%		70-130	21-FEB-20
Nickel (Ni)-Dissolved			98.5		%		70-130	21-FEB-20
Selenium (Se)-Dissolved			102.7		%		70-130	21-FEB-20
Silver (Ag)-Dissolved			105.4		%		70-130	21-FEB-20
Sodium (Na)-Dissolved			N/A	MS-B	%		-	21-FEB-20
Thallium (Tl)-Dissolved			102.2		%		70-130	21-FEB-20
Uranium (U)-Dissolved			N/A	MS-B	%		-	21-FEB-20
Vanadium (V)-Dissolved			111.1		%		70-130	21-FEB-20
PEST-OC-511-WT	**Water**							
Batch	**R5007266**							
WG3280322-2	**LCS**							
Aldrin			105.5		%		50-140	25-FEB-20
a-chlordane			81.6		%		50-140	25-FEB-20
g-chlordane			87.5		%		50-140	25-FEB-20
o,p-DDD			85.7		%		50-140	25-FEB-20
pp-DDD			78.5		%		50-140	25-FEB-20
o,p-DDE			83.5		%		50-140	25-FEB-20
pp-DDE			78.1		%		50-140	25-FEB-20
op-DDT			81.9		%		50-140	25-FEB-20
pp-DDT			66.9		%		50-140	25-FEB-20
Dieldrin			85.1		%		50-140	25-FEB-20
Endosulfan I			77.4		%		50-140	25-FEB-20
Endosulfan II			85.9		%		50-140	25-FEB-20
Endrin			77.7		%		50-140	25-FEB-20

Quality Control Report

Workorder: L2419503 Report Date: 27-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Contact: JARED BARCLAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT	**Water**							
Batch	**R5007266**							
WG3280322-2	**LCS**							
gamma-hexachlorocyclohexane			94.7		%		50-140	25-FEB-20
Heptachlor			77.6		%		50-140	25-FEB-20
Heptachlor Epoxide			73.9		%		50-140	25-FEB-20
Hexachlorobenzene			100.8		%		40-130	25-FEB-20
Hexachlorobutadiene			94.8		%		40-130	25-FEB-20
Hexachloroethane			90.2		%		40-130	25-FEB-20
Methoxychlor			59.7		%		50-140	25-FEB-20
WG3280322-1	**MB**							
Aldrin			<0.010		ug/L		0.01	26-FEB-20
a-chlordane			<0.040		ug/L		0.04	26-FEB-20
g-chlordane			<0.040		ug/L		0.04	26-FEB-20
o,p-DDD			<0.030		ug/L		0.03	26-FEB-20
pp-DDD			<0.030		ug/L		0.03	26-FEB-20
o,p-DDE			<0.0080		ug/L		0.008	26-FEB-20
pp-DDE			<0.0080		ug/L		0.008	26-FEB-20
op-DDT			<0.030		ug/L		0.03	26-FEB-20
pp-DDT			<0.030		ug/L		0.03	26-FEB-20
Dieldrin			<0.050		ug/L		0.05	26-FEB-20
Endosulfan I			<0.030		ug/L		0.03	26-FEB-20
Endosulfan II			<0.030		ug/L		0.03	26-FEB-20
Endrin			<0.040		ug/L		0.04	26-FEB-20
gamma-hexachlorocyclohexane			<0.010		ug/L		0.01	26-FEB-20
Heptachlor			<0.010		ug/L		0.01	26-FEB-20
Heptachlor Epoxide			<0.010		ug/L		0.01	26-FEB-20
Hexachlorobenzene			<0.010		ug/L		0.01	26-FEB-20
Hexachlorobutadiene			<0.010		ug/L		0.01	26-FEB-20
Hexachloroethane			<0.010		ug/L		0.01	26-FEB-20
Methoxychlor			<0.050		ug/L		0.05	26-FEB-20
Surrogate: Decachlorobiphenyl			62.2		%		50-150	26-FEB-20
Surrogate: Tetrachloro-m-xylene			89.2		%		50-150	26-FEB-20
PH-WT	**Water**							

Quality Control Report

Workorder: L2419503 Report Date: 27-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1

Contact: JARED BARCLAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT	**Water**							
Batch R5000772								
WG3279521-4 DUP		**WG3279521-3**						
pH		7.90	7.96	J	pH units	0.06	0.2	21-FEB-20
WG3279521-2 LCS								
pH			7.00		pH units		6.9-7.1	21-FEB-20

Quality Control Report

Workorder: L2419503 Report Date: 27-FEB-20

Client: CHUNG AND VANDER DOELEN
311 VICTORIA ST. N.
KITCHENER ON N2H 5E1
Contact: JARED BARCLAY

Legend:

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

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

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

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

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

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

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2419503-COFC

COC Number: 17 - 619842

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	CVD
Contact:	JARED BARCLAY
Phone:	
Company address below will appear on the final report	
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To [ ] YES [ ] NO
	Copy of Invoice with Report [ ] YES [ ] NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: [x] PDF [ ] EXCEL [ ] EDD (DIGITAL)
Quality Control (QC) Report with Report [ ] YES [ ] NO
[x] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [x] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax
Email 2
Email 3

Invoice Distribution

Select Invoice Distribution: [ ] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax
Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [x] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]

EMERGENCY: 1 Business day [E-100%] [ ]; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: [redacted]
For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #:
Job #: BLUE MOUNTAIN PHASE II ESA-GW
PO / AFE: E19858
LSD:

[redacted] (client use)
AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2419503
ALS Contact: E.H
Sampler: J.B

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	METALS & INORGANICS	OC PESTICIDES	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	BH 1	FEB-19		GW	✓	✓			
	BH 2	↓		↓	✓	✓			
	BH 3				✓	✓			
	BH 108				✓	✓			
	BH 110				✓	✓			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [x] NO
Are samples for human consumption/ use? [ ] YES [x] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

O.REG 153/04: TABLE 8 (R/P/I/I/C/C)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [ ] Ice Cubes [x] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				7.5			

SHIPMENT RELEASE (client use)

Released by: Jared Barclay Date: FEB21-2020 Time:

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Feb 21/20 Time: 11:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

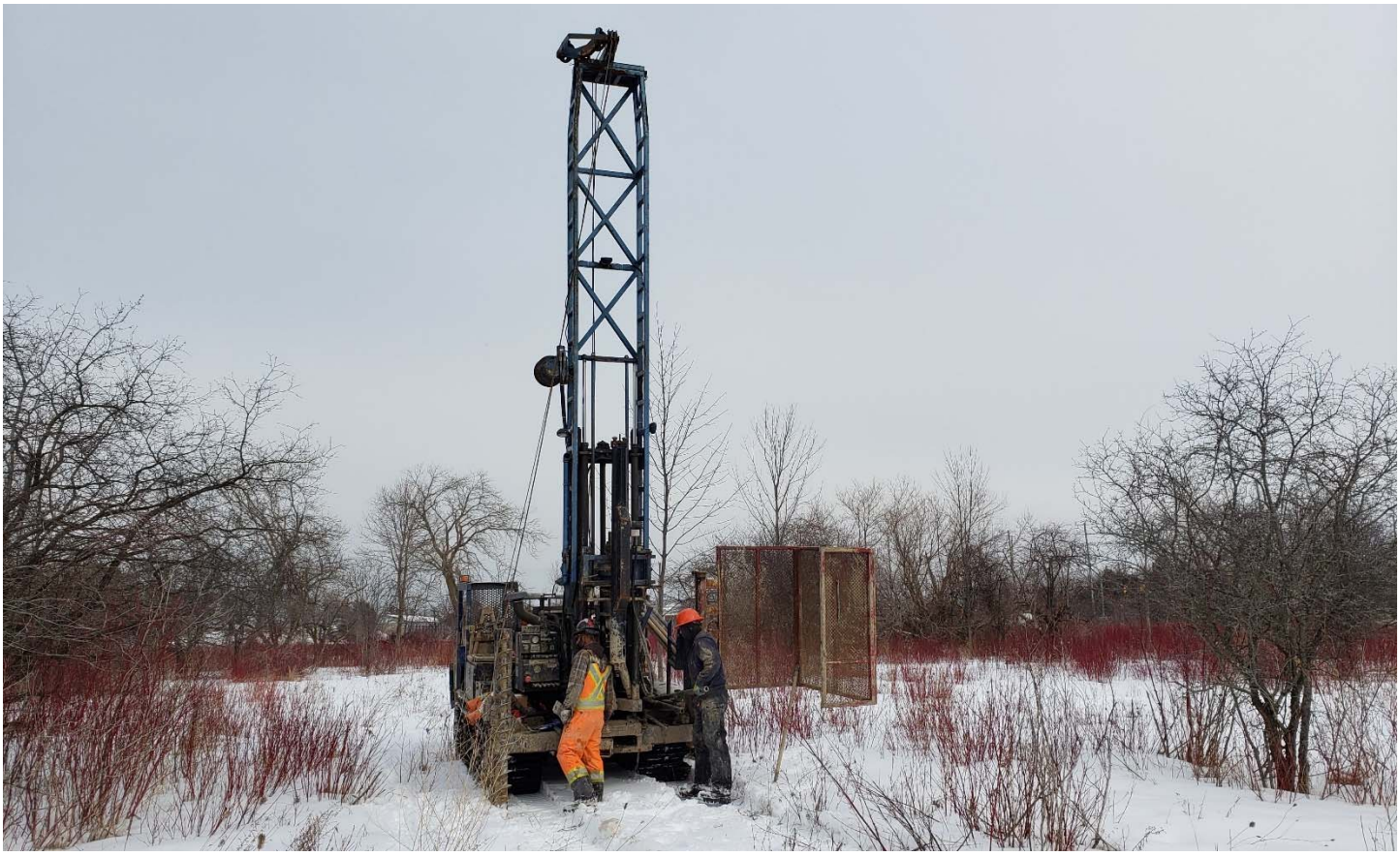
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

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

APPENDIX E
SITE PHOTOGRAPHS

Photograph 1: View of drilling activities at the location of former orchards at the eastern portion of the Site.

Photograph 2: View of the installation of borehole BH1 located in the orchard area at the east side of the Site.



Photograph 3: View of drilling activities at the location of former orchards at the eastern portion of the Site.

Photograph 4: View of the installation of borehole BH3 located in the orchard area at the north side of the Site.

Photograph 5: View of the installation of borehole BH2 located in the orchard area at the east side of the Site.

Photograph 6: View of drilling activities at the location of former orchards at the eastern portion of the Site.

APPENDIX F
QUALIFICATIONS OF ASSESSOR

CHUNG & VANDER DOELEN
ENGINEERING LTD.

Jared Barclay, B.A. (Hons)
Environmental Scientist
jared.barclay@cvdengineering.com

Professional Experience

Mr. Barclay has been involved in a range of projects across southern Ontario, including Phase One and Phase Two Environmental Site Assessments, contaminated site remediation and Record of Site Conditions.

Education

Honours Bachelor of Arts|
Wilfrid Laurier University|
2004

Languages

English |

EXPERIENCE

Environmental Assessments

Mr. Barclay has over 15 years experience in environmental assessment and inspection, providing and overseeing site investigation and remediation services, for the industrial, commercial and municipal sectors. This involvement includes conducting and preparing O.Reg. 153/04 Phase One and Phase Two Environmental Site Assessments (ESA) and implementing and monitoring of remedial programs for contaminated sites for all types of properties across southern Ontario. Mr. Barclay has also collaborated on several successful Site-Specific Risk Assessments to support Record of Site Conditions filed with the Ministry of the Environment, Conservation and Parks (MECP).

Project Management

Mr. Barclay has been responsible for project management of environmental projects at Chung & Vander Doelen Engineering Ltd. since 2007.

EMPLOYMENT RECORD

***Environmental Scientist,* Chung & Vander Doelen Engineering**
Kitchener, ON | 2007 – Present

Hydro-Met Research Technician, Cold Regions Research Centre
Wilfrid Laurier University, Waterloo, ON | 2006 – 2007

Environmental Planning Technician, Grey Sauble Conservation Authority
Owen Sound, ON | 2005-2006