

# Phase Two Environmental Site Assessment

## For Records of Site Condition

**5619 Murray Street  
5643 Murray Street  
6285 Main Street  
6289 Main Street  
Former (now closed) municipal road  
allowance, Murray Street  
Niagara Falls, Ontario**

**October 19, 2021**



**Prepared for**

**Zeljko Holdings Limited  
4728 Dorchester Road,  
Unit 11B, 2nd Floor  
Niagara Falls, ON  
L2E 7H9**



**CEGP Consultants Ltd.**

29 Larkspur Drive  
Markham, L6B 0N1  
<https://cegp.ca>  
647 987 1384



## TABLE OF CONTENTS

<b>1. Executive Summary</b>	<b>7</b>
<b>2. Introduction</b>	<b>9</b>
(i) Site Description	9
(ii) Property Ownership	11
(iii) Current and Proposed Future Uses	11
(iv) Applicable Site Condition Standard	11
<b>3. Background Information</b>	<b>12</b>
(i) Physical Setting	12
(ii) Past Investigations	13
<b>4. Scope of the Investigation</b>	<b>14</b>
(i) Overview of Site Investigation	14
(ii) Media Investigated	14
(iii) Phase One Conceptual Site Model	14
(iv) Deviations From Sampling and Analysis Plan	21
(v) Impediments	21
<b>5. Investigation Method</b>	<b>23</b>
(i) General	23
(ii) Drilling and Excavating	23
(iii) Soil: Sampling	23
(iv) Field Screening Measurements	25
(v) Ground Water: Monitoring Well Installation	26
(vi) Ground Water: Field Measurement of Water Quality Parameters	26
(vii) Ground Water: Sampling	26
(viii) Sediment: Sampling	26
(ix) Analytical Testing	27
(x) Residue Management Procedures	27
(xi) Elevation Surveying	27
(xii) Quality Assurance and Quality Control Measures	27
<b>6. Review and Evaluation</b>	<b>29</b>
(i) Geology	29
(ii) Ground Water: Elevations and Flow Direction	30
(iii) Ground Water: Hydraulic Gradients	30
(iv) Fine-Medium Soil Texture	31



(v) Soil: Field Screening	31
(vi) Soil Quality	32
(vii) Ground Water Quality	34
(viii) Sediment Quality	34
(ix) Quality Assurance and Quality Control Results	35
(x) Phase Two Conceptual Site Model	38
<b>7. Conclusions</b>	<b>39</b>
(i) Signatures and Limitations	40
<b>8. References</b>	<b>42</b>
<b>9. Figures and Tables</b>	<b>43</b>
(a) Tables	43
(i) Monitoring Well Installation	43
(ii) Water Levels	43
(iii) LNAPLs and DNAPLs	43
(iv) Soil Data	43
(v) Ground Water Data	43
(vi) Sediment Data	44
(vii) Ground Water, Sediment and Soil Maximum Concentration Data	44
(b) Figures	44
(i) Areas of Natural Significance and Water Bodies	44
(ii) Property Before Actions Taken to Reduce the Concentration of Contaminants	45
(iii) Interpreted Contours of Ground Water Elevations	45
(iv) Contaminants in Soil Before Actions Taken to Reduce the Concentration of Contaminants	45
(v) Contaminants in Ground Water Before Actions Taken to Reduce the Concentration of Contaminants	46
(vi) Contaminants in Sediment Before Actions Taken to Reduce the Concentration of Contaminants	46
(vii) Delineation	46
(viii) Contaminants of Concern in Areas of Potential Environmental Concern	47
<b>10. Appendices</b>	<b>48</b>
(a) General	48
(i) Sampling and Analysis Plan	48
(ii) Finalized Field Logs	48
(iii) Certificates of Analysis or Analytical Reports from Laboratories	48
(iv) Residue Management	48
(v) Survey of Phase Two Property	48
(b) Remediation	48



(i) Where any Action has been Taken to Reduce the Concentration of Contaminants on, in or under a Phase Two Property	48
(ii) Remedial Actions	49
(iii) Free Flowing Product	50
(iv) Confirmation Sampling and Analysis	50
(c) Soil Excavated at the Phase Two Property/Excess Soil Brought to the Phase Two Property	53
(i) Excess Soil Brought to RSC property	53
(ii) Segregation of Soil	53
(iii) Stockpiles	54



## TABLES

Monitoring Wells Installation (not applicable)	1
Water Levels, LNAPLs, DNAPLs, Water Quality Parameters (not applicable)	2
Soil Analytical Data	3
Groundwater Analytical Data (not applicable)	4
Sediment Analytical Data - Not Applicable	
Ground Water, Sediment and Soil Maximum Concentration Data - See Table 3	

## FIGURES

Survey Plan	
Site Layout Map	1
Conceptual Site Model Potentially Contaminating Activities	2
Conceptual Site Model Areas of Potential Environmental Concern	3
Borehole Layout Plan	4
Soil Analyses - Petroleum Hydrocarbons F1-F4, including Benzene, Toluene, Ethylbenzene and Xylene	5
Cross-Section A-A'	5.1
Cross-Section B-B'	5.2
Soil Analyses - Organochlorine Pesticides	6
Cross-Section D-D' - Organochlorine Pesticides	6.1
Soil Analyses - Metals, As, Sb, Se	7
Cross-Section C-C' - Metals, As, Sb, Se	7.1

## APPENDICES

Non-Potable Groundwater Notification to Municipality	Appendix A
Sampling and Analysis Plan	Appendix B
Finalized Field Logs	Appendix B
Certificates of Analysis or Analytical Reports from Laboratory	Appendix C



**CEGP Consultants Ltd.**

**Phase Two Environmental Site Assessment  
Main Street and Murray Street, Niagara Falls**

left blank for notes



## 1. Executive Summary

CEGP Consultants Ltd. was retained by Zeljko Holdings Limited (the Client) to conduct a Phase Two Environmental Site Assessment (Phase Two ESA) for the properties having municipal addresses of 5619 Murray Street, 5643 Murray Street, 6285 Main Street, 6289 Main Street and a roadway described as former (now closed) municipal road allowance, Murray Street in the City of Niagara Falls, Ontario (Phase One Property).

This Phase Two ESA has been completed in accordance with Schedule E Phase One Environmental Site Assessments of Ontario Regulation 153/04, Records of Site Condition - Part XV.1 of the Environmental Protection Act (OReg 153/04, as amended). This Phase Two ESA has been completed by Rakesh Koneru, P.Eng. who is registered as a Qualified Person with the Ministry of Environment, Conservation and Parks (MOE).

The Phase Two Property is located at the west side of the intersection of three roads, namely, Main Street, Murray Street and Allendale Avenue. At the time of this ESA, the Phase Two Property contained five parcels of land (based on Niagara Region Navigator interactive map) developed as follows:

- 5619 Murray Street, L2G 2J7 - two storey dwelling with basement,
- 5643 Murray Street, L2G 2J7 - one and half storey building with basement,
- 6285 Main Street, L2G 2J7 - two storey dwelling with basement,
- 6289 Main Street, L2G 6A5 - one and half storey building with basement, and
- Murray Street - an asphalt paved roadway with a sidewalk along the north side, and grassed areas beyond the paved surfaces to the north and south.

All dwellings were vacant at the time of this ESA. A wooden fence was present along the western perimeter of 5643 Murray Street (beyond the Phase One Property limits). Large trees were present along the Main Street and around the dwellings. A concrete slab (former auto shed) was present at the west side of the dwelling at 6285 Main Street. Remnants of a former garage and asphalt/concrete pavement were present at the east of the dwelling at 5643 Murray Street and at the south side of the dwelling at 6289 Main Street.

There is a steep downward slope from the parcel at 6285 Main Street towards the parcel at 5643 Murray Street. Overall, the Phase One Property has a downward slope in the south to southwesterly direction.

The vicinity of the Phase One Property is generally higher than the surrounding areas. There is a downward slope in the southerly and westerly directions, and a steep downhill slope across the main intersection to the east leading to the entertainment area of Niagara Falls.

The current land use of the Phase Two Property is community (for the former roadway) and residential. To our understanding the proposed future land use will include multi-rise residential development with below grade parking.

Based on the Phase One ESA, a total of 7 Areas of Potential Environmental Concern (APEC) were identified at the Phase Two Property. Each APEC was characterized by conducting subsoil investigation and analyzing for the Contaminants of Concern in the soil.



A total of six boreholes BH1, BH2, BH3, BH4, BH5, BH6 were completed to depths of 4.1m to 1.4m below existing grade. Additionally, four grab samples (TP1, TP2, TP3, TP4) were obtained from the landscape areas using a hand shovel. Select soil samples were analyzed for one or more parameter groups of Petroleum Hydrocarbons (PHC), Benzene, Toluene, Ethylbenzene, Xylene (BTEX), Metals, As, Sb, Se and OrganoChlorine Pesticides, in accordance with the Sampling and Analysis Plan.

Table 3 : Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for Residential, Parkland, Institutional property use with medium-fine textured soils (Table 3 SCS Criteria) as published in the Soil, ground water and sediment standards for use under Part XV.1 of the Environmental Protection Act, April 2011 has been used.

The City of Niagara Falls was notified by email on September 12, 2021 of the non-potable groundwater use. No written or email response was received at the time of preparation of this report.

Based on desktop review, the groundwater is reportedly at a significant depth, and was not investigated during this ESA.

Based on the laboratory analytical results of the soil samples, exceedances to Table 3 SCS Criteria were identified as follows:

Sample ID	Depth	Contaminant	Criteria	Results
BH5 SS1	0-0.6m	Lead	120 µg/g	163 µg/g
TP3	0-0.15m	Chlordane Dieldrin	0.184 µg/g 0.184 µg/g	0.05 µg/g 0.05 µg/g
TP4	0-0.15m	Lead	120 µg/g	163 µg/g

The above exceedances are expected to be surficial and can be remediated by means of localized excavation(s). Additional lateral and vertical delineation will be completed at the time of soil remediation.

This report will be updated upon completion of remedial works.

This executive summary should be read in conjunction with the entire report.





## 2. Introduction

CEGP Consultants Ltd. was retained by Zeljko Holdings Limited (the Client) to conduct a Phase Two Environmental Site Assessment (Phase TwpESA) for the properties having municipal addresses of 5619 Murray Street, 5643 Murray Street, 6285 Main Street, 6289 Main Street and a roadway described as former (now closed) municipal road allowance, Murray Street in the City of Niagara Falls, Ontario (Phase One Property).

This Phase Two ESA has been completed in accordance with Schedule E Phase One Environmental Site Assessments of Ontario Regulation 153/04, Records of Site Condition - Part XV.1 of the Environmental Protection Act (OReg 153/04, as amended). This Phase Two ESA has been completed by Rakesh Koneru, P.Eng. who is registered as a Qualified Person with the Ministry of Environment, Conservation and Parks (MOE).

### (i) Site Description

The Phase Two Property is located at the west side of the intersection of three roads, namely, Main Street, Murray Street and Allendale Avenue. At the time of this ESA, the Phase Two Property contained five parcels of land (based on Niagara Region Navigator interactive map) developed as follows:

- 5619 Murray Street, L2G 2J7 - two storey dwelling with basement,
- 5643 Murray Street, L2G 2J7 - one and half storey building with basement,
- 6285 Main Street, L2G 2J7 - two storey dwelling with basement,
- 6289 Main Street, L2G 6A5 - one and half storey building with basement, and
- Murray Street - an asphalt paved roadway with a sidewalk along the north side, and grassed areas beyond the paved surfaces to the north and south.

All dwellings were vacant at the time of this ESA. A wooden fence was present along the western perimeter of 5643 Murray Street (beyond the Phase One Property limits). Large trees were present along the Main Street and around the dwellings. A concrete slab (former auto shed) was present at the west side of the dwelling at 6285 Main Street. Remnants of a former garage and asphalt/concrete pavement were present at the east of the dwelling at 5643 Murray Street and at the south side of the dwelling at 6289 Main Street.

There is a steep downward slope from the parcel at 6285 Main Street towards the parcel at 5643 Murray Street. Overall, the Phase One Property has a downward slope in the south to southwesterly direction.

The vicinity of the Phase One Property is generally higher than the surrounding areas. There is a downward slope in the southerly and westerly directions, and a steep downhill slope across the main intersection to the east leading to the entertainment area of Niagara Falls.

Layout of the Phase One Property is shown in Image No. 1 below:



Image No. 1: 2018 Aerial imagery showing the Phase One Property  
(from Niagara Region Navigator interactive map application)

### Phase Two Property Information

#### Municipal Addresses:

- 5619 Murray Street, L2G 2J7
- 5643 Murray Street, L2G 2J7
- 6285 Main Street, L2G 2J7
- 6289 Main Street, L2G 6A5 and
- former (now closed) municipal road allowance, Murray Street, (no municipal address)

Legal Description: See attached Legal Survey and information provided by the Client

#### Assessment Roll Numbers:

(obtained from Niagara Peninsula Conservation Authority Watershed Explorer)

- 5619 Murray Street - 27250700040630000000
- 5643 Murray Street - 27250700040640000000
- 6285 Main Street - 27250700040610000000
- 6289 Main Street - 27250700040620000000
- Murray Street allowance - 27250700040645000000

Property Identifier Numbers (PIN): from survey and information provided by the Client

- 64350-0136 (LT)



- 64350-0135 (LT)
- 64350-0137 (LT)
- 64350-0244 (LT)

Area: 0.8 acres

Centroid Geographical Coordinates: Zone 17, 655750 E, 4771859 N

## **ii) Property Ownership**

Contact information for the Client is provided below:

Zeljko Holdings Limited  
4728 Dorchester Road, Unit 11B, 2nd Floor  
Niagara Falls, ON, L2E 7H9

Jeremia Rudan - 1 905 380 6016, jeremia@smjrhospitality.com

## **(iii) Current and Proposed Future Uses**

The current land use of the Phase Two Property is community (for the former roadway) and residential. To our understanding the proposed future land use will include multi-rise residential development with below grade parking.

## **(iv) Applicable Site Condition Standard**

The City of Niagara Falls purchases treated water from the Regional Municipality of Niagara which sources the water from Lake Erie. The Phase Two Property is not within an area of natural significance, does not include or is not adjacent to an area of natural significance or is not part of such an area, or does not include land that is within 30 metres of an area of natural significance or not part of such an area. The soil at the Phase Two Property has a pH value between 5 and 9 for surface soil and between 5 and 11 for sub-surface soil. The Phase Two Property is not a shallow soil property and it does not include all or part of a water body or is not adjacent to a water body or does not include land that is within 30 metres of a water body.

Predominant surface and sub-surface soils at the Phase Two Property consist of silt. Grain size analysis was carried out on a single soil sample BH5 SS2, indicated 92.5% passing the 75 µm sieve. Therefore, medium-fine soil texture is applicable.

Table 3 : Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for Residential, Parkland, Institutional property use with medium-fine textured soils (Table 3 SCS Criteria) as published in the Soil, ground water and sediment standards for use under Part XV.1 of the Environmental Protection Act, April 2011 has been used.

The City of Niagara Falls was notified by the QP, by email on September 12, 2021. No written or email response was received.



### 3. Background Information

#### (i) Physical Setting

The Phase Two Property is located in an area of commercial and residential development within the Phase One Study Area.

##### *i. water bodies,*

Based on the review of aerial photographs/images and desktop review at the City of Niagara Falls, Information Systems, GIS, Maps online portal, Niagara Peninsula Conservation Authority Watershed Explorer and Niagara Navigator, there are no water bodies at the Phase One Property or the Phase One Study Area.

##### *ii. areas of natural significance,*

The ERIS report provided a map for Areas of Natural & Scientific Interest for the vicinity of the Phase One Property. In addition, CEGP completed a desktop review of the following:

- City of Niagara Falls, Information Systems, GIS, Maps online portal,
- Niagara Peninsula Conservation Authority Watershed Explorer,
- Niagara Navigator, and
- Ontario Greenbelt Maps - Map 124: City of Niagara Falls,
- Niagara Escarpment Plan Maps - Plan Map 1: Niagara Region

There are no areas of natural significance or scientific interest within the Phase One Property or the Phase One Study Area.

##### *iii. the topography and surface water drainage features on the phase two property,*

There is a steep downgradient from the north direction to the south/southwest direction at the Phase Two Property. According to a topographic survey provided by the Client, the north elevation averages about 205.20 masl, the southwest portion is approximately 201.90 masl and the southeast portion is approximately 205.0 masl.

##### *iv. any well-head protection areas or other designation identified by the municipality in its official plan for the protection of ground water, and*

CEGP Consultants Ltd. completed a cursory review of the following documents:

- Catfish Creek Source Protection Area, Approved Source Protection Plan, prepared by Lake Erie Source Protection Region, dated September 19, 2014, and
- Kettle Creek Source Protection Area, Approved Source Protection Plan, prepared by Lake Erie Source Protection Region, dated September 8, 2014.

Based on the review of above documents, the vicinity of the Phase One Property is not located within Groundwater vulnerability, including Highly Vulnerable Aquifers, Significant Recharge Areas and Wellhead Protection Areas.

##### *v. Observations related to whether the property and all other properties within the phase one study area*



*are served by a municipal drinking water system, as defined in the Safe Drinking Water Act, 2002.*

The Phase One Property and all other properties within the Phase One Study Area are serviced by a municipal drinking water system. The City of Niagara Falls purchases treated water from the Regional Municipality of Niagara which sources the water from Lake Erie.

*vi. Where all properties within the phase one study area are served by a municipal drinking water system, observations related to the presence of any well on the phase two property or within the phase one study area that supplies water used for human consumption or an agricultural use.*

Review of ERIS Water Well Information System database and the desktop review of Map: Well records at the Ontario Ministry website indicated that there is no well on the Phase Two Property or within the Phase One Study area that supplies water used for human consumption or an agricultural use.

## **(ii) Past Investigations**

*Provide,*

*i. a summary of any relevant past investigations of the phase two property, and*

No previous environmental reports were provided to CEGP Consultants Ltd. during this ESA. The Client was not aware of any previous ESA work that was completed at the Phase Two Property.

*ii. documentation of the steps taken to confirm that information or data which are to be used from previous investigations are of adequate quality such that it can be relied upon.*

This section is not applicable since no previous investigations were completed at the Phase Two Property.



## 4. Scope of the Investigation

### (i) Overview of Site Investigation

The site investigation at the Phase Two Property involved the following components:

- Review of the Phase One ESA findings, and preparation of a Sampling and Analysis Plan,
- Clearing of public utilities through Ontario One Call,
- Clearing of private utilities through Ontario Locates,
- Selection of a licenced well drilling contractor - Davis Drilling Ltd., MOE License Number 7472,
- Fieldwork of laying out the boreholes,
- Drilling of boreholes as follows:
  - Boreholes BH1, BH2, BH3, BH4, BH5, BH6,
  - Collecting surficial grab soil samples from TP1, TP2, TP3, TP4.
- Analysis of soil samples for one or more parameter groups as identified in the Sampling and Analysis Plan and listed below:
  - Petroleum Hydrocarbons (PHC),
  - Benzene, Toluene, Ethylbenzene, Xylene (BTEX),
  - Metals, As, Sb, Se (Hg, Cr(VI), CN, B(HWS), SAR, EC were also analyzed for future disposal options)
  - OrganoChlorine Pesticides
- Preparation of this ESA report incorporating the findings.

### (ii) Media Investigated

*i. the rationale for whether to include in the field investigation sampling and analysis of each of ground water and sediment on, in or under the phase two property, and*

On soil investigation was undertaken. According to the RSC filed for the adjacent property to the south, the groundwater is at a significant depth and the identified environmental concerns were not anticipated to influence the groundwater conditions at the Phase Two Property.

*ii. an overview of the field investigation of each medium for which sampling and analysis were done.*

The field investigation included drilling boreholes and sampling with a split spoon sampler.

Surficial grab samples were hand dug in the landscape areas using a shovel.

### (iii) Phase One Conceptual Site Model

*Provide a description of the phase one conceptual site model prepared as part of the phase one environmental site assessment report and of relevant subsequently acquired information.*

*1. Provide one or more figures of the phase one study area that,*

*i. show any existing buildings and structures,*



Buildings within the Phase One Study Area are shown in Figure 3.

*ii. identify and locate water bodies located in whole or in part on the phase one study area,*

There are no water bodies located within the Phase One Study Area.

*iii. identify and locate any areas of natural significance located in whole or in part on the phase one study area,*

There are no areas of natural significance within the Phase One Study Area.

*iv. locate any drinking water wells at the phase one property,*

There are no drinking water wells at the Phase One Property.

*v. show roads, including names, within the phase one study area,*

Roads within the Phase One Study Area are shown in Figure 3.

*vi. show uses of properties adjacent to the phase one property,*

Property uses adjacent to the Phase One Property include community roadways to the north, west and east, an industrial hydro corridor to the west and industrial power/transformer station to the south.

*vii. identify and locate areas where any potentially contaminating activity has occurred, and show tanks in such areas, and*

Potentially Contaminating Activity identified at the Phase One Property and Phase One Study Area during this ESA are shown in Figure 3.

*viii. identify and locate any areas of potential environmental concern.*

Areas of Potential Environmental Concern within the Phase One Property are shown in Figure 4.



2. Provide a description and assessment of,

i. any areas where potentially contaminating activity on or potentially affecting the phase one property has occurred,

Potentially Contaminating Activities (PCA) at the Phase One Property and Phase One Study Area identified during this ESA are summarized below:

Location	Source	PCA #	Description	Impact onto Phase One Property
Entire Phase One Property	-	#30. Importation of Fill Material of Unknown Quality	Due to age of development of the Phase One Property fill material of unknown quality may be present in the underlying subsoils.	Yes - however, during the Phase Two ESA, there was no fill material encountered at the borehole locations. Therefore, this was not considered a PCA.
5619, 5643 Murray Street 6285, 6289 Main Street	Interview, Site Visit	#28. Gasoline and Associated Products Storage in Fixed Tanks	A fuel oil tank is present in the basement of the dwelling at 6285 Main Street. Vent/fill pipes were evident in the basements of all other dwellings indicative of aboveground fuel oil tanks in the past.	Yes
6389 Allendale Avenue 5800 Murray Street 5900 Murray Street Adjacent to south (Former 1652 Murray Street)	Fire Insurance Plans, Street Directories, Aerials, Site Visit	#18. Electricity Generation, Transformation and Power Stations #55. Transformer Manufacturing, Processing and Use	Presence of transformer station A Record of Site Condition (208526) was submitted for the east portion of the property. Localized remediation was completed for soils impacted with pesticides at the south portion of the property.	The transformer station building is about 90m to the south within the property, in a down/transgradient orientation. Most of the north portion remained a landscape area through the years. Therefore, environmental concern onto the Phase One Property is not anticipated.
Adjacent to west of Phase	Aerials, Site Visit	#40. Pesticides (including Herbicides,	A hydro corridor is present along the west side of the	Yes, due to proximity





One Property		Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	Phase One Property. There might have been pesticides and herbicides used in the past.	
6158 Allendale Avenue, (Former 2152-2162 Allen Avenue)	Fire Insurance Plans, ERIS	#33. Metal Treatment, Coating, Plating and Finishing #51. Solvent Manufacturing, Processing and Bulk Storage	Presence of former Zippo Manufacturing Company Canada Ltd. (cigarette lighter assembly)	No, due to significant distance
6155 Allendale Avenue	ERIS	#55. Transformer Manufacturing, Processing and Use	Niagara Peninsula Energy Inc. as a waste generator of PCBs in 2013 and 2014	No, due to significant distance
6361 Fallsvievw Boulevard	ERIS	#28. Gasoline and Associated Products Storage in Fixed Tanks	Listing of 100L diesel spill in 2015.	No, due to downgradient orientation
6158 Main Street	ERIS	#55. Transformer Manufacturing, Processing and Use	Specialty Commercial and Industrial Leasing Inc. Listed as a generator of light fuels and PCBs from 2001 to 2004.	No, due to significant distance

No other PCAs were identified within the Phase One Study Area.

Identified PCAs are shown in Figure 2.

*ii. any contaminants of potential concern,*

Contaminants of potential concern associated with identified areas of potential environmental concern, and the media to be potentially impacted is shown in the table below:

Area of potential environmental concern	Location of area of potential environmental concern on phase one property	Potentially contaminating activity	Location of PCA (on-site or off-site)	Contaminants of potential concern	Media potentially Impacted (Ground water, soil and/or sediment)
1A	6285 Main Street	#28. Gasoline and Associated Products Storage	on-site	PHC, BTEX	Soil



		in Fixed Tanks			
1B	6289 Main Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	on-site	PHC, BTEX	Soil
1C	5619 Murray Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	on-site	PHC, BTEX	Soil
1D	5643 Murray Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	on-site	PHC, BTEX	Soil
2	Part of Murray Street	No PCA (Application of former de-icing salts on roadway)	on-site	SAR, EC (Na, Cl)	Soil (GW)
3	Landscape areas	#40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	on-site	OCP, Metals, As, Sb, Se	Soil
3A	West portion	#40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	off-site	OCP, Metals, As, Sb, Se	Soil

Areas of Potential Environmental Concern are shown in Figure No. 3.

*iii. the potential for underground utilities, if any present, to affect contaminant distribution and transport,*

Utilities observed during the site visit are summarized below:



Address	Electricity	Gas	Water	Sanitary
5619 Murray Street	Overhead wires were connected at the southeast corner of the dwelling	The gas main was located at the southeast corner	The watermain observed inside the basement was connected from Main Street	Likely connected to Main or Murray Street
5643 Murray Street	Overhead wires were connected at the southwest corner of the dwelling	The gas main was located on the east elevation	Likely connected from Murray Street	Sanitary cleanout was evident on the west elevation.
6285 Main Street	Overhead wires were connected at the southeast corner of the dwelling	Fuel oil tank was located along the west side of the basement	Connected from Main Street	Likely connected to Main Street
6289 Main Street	Overhead wires were connected at the central east elevation of the dwelling	The gas main was located at the southeast corner	Likely connected from Main Street	Likely connected to Main Street
Part of Murray Street	Municipal hydro poles were located along the north side	A gas line cross the street in the southerly direction at 5643 Murray Street	Water service is present along the north side of the street.	Sanitary line is present along the north side of the street.

Additionally, a hydro duct bank is present along the landscape area to the south.

There were no floor drains observed inside the basements during the site visit on September 17, 2021. According to Mr. Boulet, there were no floor drains in the past.

Review of Niagara Region Navigator interactive map indicated that there is a Regional Municipality of Niagara Public Watermain running parallel to Murray Street. Furthermore, there are two hydro tunnels beneath the Phase One Property - the tunnels are part of a hydro network constructed in the 1950s. An email was sent to the Building Department at the City of Niagara Falls on February 11, 2021 to inquire about the depth and construction details of the tunnels. Email responses received from Ontario Power Generation, the branch responsible for the tunnels, is included in Appendix D. The tunnels are about 81m below grade in the vicinity of the Phase One Property and have an inner diameter of 45ft and an outer diameter of 50ft. No other drawings or literature was provided by the correspondent.



Source: Niagara Navigator interactive map showing public water main (blue) and two hydro tunnels (white lines in north-south orientation)

Subsurface utility trenches can act as preferential pathways in the case of spills or discharges and affect contaminant distribution and transport.

*iv. available regional or site specific geological and hydrogeological information, and*

The groundwater flow in the vicinity of the Phase One Property is anticipated to be in an easterly orientation towards Niagara River located approximately 790m east (proximity to Niagara Falls).

Regional physiographic information such as surficial soil and bedrock type were obtained from desktop research at Ontario Ministry of Energy, Northern Development and Mines website, OGS Earth application which provides geoscience data, accumulated from Mines and Minerals division.

According to Ontario Geotechnical Boreholes database bedrock in the vicinity of the Phase One Property can be encountered at 21m to 30m below ground level.

Physiography in the vicinity of the Phase One Property consists of sand plains. Surficial geology consists of sand, gravel, minor silt and clay derived from coarse textured glaciolacustrine deposits. Bedrock consists of sandstone, shale, dolostone, siltstone belonging to the Guelph Formation.



The information obtained from well records, including intrusive work (RSC#208526) conducted adjacent to south of the Phase One Property is consistent with the above deposits. Groundwater was documented between depths of 2.1m (possibly perched) to 23.7m below grade at the north and south portions of the property, respectively, and was indicated as being in a southeast direction. Bedrock was expected to be between 8.8m to 26m below grade at the north and south portions of the property, respectively.

*v. how any uncertainty or absence of information obtained in each of the components of the phase one environmental site assessment could affect the validity of the model.*

The QP has relied on information available from other sources, site visit and interviews in the rationale for development of the areas of potential environmental concern.

*3. If the exemption set out in paragraph 1, 1.1 or 2 of section 49.1 of the regulation is being relied upon, document the rationale for relying upon the exemption, which may be based on information gathered during one or more of the records review, interviews and site reconnaissance.*

Paragraph 1 of Section 49.1 of the Regulation applies to the Phase One Property as follows: There are asphalt paved driveways at the Phase One Property, where deicing salts would have been applied through the years for purposes of safety of vehicular or pedestrian traffic under conditions of snow or ice or both. Contaminants of concern associated with such application include Sodium Adsorption Ratio and Electrical Conductivity in the soil, and Sodium, Chloride in the groundwater. These have not been considered as contaminants of concern at the paved areas.

*4. If there is an intention to rely upon the exemption set out in paragraph 3 of section 49.1 of the regulation, set out the intention to rely upon the exemption and provide a brief explanation as to why the exemption may apply, which may be based on information gathered during one or more of the records review, interviews and site reconnaissance.*

Not applicable.

#### **(iv) Deviations From Sampling and Analysis Plan**

*Provide a description of any deviations from the sampling and analysis plan.*

The presence of fill material of unknown quality (#30. Importation of Fill Material of Unknown Quality) was considered a PCA during the Phase One ESA. However, based on the boreholes completed during the Phase Two ESA, the predominant soil underlying the surficial granular and/or foundation wall backfill material consisted of native silt deposits. Therefore, PCA#30 was not considered an APEC. The Phase One and Phase Two ESA reports were revised accordingly.

Additionally, in order to characterize the APECs associated with the fuel oil tanks, the drilling was planned for inside the basements. However, the driller indicated that due to access and height constraints the drilling would not be possible inside the basements. Therefore, the boreholes were completed on the exterior walls in the vicinity of the vent/fill pipes.



**(v) Impediments**

*Provide a description of any physical impediments and documentation of any denial of access.*

Due to the presence of several services, the borehole locations were limited to the locations shown in Figure No. 4.



## 5. Investigation Method

### (i) General

*Provide a brief description of all methods as specified in the following sections. Where the method differs from the associated standard operating procedure, provide a detailed description of the method used, and a rationale for the change in method.*

### (ii) Drilling and Excavating

*Provide for each borehole drilled or test pit excavated,*

*i. the name of the contractor,*

Licensed well drilling contractor David Drilling Ltd. (MOE License# 7472) conducted the drilling work.

*ii. a description of the equipment used,*

A track mounted drill rig was used for drilling work, in conjunction with Standard Penetration Test (SPT) using a split spoon sampler.

A hand shovel was used to conduct the shallow grab samples.

*iii. a description of the measures taken to minimize the potential for cross-contamination, and*

Solid stem augers were used to conduct the drilling work and split spoon samplers were used to obtain the soil samples. The augers were brushed clean of spoils between each borehole location. The split spoons were washed with phosphate free Alconox and distilled water solution between each sampling round.

For the grab samples, discrete soil samples were obtained from undisturbed material retrieved from the hand shovel.

*iv. the frequency of sample collection.*

At the borehole locations, the soil samples were logged in the field at surface, 0.76m (2.5ft), 1.5m (5ft), 2.3m (7.5ft), 3m (10ft) and 3.8m (12.5ft), as applicable, based on the SPT counts. The length of the sample was generally 0.45m or 0.6m.

At the grab sample locations, the soil samples were collected below the surficial grass, at a depth of approximately 0.15m.

### (iii) Soil: Sampling

*Provide,*



*i. a description of all equipment used to collect soil samples, and*

The soil samples were handled with dedicated nitrile gloves, and bagged into ziploc polyethylene bags for field screening. Appropriate ‘worst case’ soil samples which were selected based on field screening and visual observations were placed into laboratory supplied vials or jars, for laboratory submission, as applicable. A metal trowel or knife was used to obtain the sample, and was decontaminated with phosphate free Alconox and distilled water solution between each use.

*ii. a geological description of soil and sediment cores and samples, based on the finalized field logs for each monitoring well, test hole or intrusive investigation point.*

Borehole ID	Date	Depths below grade	Geological Description
BH1	Sept 27, 2021	0m-0.15m 0.15-0.6m 0.76-2.1m 2.1m-3m 3m-4.1m	Concrete Fill Silt (foundation backfill) Clayey Silt Silt
BH2	Sept 27, 2021	0m-0.5m 0.5-0.6m 0.6-3.51m	Topsoil Fill Silt (foundation backfill to 2.1m)
BH3	Sept 27, 2021	0m-0.05m 0.05-0.6m 0.6-1.5m 1.5m-2.1m 2.1m-3.3m	Grass/Topsoil Fill - Sandy Silt with organics, rootlets Silt (foundation backfill) Sandy Silt Silt - reddish, moist
BH4	Sept 27, 2021	0m-0.05m 0.05-0.6m 0.6-2.6m	Grass/Topsoil Fill - Sandy Silt with organics, rootlets, reddish Silt
BH5	Sept 27, 2021	0m-0.15m 0.15m-0.6m 0.6-1.4m	Grass and Topsoil Sandy Silt Fill - with organics, rootlets Silt - reddish, moist
BH6	Sept 27, 2021	0m-0.08m 0.08m-0.3m 0.3m-0.6m 0.6m-2.1m	Asphalt Granular base - sand and gravel Sandy Silt Fill - reddish, with some gravel Silt - reddish, moist
TP1	Sept 27, 2021	0m-0.15m	Grass/Topsoil
TP2	Sept 27, 2021	0m-0.15m	Grass/Topsoil





TP3	Sept 27, 2021	0m-0.15m	Grass/Topsoil
TP4	Sept 27, 2021	0m-0.15m	Grass/Topsoil

**(iv) Field Screening Measurements**

1. Provide a description of any equipment used to perform field screening measurements including,

i. make and model number,

RKI Eagle-2

ii. chemicals the equipment can detect and associated detection limits,

Combustible Hydrocarbons: 0 - 50,000 ppm and 0 - 100% LEL  
Volatile Organic Compounds: 0 - 2000 ppm  
(ppm - parts per million)

iii. precision of the measurements,

Increment of 1 for ppm and LEL

iv. accuracy of the measurements,

± 5% of reading or ± 2% LEL

v. calibration reference standards such as span gas, and

Hexane and Isobutylene

vi. procedures for checking calibration of the equipment.

The equipment was calibrated by the supplier Maxim Environmental and Safety Inc..

2. Provide a description of how field screening measurements were used to select samples for laboratory analysis, if applicable.

The selection of soil samples for laboratory analyses of parameter groups of PHC, BTEX was determined through a combination of visual (staining), olfactory odour and field screening readings.

Field readings are shown in the finalized borehole logs. All the readings were below 0 ppm.

3. Where a field screening method was different from what was proposed as a standard operating



*procedure in the sampling and analysis plan, provide a description of, and rationale for, the difference.*

There was no deviation from the standard operating procedures.

**(v) Ground Water: Monitoring Well Installation**

*1. For each monitoring well installed provide,*

*i. the name of the contractor,*

No monitoring wells were installed during this ESA.

*ii. a description of the equipment used,*

No monitoring wells were installed during this ESA.

*iii. a description of the measures taken to minimize the potential for cross-contamination, and*

No monitoring wells were installed during this ESA.

*iv. the frequency of sample collection during drilling, if any.*

No monitoring wells were installed during this ESA.

*2. Provide a description of the methods used to develop monitoring wells.*

No monitoring wells were installed during this ESA.

**(vi) Ground Water: Field Measurement of Water Quality Parameters**

*Provide a description of the methods used to measure water quality parameters such as pH, specific conductance and temperature.*

No monitoring wells were installed during this ESA.

**(vii) Ground Water: Sampling**

*Provide a description of the methods used to conduct ground water sampling.*

No monitoring wells were installed during this ESA.

**(viii) Sediment: Sampling**

*Provide a description of the methods used to collect sediment samples.*

There is no water body at the Phase Two Property. Therefore, sediment sampling was not conducted at the Phase Two Property.



**(ix) Analytical Testing**

*Provide the names of all laboratories used for analysis of soil, sediment or ground water samples.*

All soil samples collected by CEGP Consultants Ltd. were analyzed by ALS Canada Ltd. (Waterloo, Ontario). ALS Canada Ltd. is accredited by Canadian Association for Laboratory Accreditation. The soil samples were dropped off at the end of each sampling day.

**(x) Residue Management Procedures**

*Provide detailed documentation of procedures used for the management of residues from the field investigation including,*

*i. soil cuttings from drilling and excavations,*

There were minimal soil cuttings from the drilling. The boreholes were filled with bentonite.

*ii. water from well development and purging, and*

No monitoring wells were installed during this ESA.

*iii. fluids from equipment cleaning.*

The solution fluid from cleaning the split spoon was also disposed off into the soil drum(s).

**(xi) Elevation Surveying**

*Provide an accurate specification of the location of any benchmark used in surveying of elevations.*

The topographic survey by Suda and Maleszyk Surveying Inc., File 18-153, dated 2018 was used to reference the geodetic elevations of the boreholes.

**(xii) Quality Assurance and Quality Control Measures**

*i. a description of sample containers, preservation, labelling, handling and custody for samples submitted for laboratory analysis, including any deviations from the sampling and analysis plan,*

All soil and groundwater samples were collected in laboratory supplied vials and jars, in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, Laboratory Services Branch Ministry of the Environment, March 9, 2004, amended as of July 1, 2011.

All field samples were placed into a cooler and packed with ice and transported to the laboratory along with a chain of custody, and a custody seal on the cooler.

There were no deviations from the SAP.



*ii. a description of equipment cleaning procedures followed during all sampling,*

Eagle 2 for field screening - the probe was wiped clean between each use, and reset to Fresh Air Reading if the initial readings were above 0. The knife used for sample collection from the split spoon was rinsed with phosphate free Alconox and distilled water solution between each use.

*iii. a description of how the field quality control measures referred to in subsection 3 (3) were carried out, and*

Compliance with Schedule E, Part II, Subsection 3 (3) of the regulation is summarized below:

- Cleaning of non-dedicated sampling and monitoring equipment included:
- Eagle 2 for field screening - the probe was wiped clean between each use, and reset to Fresh Air Reading if the initial readings were above 0,
- Knife used for sample collection from split spoon - rinsed with phosphate free Alconox and distilled water solution between each use.
- A minimum ratio of 1 random field duplicate for every 10 samples was maintained during this ESA.
- All field instruments were calibrated by the supplier prior to being picked by CEGP Consultants Ltd. for field use.

*iv. a description of, and rationale for, any deviations from the procedures set out in the quality assurance and quality control program set out in the sampling and analysis plan.*

In general, standard operating procedures were followed during the field sampling, sample preparation and submission to the laboratory. All soil and groundwater samples were analyzed within the prescribed times specified in the Analytical Protocol. The laboratory analytical reports did not highlight any concerns with the submissions.



## 6. Review and Evaluation

### (i) Geology

*Provide a description and analysis of each aquifer and aquitard investigated pursuant to section 12 including,*

*i. estimated thickness of each geologic unit,*

The predominant soil at the Phase Two Property consisted of reddish silt deposits. Isolated layers of clayey silt and sandy silt were present within the silt deposit. In the vicinity of the buildings, the foundation backfill material was silt with some clayey silt or sandy silt, generally reddish in colour. The boreholes were terminated between depths of 1.4m to 4.1m below existing grade. Beneath the topsoil and/or asphalt pavement minimal re-graded fill was encountered, beneath which was native silt deposit. The lower limit of the silt unit was not established.

*ii. elevations, relative to a geodetic benchmark or other permanent and recoverable benchmark, of the top and bottom of each geologic unit,*

The surface elevation at the Phase Two Property varied from 205.2 masl along Main Street to the north to 201.9 masl at the southwest portion to 204.9 masl at the southeast portion. The boreholes were terminated at an elevation of approximately 201.2 masl.

*iii. geological and other material in each geological unit,*

The primary native geological makeup is fine texture glaciolacustrine deposits consisting of silt and clay.

*iv. the properties of each aquifer and aquitard, and*

The silt deposits can be considered an aquitard with low permeability, having an approximate hydraulic conductivity of  $10^{-8}$  m/s according to Groundwater, R. Allan Freeze, John A. Cherry, 1979.

*v. the rationale for the choice of aquifers and aquitards investigated as it relates to identification of the location, presence, release, concentration, migration or retention of a contaminant.*

The aboveground fuel storage tanks were located in the basements. There were no reported spills. The drilling was conducted into native silt deposits below the underside of the foundations. Since no vapour concentrations, odour or staining was evident, the boreholes were terminated at a depth of approximately 3m below grade.

The denser pesticides and metals are generally found beneath the surface and have less mobility. Therefore, the soil sample were obtained beneath the landscape features.



**(ii) Ground Water: Elevations and Flow Direction**

1. *Provide,*

*i. a discussion of, and rationale for, locations and screened intervals of monitoring wells used for interpretations of ground water flow direction,*

There was no groundwater investigation at the Phase Two Property.

*ii. results of any measurements taken using an interface probe during water level measurements, and*

There was no groundwater investigation at the Phase Two Property.

*iii. measurements of the thickness of any free flowing product present in monitoring wells.*

There was no groundwater investigation at the Phase Two Property.

2. *Provide a description of the method used to calculate ground water elevation in the monitoring well, including,*

*i. a description of the ground water elevations from all monitoring events in any aquifer investigated,*

There was no groundwater investigation at the Phase Two Property.

*ii. a description of the interpreted direction of ground water flow at the phase two property,*

There was no groundwater investigation at the Phase Two Property.

*iii. assessment of the potential for temporal variability in ground water flow direction, and*

There was no groundwater investigation at the Phase Two Property.

*iv. an evaluation and description of the potential interaction between any buried utilities in or under the phase two property and the water table.*

There was no groundwater investigation at the Phase Two Property.

**(iii) Ground Water: Hydraulic Gradients**

*Provide,*

*i. a description of the horizontal hydraulic gradient for each aquifer investigated, including minimum, maximum and average horizontal hydraulic gradients, and*

There was no groundwater investigation at the Phase Two Property.

*ii. a description of vertical hydraulic gradients in aquifers where a contaminant is present at a*



*concentration greater than the applicable site condition standard for the contaminant, including minimum, maximum and average vertical hydraulic gradients.*

There was no groundwater investigation at the Phase Two Property.

**(iv) Fine-Medium Soil Texture**

*Where fine-medium soil texture is to be used in determining the applicable site condition standards, provide,*

*i. a rationale for the use of the fine-medium soil texture category,*

Predominant surface and sub-surface soils at the Phase Two Property consist of silt deposits.

*ii. a description of the results of the required grain size analysis, and*

Grain size analysis was carried out on a single soil sample BH5 SS2, indicated 92.5% passing the 75 µm sieve. Therefore, medium-fine soil texture is applicable.

*iii. a description and rationale for the number of samples collected and analyzed.*

The soil profile is consistent across the Phase Two Property. Therefore, a single soil sample was considered representative of the site condition.

**(v) Soil: Field Screening**

*Provide a discussion of soil field screening results.*

All soil samples collected in the field were screened using an RKI Eagle 2 vapour monitor. The method of screening included

- bag a representative portion of the soil from the split spoon into a Ziploc bag and seal it,
- break the sample into smaller pieces,
- allow the sample to come to ambient temperature (subject to seasonal weather during drilling), inserting the probe of Eagle 2 into the Ziploc bag near the soil,
- take readings for at least 20-30 seconds until a maximum value is obtained.

This method is similar to the procedure indicated in Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario, Ontario Ministry of Environment and Energy Standards Development Branch, December, 1996.

All soil vapour readings were 0 ppm.



**(vi) Soil Quality**

Provide a discussion and analysis of the laboratory analytical results for all soil samples analyzed including,

*i. locations and depths of samples,*

Each identified APEC was characterized for soil quality by analyzing one or more soil samples from various boreholes drilled at the Phase Two Property. Analyzed soil samples are summarized below:

APEC	PCA/APEC Location	Associated PCA	CoC	Sample ID	Soil Type
1A	6285 Main Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	PHC, BTEX	BH1 SS5 3.05-3.65m	Native, below basement level
1B	6289 Main Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	PHC, BTEX	BH2 SS5 3.05-3.65m	Native, below basement level
1C	5619 Murray Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	PHC, BTEX	BH3 SS5 3.05-3.65m	Native, below basement level
1D	5643 Murray Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	PHC, BTEX	BH4 SS4 2.28-2.44m	Native, below basement level
2	Part of Murray Street	No PCA (Application of former de-icing salts on roadway)	SAR, EC (Na, Cl)	None	-
3	Landscape areas	#40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	OCP, Metals, As, Sb, Se	BH4 SS1 0-0.6m BH5 SS1 0-0.6m TP1, TP2, TP3, TP4 (0-0.15m)	surface
3A	West portion	#40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	OCP, Metals, As, Sb, Se	BH4 SS1 0-0.6m TP4 0-0.15m	surface

*ii. comparison of analytical results to applicable site conditions standards,*

The soil at the Phase Two Property has a pH value between 6.55 and 7.29 for surface soil and 7.69 for sub-surface soil.

All soil laboratory analytical results were compared to Table 3 SCS Criteria and are presented in attached Table 3. With the exception of soil samples BH5 SS1, TP3, TP4, all other laboratory analytical results met Table 3 SCS Criteria.

Exceedances to Table 3 SCS Criteria were detected as follows:





Sample ID	Depth	Contaminant	Criteria	Results
BH5 SS1	0-0.6m	Lead	120 µg/g	163 µg/g
TP3	0-0.15m	Chlordane Dieldrin	0.184 µg/g 0.184 µg/g	0.05 µg/g 0.05 µg/g
TP4	0-0.15m	Lead	120 µg/g	163 µg/g

*iii. contaminants of concern,*

Contaminants of concern included PHC, BTEX, Metals, As, Sb, Se, OCP.

*iv. contaminants related to chemical and biological transformations that have or may have occurred,*

The exceedances are related to Metals and OCPs. No chemical or biological transformations are anticipated.

*v. whether the results indicate soil serves as a source of contaminant mass contributing to ground water or sediment, and*

The contaminants are expected to be in the surficial soils, therefore, they do not serve as a source of contaminant mass contributing to groundwater contamination.

*vi. whether the results indicate the presence of light or dense non-aqueous phase liquids.*

The exceedances are related to Metals and OCPs, therefore no light or dense non-aqueous phase liquids are expected.



**(vii) Ground Water Quality**

*Provide a discussion and analysis of the laboratory analytical results for all ground water samples analyzed including,*

*i. locations and sample depth interval of samples,*

There was no groundwater investigation at the Phase Two Property.

*ii. documentation of any field filtering,*

There was no groundwater investigation at the Phase Two Property.

*iii. comparison of analytical results to applicable site conditions standards,*

There was no groundwater investigation at the Phase Two Property.

*iv. contaminants of concern,*

There was no groundwater investigation at the Phase Two Property.

*v. contaminants related to chemical and biological transformations that have or may have occurred,*

There was no groundwater investigation at the Phase Two Property.

*vi. whether the results indicate soil serves as a source of contaminant mass contributing to ground water or sediment, and*

There was no groundwater investigation at the Phase Two Property.

*vii. whether the results indicate the presence of light or dense non-aqueous phase liquids.*

There was no groundwater investigation at the Phase Two Property.

**(viii) Sediment Quality**

*Provide a discussion and analysis of the laboratory analytical results for any sediment samples analyzed including,*

*i. locations and depths of samples,*

There is no water body at the Phase Two Property. This section is not applicable.

*ii. comparison of analytical results to applicable site conditions standards,*

There is no water body at the Phase Two Property. This section is not applicable.



iii. *contaminants of concern,*

There is no water body at the Phase Two Property. This section is not applicable.

iv. *contaminants related to chemical and biological transformations that have or may have occurred, and*

There is no water body at the Phase Two Property. This section is not applicable.

v. *whether the results indicate the presence of light or dense non-aqueous phase liquids.*

There is no water body at the Phase Two Property. This section is not applicable.

**(ix) Quality Assurance and Quality Control Results**

1. *Provide a description of the types of quality control samples collected and results of any other quality assurance and quality control measures taken during the field investigation, including the types of quality control samples, the media sampled, and the importance of the results with respect to ensuring the data are useful, appropriate and accurate in the determination of whether the phase two property, or any RSC property within it, meets the applicable site condition standards and any standards specified in a risk assessment.*

Quality assurance and quality control measures taken during the field investigation included the following:

- compliance to standard operating procedures,
- ratio of 1 random field duplicate for every 10 samples that were collected for both soil and groundwater,
- calculation of relative percentage difference (RPD) to determine if the variation of the analytical result between the original sample and the duplicate sample is within the acceptable limits indicated in the Performance Criteria Tables 5-1 to 5-15 (as applicable) listed in Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, Laboratory Services Branch, Ministry of the Environment, March 9, 2004, amended as of July 1, 2011.

Duplicate samples submitted during this ESA are summarized below:

Media	Parameter Group	Total Samples Analyzed	Duplicate Samples Submitted	Trip Blanks
Soil	PHCs, BTEX	4	1	N/A
	OCPs	6	1	
	Metals	6	1	



Relative percent difference was calculated where the analytical results had concentrations above laboratory detection limits for both the original and duplicate samples. The calculated results are tabulated in attached Table 3 for soil. The RPD, where calculated is summarized below:

Original Sample	Duplicate Sample	Parameter	RPD %	Remark
BH4 SS1	4B	Metals	2.56% to 25%	All results were within the Protocol criteria percentages
BH4 SS1	4B	OCP Dieldrin	71.72% The concentrations were 0.00197 and 0.00093.	The allowable RPD is 40%. Due to the heterogeneous nature of soil, variations can be expected. The variation is not expected to influence the validity of the environmental conclusions.

2. Provide a description of each instance where a sample was not handled in accordance with the Analytical Protocol with respect to,

i. holding time,

All collected soil and groundwater samples were analyzed within the holding time in accordance with the Analytical Protocol.

ii. preservation method,

Soil samples to be analyzed for PHC (F1 Fraction), BTEX were placed in laboratory supplied vials with Methanol preservative. No preservative was used in the jars that were used for collecting soil samples to be analyzed for PHC F2-F4 Fraction, Metals and OCPs

No concerns were identified by the laboratory.

iii. storage requirement, or

All collected soil samples for analytical testing were placed appropriately in the laboratory supplied bottles and/or vials. The samples were placed into a cooler and packed with ice. No concerns were identified by the laboratory.

iv. container type.

All collected soil samples were placed appropriately in the laboratory supplied bottles and/or vials. No concerns were identified by the laboratory.

3. Provide a statement, with respect to subsection 47 (3) of the regulation that,

i. all certificates of analysis or analytical reports received pursuant to clause 47 (2) (b) of the regulation comply with subsection 47 (3),



In accordance with subsection 47(3) of O.Reg. 153 (July 2020), all certificates of analyses provided by ALS Canada Inc. included items (a) to (n).

*ii. a certificate of analysis or analytical report has been received for each sample submitted for analysis, and*

ALS Canada Inc. has provided a certificate of analysis for each soil sample that was submitted during this ESA.

*iii. all certificates of analysis or analytical reports received have been included in full in an appendix to the phase two environmental site assessment report.*

All certificates of analysis for the soil analytical testing are included in Appendix C.

*4. Provide a description of each instance where a laboratory qualified any results or made remarks in a certificate of analysis or analytical report about a sample and include a discussion of the validity of any results qualified.*

ALS Canada Inc. did not identify any concerns related to soil or groundwater sample submission during this ESA.

*5. Provide a discussion of the overall quality of the field data from the investigation with respect to the data quality objectives, to demonstrate that,*

*i. decision-making was not affected, and*

The Contaminants of Concern associated with each of the Areas of Potential Environmental Concern were investigated through soil sampling. Standard operating procedures were followed and there was no data qualifiers or concerns highlighted from the laboratory. Therefore, the decision-making was not affected during this ESA.

*ii. the overall objectives of the investigation and the assessment were met.*

The standard operating procedures were followed during the field investigation and sampling program. The laboratory did not highlight or qualify any analytical results. Thus, the overall objectives of the investigation and assessment were met.



**(x) Phase Two Conceptual Site Model**

*Since exceedances in soil were identified, localized remediation will be required. This section will be updated upon completion of remedial works.*



## 7. Conclusions

A total of 7 Areas of Potential Environmental Concern (APEC) were identified at the Phase Two Property. Each APEC was characterized by conducting subsoil investigation and analyzing for the Contaminants of Concern in the soil.

*i. the location and concentration of contaminants in the land or water on, in or under the phase two property,*

Exceedances to Table 3 SCS Criteria were identified as follows:

Sample ID	Depth	Contaminant	Criteria	Results
BH5 SS1	0-0.6m	Lead	120 µg/g	163 µg/g
TP3	0-0.15m	Chlordane Dieldrin	0.184 µg/g 0.184 µg/g	0.05 µg/g 0.05 µg/g
TP4	0-0.15m	Lead	120 µg/g	163 µg/g

Additional lateral and vertical delineation will be completed at the time of soil remediation.

*ii. environmental conditions in the land or water on, in or under the phase two property where it is necessary to undertake a risk assessment with respect to one or more contaminants of concern, and*

The above exceedances are expected to be surficial and can be remediated by means of localized excavation(s).

*iii. whether applicable site condition standards and standards specified in a risk assessment for contaminants on, in or under the phase two property were met as of the certification date.*

The above exceedances are expected to be surficial and can be remediated by means of localized excavation(s). This section will be updated accordingly.



**(i) Signatures and Limitations**

Provide,

*i. original signatures of the qualified person who conducted or supervised the phase two environmental site assessment, and*

This Phase Two ESA report has been prepared for the exclusive use of the Client. Any use of the report by any other party without the written consent of CEGP Consultants Ltd. is the sole responsibility of such party. CEGP Consultants Ltd. accepts no responsibility for damages that may be incurred or suffered by any third party as a result of decisions made or actions taken based on the report. No other warranties are either expressed or implied with respect to the professional services provided under the terms of the contract or quotation and represented in this ESA report.

CEGP Consultants Ltd. has made every attempt to identify and characterize the environmental concerns that may be associated with historical or current operations. The sampled locations and depths are considered representative of an environmental concern. CEGP Consultants Ltd. has completed the sampling program in accordance with acceptable standards and common engineering practices. The Client understands that there may be conditions that can exist which were not identified or detected by the sampling program undertaken during the Phase Two ESA. The soil and/or contaminant information (or lack thereof) may vary significantly between the locations and depths sampled.

CEGP Consultants Ltd. liability with respect to the ESA work is limited to re-performing any part of the ESA that is unacceptable solely due to the fact that CEGP Consultants Ltd. did not perform the work in compliance with the requirements of O.Reg. 153/04. The maximum liability to CEGP Consultants Ltd. is limited to the amount of fees paid in accordance with terms in the original contract, provided that notice of claim is made within 2 years of the date when the reports are provided to the Client. The Client understands that irrespective of the findings of the ESA report, there is a possibility that unexpected environmental conditions may be encountered at the property at a later date. In this case, CEGP Consultants Ltd. should be notified in order to determine if appropriate revisions or modifications are required to the report content and its conclusions.

The ESA report and findings are based on data (and information) collected before and during the course of this ESA. Conditions may change and the findings and conclusions in this ESA report may not be valid following the issuance of this report. If any such circumstances become evident, CEGP Consultants Ltd. should be notified immediately to reassess the conclusions and recommendations provided herein.

CEGP Consultants disclaims any obligation to update the ESA reports for conditions that may be identified after the issuance of the final ESA report(s), however, revisions may be made based on available information or documentation.





**CEGP Consultants Ltd.**

**Phase Two Environmental Site Assessment  
Main Street and Murray Street, Niagara Falls**

- ii. a statement by the qualified person confirming the carrying out of the phase two environmental site assessment and the findings and conclusions of the report.

This Phase Two ESA has been conducted under the supervision of Rakesh Koneru P.Eng. in accordance with the requirements of Part VII, Schedule E Phase Two Environmental Site Assessments of Ontario Regulation 153/04: Records of Site Condition - Part XV.1 of the Environmental Protection Act, as amended.



**Rakesh Koneru, P.Eng., QPESA  
Principal  
CEGP Consultants Ltd.  
Markham, Ontario**



## **8. References**

1. Previous environmental reports as indicated in 3. (ii)
2. Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, Laboratory Services Branch Ministry of the Environment, March 9, 2004, amended as of July 1, 2011.
3. Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario, Ontario Ministry of Environment and Energy Standards Development Branch, December, 1996.



## 9. Figures and Tables

### (a) Tables

#### (i) Monitoring Well Installation

*Provide a table showing construction details and elevations for all monitoring wells installed during the field investigation.*

Not applicable since there was no groundwater investigation.

#### (ii) Water Levels

*Provide a table showing all water level measurements for all monitoring events at or under the phase two property, including depth to water reported as elevations to the nearest centimetre relative to a geodetic or permanent and recoverable benchmark and reference elevations.*

Not applicable since there was no groundwater investigation.

#### (iii) LNAPLs and DNAPLs

*Provide a table showing all light or dense non-aqueous phase liquid measurements at or under the phase two property, reported as elevations to the nearest centimetre relative to a geodetic or permanent and recoverable benchmark and reference elevations.*

Not applicable since there was no groundwater investigation.

#### (iv) Soil Data

*Provide one or more tables that,*

*i. show soil quality data contained in laboratory certificates of analysis of samples taken at or under the phase two property,*

*ii. include the borehole, test hole, test pit or monitoring well identification number, sample depths, sample identification number, date of sample collection, date of analysis and laboratory certificate of analysis or analytical report reference number, and*

*iii. include a comparison of the data to applicable site condition standards.*

Attached as Table 3

#### (v) Ground Water Data

*Provide one or more tables that,*



- i. show any ground water quality data contained in laboratory certificates of analysis of samples taken at or under the phase two property,*
- ii. include the test hole or monitoring well identification number, sample identification number, sampling depth intervals, date of sample collection, date of analysis and laboratory certificate of analysis or analytical report reference number, and*
- iii. include a comparison of the data to applicable site condition standards.*

Not applicable since there was no groundwater investigation.

#### **(vi) Sediment Data**

*Provide one or more tables that,*

- i. summarize all sediment quality data contained in laboratory certificates of analysis of samples taken at or under the phase two property,*
- ii. include the sample identification number, sampling depths, date of sample collection, date of analysis and laboratory certificate of analysis or analytical report reference number, and*
- iii. include a comparison of the data to applicable site condition standards.*

This section is not applicable.

#### **(vii) Ground Water, Sediment and Soil Maximum Concentration Data**

*Provide a table showing, for each contaminant for which sampling and analysis has been performed, the maximum known concentration of each contaminant on, in or under the phase two property as of the certification date including,*

- i. the location and unique identification number of each borehole, test pit, test hole or monitoring well from which the sample showing the maximum concentration was collected, and*
- ii. the relevant soil sampling depths, sediment sampling depths, and ground water sampling depth intervals.*

Attached as Table 3 for soil.

#### **(b) Figures**

##### **(i) Areas of Natural Significance and Water Bodies**

*Provide a figure that illustrates the location of any,*

- i. area of natural significance that includes the phase two property, that is adjacent to the phase two*



*property or that is located, wholly or partly, on the phase two property or within 30 metres of the phase two property or part of the phase two property, and*

*ii. water body located adjacent to the phase two property, wholly or partly on the phase two property, within 30 metres of the phase two property or part of the phase two property.*

As shown in Figure No. 2 and 3, there are no areas of natural significance at or around the vicinity of the Phase Two Property.

**(ii) Property Before Actions Taken to Reduce the Concentration of Contaminants**

*Provide a figure showing, in a plan view, all features relevant to the phase two environmental site assessment prior to any actions being taken to reduce the concentration of contaminants, including,*

*i. areas where a contaminant is present at a concentration greater than the applicable site condition standards for the contaminant, and*

*ii. the locations of buildings, storage tanks, drainage features and fill areas on or under the phase two property.*

Figures 5, 6, 7.

**(iii) Interpreted Contours of Ground Water Elevations**

*Provide a figure showing the phase two property that shows interpreted contours of the ground water elevations for each hydrostratigraphic unit where at least three monitoring wells have been installed to permit contouring and includes,*

*i. monitoring well identification numbers,*

*ii. water elevation at each monitoring well used for contouring,*

*iii. labelling of the elevation contour,*

*iv. ground water elevations contoured, which shall obey and not extend outside the dataset, and*

*v. arrows indicating the qualified person's interpretation of lateral ground water flow direction at the phase two property.*

Not applicable.

**(iv) Contaminants in Soil Before Actions Taken to Reduce the Concentration of Contaminants**

*Where one or more contaminants in soil at or under the phase two property are present at a concentration greater than the applicable site condition standard for the contaminant prior to any actions taken to reduce the concentration of contaminants, provide one or more figures in plan view of the phase two property that show the concentration of contaminants as analyzed in an accredited*



*laboratory, in all boreholes, test holes, test pits and any other soil sampling locations.*

Figures 5, 5.1, 5.2, 6, 6.1, 7, 7.1

**(v) Contaminants in Ground Water Before Actions Taken to Reduce the Concentration of Contaminants**

*Where one or more contaminants in ground water at or under the phase two property are greater than the applicable site condition standard prior to any actions taken to reduce the concentration of contaminants, provide one or more figures in plan view of the phase two property that show the concentration of contaminants, as analyzed in an accredited laboratory, in all monitoring wells and test holes.*

Not applicable.

**(vi) Contaminants in Sediment Before Actions Taken to Reduce the Concentration of Contaminants**

*Where one or more contaminants in sediment at or under the phase two property are greater than the applicable site condition standard prior to any actions taken to reduce the concentration of contaminants, provide one or more figures in plan view of the phase two property that show the concentration of contaminants, as analyzed in an accredited laboratory, in all sediment sample locations.*

Not applicable.

**(vii) Delineation**

*For each parameter group defined in the Analytical Protocol for which a contaminant has been analysed, provide figures showing the phase two property in a plan view and illustrating the delineation of the lateral and vertical extent of contaminants of concern in soil, ground water or sediment for each area where contaminants are present at concentrations greater than the applicable site condition standard including,*

*i. sampling locations,*

*ii. sample identification number,*

*iii. sampling points,*

*iv. sampling depths,*

*v. sampling depth intervals,*

*vi. concentrations of contaminants as analyzed in an accredited laboratory, and*

*vii. the applicable site condition standard or standard specified in a risk assessment for each*



*contaminant analyzed.*

Lateral and vertical delineation will be completed during remediation.

**(viii) Contaminants of Concern in Areas of Potential Environmental Concern**

*For each parameter group defined in the Analytical Protocol for which a contaminant has been analysed, provide cross-sections that are oriented parallel and perpendicular to the direction of ground water flow at the phase two property illustrating,*

- i. the delineation of the lateral and vertical extent of contaminants of concern in soil, ground water or sediment for each area of potential environmental concern and showing sample locations, sample identification numbers, sampling points, sampling depths and sampling depth intervals,*
- ii. concentration of contaminants analyzed in an accredited laboratory,*
- iii. in highlighting, all concentrations of contaminants in excess of the applicable site condition standard or standard specified in a risk assessment, and*
- iv. the stratigraphy from ground surface to the deepest aquifer or aquitard investigated.*

Figures 5.1, 5.2, 6.1, 7.1.



## 10. Appendices

### (a) General

#### (i) Sampling and Analysis Plan

*Provide the sampling and analysis plan for the site investigation.*

Attached as Appendix A.

#### (ii) Finalized Field Logs

*Provide all finalized field logs.*

Attached as Appendix B.

#### (iii) Certificates of Analysis or Analytical Reports from Laboratories

*Provide laboratory certificates of analysis or analytical reports for all samples analyzed.*

Attached as Appendix C.

#### (iv) Residue Management

*Provide copies of all permits, approvals and the like obtained from municipal, provincial or federal governments or agencies for handling, treating, discharging and disposing of soil, sediment and ground water.*

To be completed after remediation.

#### (v) Survey of Phase Two Property

*Provide a survey of the phase two property which has been prepared, signed and sealed by a surveyor or, where the phase two property consists of land that is administered by the Ministry of Natural Resources under the Public Lands Act, a description of the phase two property approved by the Surveyor General.*

Provided with Figures.

### (b) Remediation

#### (i) Where any Action has been Taken to Reduce the Concentration of Contaminants on, in or under a Phase Two Property

*Provide a remediation appendix that includes the following sections,*





- i. remedial actions,*
- ii. free flowing product,*
- iii. results of confirmation sampling and analysis, and*
- iv. Conclusions.*

**(ii) Remedial Actions**

- 1. Provide a description of any soil excavation and soil treatment activities at the phase two property that includes,*
  - i. the rationale for each method used,*
  - ii. the quantities and types of compounds used to treat contaminants of concern, and*
  - iii. the location of the remedial action.*
- 2. Provide an estimate of the quantity of soil treated on the property and removed from the property, in tonnes.*
- 3. Provide a description of any ground water removal or ground water treatment activities at the phase two property, including,*
  - i. the rationale for each method used,*
  - ii. the quantities and types of compounds used to treat contaminants of concern, and*
  - iii. the location of the remedial action.*
- 4. Provide an estimate, in litres, of the volume of any ground water removed from the phase two property.*
- 5. Provide a description of any actions taken to reduce contaminant concentrations in sediment at the phase two property, including,*
  - i. the rationale for each method used,*
  - ii. the quantities and types of compounds used to treat contaminants of concern, and*
  - iii. the location of the remedial action in relation to any areas of potential environmental concern.*
- 6. Provide an estimate of the quantity of sediment treated or removed from the property.*
- 7. Provide copies of all permits from local, provincial and federal agencies for handling, treating, discharging and disposing of soil, ground water or sediment.*



8. *Provide a description of the steps taken to ensure that contaminants created or introduced to the property during remediation do not exceed the applicable site condition standard, if the remediation method involved the creation or introduction of contaminants or substances to the subsurface of the property.*

9. *Provide a description of the steps taken to establish baseline and background conditions relevant to the proposed remediation method to a degree adequate to detect any increases of contaminants on, in or under the phase two property following remediation, including contaminants created or introduced to the property during remediation.*

10. *Provide a rationale for the selection of monitoring wells and contaminants to be analyzed for the purpose of monitoring concentrations of contaminants on, in or under the phase two property, including contaminants created or introduced to the property during remediation.*

To be completed after remediation.

### **(iii) Free Flowing Product**

*Provide,*

- i. a discussion of the types and quantities of any free flowing product observed during remediation,*
- ii. an estimate of the volume of free flowing product, in litres, removed from ground water on, in or under the phase two property, where free flowing product is present, and*
- iii. a description of any free flowing product recovery system or other activity undertaken to remove the free flowing product.*

Not Applicable.

### **(iv) Confirmation Sampling and Analysis**

1. *Provide a description of all confirmation sampling activities conducted during and after remedial actions for the purpose of demonstrating that the phase two property meets the applicable site condition standards and any standards specified in a risk assessment.*

2. *Provide a description and rationale for all confirmation sampling locations, depths and contaminants analyzed.*

3. *Provide a description of the lateral and vertical dimensions of the excavations and the number and types of confirmation samples taken at each excavation, where part or all of the land on, in or under a phase two property has been excavated.*

4. *Provide one or more figures of the phase two property, identifying the locations and dimensions of any excavations on, in or under the phase two property.*



5. *Provide one or more cross-sections that show the vertical dimensions of any excavations on, in or under the phase two property.*
6. *Provide one or more figures of the phase two property, identifying the locations of any ground water removal or treatment activities, including the locations of any injection wells and extraction wells.*
7. *Provide one or more figures of the phase two property, identifying the locations of any sediment removal or treatment activities.*
8. *Provide a description of the results of quarterly sampling events, including water level measurements and ground water sampling and analysis, where in situ treatment has been undertaken on, in or under the phase two property.*
9. *Provide a description of the results of quarterly sampling events, including water level measurements and ground water sampling and analysis, where excavation has been undertaken on, in or under the phase two property.*
10. *Provide tables showing all soil, ground water and sediment quality data contained in laboratory certificates of analysis or analytical reports for confirmation samples, including,*
  - i. *comparison of the data to applicable site condition standards or standards specified in a risk assessment as the case may be for each contaminant analyzed,*
  - ii. *the borehole, test hole, test pit or monitoring well identification number,*
  - iii. *the sample identification number,*
  - iv. *soil or sediment sample depth,*
  - v. *ground water sampling depth interval,*
  - vi. *date of sample collection,*
  - vii. *date of sample analysis, and*
  - viii. *laboratory certificate of analysis or analytical report reference number.*
11. *For each parameter group defined in the Analytical Protocol for which a contaminant has been analysed, provide one or more figures that show the results of analyses for all confirmation samples of soil, ground water and sediment, including the delineation of the lateral and vertical extent of contaminants in soil, ground water or sediment following actions taken to reduce the concentration of contaminants, and illustrating,*
  - i. *sampling locations,*
  - ii. *sample identification number,*



- iii. sampling points,*
- iv. sampling depths,*
- v. sampling depth intervals,*
- vi. concentrations of contaminants as analyzed in an accredited laboratory, and*
- vii. the applicable site condition standard or standard specified in a risk assessment for each contaminant analysed.*

*12. For each parameter group defined in the Analytical Protocol for which a contaminant has been analysed, provide cross-sections that are oriented parallel and perpendicular to the direction of ground water flow that show the results of analyses for all confirmation samples of soil, ground water and sediment, including the delineation of the lateral and vertical extent of contaminants in soil, ground water or sediment following actions taken to reduce the concentration of contaminants, and illustrating,*

- i. sampling locations,*
- ii. sample identification number,*
- iii. sampling points,*
- iv. sampling depths,*
- v. sampling depth intervals,*
- vi. concentrations of contaminants as analyzed in an accredited laboratory,*
- vii. the applicable site condition standard or standard specified in a risk assessment for each contaminant analyzed,*
- viii. approximate depth to water table, and*
- ix. the stratigraphy from ground surface to the deepest aquifer or aquitard where actions were taken to reduce the concentration of contaminants.*

*13. Provide a table showing construction details and elevations for all monitoring wells used in demonstrating that contaminant concentrations in ground water are below the applicable site condition standards following actions taken to reduce concentration of contaminants.*

*14. Provide a table showing all water level measurements for all monitoring events used in demonstrating that contaminant concentrations in ground water are below the applicable site condition standards following actions taken to reduce concentration of contaminants, including depth to water reported as elevations to the nearest centimetre relative to a geodetic or permanent and recoverable benchmark and reference elevations.*



To be completed after remediation.

**(c) Soil Excavated at the Phase Two Property/Excess Soil Brought to the Phase Two Property**

**(i) Excess Soil Brought to RSC property**

1. *Provide a rationale for the selection of chemical parameters analyzed by a laboratory in accordance with section 31 of this Schedule.*
2. *Provide a description of the soil sampling activities conducted, including,*
  - i. *the number of samples analyzed,*
  - ii. *the soil sampling program, including methods used to ensure that the samples are representative of any areas where a contaminant may be present at a concentration greater than the applicable soil quality standard, as determined in accordance with the Excess Soil Standards,*
  - iii. *the address of the source property and any property where the soil was stored prior to being deposited on, in or under the phase two property,*
  - iv. *the former and current uses of the source property, including identification of any potentially contaminating activity,*
  - v. *total volume of soil brought to the phase two property,*
  - vi. *the results of analyses of soil samples, including a comparison of the results to the applicable soil quality standards set out in the Excess Soil Standards,*
  - vii. *a figure showing the locations on the phase two property where soil was deposited, and*
  - viii. *tables,*
    - A. *showing all soil quality data contained in laboratory certificates of analysis of soil, samples analyzed, and*
    - B. *comparing the analytical results to the applicable soil quality standards set out in the Excess Soil Standards.*
3. *Provide a description of the purposes for which the soil was brought to the phase two property.*

To be completed after remediation.

**(ii) Segregation of Soil**

*Provide,*



- i. a rationale for the choice of contaminants to be analyzed,*
- ii. a description of the methods used to ensure uniform and representative sample collection,*
- iii. the number of soil samples collected and the volume of each stockpile, and*
- iv. a comparison of the results of analysis to the applicable site condition standards and standards specified in a risk assessment for all contaminants analyzed.*

*(c) Soil Excavated at the Phase Two Property or Excess Soil Brought to the Phase Two Property*

To be completed after remediation.

**(iii) Stockpiles**

*Provide,*

- i. a rationale for the choice,*
- ii. a description of the stockpile sampling program, including methods used to ensure uniform and representative sample collection, the number of soil samples collected and the volume of each stockpile,*
- iii. in respect of soil excavated at the phase two property, a table showing all soil quality data contained in certificates of analysis or analytical reports for stockpiled soil samples analyzed and a comparison of the analytical results to the applicable site condition standards and standards specified in a risk assessment, and*
- iv. in respect of excess soil brought to the phase two property, a comparison of the analytical results to applicable soil quality standards set out in the Excess Soil Standards.*

To be completed after remediation.

<b>TABLES</b>	
Monitoring Wells Installation (not applicable)	1
Water Levels, LNAPLs, DNAPLs, Water Quality Parameters (not applicable)	2
Soil Analytical Data	3
Groundwater Analytical Data (not applicable)	4
Sediment Analytical Data - Not Applicable	
Ground Water, Sediment and Soil Maximum Concentration Data - See Table 3	



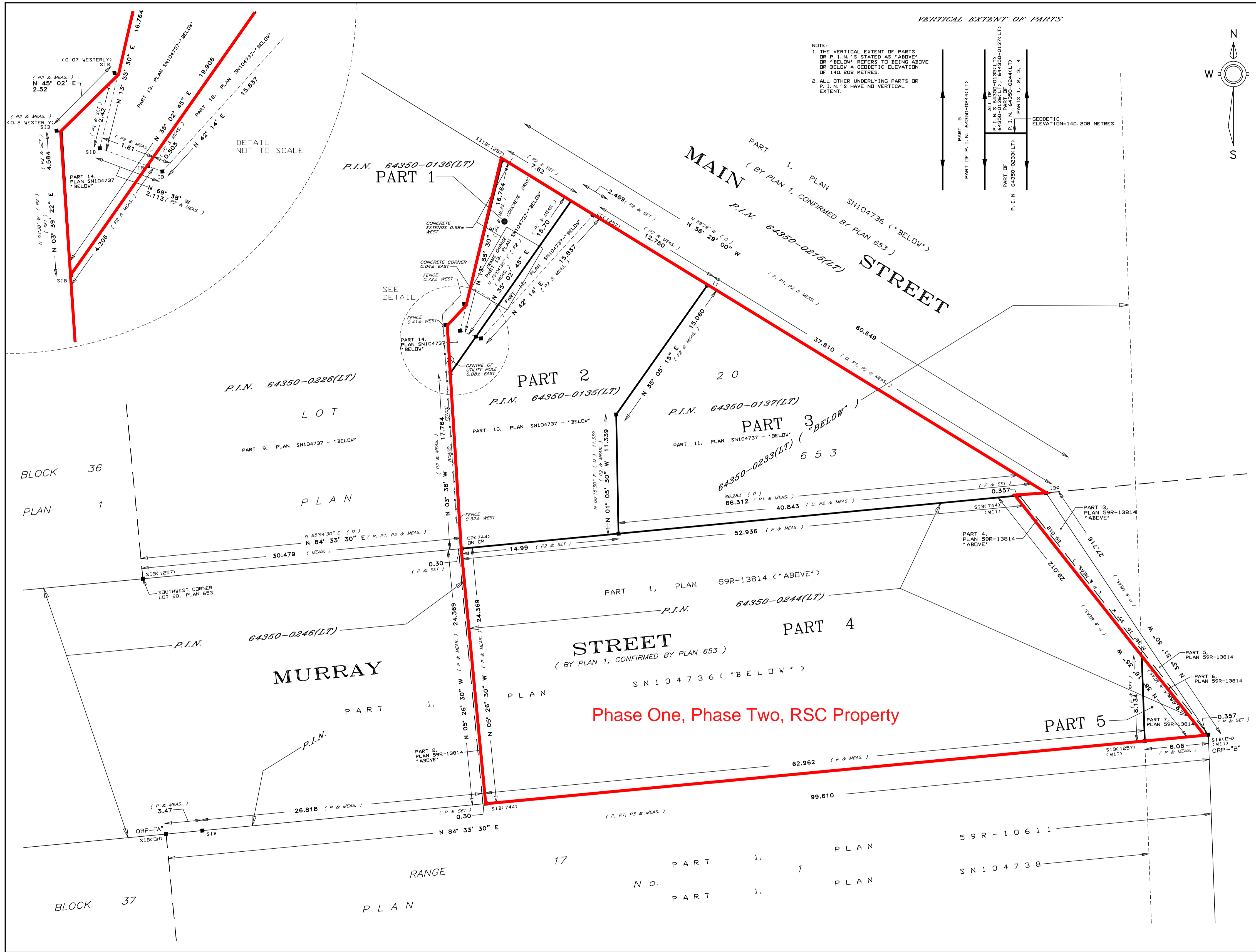


Analyte	Units	Sample ID		MAXIMUM CONCENTRATION	BH2 SS5	2A	RPD %	BH4 SS1	4B	RPD %
		ALS ID			L2644525-2	L2644525-5		L2644541-1	L2644541-2	
		Date Sampled	T3-SOIL-F-RPI		9/27/2021 10:30:00 AM	9/27/2021 12:00:00 AM		9/27/2021 12:00:00 PM	9/27/2021 12:00:00 PM	
		LOR			Soil	Soil		Soil	Soil	
Conductivity	mS/cm	0.004	0.7	0.433	-	-		0.163	0.139	15.89
% Moisture	%	0.25	-	22.4	9.31	9.68	3.90	20.3	18	12.01
pH	pH units	0.1	-	7.69	-	-		6.97	7.29	4.49
% >75um	%	1	-	7.5	-	-		-	-	-
Cyanide, Weak Acid Diss	ug/g	0.05	0.051	<0.050	-	-		<0.050	<0.050	n/a
SAR	SAR	0.1	5	1.16	-	-		0.13	0.13	0.00
Calcium (Ca)	mg/L	0.5	-	44.8	-	-		17.2	15.3	11.69
Magnesium (Mg)	mg/L	0.5	-	6.41	-	-		5.34	4.58	15.32
Sodium (Na)	mg/L	0.5	-	17.6	-	-		2.37	2.31	2.56
Antimony (Sb)	ug/g	1	7.5	0	-	-		<1.0	<1.0	n/a
Arsenic (As)	ug/g	1	18	15.7	-	-		7.4	6.5	12.95
Barium (Ba)	ug/g	1	390	68.6	-	-		68.4	53.2	25.00
Beryllium (Be)	ug/g	0.5	5	<0.50	-	-		<0.50	<0.50	n/a
Boron (B)	ug/g	5	120	7.5	-	-		6.6	6	9.52
Boron (B), Hot Water Ext. Available	ug/g	0.1	1.5	0.63	-	-		0.52	0.42	21.28
Cadmium (Cd)	ug/g	0.5	1.2	0.57	-	-		0.57	0.51	11.11
Chromium (Cr)	ug/g	1	160	17.5	-	-		16.9	16	5.47
Cobalt (Co)	ug/g	1	22	7.9	-	-		7.9	7.7	2.56
Copper (Cu)	ug/g	1	180	34.9	-	-		21.9	18.8	15.23
Lead (Pb)	ug/g	1	120	163	-	-		106	79.9	28.08
Mercury (Hg)	ug/g	0.005	1.8	0.0909	-	-		0.0527	0.0469	11.65
Molybdenum (Mo)	ug/g	1	6.9	<1.0	-	-		<1.0	<1.0	n/a
Nickel (Ni)	ug/g	1	130	23.6	-	-		19	18.6	2.13
Selenium (Se)	ug/g	1	2.4	<1.0	-	-		<1.0	<1.0	n/a
Silver (Ag)	ug/g	0.2	25	<0.20	-	-		<0.20	<0.20	n/a
Thallium (Tl)	ug/g	0.5	1	<0.50	-	-		<0.50	<0.50	n/a
Uranium (U)	ug/g	1	23	<1.0	-	-		<1.0	<1.0	n/a
Vanadium (V)	ug/g	1	86	26.1	-	-		26	22.5	14.43
Zinc (Zn)	ug/g	5	340	190	-	-		166	145	13.50
Chromium, Hexavalent	ug/g	0.2	10	<0.20	-	-		<0.20	<0.20	n/a
Benzene	ug/g	0.0068	0.17	<0.0068	<0.0068	<0.0068	n/a	-	-	-
Ethylbenzene	ug/g	0.018	15	<0.018	<0.018	<0.018	n/a	-	-	-
Toluene	ug/g	0.08	6	<0.080	<0.080	<0.080	n/a	-	-	-
o-Xylene	ug/g	0.02	-	<0.020	<0.020	<0.020	n/a	-	-	-
m,p-Xylenes	ug/g	0.03	-	<0.030	<0.030	<0.030	n/a	-	-	-
Xylenes (Total)	ug/g	0.05	25	<0.050	<0.050	<0.050	n/a	-	-	-
F1 (C6-C10)	ug/g	5	65	<5.0	<5.0	<5.0	n/a	-	-	-
F1-BTEX	ug/g	5	65	<5.0	<5.0	<5.0	n/a	-	-	-
F2 (C10-C16)	ug/g	10	150	<10	<10	<10	n/a	-	-	-
F3 (C16-C34)	ug/g	50	1300	<50	<50	<50	n/a	-	-	-
F4 (C34-C50)	ug/g	50	5600	<50	<50	<50	n/a	-	-	-
Total Hydrocarbons (C6-C50)	ug/g	72	-	<72	<72	<72	n/a	-	-	-
Aldrin	ug/g	0.0002	0.05	<0.00020	-	-		<0.00020	<0.00020	n/a
Lindane	ug/g	0.0002	0.063	<0.00020	-	-		<0.00020	<0.00020	n/a
a-chlordane	ug/g	0.0003	-	0.077	-	-		<0.00110	0.00047	n/a
Chlordane (Total)	ug/g	0.00042	0.05	0.184	-	-		<0.0032	0.00145	n/a
g-chlordane	ug/g	0.0003	-	0.107	-	-		<0.00300	0.00098	n/a
o,p-DDD	ug/g	0.0003	-	<0.00030	-	-		<0.00030	<0.00030	n/a
pp-DDD	ug/g	0.0003	-	<0.00120	-	-		<0.00120	0.00038	n/a
Total DDD	ug/g	0.00042	3.3	<0.0012	-	-		<0.0012	<0.00042	n/a
o,p-DDE	ug/g	0.0003	-	<0.00030	-	-		<0.00030	<0.00030	n/a
pp-DDE	ug/g	0.0003	-	<0.00250	-	-		<0.00250	0.00125	n/a
Total DDE	ug/g	0.00042	0.33	<0.0025	-	-		<0.0025	0.00125	n/a
op-DDT	ug/g	0.0005	-	<0.00050	-	-		<0.00050	<0.0015	n/a
pp-DDT	ug/g	0.0015	-	<0.00200	-	-		<0.00200	<0.0015	n/a
Total DDT	ug/g	0.0021	1.4	<0.0021	-	-		<0.0021	<0.0021	n/a
Dieldrin	ug/g	0.0002	0.05	0.184	-	-		0.00197	0.00093	71.72
alpha-Endosulfan	ug/g	0.0003	-	<0.00030	-	-		<0.00030	<0.00030	n/a
beta-Endosulfan	ug/g	0.0003	-	<0.00030	-	-		<0.00030	<0.00030	n/a
Endosulfan (Total)	ug/g	0.00042	0.04	<0.00042	-	-		<0.00042	<0.00042	n/a
Endrin	ug/g	0.0005	0.04	<0.00050	-	-		<0.00050	<0.0010	n/a
Heptachlor	ug/g	0.0002	0.15	<0.00020	-	-		<0.00020	<0.00020	n/a
Heptachlor Epoxide	ug/g	0.0002	0.05	<0.00050	-	-		<0.00050	<0.00020	n/a
Hexachlorobenzene	ug/g	0.0005	0.52	<0.00050	-	-		<0.00050	<0.00050	n/a
Hexachlorobutadiene	ug/g	0.0005	0.014	<0.00050	-	-		<0.00050	<0.00050	n/a
Hexachloroethane	ug/g	0.0005	0.07	<0.00050	-	-		<0.00050	<0.00050	n/a
Methoxychlor	ug/g	0.0005	0.13	<0.00050	-	-		<0.00050	<0.0025	n/a

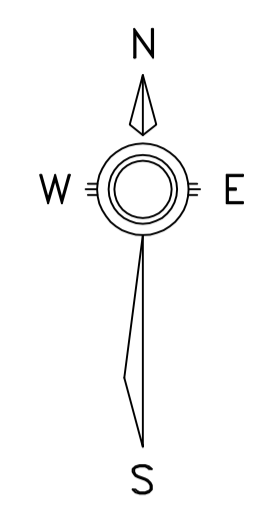
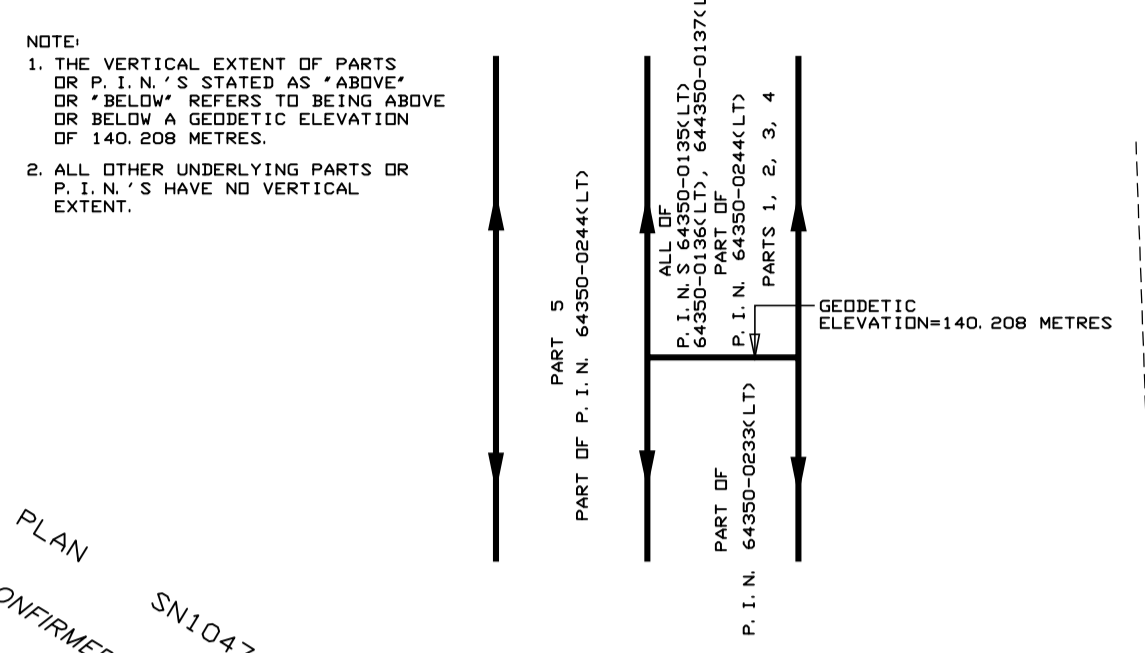
Applied Guideline: Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/1

## FIGURES

Survey Plan	
Site Layout Map	1
Conceptual Site Model Potentially Contaminating Activities	2
Conceptual Site Model Areas of Potential Environmental Concern	3
Borehole Layout Plan	4
Soil Analyses - Petroleum Hydrocarbons F1-F4, including Benzene, Toluene, Ethylbenzene and Xylene	5
Cross-Section A-A'	5.1
Cross-Section B-B'	5.2
Soil Analyses - Organochlorine Pesticides	6
Cross-Section D-D' - Organochlorine Pesticides	6.1
Soil Analyses - Metals, As, Sb, Se	7
Cross-Section C-C' - Metals, As, Sb, Se	7.1



**VERTICAL EXTENT OF PARTS**



I REQUIRE THIS PLAN TO BE DEPOSITED UNDER THE LAND TITLES ACT		<b>PLAN 59 R-</b> RECEIVED AND DEPOSITED	
DATE: _____		DATE: _____	
PHILIP S. SUDA O.L.S.		REPRESENTATIVE FOR THE LAND REGISTRAR FOR THE LAND TITLES DIVISION OF NIAGARA SOUTH(59)	
SCHEDULE			
PART	LOT	STREET	PLAN
1			ALL OF 64350-0136(LT)
2	PART OF LOT 20		653 ALL OF 64350-0135(LT)
3		PART OF MURRAY STREET	ALL OF 64350-0137(LT)
4		PART OF MURRAY STREET	ALL OF 64350-0244(LT)
5			ALL OF 64350-0244(LT)
PART 1 COMPRISES ALL OF P.I.N. 64350-0136(LT) PART 2 COMPRISES ALL OF P.I.N. 64350-0135(LT) PART 3 COMPRISES ALL OF P.I.N. 64350-0137(LT) PARTS 4 AND 5 COMPRISE ALL OF P.I.N. 64350-0244(LT)			

PLAN OF SURVEY OF  
**PART OF LOT 20,**  
 AND  
**PART OF MURRAY STREET,**  
**PLAN 653**  
 IN THE  
**CITY OF NIAGARA FALLS**  
 REGIONAL MUNICIPALITY OF NIAGARA  
 SCALE 1 : 200  
 5 4 3 2 1 0 5 10 15 METRES  
 PHILIP S. SUDA O.L.S.

**BEARING NOTE**  
 BEARINGS SHOWN ARE GRID BEARINGS DERIVED FROM OBSERVED REFERENCE POINTS "A" AND "B" BY REAL TIME NETWORK OBSERVATIONS AND ARE REFERRED TO THE CENTRAL MERIDIAN 81° W, U.T.M. ZONE 17, NAD 83(CSRS)

**DISTANCE NOTE**  
 DISTANCES SHOWN ON THIS PLAN ARE ADJUSTED GROUND LEVEL DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY THE AVERAGE COMBINED SCALE FACTOR OF 0.999859

**COORDINATE VALUES ARE TO AN URBAN ACCURACY IN ACCORDANCE WITH SECTION 14 (2) OF O.REG. 216/10**

POINT ID	NORTHING	EASTING
ORP-"A"	4771829.049	655891.183
ORP-"B"	4771838.470	655790.357

**NOTE**  
 COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

**METRIC NOTE**  
 DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METERS AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

**LEGEND**

- DENOTES SURVEY MONUMENT FOUND
- DENOTES SURVEY MONUMENT SET
- SB DENOTES STANDARD IRON BAR
- SSB DENOTES SHORT STANDARD IRON BAR
- IB DENOTES IRON BAR
- IT DENOTES IRON TUBE
- RB DENOTES ROUND IRON BAR
- CC DENOTES CUT CROSS
- WT DENOTES WITNESS
- CP DENOTES CONCRETE PIN AND WASHER
- P DENOTES DEPOSITED PLAN 59R-13814
- P1 DENOTES DEPOSITED PLAN SN104736
- P2 DENOTES DEPOSITED PLAN SN104737
- P3 DENOTES DEPOSITED PLAN 59R-10811
- D DENOTES INST. NO. 80756012
- 744 DENOTES R.J. MATTHEWS O.L.S.
- 1257 DENOTES R. LARROQUE O.L.S.
- OH DENOTES ONTARIO HYDRO
- CM DENOTES CONCRETE MONUMENT

**SURVEYOR'S CERTIFICATE**

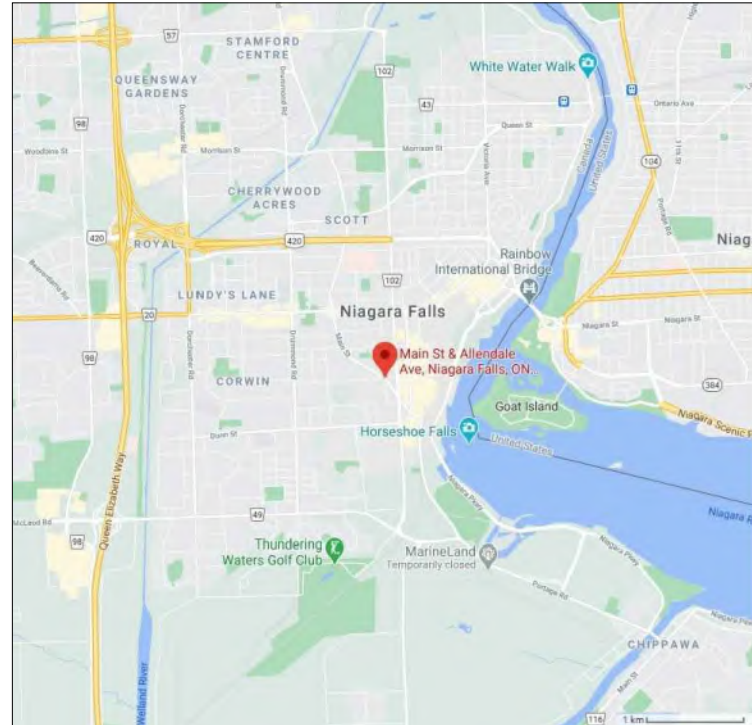
I CERTIFY THAT:  
 1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYORS ACT, THE SURVEYORS ACT AND THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.  
 2. THE SURVEY WAS COMPLETED ON THE \_\_\_\_\_<sup>12</sup> DAY OF \_\_\_\_\_ MAY 20 18 \_\_\_\_\_

DATE: \_\_\_\_\_ PHILIP S. SUDA  
 ONTARIO LAND SURVEYOR

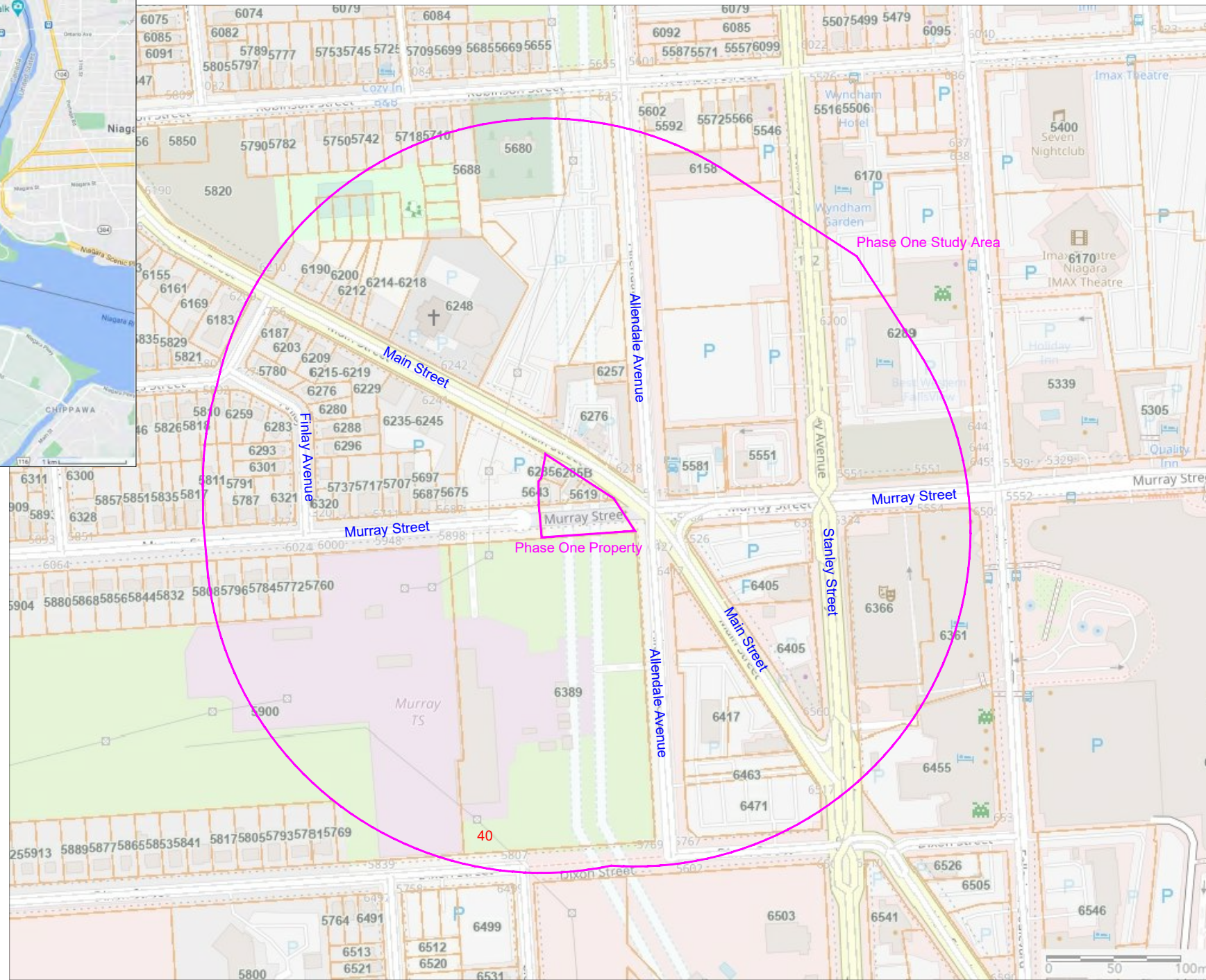
**SUDA & MALESZYK SURVEYING INC.**  
 ONTARIO LAND SURVEYORS  
 26 EAST MAIN STREET, WELLAND, ONTARIO, L3B 3W3  
 TEL: (905) 732-7651

FILE NO: 18-93 JOB NO: 5589





0m 1km



	<b>CEGP Consultants Ltd.</b> Markham, Ontario cegp.ca	Client: <b>Zeljko Holdings Limited</b>
	Project Address: <b>Main Street &amp; Murray Street, Niagara Falls</b>	
Figure Name: <b>Site Layout Map</b>	Date: October 2021	Figure No.: <b>1</b>

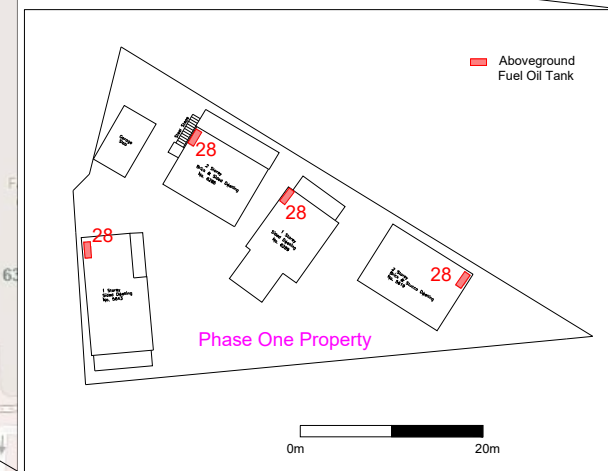
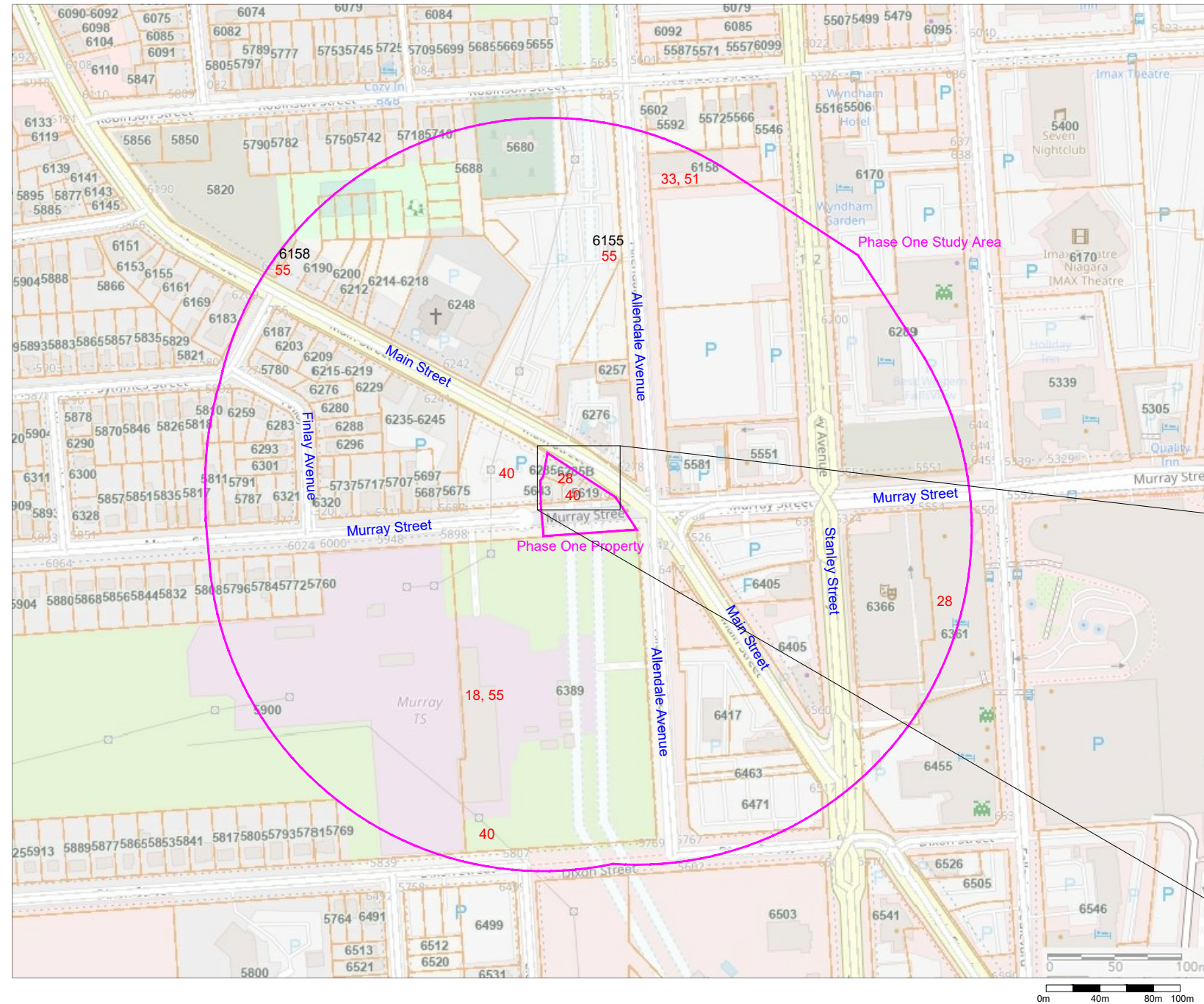




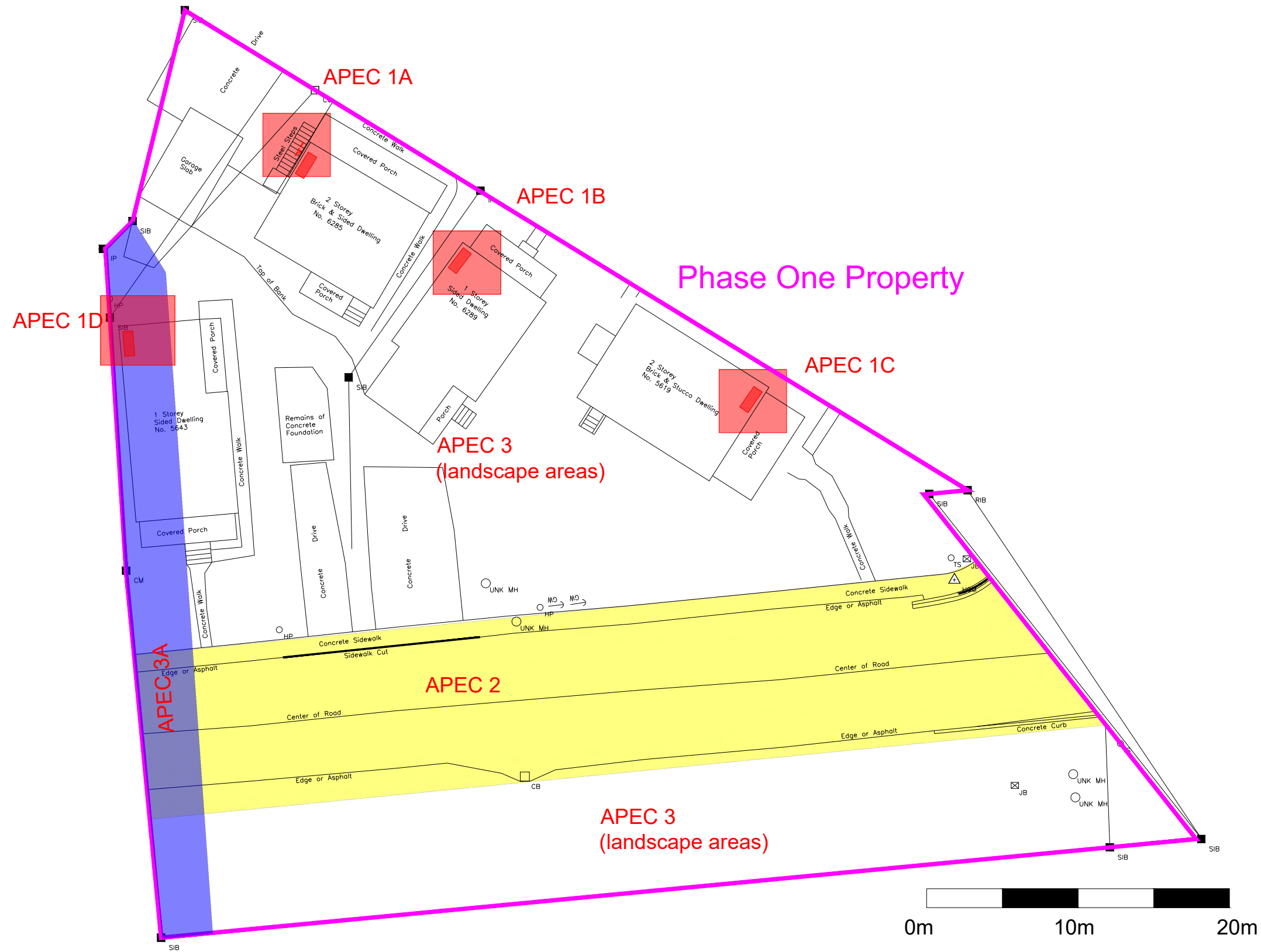
ONTARIO REGULATION 153/04  
 RECORDS OF SITE CONDITION - PART XV.1 OF THE ACT  
 SCHEDULE D - PHASE ONE ENVIRONMENTAL SITE ASSESSMENTS  
 TABLE 2 - POTENTIALLY CONTAMINATING ACTIVITIES

- #18 - Electricity Generation, Transformation and Power Stations
- #28 - Gasoline and Associated Products Storage in Fixed Tanks
- #30 - Importation of Fill Material of Unknown Quality
- #33 - Metal Treatment, Coating, Plating and Finishing
- #40 - Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents)
- Manufacturing, Processing, Bulk Storage and Large-Scale Applications
- #51 - Solvent Manufacturing, Processing and Bulk Storage
- #55 - Transformer Manufacturing, Processing and Use

28 indicates location of possible tank(s) within the property indicated in the layout plan.



 CEGP Consultants Ltd. Markham, Ontario cegp.ca	Client: Zeljko Holdings Limited	
	Project Address: Main Street & Murray Street, Niagara Falls	
Figure Name: Conceptual Site Model Potentially Contaminating Activities	Date: October 2021	Figure No.: <b>2</b>



**CEGP Consultants Ltd.**  
Markham, Ontario  
cegp.ca

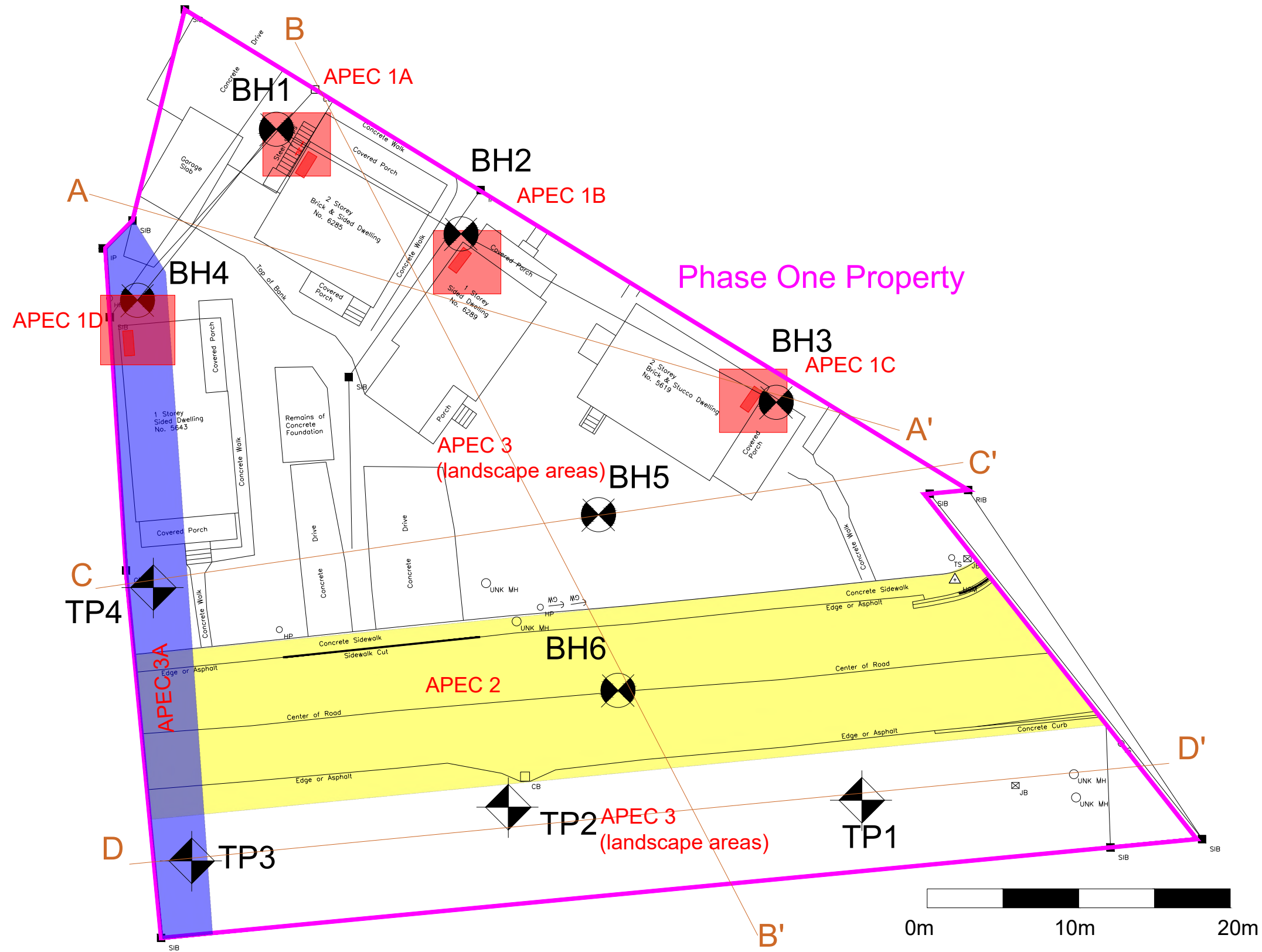
Client:  
**Zeljko Holdings Limited**

Project Address:  
**Main Street & Murray Street, Niagara Falls**

Figure Name:  
**Conceptual Site Model  
Areas of Potential Environmental Concern**

Date:  
**October  
2021**

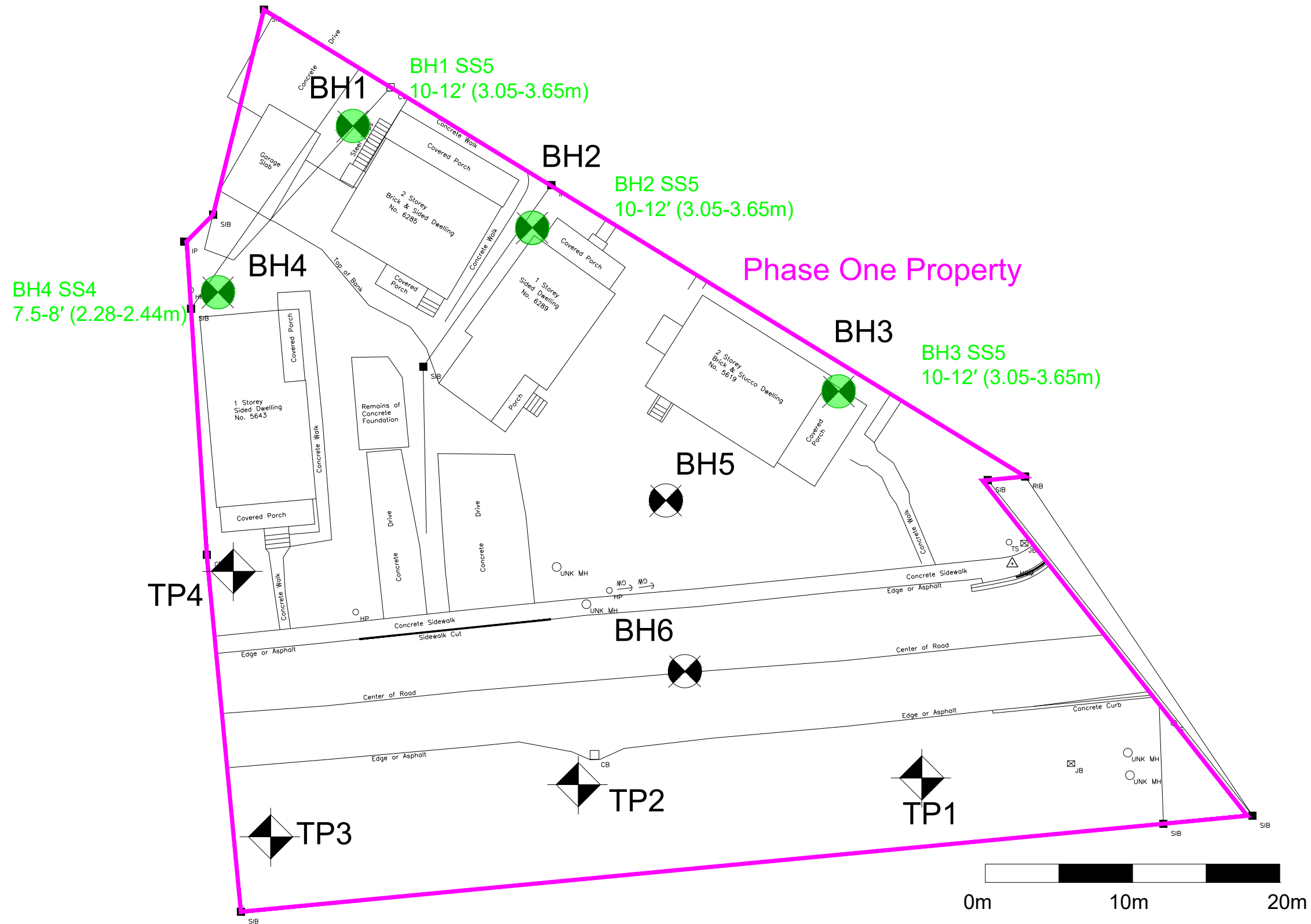
Figure No.:  
**3**



LEGEND	
	Borehole by CEGP 2021
	Test pit by CEGP 2021
	Meets Criteria
	Exceeds Criteria

 <b>CEGP Consultants Ltd.</b> Markham, Ontario cegp.ca	Client: <b>Zeljko Holdings Limited</b>	
	Project Address: <b>Main Street &amp; Murray Street, Niagara Falls</b>	
Figure Name: <b>Borehole Layout Plan</b>	Date: October 2021	Figure No.: <b>4</b>



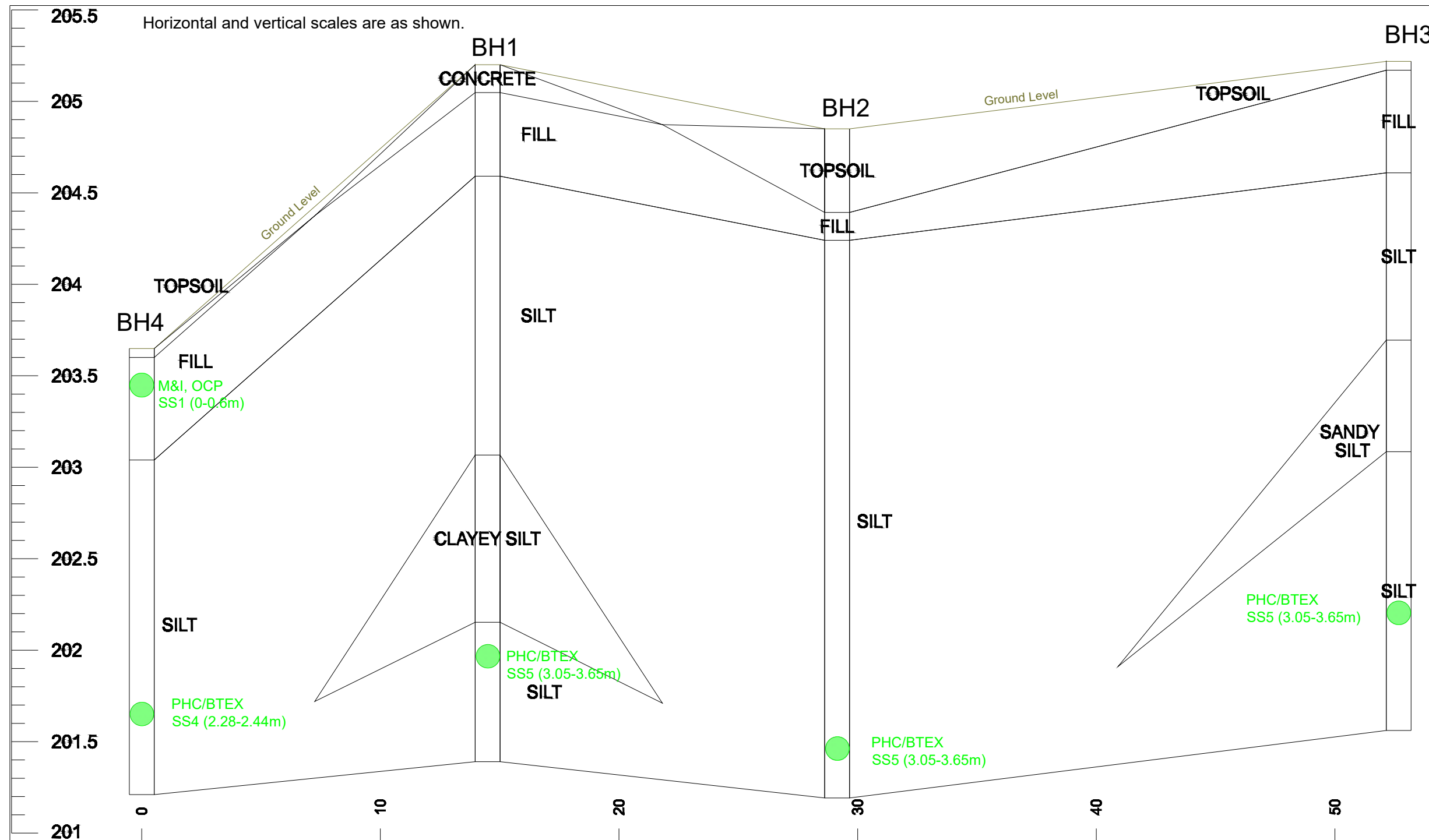


- Borehole by CEGP 2021
- Test pit by CEGP 2021
- Meets Criteria
- Exceeds Criteria

**SCS:** Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition with Medium Fine Textured Soils  
All units are in ug/g.

	<b>CEGP Consultants Ltd.</b> Markham, Ontario cegp.ca	Client: <b>Zeljko Holdings Limited</b>
	Project Address: <b>Main Street &amp; Murray Street, Niagara Falls</b>	
Figure Name: <b>Soil Analyses          Petroleum Hydrocarbons F1-F4, including          Benzene, Toluene, Ethylbenzene and Xylene</b>		Date: October 2021
		Figure No.: <b>5</b>





- Meets Criteria
- Exceeds Criteria

**SCS:** Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition with Medium Fine Textured Soils  
All units are in ug/g.



**CEGP Consultants Ltd.**  
Markham, Ontario  
cegp.ca

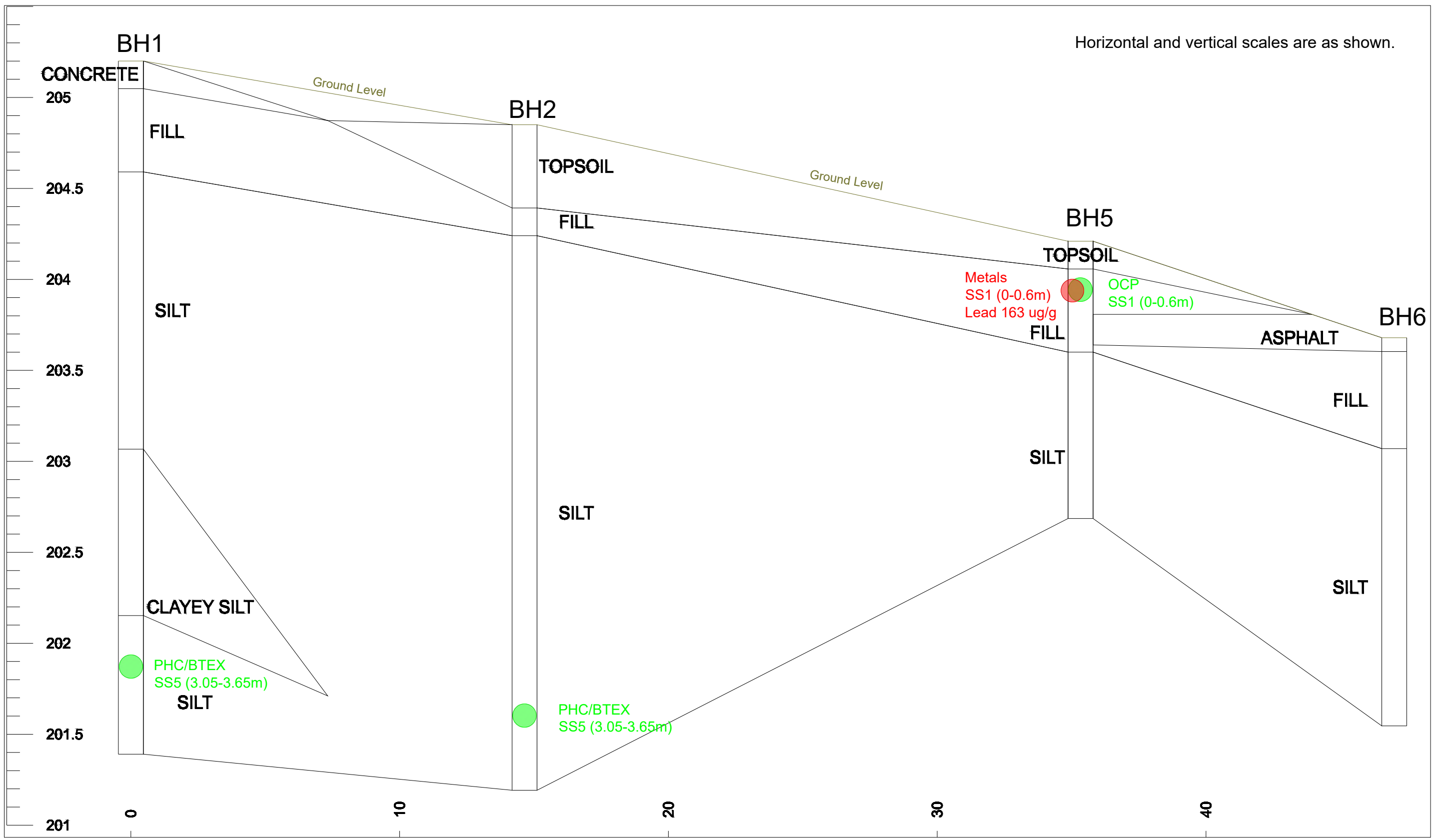
Client:  
**Zeljko Holdings Limited**

Project Address:  
**Main Street & Murray Street, Niagara Falls**

Figure Name:  
**Cross-Section A-A'**

Date:  
**October 2021**

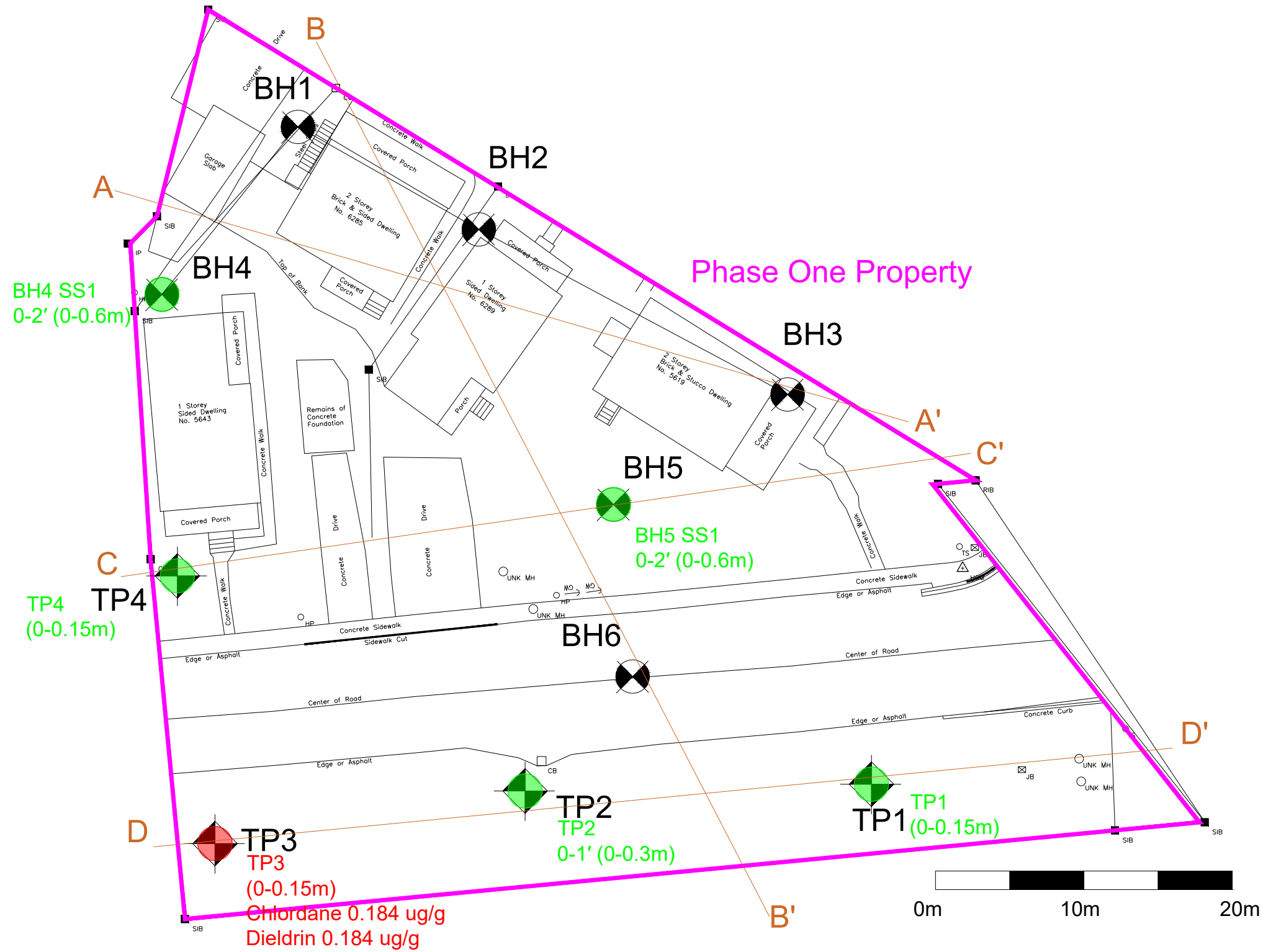
Figure No.:  
**5.1**



● Meets Criteria  
● Exceeds Criteria

**SCS:** Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition with Medium Fine Textured Soils  
All units are in ug/g.

<b>CEGP Consultants Ltd.</b> Markham, Ontario    cegp.ca	Client: <b>Zeljko Holdings Limited</b>
	Project Address: <b>Main Street &amp; Murray Street, Niagara Falls</b>
Figure Name: <b>Cross-Section B-B'</b>	Date: October 2021
Figure No.: <b>5.2</b>	



Borehole by CEGP 2021

Test pit by CEGP 2021

Meets Criteria

Exceeds Criteria

**SCS:** Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition with Medium Fine Textured Soils  
All units are in ug/g.

Chlordane 0.05  
Dieldrin 0.05



**CEGP Consultants Ltd.**  
Markham, Ontario  
cegp.ca

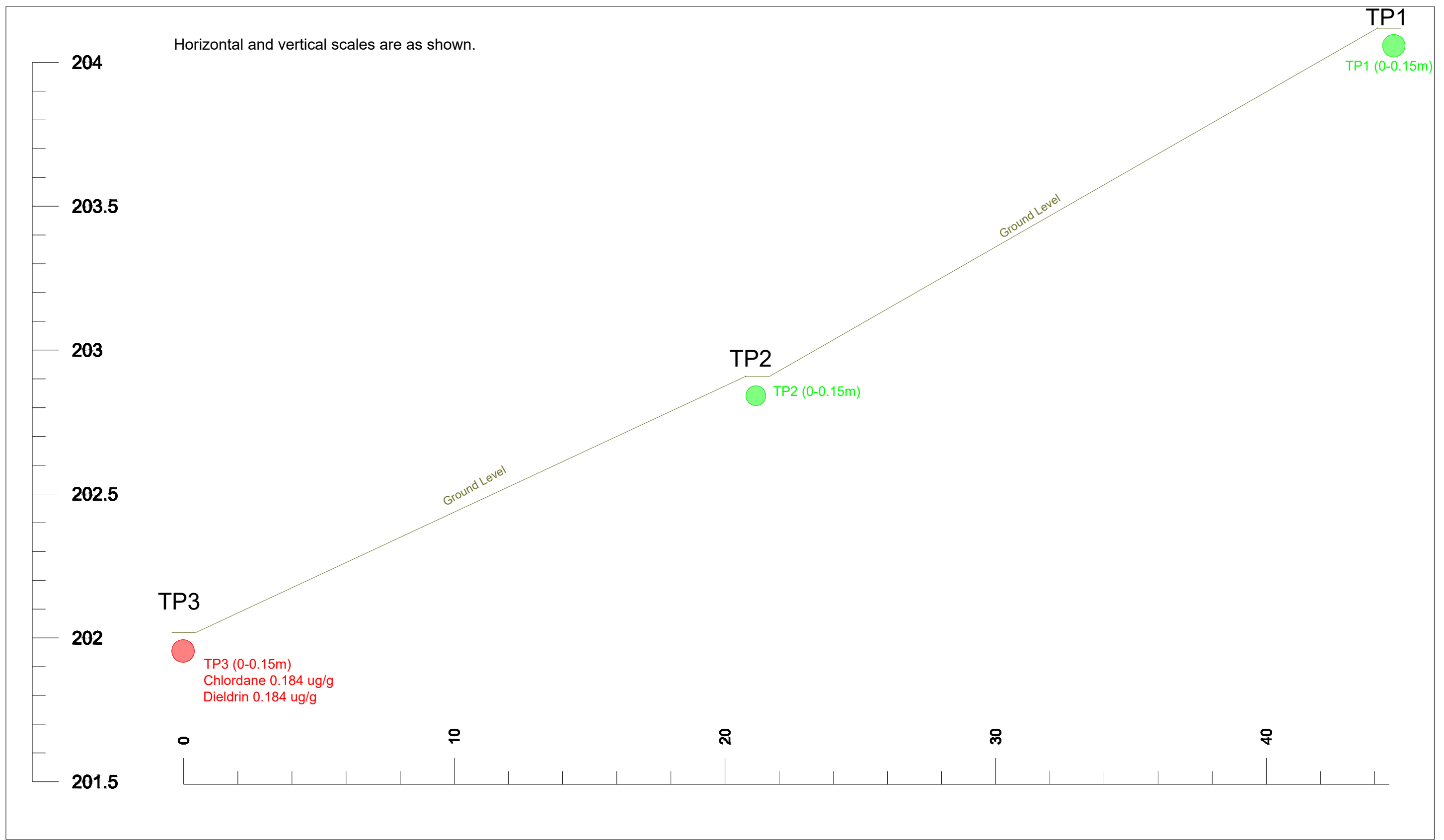
Client:  
**Zeljko Holdings Limited**

Project Address:  
**Main Street & Murray Street, Niagara Falls**

Figure Name:  
**Soil Analyses  
Organochlorine Pesticide**

Date:  
**October  
2021**

Figure No.:  
**6**

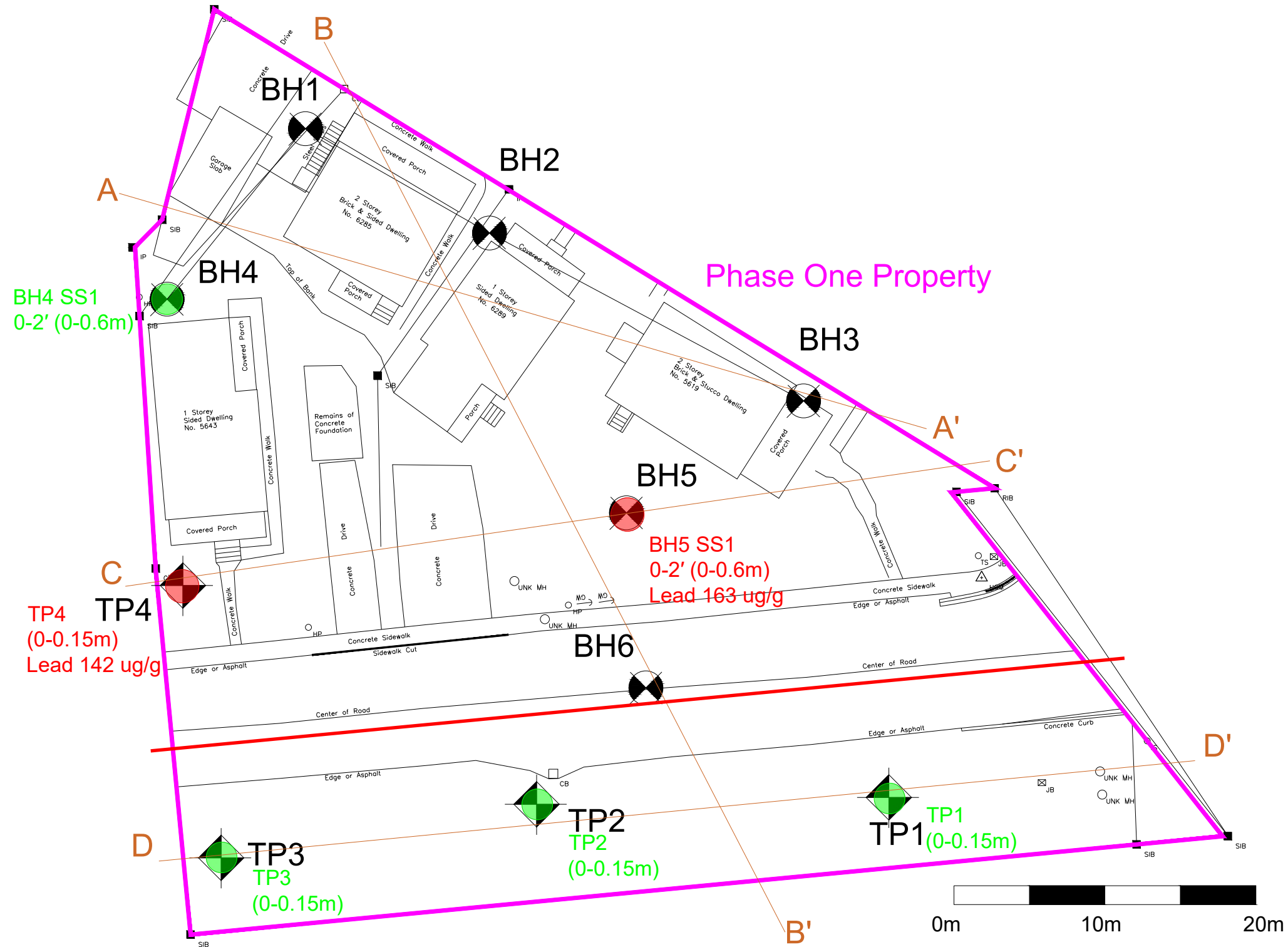


- Meets Criteria
- Exceeds Criteria

**SCS:** Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition with Medium Fine Textured Soils  
 All units are in ug/g.

Chlordane 0.05  
 Dieldrin 0.05

	<b>CEGP Consultants Ltd.</b> Client: Markham, Ontario      cegp.ca <b>Zeljko Holdings Limited</b>	
	Project Address: <b>Main Street &amp; Murray Street, Niagara Falls</b>	
Figure Name: <b>Cross-Section D-D'          Organochlorine Pesticide</b>	Date: <b>October          2021</b>	Figure No.: <b>6.1</b>

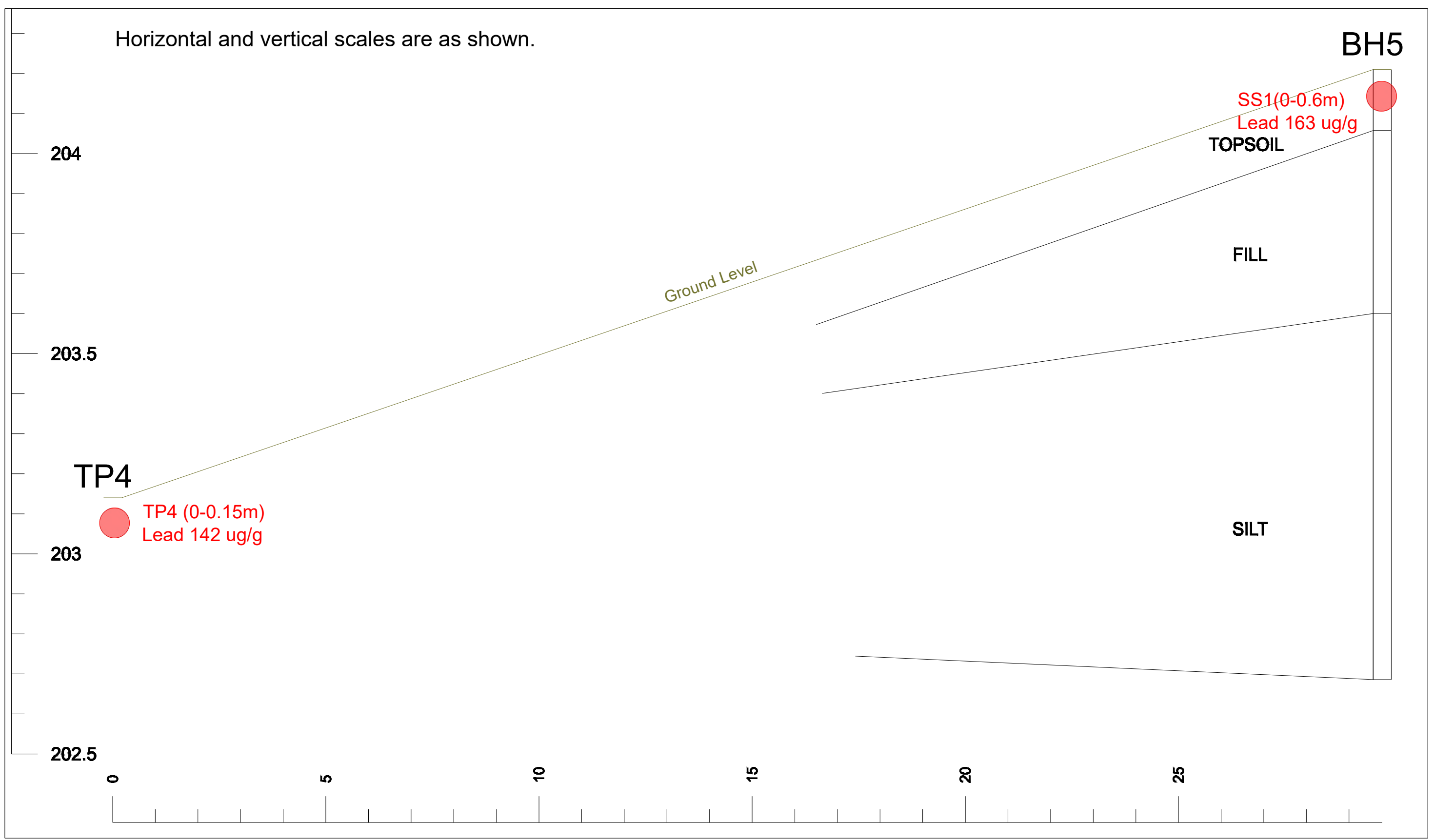


- Borehole by CEGP 2021
- Test pit by CEGP 2021
- Meets Criteria
- Exceeds Criteria

**SCS:** Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition with Medium Fine Textured Soils  
 All units are in ug/g.  
 Lead 120

<b>CEGP Consultants Ltd.</b> Markham, Ontario cegp.ca	Client:	<b>Zeljko Holdings Limited</b>
	Project Address: <b>Main Street &amp; Murray Street, Niagara Falls</b>	
Figure Name: <b>Soil Analyses Metals, As, Sb, Se</b>	Date: <b>October 2021</b>	Figure No.: <b>7</b>

Horizontal and vertical scales are as shown.



- Meets Criteria
- Exceeds Criteria

**SCS:** Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition with Medium Fine Textured Soils  
All units are in ug/g.  
  
Lead 120

 <b>CEGP Consultants Ltd.</b> Markham, Ontario cegp.ca	Client: <b>Zeljko Holdings Limited</b>	
	Project Address: <b>Main Street &amp; Murray Street, Niagara Falls</b>	
Figure Name: <b>Cross-Section C-C' Metals, As, Sb, Se</b>	Date: <b>October 2021</b>	Figure No.: <b>7.1</b>

<b>APPENDICES</b>	
Non-Potable Groundwater Notification to Municipality Sampling and Analysis Plan	Appendix A

## RE: [EXTERNAL]-Non-Potable Groundwater Notification for RSC

Clerk <clerk@niagarafalls.ca>

Mon 2021-09-13 10:58 AM

To: 'Rakesh Koneru' <rakeshk@live.ca>

Cc: Erik Nickel <enickel@niagarafalls.ca>; Natasha Vuckovic <nvuckovic@niagarafalls.ca>; Sam Valeo <svaleo@niagarafalls.ca>; James Sticca <jsticca@niagarafalls.ca>

Thank you for sending along your notice of intention to the City. I can confirm receipt and let you know that I have included staff from our Municipal Works Office to offer any comments related to your request.

**Bill Matson** | City Clerk | Director of Clerks Services | City of Niagara Falls

4310 Queen Street | Niagara Falls, ON L2E 6X5 | (905) 356-7521 ext 4342 | Fax 905-356-9083 | [billmatson@niagarafalls.ca](mailto:billmatson@niagarafalls.ca)

---

**From:** Rakesh Koneru <rakeshk@live.ca>

**Sent:** Sunday, September 12, 2021 10:14 AM

**To:** Clerk <clerk@niagarafalls.ca>

**Subject:** [EXTERNAL]-Non-Potable Groundwater Notification for RSC

Dear Sir/Madam,

CEGP Consultants Ltd. has been retained by Zeljko Holdings Limited to file a Record of Site Condition (RSC) in accordance to Ontario Regulation 153/04: Records of Site Condition for the properties at 5619 Murray Street, 5643 Murray Street, 6285 Main Street, 6289 Main Street, Former (now closed) municipal road allowance, Murray Street, in Niagara Falls, Ontario.

We are writing this email to notify you of our intention to use non-potable groundwater conditions for environmental site assessments purposes at the subject properties. To apply a non-potable ground water condition at an RSC property, the following conditions, as generally set out in subsection 35(2) of O. Reg. 153/04, must be met:

1. The RSC property and all other properties, located in whole or in part, within 250 metres of the boundaries of the property, are supplied by a municipal drinking water system, as defined in the Safe Drinking Water Act, 2002.
2. The RSC for the property does not specify agricultural or other use as the type of property use for which the RSC is filed.
3. If the RSC property is located in an area designated in the municipal official plan as a well-head protection area or other designation identified by the municipality for the protection of ground water, the municipality has consented in writing to the use of non-potable ground water standards and the consent has not been withdrawn.
4. If there are one or more wells used or intended for use as a source of water for human consumption of agriculture at the RSC property or within the phase one study area (i.e. wells other than the municipal drinking water well, such as a well on a property used as a backup water supply even when on municipal drinking water system), the municipality has consented in writing to the use of non-potable ground water standards and the consent has not been withdrawn.

To our knowledge, the subject property and surrounding areas are serviced by municipal drinking water, the land use is considered residential/community (former road) and there are no ground water wells located within 250 meters of the boundaries of the subject property.



Kindly note that in accordance with the Regulation, if no response is received from the Municipality within 30 days of this notification, then non-potable groundwater conditions will be used.

Should you have any concerns or questions, please contact the undersigned.

Sincerely,

Rakesh Koneru BSc, MEngSc, PEng, QP<sub>ESA</sub>  
Principal  
CEGP Consultants Ltd.  
29 Larkspur Drive  
Markham, Ontario  
L6B 0N1  
647 987 1384  
<https://cegp.ca>  
[rakesh@cegp.ca](mailto:rakesh@cegp.ca) or [rakeshk@live.ca](mailto:rakeshk@live.ca)

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

**Description of Potentially Contaminating Activities and associated Areas of Potential Environmental Concern****Potentially Contaminating Activities**

Location	Source	PCA #	Description	Impact onto Phase One Property
Entire Phase One Property	-	#30. Importation of Fill Material of Unknown Quality	Due to age of development of the Phase One Property fill material of unknown quality may be present in the underlying subsoils.	Yes - however, during the Phase Two ESA, there was no fill material encountered at the borehole locations. Therefore, this was not considered a PCA.
5619, 5643 Murray Street 6285, 6289 Main Street	Interview, Site Visit	#28. Gasoline and Associated Products Storage in Fixed Tanks	A fuel oil tank is present in the basement of the dwelling at 6285 Main Street. Vent/fill pipes were evident in the basements of all other dwellings indicative of aboveground fuel oil tanks in the past.	Yes
6389 Allendale Avenue 5800 Murray Street 5900 Murray Street Adjacent to south (Former 1652 Murray Street)	Fire Insurance Plans, Street Directories, Aerials, Site Visit	#18. Electricity Generation, Transformation and Power Stations #55. Transformer Manufacturing, Processing and Use	Presence of transformer station A Record of Site Condition (208526) was submitted for the east portion of the property. Localized remediation was completed for soils impacted with pesticides at the south portion of the property.	The transformer station building is about 90m to the south within the property, in a down/transgradient orientation. Most of the north portion remained a landscape area through the years. Therefore, environmental concern onto the Phase One Property is not anticipated.
Adjacent to west of Phase One Property	Aerials, Site Visit	#40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk	A hydro corridor is present along the west side of the Phase One Property. There might have been pesticides and herbicides used in the past.	Yes, due to proximity



		Storage and Large-Scale Applications		
6158 Allendale Avenue, (Former 2152-2162 Allen Avenue)	Fire Insurance Plans, ERIS	#33. Metal Treatment, Coating, Plating and Finishing #51. Solvent Manufacturing, Processing and Bulk Storage	Presence of former Zippo Manufacturing Company Canada Ltd. (cigarette lighter assembly)	No, due to significant distance
6155 Allendale Avenue	ERIS	#55. Transformer Manufacturing, Processing and Use	Niagara Peninsula Energy Inc. as a waste generator of PCBs in 2013 and 2014	No, due to significant distance
6361 Fallsview Boulevard	ERIS	#28. Gasoline and Associated Products Storage in Fixed Tanks	Listing of 100L diesel spill in 2015.	No, due to downgradient orientation
6158 Main Street	ERIS	#55. Transformer Manufacturing, Processing and Use	Specialty Commercial and Industrial Leasing Inc. Listed as a generator of light fuels and PCBs from 2001 to 2004.	No, due to significant distance

No other PCAs were identified within the Phase One Study Area.

Identified PCAs are shown in Figure 2.



## Areas of Potential Environmental Concern

Area of potential environmental concern	Location of area of potential environmental concern on phase one property	Potentially contaminating activity	Location of PCA (on-site or off-site)	Contaminants of potential concern	Media potentially Impacted (Ground water, soil and/or sediment)
1A	6285 Main Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	on-site	PHC, BTEX	Soil
1B	6289 Main Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	on-site	PHC, BTEX	Soil
1C	5619 Murray Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	on-site	PHC, BTEX	Soil
1D	5643 Murray Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	on-site	PHC, BTEX	Soil
2	Part of Murray Street	No PCA (Application of former de-icing salts on roadway)	on-site	SAR, EC (Na, Cl)	Soil (GW)
3	Landscape areas	#40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	on-site	OCP, Metals, As, Sb, Se	Soil
3A	West portion	#40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	off-site	OCP, Metals, As, Sb, Se	Soil



Areas of Potential Environmental Concern are shown in Figure No. 3.

**Sampling Media, Depth & Parameters**

Sampling Media		Sampling Depth Range	Analysis Parameters
Soil	Yes	Evaluate fill and native, select worst case based on visual, odour and field screening.	See APEC table above
		Collect surface samples for OCP, Metals	See APEC table above
Groundwater	Yes	Subject to known groundwater conditions	According to SoilMat (Geotechnical) the groundwater is at a significant depth. Evaluate and discuss with the Client before proceeding.
Cluster Wells	No		
Nested Wells	No		
Wells in Bedrock	No	To be determined if shallow bedrock.	
Surface Water	No	N/A	
Sediment	No	N/A	



## Soil and Groundwater Sampling &amp; Analysis : SOIL

APEC	PCA/APEC Location	Associated PCA	CoC	Sample ID	Expected Soil Type
1A	6285 Main Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	PHC, BTEX	BH1	Native, below basement level
1B	6289 Main Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	PHC, BTEX	BH2	Native, below basement level
1C	5619 Murray Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	PHC, BTEX	BH3	Native, below basement level
1D	5643 Murray Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	PHC, BTEX	BH4	Native, below basement level
2	Part of Murray Street	No PCA (Application of former de-icing salts on roadway)	SAR, EC (Na, Cl)	-	-
3	Landscape areas	#40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	OCP, Metals, As, Sb, Se	TP# and BH (as applicable)	surface
3A	West portion	#40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	OCP, Metals, As, Sb, Se	TP#	surface



**Soil and Groundwater Sampling & Analysis : GROUNDWATER**

APEC	PCA/APEC Location	Associated PCA	CoC	Sample ID
1A	6285 Main Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	PHC, BTEX	BH1
1B	6289 Main Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	PHC, BTEX	BH2
1C	5619 Murray Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	PHC, BTEX	BH3
1D	5643 Murray Street	#28. Gasoline and Associated Products Storage in Fixed Tanks	PHC, BTEX	BH4

To be evaluated based on site conditions. If groundwater/damp conditions are evident below the basement, install monitoring well(s) at each location.



**Sampling Equipment**

Sampling Equipment		Sampling Frequency	Remark
Split spoon	Yes	Every 0.76m upto 3m, then every 1.5m	SPT blow counts required.
Tube Sampler	No		
Excavating (test pits)	No	Surface Grab Sample	Hand shovel
Rock Coring	No		

**Residue Management**

Soil to be collected in drums/containers	Yes	Spoils to be left in metal drums and secured with caps. All drums should be kept inside the property fence.	
Soil disposal options	Yes	Include TCLPS analysis if exceedances are identified.	
Disposal Contact	N/A		
Site access issues – public accessibility issues	Yes	Check with Client	

**Site Characteristics**

Physical Impediments	Several utilities present across the site.
Utilities	See clearance papers, include private locator (Ontario Locates) prior to drilling at south portion - locator contracted by SoilMat
Property Limits	See Phase One ESA
Adjacent Structures	None

**Quality Assurance & Quality Control**

Laboratory to be used	ALS Canada - Emily Smith (PM)
SCS Table	Table 3 Non-Potable GW, with coarse soil texture, do grain size and evaluate
QA/QC Soil	Soil : Maintain duplicate ratio of 1:10, as a minimum, for each parameter group
QA/QC Water	Water (if applicable) : Maintain duplicate ratio of 1:10, as a minimum for each parameter group Include Trip Blank for each VOC round of sampling
Data Quality Objectives	Duplicate results should be compared to criteria as listed below.
Applicable Results	Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, Amended July 1, 2011 (Table 5 to 15)



**Applicable Standard Operating Procedures**

x	Borehole Drilling
x	Test Pits
x	Soil Sampling
x	Equipment For Screening
x	Field Screening
x	Monitoring Well Installation
x	Monitoring Well Development
x	Water Quality Indicator Measurement
x	Groundwater Sampling

<b>APPENDICES</b>	
Finalized Field Logs	Appendix B



Ground Elevation: 205.2 masl

m	ft	Geologic Description	ID	Recovery%	SPT Blow Count	Hexane	Isobutylene	Analysis	Well Details
0	0	CONCRETE							
0.5	1	FILL: Sand and gravel with clay, silt, reddish, dark brown, moist	SS1		5, 13, 4, 2	0	0		
1	3	SILT: Reddish Sandy Silt foundation backfill	SS2		2, 1, 1, 2	0	0		
1.5	5	SILT: Reddish Sandy Silt foundation backfill	SS3		2, 4, 3, 3	0	0		
2	7	CLAYEY SILT: reddish, damp	SS4		2, 3, 3, 9	0	0		
3	10	SILT: reddish, with cobble at 3.5m	SS5		12, 22, 29, 40	0	0	PHC, BTEX	
4	13	SILT: with some gravel, reddish, moist	SS6		17, 39	0	0		
4	14	End of borehole. No free water.							

Contractor: DAVIS DRILLING LTD.

Equipment: Track Mounted Rig

Method: Split Spoon with Solid Stem Augers



Ground Elevation: 204.85 masl

m	ft	Geologic Description	ID	Recovery%	SPT Blow Count	Hexane	Isobutylene	Analysis	Well Details
0	0	TOPSOIL: grass and topsoil							
	1		SS1		2, 6, 6, 4	0	0		
0.5	2	FILL: gravel with brown sand, moist							
	3	SILT: Reddish Silt foundation backfill							
1	4		SS2		2, 3, 3, 4	0	0		
	5								
1.5	6	SILT: Reddish Silt foundation backfill							
	7		SS3		2, 3, 12, 22	0	0		
	8								
2	9	SILT: with traces of sand and gravel, reddish, moist							
	10		SS4		10, 50	0	0		
	11								
3	12		SS5		21, 36	0	0	PHC, BTEX	
3.5	13	End of borehole. No free water.							
	14								

Contractor: DAVIS DRILLING LTD.

Equipment: Track Mounted Rig

Method: Split Spoon with Solid Stem Augers



Ground Elevation: 205.22 masl

m	ft	Geologic Description	ID	Recovery%	SPT Blow Count	Hexane	Isobutylene	Analysis	Well Details
0	0	TOPSOIL: grass and topsoil							
	1	FILL: Reddish Silt foundation backfill with some organics	SS1		4, 5, 5, 7	0	0		
0.5	2								
	3	SILT: Silt brown sandy silt, a layer of sand and gravel between 1-1.4m foundation backfill	SS2		5, 7, 9, 9	0	0		
1	4								
1.5	5	SANDY SILT: with some sand and gravel and boulders, reddish, moist	SS3		6, 11, 17, 24	0	0		
2	6								
	7	SILT: reddish, with some sand							
2.5	8		SS4		16, 42, 50	0	0		
3	9								
	10	SILT: with some gravel	SS5		11, 29	0	0	PHC, BTEX	
3.5	11	End of borehole. No free water.							
4	12								
	13								
	14								

Contractor: DAVIS DRILLING LTD.

Equipment: Track Mounted Rig

Method: Split Spoon with Solid Stem Augers



Ground Elevation: 203.65 masl

m	ft	Geologic Description	ID	Recovery%	SPT Blow Count	Hexane	Isobutylene	Analysis	Well Details
0	0	TOPSOIL: grass and topsoil							
	1	FILL: dark brown sandy silt, with organics and rootlets, reddish at 0.45 to 0.6m	SS1		1, 2, 3, 2	0	0	OCP, Metals	
0.5	2	SILT: with traces of sand and gravel, reddish, moist							
1	3		SS2		2, 3, 4, 6	0	0		
1.5	5								
2	6		SS3		5, 10, 14, 20	0	0		
2.5	8		SS4		11, 22	0	0	PHC, BTEX	
3	9	End of borehole. No free water.							
3.5	10								
4	11								
	12								
	13								
	14								

Contractor: DAVIS DRILLING LTD.

Equipment: Track Mounted Rig

Method: Split Spoon with Solid Stem Augers





**CEGP Consultants Ltd.**

Project Address:

Main Street & Murray Street, Niagara Falls

**BH5**

Date: 27 September, 2021

Easting: 655750.52

Northing: 4771859.88

Ground Elevation: 204.21 masl

m	ft	Geologic Description	ID	Recovery%	SPT Blow Count	Hexane	Isobutylene	Analysis	Well Details
0	0	TOPSOIL: grass and topsoil							
	1	FILL: dark brown sandy silt with organics and rootlets	SS1		2, 2, 3, 5	0	0	OCP, Metals	
0.5	2	SILT: reddish							
1	3		SS2		6, 8, 7, 9	0	0	Grainsi ze	
1.5	5	End of borehole. No free water.							
2	6								
2.5	7								
3	8								
3.5	9								
4	10								
	11								
	12								
	13								
	14								

Contractor: DAVIS DRILLING LTD.

Equipment: Track Mounted Rig

Method: Split Spoon with Solid Stem Augers



Ground Elevation: 203.68 masl

m	ft	Geologic Description	ID	Recovery%	SPT Blow Count	Hexane	Isobutylene	Analysis	Well Details
0	0	ASPHALT:							
		FILL: Sand and gravel							
0.5	1	FILL: sandy silt, with some gravel, reddish, moist	SS1		25, 17, 7, 5	0	0		
1	2	SILT: reddish, with some gravel, moist							
1.5	3		SS2		4, 5, 4, 4	0	0		
2	4								
2.5	5								
3	6		SS3		2, 4, 8, 8	0	0		
3.5	7	End of borehole. No free water.							
4	8								
	9								
	10								
	11								
	12								
	13								
	14								

Contractor: DAVIS DRILLING LTD.

Equipment: Track Mounted Rig

Method: Split Spoon with Solid Stem Augers



**CEGP Consultants Ltd.**

Project Address:

Main Street & Murray Street, Niagara Falls

**TP1**

Date:

Easting: 655767.90

Northing: 4771841.04

Ground Elevation: 204.12 masl

m	ft	Geologic Description	ID	Recovery%	SPT Blow Count	Hexane	Isobutylene	Analysis	Well Details
0	0	TOPSOIL: grass and topsoil						OCP, Metals	
0.5	1								
1	2								
1.5	3								
2	4								
2.5	5								
3	6								
3.5	7								
4	8								
	9								
	10								
	11								
	12								
	13								
	14								

Contractor:  
 Equipment:  
 Method:



**CEGP Consultants Ltd.**

Project Address:

Main Street & Murray Street, Niagara Falls

**TP2**

Date:

Easting: 655744.56

Northing: 4771840.58

Ground Elevation: 202.91 masl

m	ft	Geologic Description	ID	Recovery%	SPT Blow Count	Hexane	Isobutylene	Analysis	Well Details
0	0	TOPSOIL: grass and topsoil						OCP, Metals	
0.5	1								
1	2								
1.5	3								
2	4								
2.5	5								
3	6								
3.5	7								
4	8								
	9								
	10								
	11								
	12								
	13								
	14								

Contractor:  
 Equipment:  
 Method:



**CEGP Consultants Ltd.**

Project Address:

Main Street & Murray Street, Niagara Falls

**TP3**

Date:

Easting: 655723.66

Northing: 4771837.03

Ground Elevation: 202.02 masl

m	ft	Geologic Description	ID	Recovery%	SPT Blow Count	Hexane	Isobutylene	Analysis	Well Details
0	0	TOPSOIL: grass and topsoil						OCP, Metals	
0.5	1								
1	2								
1.5	3								
2	4								
2.5	5								
3	6								
3.5	7								
4	8								
	9								
	10								
	11								
	12								
	13								
	14								

Contractor:  
 Equipment:  
 Method:



**CEGP Consultants Ltd.**

Project Address:

Main Street & Murray Street, Niagara Falls

**TP4**

Date:

Easting: 655721.13

Northing: 4771855.07

Ground Elevation: 203.14 masl

m	ft	Geologic Description	ID	Recovery%	SPT Blow Count	Hexane	Isobutylene	Analysis	Well Details
0	0	TOPSOIL: grass and topsoil						OCP, Metals	
0.5	1								
1	2								
1.5	3								
2	4								
2.5	5								
3	6								
3.5	7								
4	8								
	9								
	10								
	11								
	12								
	13								
	14								

Contractor:  
 Equipment:  
 Method:

<b>APPENDICES</b>	
Certificates of Analysis or Analytical Reports from Laboratory	Appendix C



CEGP Consultants Ltd.  
ATTN: Rakesh Koneru  
29 Larkspur Drive  
Markham ON L6B 0N1

Date Received: 28-SEP-21  
Report Date: 05-OCT-21 17:57 (MT)  
Version: FINAL

Client Phone: 647-987-1384

## Certificate of Analysis

Lab Work Order #: L2644525  
Project P.O. #: NOT SUBMITTED  
Job Reference: CEGP 5619  
C of C Numbers:  
Legal Site Desc:

Emily Smith  
Account Manager

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

ADDRESS: 60 Northland Road, Unit 1, Waterloo, ON N2V 2B8 Canada | Phone: +1 519 886 6910 | Fax: +1 519 886 9047  
ALS CANADA LTD Part of the ALS Group An ALS Limited Company





# ANALYTICAL GUIDELINE REPORT

CEGP 5619

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte									
L2644525-1	BH1 SS5									
Sampled By: RK on 27-SEP-21 @ 09:45							#1			
Matrix: SOIL										
<b>Physical Tests</b>										
% Moisture		10.5		0.25	%	30-SEP-21				
pH		7.69		0.10	pH units	05-OCT-21				
<b>Volatile Organic Compounds</b>										
Benzene		<0.0068		0.0068	ug/g	29-SEP-21	0.21			
Ethylbenzene		<0.018		0.018	ug/g	29-SEP-21	2			
Toluene		<0.080		0.080	ug/g	29-SEP-21	2.3			
o-Xylene		<0.020		0.020	ug/g	29-SEP-21				
m+p-Xylenes		<0.030		0.030	ug/g	29-SEP-21				
Xylenes (Total)		<0.050		0.050	ug/g	30-SEP-21	3.1			
Surrogate: 4-Bromofluorobenzene		108.4		50-140	%	29-SEP-21				
Surrogate: 1,4-Difluorobenzene		96.7		50-140	%	29-SEP-21				
<b>Hydrocarbons</b>										
F1 (C6-C10)		<5.0		5.0	ug/g	29-SEP-21	55			
F1-BTEX		<5.0		5.0	ug/g	05-OCT-21	55			
F2 (C10-C16)		<10		10	ug/g	05-OCT-21	98			
F3 (C16-C34)		<50		50	ug/g	05-OCT-21	300			
F4 (C34-C50)		<50		50	ug/g	05-OCT-21	2800			
Total Hydrocarbons (C6-C50)		<72		72	ug/g	05-OCT-21				
Chrom. to baseline at nC50		YES			No Unit	05-OCT-21				
Surrogate: 2-Bromobenzotrifluoride		91.1		60-140	%	05-OCT-21				
Surrogate: 3,4-Dichlorotoluene		72.9		60-140	%	29-SEP-21				
L2644525-2	BH2 SS5									
Sampled By: RK on 27-SEP-21 @ 10:30							#1			
Matrix: SOIL										
<b>Physical Tests</b>										
% Moisture		9.31		0.25	%	30-SEP-21				
<b>Volatile Organic Compounds</b>										
Benzene		<0.0068		0.0068	ug/g	29-SEP-21	0.21			
Ethylbenzene		<0.018		0.018	ug/g	29-SEP-21	2			
Toluene		<0.080		0.080	ug/g	29-SEP-21	2.3			
o-Xylene		<0.020		0.020	ug/g	29-SEP-21				
m+p-Xylenes		<0.030		0.030	ug/g	29-SEP-21				
Xylenes (Total)		<0.050		0.050	ug/g	30-SEP-21	3.1			
Surrogate: 4-Bromofluorobenzene		102.9		50-140	%	29-SEP-21				
Surrogate: 1,4-Difluorobenzene		91.4		50-140	%	29-SEP-21				
<b>Hydrocarbons</b>										
F1 (C6-C10)		<5.0		5.0	ug/g	29-SEP-21	55			
F1-BTEX		<5.0		5.0	ug/g	05-OCT-21	55			
F2 (C10-C16)		<10		10	ug/g	05-OCT-21	98			
F3 (C16-C34)		<50		50	ug/g	05-OCT-21	300			
F4 (C34-C50)		<50		50	ug/g	05-OCT-21	2800			
Total Hydrocarbons (C6-C50)		<72		72	ug/g	05-OCT-21				
Chrom. to baseline at nC50		YES			No Unit	05-OCT-21				
Surrogate: 2-Bromobenzotrifluoride		96.1		60-140	%	05-OCT-21				
Surrogate: 3,4-Dichlorotoluene		73.3		60-140	%	29-SEP-21				

\*\* 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:

**T3-Soil-Res/Park/Inst. Property Use (Coarse)**

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



# ANALYTICAL GUIDELINE REPORT

CEGP 5619

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte									
L2644525-3	BH3 SS5									
Sampled By: RK on 27-SEP-21 @ 11:20										
Matrix: SOIL										
<b>Physical Tests</b>										
% Moisture		9.83		0.25	%	30-SEP-21				
<b>Volatile Organic Compounds</b>										
Benzene		<0.0068		0.0068	ug/g	29-SEP-21	0.21			
Ethylbenzene		<0.018		0.018	ug/g	29-SEP-21	2			
Toluene		<0.080		0.080	ug/g	29-SEP-21	2.3			
o-Xylene		<0.020		0.020	ug/g	29-SEP-21				
m+p-Xylenes		<0.030		0.030	ug/g	29-SEP-21				
Xylenes (Total)		<0.050		0.050	ug/g	30-SEP-21	3.1			
Surrogate: 4-Bromofluorobenzene		118.6		50-140	%	29-SEP-21				
Surrogate: 1,4-Difluorobenzene		106.3		50-140	%	29-SEP-21				
<b>Hydrocarbons</b>										
F1 (C6-C10)		<5.0		5.0	ug/g	29-SEP-21	55			
F1-BTEX		<5.0		5.0	ug/g	05-OCT-21	55			
F2 (C10-C16)		<10		10	ug/g	05-OCT-21	98			
F3 (C16-C34)		<50		50	ug/g	05-OCT-21	300			
F4 (C34-C50)		<50		50	ug/g	05-OCT-21	2800			
Total Hydrocarbons (C6-C50)		<72		72	ug/g	05-OCT-21				
Chrom. to baseline at nC50		YES			No Unit	05-OCT-21				
Surrogate: 2-Bromobenzotrifluoride		88.8		60-140	%	05-OCT-21				
Surrogate: 3,4-Dichlorotoluene		68.9		60-140	%	29-SEP-21				
L2644525-4	BH4 SS4									
Sampled By: RK on 27-SEP-21 @ 12:25										
Matrix: SOIL										
<b>Physical Tests</b>										
% Moisture		11.9		0.25	%	30-SEP-21				
<b>Volatile Organic Compounds</b>										
Benzene		<0.0068		0.0068	ug/g	29-SEP-21	0.21			
Ethylbenzene		<0.018		0.018	ug/g	29-SEP-21	2			
Toluene		<0.080		0.080	ug/g	29-SEP-21	2.3			
o-Xylene		<0.020		0.020	ug/g	29-SEP-21				
m+p-Xylenes		<0.030		0.030	ug/g	29-SEP-21				
Xylenes (Total)		<0.050		0.050	ug/g	30-SEP-21	3.1			
Surrogate: 4-Bromofluorobenzene		101.9		50-140	%	29-SEP-21				
Surrogate: 1,4-Difluorobenzene		90.3		50-140	%	29-SEP-21				
<b>Hydrocarbons</b>										
F1 (C6-C10)		<5.0		5.0	ug/g	29-SEP-21	55			
F1-BTEX		<5.0		5.0	ug/g	01-OCT-21	55			
F2 (C10-C16)		<10		10	ug/g	01-OCT-21	98			
F3 (C16-C34)		<50		50	ug/g	01-OCT-21	300			
F4 (C34-C50)		<50		50	ug/g	01-OCT-21	2800			
Total Hydrocarbons (C6-C50)		<72		72	ug/g	01-OCT-21				
Chrom. to baseline at nC50		YES			No Unit	01-OCT-21				
Surrogate: 2-Bromobenzotrifluoride		93.0		60-140	%	01-OCT-21				
Surrogate: 3,4-Dichlorotoluene		56.5	SURR-ND	60-140	%	29-SEP-21				

\*\* 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:

**T3-Soil-Res/Park/Inst. Property Use (Coarse)**

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



# ANALYTICAL GUIDELINE REPORT

CEGP 5619

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits		
Grouping	Analyte						#1		
L2644525-5	2A								
Sampled By: RK on 27-SEP-21									
Matrix: SOIL									
<b>Physical Tests</b>									
% Moisture		9.68		0.25	%	30-SEP-21			
<b>Volatile Organic Compounds</b>									
Benzene		<0.0068		0.0068	ug/g	29-SEP-21	0.21		
Ethylbenzene		<0.018		0.018	ug/g	29-SEP-21	2		
Toluene		<0.080		0.080	ug/g	29-SEP-21	2.3		
o-Xylene		<0.020		0.020	ug/g	29-SEP-21			
m+p-Xylenes		<0.030		0.030	ug/g	29-SEP-21			
Xylenes (Total)		<0.050		0.050	ug/g	30-SEP-21	3.1		
Surrogate: 4-Bromofluorobenzene		106.2		50-140	%	29-SEP-21			
Surrogate: 1,4-Difluorobenzene		96.5		50-140	%	29-SEP-21			
<b>Hydrocarbons</b>									
F1 (C6-C10)		<5.0		5.0	ug/g	29-SEP-21	55		
F1-BTEX		<5.0		5.0	ug/g	01-OCT-21	55		
F2 (C10-C16)		<10		10	ug/g	01-OCT-21	98		
F3 (C16-C34)		<50		50	ug/g	01-OCT-21	300		
F4 (C34-C50)		<50		50	ug/g	01-OCT-21	2800		
Total Hydrocarbons (C6-C50)		<72		72	ug/g	01-OCT-21			
Chrom. to baseline at nC50		YES			No Unit	01-OCT-21			
Surrogate: 2-Bromobenzotrifluoride		89.6		60-140	%	01-OCT-21			
Surrogate: 3,4-Dichlorotoluene		75.5		60-140	%	29-SEP-21			

\*\* 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:

**T3-Soil-Res/Park/Inst. Property Use (Coarse)**

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

## Reference Information

### Sample Parameter Qualifier key listed:

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

### Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
BTX-511-HS-WT	Soil	BTEX-O.Reg 153/04 (July 2011)	SW846 8260

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

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

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S
-------------------	------	---	-------------------------------------

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

Hydrocarbon results are expressed on a dry weight basis.

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

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

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

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

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

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

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

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

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

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

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

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

#### Notes:

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

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

MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
-------------	------	------------	---------------------------------

## Reference Information

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).

XYLENES-SUM-CALC-      Soil                      Sum of Xylene Isomer                      CALCULATION  
WT                                      Concentrations

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

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

Chain of Custody numbers:

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

Laboratory Definition Code	Laboratory Location	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: L2644525

Report Date: 05-OCT-21

Page 1 of 4

Client: CEGP Consultants Ltd.  
29 Larkspur Drive  
Markham ON L6B 0N1

Contact: Rakesh Koneru

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>BTX-511-HS-WT</b>		<b>Soil</b>						
<b>Batch</b>	<b>R5604333</b>							
<b>WG3626764-4</b>	<b>DUP</b>	<b>WG3626764-3</b>						
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	29-SEP-21
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	29-SEP-21
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	29-SEP-21
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	29-SEP-21
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	29-SEP-21
<b>WG3626764-2</b>	<b>LCS</b>							
Benzene			98.2		%		70-130	29-SEP-21
Ethylbenzene			98.5		%		70-130	29-SEP-21
m+p-Xylenes			97.1		%		70-130	29-SEP-21
o-Xylene			96.8		%		70-130	29-SEP-21
Toluene			100.1		%		70-130	29-SEP-21
<b>WG3626764-1</b>	<b>MB</b>							
Benzene			<0.0068		ug/g		0.0068	29-SEP-21
Ethylbenzene			<0.018		ug/g		0.018	29-SEP-21
m+p-Xylenes			<0.030		ug/g		0.03	29-SEP-21
o-Xylene			<0.020		ug/g		0.02	29-SEP-21
Toluene			<0.080		ug/g		0.08	29-SEP-21
Surrogate: 1,4-Difluorobenzene			107.4		%		50-140	29-SEP-21
Surrogate: 4-Bromofluorobenzene			125.5		%		50-140	29-SEP-21
<b>WG3626764-5</b>	<b>MS</b>	<b>WG3626764-3</b>						
Benzene			105.0		%		60-140	29-SEP-21
Ethylbenzene			106.2		%		60-140	29-SEP-21
m+p-Xylenes			105.1		%		60-140	29-SEP-21
o-Xylene			104.0		%		60-140	29-SEP-21
Toluene			108.7		%		60-140	29-SEP-21
<b>F1-HS-511-WT</b>		<b>Soil</b>						
<b>Batch</b>	<b>R5604333</b>							
<b>WG3626764-4</b>	<b>DUP</b>	<b>WG3626764-3</b>						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	29-SEP-21
<b>WG3626764-2</b>	<b>LCS</b>							
F1 (C6-C10)			80.3		%		80-120	29-SEP-21
<b>WG3626764-1</b>	<b>MB</b>							
F1 (C6-C10)			<5.0		ug/g		5	29-SEP-21
Surrogate: 3,4-Dichlorotoluene			84.5		%		60-140	29-SEP-21
<b>WG3626764-5</b>	<b>MS</b>	<b>WG3626764-3</b>						



### Quality Control Report

Workorder: L2644525

Report Date: 05-OCT-21

Page 2 of 4

Client: CEGP Consultants Ltd.  
29 Larkspur Drive  
Markham ON L6B 0N1

Contact: Rakesh Koneru

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>F1-HS-511-WT</b>		<b>Soil</b>						
<b>Batch</b>	<b>R5604333</b>							
<b>WG3626764-5</b>	<b>MS</b>	<b>WG3626764-3</b>						
F1 (C6-C10)			103.0		%		60-140	29-SEP-21
<b>F2-F4-511-WT</b>		<b>Soil</b>						
<b>Batch</b>	<b>R5606253</b>							
<b>WG3627650-7</b>	<b>DUP</b>	<b>WG3627650-9</b>						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	01-OCT-21
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	01-OCT-21
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	01-OCT-21
<b>WG3627650-6</b>	<b>LCS</b>							
F2 (C10-C16)			96.6		%		80-120	01-OCT-21
F3 (C16-C34)			93.6		%		80-120	01-OCT-21
F4 (C34-C50)			100.0		%		80-120	01-OCT-21
<b>WG3627650-5</b>	<b>MB</b>							
F2 (C10-C16)			<10		ug/g		10	01-OCT-21
F3 (C16-C34)			<50		ug/g		50	01-OCT-21
F4 (C34-C50)			<50		ug/g		50	01-OCT-21
Surrogate: 2-Bromobenzotrifluoride			97.3		%		60-140	01-OCT-21
<b>WG3627650-8</b>	<b>MS</b>	<b>WG3627650-9</b>						
F2 (C10-C16)			99.6		%		60-140	01-OCT-21
F3 (C16-C34)			98.5		%		60-140	01-OCT-21
F4 (C34-C50)			107.5		%		60-140	01-OCT-21
<b>Batch</b>	<b>R5608319</b>							
<b>WG3627191-3</b>	<b>DUP</b>	<b>WG3627191-5</b>						
F2 (C10-C16)		<30	<30	RPD-NA	ug/g	N/A	30	05-OCT-21
F3 (C16-C34)		<150	180	RPD-NA	ug/g	N/A	30	05-OCT-21
F4 (C34-C50)		<150	<150	RPD-NA	ug/g	N/A	30	05-OCT-21
<b>WG3627191-2</b>	<b>LCS</b>							
F2 (C10-C16)			90.4		%		80-120	05-OCT-21
F3 (C16-C34)			87.7		%		80-120	05-OCT-21
F4 (C34-C50)			80.4		%		80-120	05-OCT-21
<b>WG3627191-1</b>	<b>MB</b>							
F2 (C10-C16)			<10		ug/g		10	05-OCT-21
F3 (C16-C34)			<50		ug/g		50	05-OCT-21
F4 (C34-C50)			<50		ug/g		50	05-OCT-21
Surrogate: 2-Bromobenzotrifluoride			95.8		%		60-140	05-OCT-21



### Quality Control Report

Workorder: L2644525

Report Date: 05-OCT-21

Page 3 of 4

Client: CEGP Consultants Ltd.  
29 Larkspur Drive  
Markham ON L6B 0N1

Contact: Rakesh Koneru

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>F2-F4-511-WT</b>	<b>Soil</b>							
<b>Batch</b>	<b>R5608319</b>							
<b>WG3627191-4 MS</b>		<b>WG3627191-5</b>						
F2 (C10-C16)			88.6		%		60-140	05-OCT-21
F3 (C16-C34)			82.0		%		60-140	05-OCT-21
F4 (C34-C50)			84.9		%		60-140	05-OCT-21
<b>MOISTURE-WT</b>	<b>Soil</b>							
<b>Batch</b>	<b>R5604938</b>							
<b>WG3627168-3 DUP</b>		<b>L2644525-1</b>						
% Moisture		10.5	10.4		%	1.0	20	30-SEP-21
<b>WG3627168-2 LCS</b>								
% Moisture			99.6		%		90-110	30-SEP-21
<b>WG3627168-1 MB</b>								
% Moisture			<0.25		%		0.25	30-SEP-21
<b>Batch</b>	<b>R5604944</b>							
<b>WG3627263-3 DUP</b>		<b>L2642342-12</b>						
% Moisture		68.5	69.3		%	1.1	20	30-SEP-21
<b>WG3627263-2 LCS</b>								
% Moisture			99.3		%		90-110	30-SEP-21
<b>WG3627263-1 MB</b>								
% Moisture			<0.25		%		0.25	30-SEP-21
<b>PH-WT</b>	<b>Soil</b>							
<b>Batch</b>	<b>R5608076</b>							
<b>WG3627166-1 DUP</b>		<b>L2643989-7</b>						
pH		5.36	5.26	J	pH units	0.10	0.3	05-OCT-21
<b>WG3631316-1 LCS</b>								
pH			6.99		pH units		6.9-7.1	05-OCT-21



# Quality Control Report

Workorder: L2644525

Report Date: 05-OCT-21

Client: CEGP Consultants Ltd.  
29 Larkspur Drive  
Markham ON L6B 0N1

Page 4 of 4

Contact: Rakesh Koneru

## 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
DLHM	Detection Limit Adjusted: Sample has High Moisture Content
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.

---

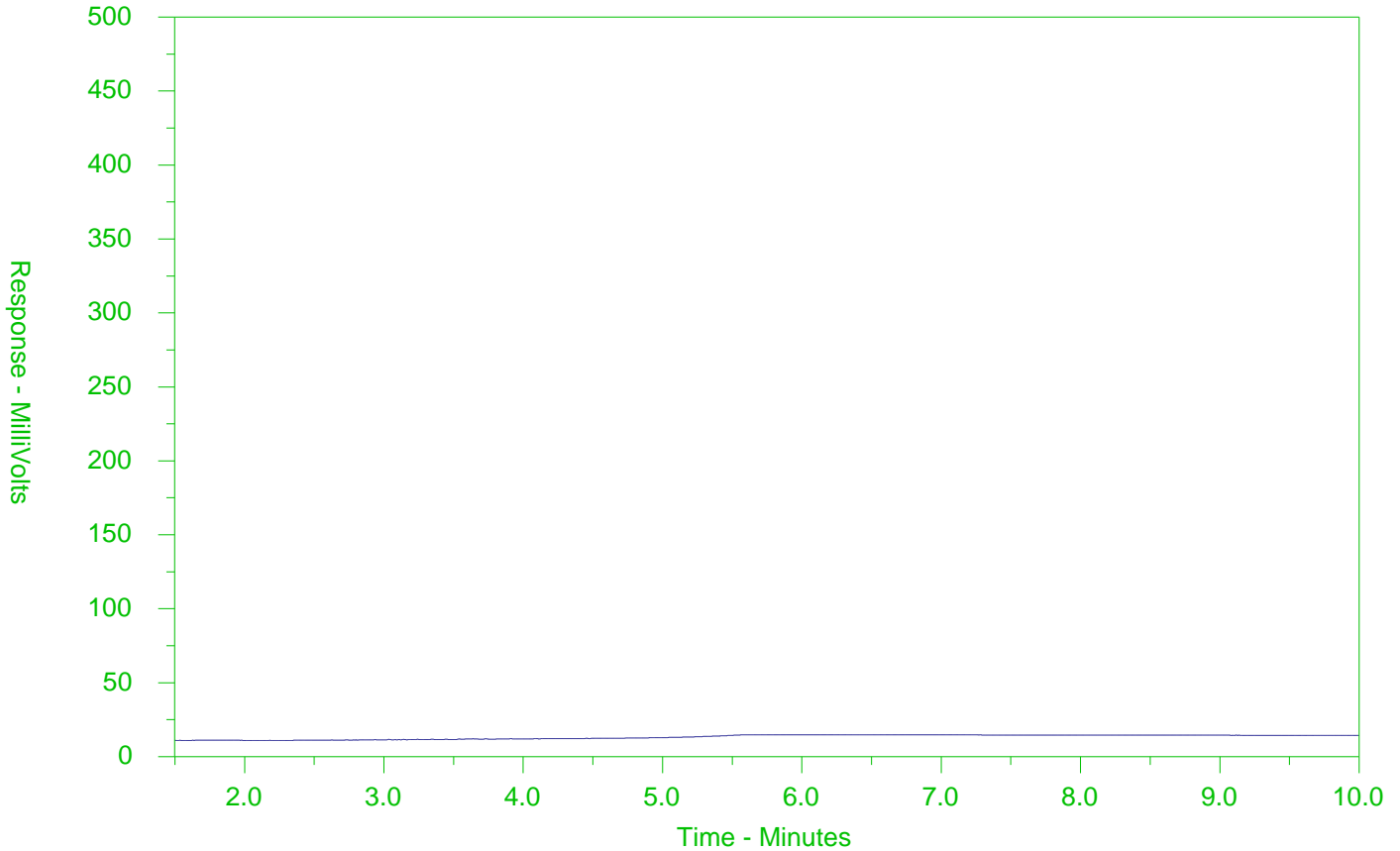
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide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

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2644525-1  
 Client Sample ID: BH1 SS5



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

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

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

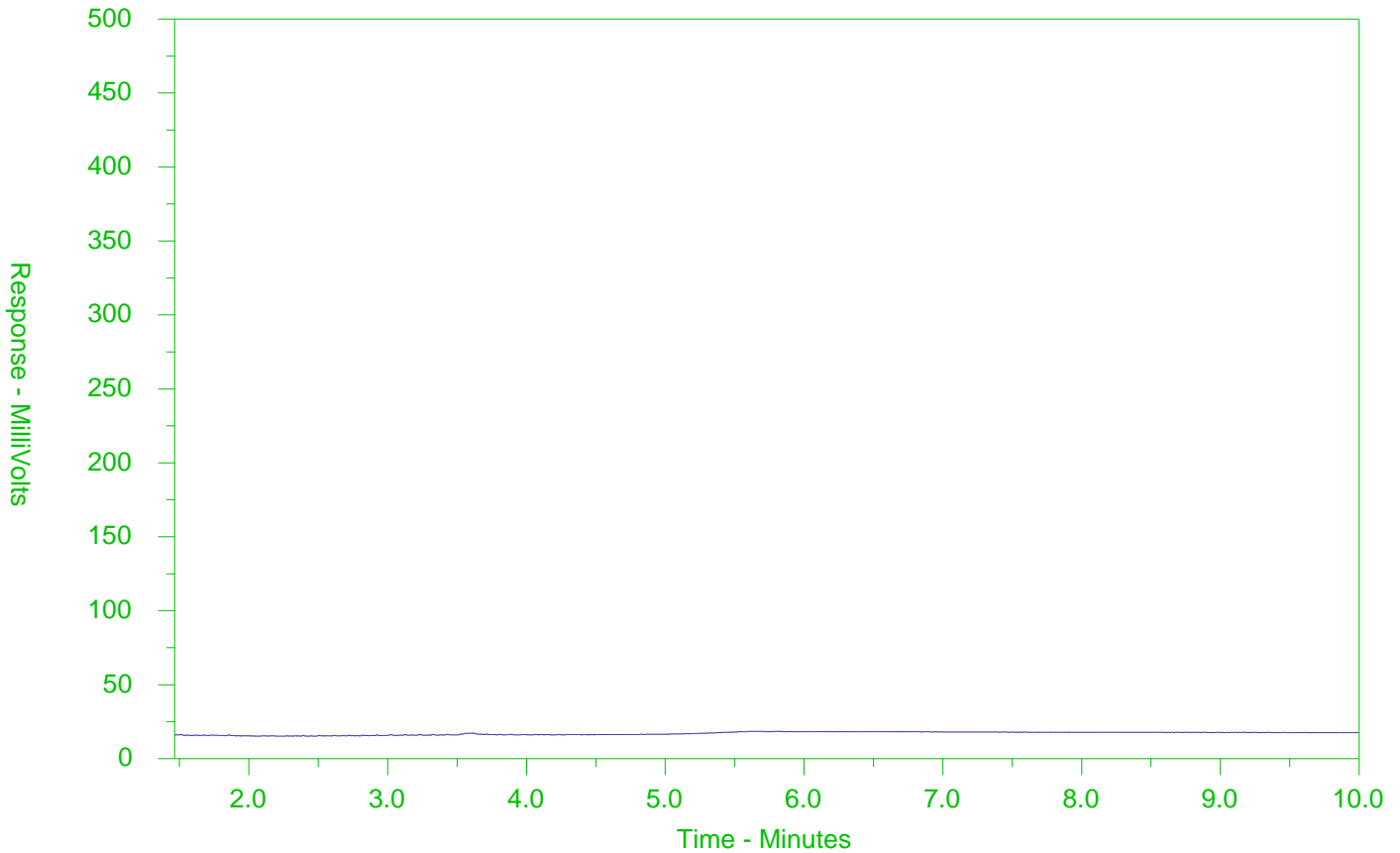
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2644525-2  
 Client Sample ID: BH2 SS5



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

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

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

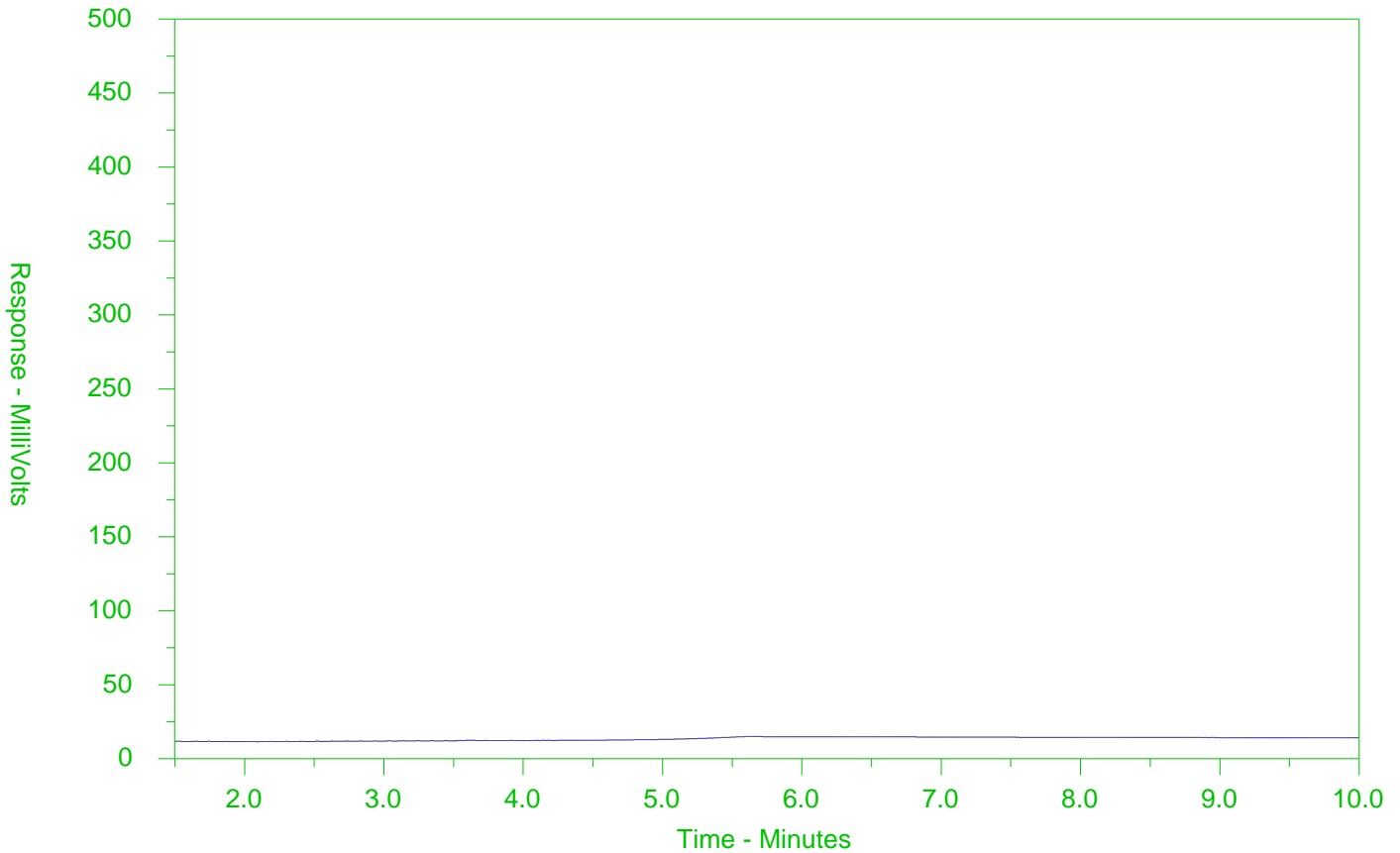
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2644525-3  
 Client Sample ID: BH3 SS5



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

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

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

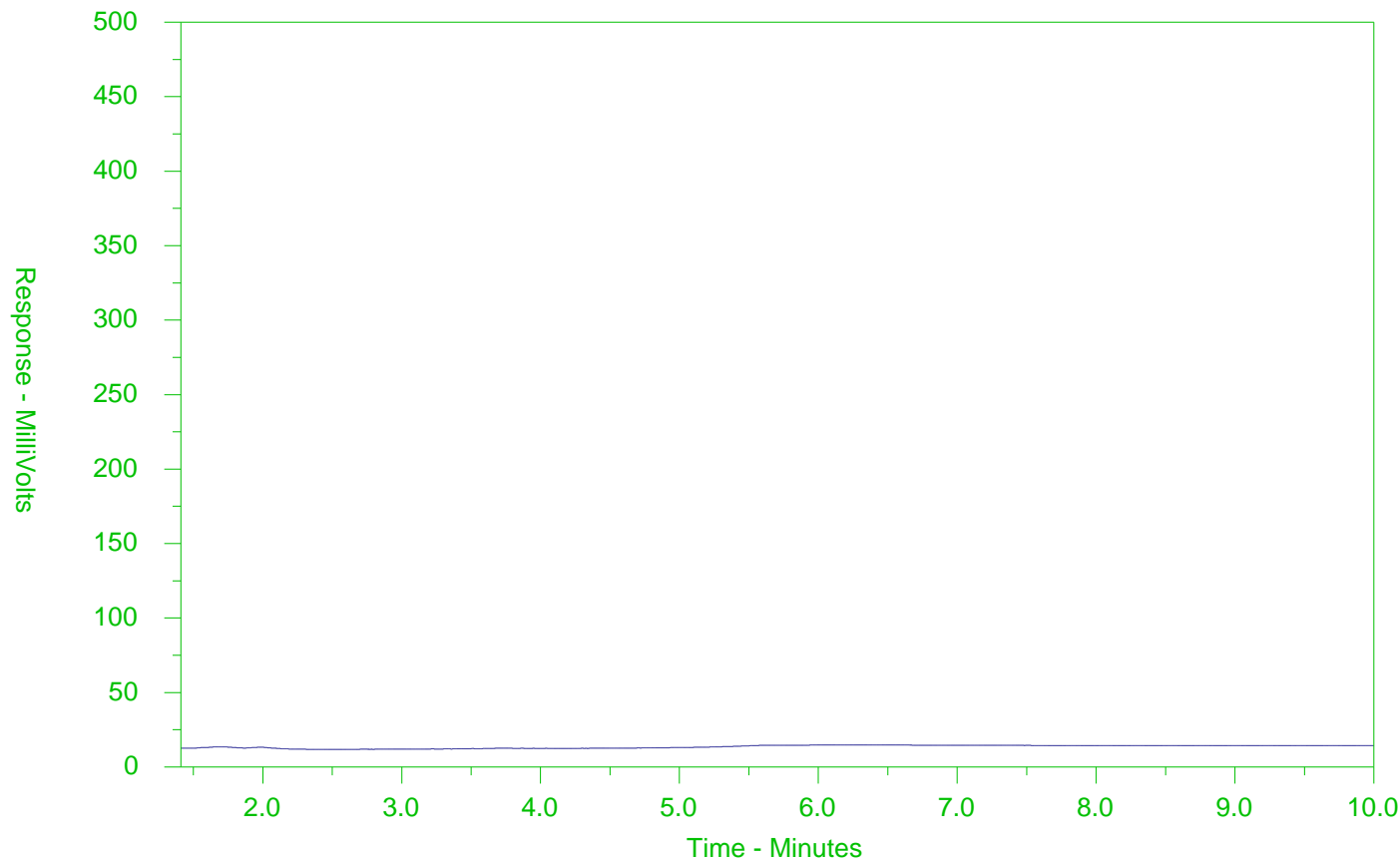
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2644525-4  
 Client Sample ID: BH4 SS4



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

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

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

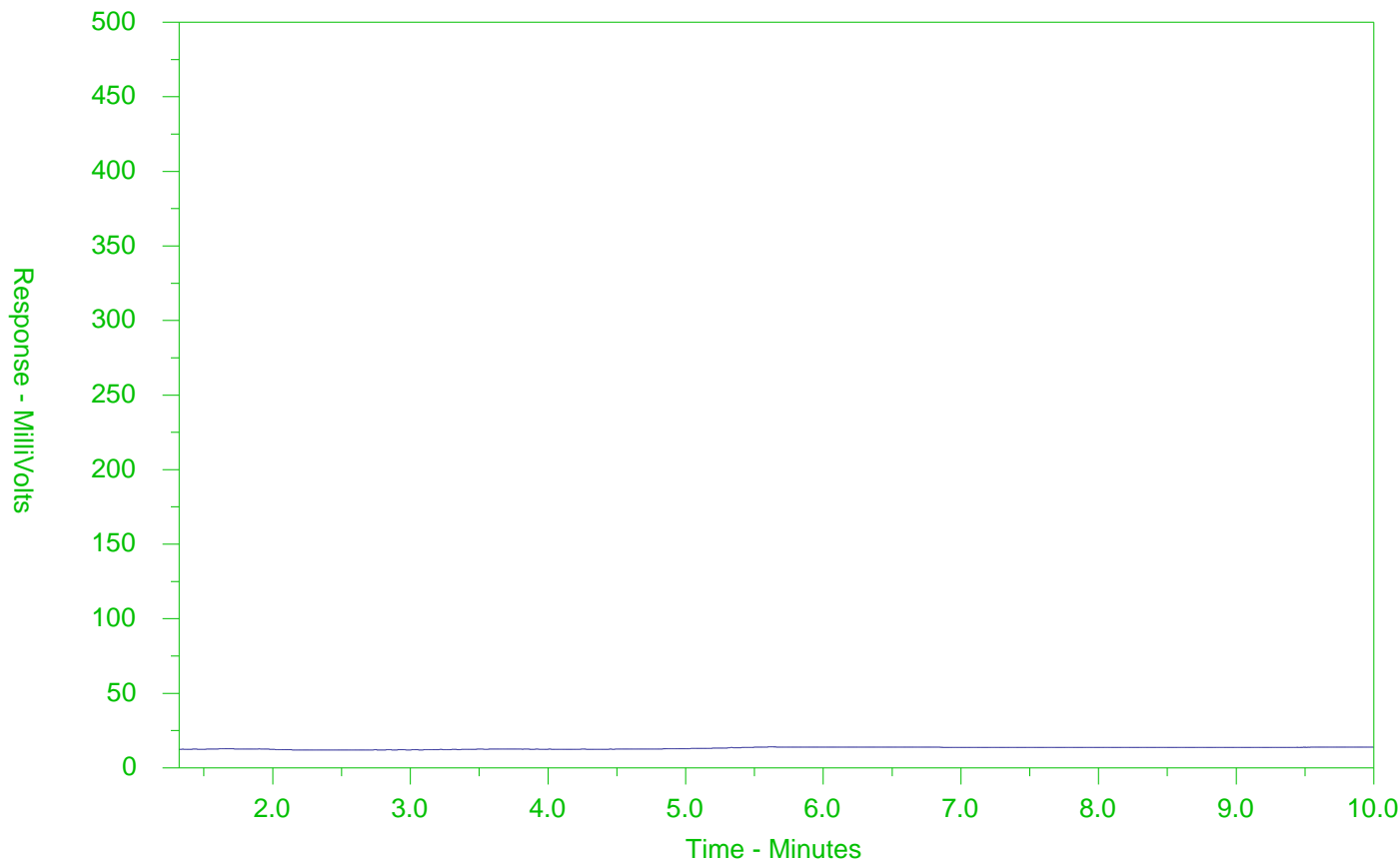
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2644525-5  
 Client Sample ID: 2A



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

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

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

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

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



irm

COC Number: 20-891280

Page 1 of 1

AP

<b>Report To</b> Company: <b>CEGP Consultants Ltd</b> Contact: <b>Rakesh</b> Phone: <b>647 907 1304</b> Street: <b>29 Larkspur Dr</b> City/Province: <b>Markham ON</b> Postal Code: <b>L6B 0N1</b>		<b>Reports / Recipients</b> Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL) Merge QC/QCI Reports with COA <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: <b>rakesh@cegp.ca</b> Email 2: Email 3:		<b>Turnaround Time (TAT) Requested</b> <input checked="" type="checkbox"/> Routine [R] if received by 3pm M-F - no surcharges apply <input type="checkbox"/> 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum <input type="checkbox"/> 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum <input type="checkbox"/> 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum <input type="checkbox"/> 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum <input type="checkbox"/> Same day [E2] if received by 10am M-S - 200% rush surcharge. Additional fees may apply to rush requests on weekends, statutory holidays and non-routine tests		<b>AFFIX ALS BARCODE LABEL HERE (ALS use only)</b>	
<b>Invoice To</b> Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Copy of Invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		<b>Invoice Recipients</b> Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: <b>rakesh@cegp.ca</b> Email 2:		<b>Date and Time Required for all E&amp;P TATs:</b>			
<b>Project Information</b> ALS Account # / Quote #: <b>CEGP 5619</b> Job #: <b>CEGP 5619</b> PO / AFE: LSD:		<b>Oil and Gas Required Fields (client use)</b> AFE/Cost Center: PO# Major/Minor Code: Routing Code: Requisitioner: Location:		<b>Analysis Request</b> Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below		<b>SAMPLES ON HOLD</b> <b>EXTENDED STORAGE REQUIRED</b> <b>SUSPECTED HAZARD (see notes)</b>	
ALS Lab Work Order # (ALS use only): <b>L2644525</b>		ALS Contact: <b>Emily Smith</b>		Sampler: <b>RK</b>			
<b>ALS Sample # (ALS use only)</b>	<b>Sample Identification and/or Coordinates (This description will appear on the report)</b>	<b>Date (dd-mmm-yy)</b>	<b>Time (hh:mm)</b>	<b>Sample Type</b>	<b>NUMBER OF CONTAINERS</b>	<b>PH</b> <b>PH</b>	
	BH1 SSS	28/9/21	9:45	Soil	3	✓	
	BH2 SSS		10:30		3	✓	
	BH3 SSS		11:20		3	✓	
	BH4 SSS		12:25		3	✓	
	2A				3	✓	
<b>Drinking Water (DW) Samples (client use)</b> Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO Are samples for human consumption/ use? <input type="checkbox"/> YES <input type="checkbox"/> NO		<b>Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)</b> <b>0 Reg 153/04 Table 3 RPI CORAL</b>		<b>SAMPLE RECEIPT DETAILS (ALS use only)</b> Cooling Method: <input type="checkbox"/> NONE <input checked="" type="checkbox"/> ICE <input type="checkbox"/> ICE PACKS <input type="checkbox"/> FROZEN <input type="checkbox"/> COOLING INITIATED Submission Comments identified on Sample Receipt Notification: <input type="checkbox"/> YES <input type="checkbox"/> NO Cooler Custody Seals Intact: <input checked="" type="checkbox"/> YES <input type="checkbox"/> N/A Sample Custody Seals Intact: <input type="checkbox"/> YES <input type="checkbox"/> N/A INITIAL COOLER TEMPERATURES °C: <b>1-0</b> FINAL COOLER TEMPERATURES °C: <b>3.9</b>			
<b>SHIPMENT RELEASE (client use)</b> Released by: <b>Rakesh</b> Date: <b>28/9/21</b> Time: <b>10:30</b>		<b>INITIAL SHIPMENT RECEPTION (ALS use only)</b> Received by: <b>ES</b> Date: <b>Sep 28/21</b> Time: <b>9:00</b>		<b>FINAL SHIPMENT RECEPTION (ALS use only)</b> Received by: <b>ES</b> Date: <b>09/28/21</b> Time: <b>11:30</b>			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION  
 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.



CEGP Consultants Ltd.  
ATTN: Rakesh Koneru  
29 Larkspur Drive  
Markham ON L6B 0N1

Date Received: 28-SEP-21  
Report Date: 08-OCT-21 14:45 (MT)  
Version: FINAL

Client Phone: 647-987-1384

## Certificate of Analysis

Lab Work Order #: L2644541  
Project P.O. #: NOT SUBMITTED  
Job Reference: CEGP 5619  
C of C Numbers: 17-845797  
Legal Site Desc:

Emily Smith  
Account Manager

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

ADDRESS: 60 Northland Road, Unit 1, Waterloo, ON N2V 2B8 Canada | Phone: +1 519 886 6910 | Fax: +1 519 886 9047  
ALS CANADA LTD Part of the ALS Group An ALS Limited Company





# ANALYTICAL GUIDELINE REPORT

CEGP 5619

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte						#1			
L2644541-1	BH4 SS1									
Sampled By: RK on 27-SEP-21 @ 12:00										
Matrix: SOIL										
<b>Physical Tests</b>										
Conductivity		0.163		0.0040	mS/cm	29-SEP-21	0.7			
% Moisture		20.3		0.25	%	30-SEP-21				
pH		6.97		0.10	pH units	05-OCT-21				
<b>Cyanides</b>										
Cyanide, Weak Acid Diss		<0.050		0.050	ug/g	30-SEP-21	0.051			
<b>Saturated Paste Extractables</b>										
SAR		0.13		0.10	SAR	29-SEP-21	5			
Calcium (Ca)		17.2		0.50	mg/L	29-SEP-21				
Magnesium (Mg)		5.34		0.50	mg/L	29-SEP-21				
Sodium (Na)		2.37		0.50	mg/L	29-SEP-21				
<b>Metals</b>										
Antimony (Sb)		<1.0		1.0	ug/g	29-SEP-21	7.5			
Arsenic (As)		7.4		1.0	ug/g	29-SEP-21	18			
Barium (Ba)		68.4		1.0	ug/g	29-SEP-21	390			
Beryllium (Be)		<0.50		0.50	ug/g	29-SEP-21	4			
Boron (B)		6.6		5.0	ug/g	29-SEP-21	120			
Boron (B), Hot Water Ext.		0.52		0.10	ug/g	29-SEP-21	1.5			
Cadmium (Cd)		0.57		0.50	ug/g	29-SEP-21	1.2			
Chromium (Cr)		16.9		1.0	ug/g	29-SEP-21	160			
Cobalt (Co)		7.9		1.0	ug/g	29-SEP-21	22			
Copper (Cu)		21.9		1.0	ug/g	29-SEP-21	140			
Lead (Pb)		106		1.0	ug/g	29-SEP-21	120			
Mercury (Hg)		0.0527		0.0050	ug/g	29-SEP-21	0.27			
Molybdenum (Mo)		<1.0		1.0	ug/g	29-SEP-21	6.9			
Nickel (Ni)		19.0		1.0	ug/g	29-SEP-21	100			
Selenium (Se)		<1.0		1.0	ug/g	29-SEP-21	2.4			
Silver (Ag)		<0.20		0.20	ug/g	29-SEP-21	20			
Thallium (Tl)		<0.50		0.50	ug/g	29-SEP-21	1			
Uranium (U)		<1.0		1.0	ug/g	29-SEP-21	23			
Vanadium (V)		26.0		1.0	ug/g	29-SEP-21	86			
Zinc (Zn)		166		5.0	ug/g	29-SEP-21	340			
<b>Speciated Metals</b>										
Chromium, Hexavalent		<0.20		0.20	ug/g	30-SEP-21	8			
<b>Organochlorine Pesticides</b>										
Aldrin		<0.00020		0.00020	ug/g	06-OCT-21	0.05			
Lindane		<0.00020		0.00020	ug/g	06-OCT-21	0.056			
a-chlordane		<0.00110	DLM	0.0011	ug/g	06-OCT-21				
Chlordane (Total)		<0.0032		0.0032	ug/g	06-OCT-21	0.05			
g-chlordane		<0.00300	DLM	0.0030	ug/g	06-OCT-21				
o,p-DDD		<0.00030		0.00030	ug/g	06-OCT-21				
pp-DDD		<0.00120	DLM	0.0012	ug/g	06-OCT-21				
Total DDD		<0.0012		0.0012	ug/g	06-OCT-21	3.3			
o,p-DDE		<0.00030		0.00030	ug/g	06-OCT-21				
pp-DDE		<0.00250	DLM	0.0025	ug/g	06-OCT-21				
Total DDE		<0.0025		0.0025	ug/g	06-OCT-21	0.26			
op-DDT		<0.00050	DLM	0.00050	ug/g	06-OCT-21				

\*\* 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:

**T3-Soil-Res/Park/Inst. Property Use (Coarse)**

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



# ANALYTICAL GUIDELINE REPORT

CEGP 5619

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte									
L2644541-1	BH4 SS1									
Sampled By: RK on 27-SEP-21 @ 12:00							#1			
Matrix: SOIL										
<b>Organochlorine Pesticides</b>										
pp-DDT		<0.00200	DLM	0.0020	ug/g	06-OCT-21				
Total DDT		<0.0021		0.0021	ug/g	06-OCT-21	1.4			
Dieldrin		0.00197		0.00020	ug/g	06-OCT-21	0.05			
alpha-Endosulfan		<0.00030		0.00030	ug/g	06-OCT-21				
beta-Endosulfan		<0.00030		0.00030	ug/g	06-OCT-21				
Endosulfan (Total)		<0.00042		0.00042	ug/g	06-OCT-21	0.04			
Endrin		<0.00050		0.00050	ug/g	06-OCT-21	0.04			
Heptachlor		<0.00020		0.00020	ug/g	06-OCT-21	0.15			
Heptachlor Epoxide		<0.00050	DLM	0.00050	ug/g	06-OCT-21	0.05			
Hexachlorobenzene		<0.00050		0.00050	ug/g	06-OCT-21	0.52			
Hexachlorobutadiene		<0.00050		0.00050	ug/g	06-OCT-21	0.012			
Hexachloroethane		<0.00050		0.00050	ug/g	06-OCT-21	0.089			
Methoxychlor		<0.00050		0.00050	ug/g	06-OCT-21	0.13			
Surrogate: Decachlorobiphenyl		109.0		50-150	%	06-OCT-21				
Surrogate: Tetrachloro-m-xylene		80.1		50-150	%	06-OCT-21				
L2644541-2	4B									
Sampled By: RK on 27-SEP-21 @ 12:00							#1			
Matrix: SOIL										
<b>Physical Tests</b>										
Conductivity		0.139		0.0040	mS/cm	29-SEP-21	0.7			
% Moisture		18.0		0.25	%	30-SEP-21				
pH		7.29		0.10	pH units	05-OCT-21				
<b>Cyanides</b>										
Cyanide, Weak Acid Diss		<0.050		0.050	ug/g	30-SEP-21	0.051			
<b>Saturated Paste Extractables</b>										
SAR		0.13		0.10	SAR	29-SEP-21	5			
Calcium (Ca)		15.3		0.50	mg/L	29-SEP-21				
Magnesium (Mg)		4.58		0.50	mg/L	29-SEP-21				
Sodium (Na)		2.31		0.50	mg/L	29-SEP-21				
<b>Metals</b>										
Antimony (Sb)		<1.0		1.0	ug/g	29-SEP-21	7.5			
Arsenic (As)		6.5		1.0	ug/g	29-SEP-21	18			
Barium (Ba)		53.2		1.0	ug/g	29-SEP-21	390			
Beryllium (Be)		<0.50		0.50	ug/g	29-SEP-21	4			
Boron (B)		6.0		5.0	ug/g	29-SEP-21	120			
Boron (B), Hot Water Ext.		0.42		0.10	ug/g	29-SEP-21	1.5			
Cadmium (Cd)		0.51		0.50	ug/g	29-SEP-21	1.2			
Chromium (Cr)		16.0		1.0	ug/g	29-SEP-21	160			
Cobalt (Co)		7.7		1.0	ug/g	29-SEP-21	22			
Copper (Cu)		18.8		1.0	ug/g	29-SEP-21	140			
Lead (Pb)		79.9		1.0	ug/g	29-SEP-21	120			
Mercury (Hg)		0.0469		0.0050	ug/g	29-SEP-21	0.27			
Molybdenum (Mo)		<1.0		1.0	ug/g	29-SEP-21	6.9			
Nickel (Ni)		18.6		1.0	ug/g	29-SEP-21	100			
Selenium (Se)		<1.0		1.0	ug/g	29-SEP-21	2.4			

\*\* 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:

**T3-Soil-Res/Park/Inst. Property Use (Coarse)**

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



# ANALYTICAL GUIDELINE REPORT

CEGP 5619

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte									
L2644541-2	4B									
Sampled By: RK on 27-SEP-21 @ 12:00							#1			
Matrix: SOIL										
<b>Metals</b>										
	Silver (Ag)	<0.20		0.20	ug/g	29-SEP-21	20			
	Thallium (Tl)	<0.50		0.50	ug/g	29-SEP-21	1			
	Uranium (U)	<1.0		1.0	ug/g	29-SEP-21	23			
	Vanadium (V)	22.5		1.0	ug/g	29-SEP-21	86			
	Zinc (Zn)	145		5.0	ug/g	29-SEP-21	340			
<b>Speciated Metals</b>										
	Chromium, Hexavalent	<0.20		0.20	ug/g	30-SEP-21	8			
<b>Organochlorine Pesticides</b>										
	Aldrin	<0.00020		0.00020	ug/g	06-OCT-21	0.05			
	Lindane	<0.00020		0.00020	ug/g	06-OCT-21	0.056			
	a-chlordane	0.00047		0.00030	ug/g	06-OCT-21				
	Chlordane (Total)	0.00145		0.00042	ug/g	06-OCT-21	0.05			
	g-chlordane	0.00098		0.00030	ug/g	06-OCT-21				
	o,p-DDD	<0.00030		0.00030	ug/g	06-OCT-21				
	pp-DDD	0.00038		0.00030	ug/g	06-OCT-21				
	Total DDD	<0.00042		0.00042	ug/g	06-OCT-21	3.3			
	o,p-DDE	<0.00030		0.00030	ug/g	06-OCT-21				
	pp-DDE	0.00125		0.00030	ug/g	06-OCT-21				
	Total DDE	0.00125		0.00042	ug/g	06-OCT-21	0.26			
	op-DDT	<0.0015	DLM	0.0015	ug/g	06-OCT-21				
	pp-DDT	<0.0015	DLM	0.0015	ug/g	06-OCT-21				
	Total DDT	<0.0021		0.0021	ug/g	06-OCT-21	1.4			
	Dieldrin	0.00093		0.00020	ug/g	06-OCT-21	0.05			
	alpha-Endosulfan	<0.00030		0.00030	ug/g	06-OCT-21				
	beta-Endosulfan	<0.00030		0.00030	ug/g	06-OCT-21				
	Endosulfan (Total)	<0.00042		0.00042	ug/g	06-OCT-21	0.04			
	Endrin	<0.0010	DLM	0.0010	ug/g	06-OCT-21	0.04			
	Heptachlor	<0.00020		0.00020	ug/g	06-OCT-21	0.15			
	Heptachlor Epoxide	<0.00020		0.00020	ug/g	06-OCT-21	0.05			
	Hexachlorobenzene	<0.00050		0.00050	ug/g	06-OCT-21	0.52			
	Hexachlorobutadiene	<0.00050		0.00050	ug/g	06-OCT-21	0.012			
	Hexachloroethane	<0.00050		0.00050	ug/g	06-OCT-21	0.089			
	Methoxychlor	<0.0025	DLM	0.0025	ug/g	06-OCT-21	0.13			
	Surrogate: Decachlorobiphenyl	102.3		50-150	%	06-OCT-21				
	Surrogate: Tetrachloro-m-xylene	83.2		50-150	%	06-OCT-21				
L2644541-3	BH5 SS1									
Sampled By: RK on 27-SEP-21 @ 12:55							#1			
Matrix: SOIL										
<b>Physical Tests</b>										
	Conductivity	0.113		0.0040	mS/cm	29-SEP-21	0.7			
	% Moisture	17.2		0.25	%	30-SEP-21				
	pH	6.55		0.10	pH units	30-SEP-21				
<b>Cyanides</b>										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	30-SEP-21	0.051			
<b>Saturated Paste Extractables</b>										

\*\* 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:

**T3-Soil-Res/Park/Inst. Property Use (Coarse)**

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



# ANALYTICAL GUIDELINE REPORT

CEGP 5619

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte						#1			
L2644541-3	BH5 SS1									
Sampled By: RK on 27-SEP-21 @ 12:55										
Matrix: SOIL										
<b>Saturated Paste Extractables</b>										
SAR		1.16		0.10	SAR	29-SEP-21	5			
Calcium (Ca)		7.03		0.50	mg/L	29-SEP-21				
Magnesium (Mg)		6.41		0.50	mg/L	29-SEP-21				
Sodium (Na)		17.6		0.50	mg/L	29-SEP-21				
<b>Metals</b>										
Antimony (Sb)		<1.0		1.0	ug/g	29-SEP-21	7.5			
Arsenic (As)		15.7		1.0	ug/g	29-SEP-21	18			
Barium (Ba)		66.9		1.0	ug/g	29-SEP-21	390			
Beryllium (Be)		<0.50		0.50	ug/g	29-SEP-21	4			
Boron (B)		<5.0		5.0	ug/g	29-SEP-21	120			
Boron (B), Hot Water Ext.		0.56		0.10	ug/g	29-SEP-21	1.5			
Cadmium (Cd)		0.57		0.50	ug/g	29-SEP-21	1.2			
Chromium (Cr)		16.1		1.0	ug/g	29-SEP-21	160			
Cobalt (Co)		6.9		1.0	ug/g	29-SEP-21	22			
Copper (Cu)		22.2		1.0	ug/g	29-SEP-21	140			
Lead (Pb)		163		1.0	ug/g	29-SEP-21	*120			
Mercury (Hg)		0.0835		0.0050	ug/g	29-SEP-21	0.27			
Molybdenum (Mo)		<1.0		1.0	ug/g	29-SEP-21	6.9			
Nickel (Ni)		18.1		1.0	ug/g	29-SEP-21	100			
Selenium (Se)		<1.0		1.0	ug/g	29-SEP-21	2.4			
Silver (Ag)		<0.20		0.20	ug/g	29-SEP-21	20			
Thallium (Tl)		<0.50		0.50	ug/g	29-SEP-21	1			
Uranium (U)		<1.0		1.0	ug/g	29-SEP-21	23			
Vanadium (V)		26.1		1.0	ug/g	29-SEP-21	86			
Zinc (Zn)		179		5.0	ug/g	29-SEP-21	340			
<b>Speciated Metals</b>										
Chromium, Hexavalent		<0.20		0.20	ug/g	01-OCT-21	8			
<b>Organochlorine Pesticides</b>										
Aldrin		<0.00020		0.00020	ug/g	06-OCT-21	0.05			
Lindane		<0.00020		0.00020	ug/g	06-OCT-21	0.056			
a-chlordane		<0.00030		0.00030	ug/g	06-OCT-21				
Chlordane (Total)		<0.00042		0.00042	ug/g	06-OCT-21	0.05			
g-chlordane		<0.00030		0.00030	ug/g	06-OCT-21				
o,p-DDD		<0.00030		0.00030	ug/g	06-OCT-21				
pp-DDD		0.00141		0.00030	ug/g	06-OCT-21				
Total DDD		0.00141		0.00042	ug/g	06-OCT-21	3.3			
o,p-DDE		<0.00030		0.00030	ug/g	06-OCT-21				
pp-DDE		0.00465		0.00030	ug/g	06-OCT-21				
Total DDE		0.00465		0.00042	ug/g	06-OCT-21	0.26			
op-DDT		<0.0015	DLM	0.0015	ug/g	06-OCT-21				
pp-DDT		<0.0015	DLM	0.0015	ug/g	06-OCT-21				
Total DDT		<0.0021		0.0021	ug/g	06-OCT-21	1.4			
Dieldrin		0.00058		0.00020	ug/g	06-OCT-21	0.05			
alpha-Endosulfan		<0.00030		0.00030	ug/g	06-OCT-21				
beta-Endosulfan		<0.00030		0.00030	ug/g	06-OCT-21				
Endosulfan (Total)		<0.00042		0.00042	ug/g	06-OCT-21	0.04			

\*\* 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:

### T3-Soil-Res/Park/Inst. Property Use (Coarse)

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



# ANALYTICAL GUIDELINE REPORT

CEGP 5619

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte									
L2644541-3	BH5 SS1									
Sampled By: RK on 27-SEP-21 @ 12:55							#1			
Matrix: SOIL										
<b>Organochlorine Pesticides</b>										
	Endrin	<0.0010	DLM	0.0010	ug/g	06-OCT-21	0.04			
	Heptachlor	<0.00020		0.00020	ug/g	06-OCT-21	0.15			
	Heptachlor Epoxide	<0.00020		0.00020	ug/g	06-OCT-21	0.05			
	Hexachlorobenzene	<0.00050		0.00050	ug/g	06-OCT-21	0.52			
	Hexachlorobutadiene	<0.00050		0.00050	ug/g	06-OCT-21	0.012			
	Hexachloroethane	<0.00050		0.00050	ug/g	06-OCT-21	0.089			
	Methoxychlor	<0.0025	DLM	0.0025	ug/g	06-OCT-21	0.13			
	Surrogate: Decachlorobiphenyl	99.7		50-150	%	06-OCT-21				
	Surrogate: Tetrachloro-m-xylene	82.8		50-150	%	06-OCT-21				
L2644541-4	BH5 SS2									
Sampled By: RK on 27-SEP-21 @ 13:01							#1			
Matrix: SOIL										
<b>Particle Size</b>										
	% >75um	7.5		1.0	%	05-OCT-21				
L2644541-5	TP1									
Sampled By: RK on 27-SEP-21 @ 13:05							#1			
Matrix: SOIL										
<b>Physical Tests</b>										
	Conductivity	0.209		0.0040	mS/cm	29-SEP-21	0.7			
	% Moisture	22.4		0.25	%	30-SEP-21				
	pH	7.10		0.10	pH units	30-SEP-21				
<b>Cyanides</b>										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	30-SEP-21	0.051			
<b>Saturated Paste Extractables</b>										
	SAR	0.15		0.10	SAR	29-SEP-21	5			
	Calcium (Ca)	29.3		0.50	mg/L	29-SEP-21				
	Magnesium (Mg)	4.14		0.50	mg/L	29-SEP-21				
	Sodium (Na)	3.33		0.50	mg/L	29-SEP-21				
<b>Metals</b>										
	Antimony (Sb)	<1.0		1.0	ug/g	29-SEP-21	7.5			
	Arsenic (As)	4.4		1.0	ug/g	29-SEP-21	18			
	Barium (Ba)	52.6		1.0	ug/g	29-SEP-21	390			
	Beryllium (Be)	<0.50		0.50	ug/g	29-SEP-21	4			
	Boron (B)	6.1		5.0	ug/g	29-SEP-21	120			
	Boron (B), Hot Water Ext.	0.58		0.10	ug/g	29-SEP-21	1.5			
	Cadmium (Cd)	<0.50		0.50	ug/g	29-SEP-21	1.2			
	Chromium (Cr)	14.6		1.0	ug/g	29-SEP-21	160			
	Cobalt (Co)	5.9		1.0	ug/g	29-SEP-21	22			
	Copper (Cu)	19.1		1.0	ug/g	29-SEP-21	140			
	Lead (Pb)	45.2		1.0	ug/g	29-SEP-21	120			
	Mercury (Hg)	0.0330		0.0050	ug/g	29-SEP-21	0.27			
	Molybdenum (Mo)	<1.0		1.0	ug/g	29-SEP-21	6.9			
	Nickel (Ni)	14.2		1.0	ug/g	29-SEP-21	100			

\*\* 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:

**T3-Soil-Res/Park/Inst. Property Use (Coarse)**

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



# ANALYTICAL GUIDELINE REPORT

CEGP 5619

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits		
Grouping	Analyte								
L2644541-5	TP1								
Sampled By: RK on 27-SEP-21 @ 13:05							#1		
Matrix: SOIL									
<b>Metals</b>									
	Selenium (Se)	<1.0		1.0	ug/g	29-SEP-21	2.4		
	Silver (Ag)	<0.20		0.20	ug/g	29-SEP-21	20		
	Thallium (Tl)	<0.50		0.50	ug/g	29-SEP-21	1		
	Uranium (U)	<1.0		1.0	ug/g	29-SEP-21	23		
	Vanadium (V)	20.7		1.0	ug/g	29-SEP-21	86		
	Zinc (Zn)	102		5.0	ug/g	29-SEP-21	340		
<b>Speciated Metals</b>									
	Chromium, Hexavalent	<0.20		0.20	ug/g	01-OCT-21	8		
<b>Organochlorine Pesticides</b>									
	Aldrin	<0.0020	DLM	0.0020	ug/g	06-OCT-21	0.05		
	Lindane	<0.0020	DLM	0.0020	ug/g	06-OCT-21	0.056		
	a-chlordane	<0.0140	DLM	0.014	ug/g	06-OCT-21			
	Chlordane (Total)	<0.030		0.030	ug/g	06-OCT-21	0.05		
	g-chlordane	<0.0260	DLM	0.026	ug/g	06-OCT-21			
	o,p-DDD	<0.0030	DLM	0.0030	ug/g	06-OCT-21			
	pp-DDD	<0.0030	DLM	0.0030	ug/g	06-OCT-21			
	Total DDD	<0.0042		0.0042	ug/g	06-OCT-21	3.3		
	o,p-DDE	<0.0030	DLM	0.0030	ug/g	06-OCT-21			
	pp-DDE	<0.0060	DLM	0.0060	ug/g	06-OCT-21			
	Total DDE	<0.0067		0.0067	ug/g	06-OCT-21	0.26		
	op-DDT	<0.0030	DLM	0.0030	ug/g	06-OCT-21			
	pp-DDT	<0.0030	DLM	0.0030	ug/g	06-OCT-21			
	Total DDT	<0.0042		0.0042	ug/g	06-OCT-21	1.4		
	Dieldrin	<0.0280	DLM	0.028	ug/g	06-OCT-21	0.05		
	alpha-Endosulfan	<0.0030	DLM	0.0030	ug/g	06-OCT-21			
	beta-Endosulfan	<0.0030	DLM	0.0030	ug/g	06-OCT-21			
	Endosulfan (Total)	<0.0042		0.0042	ug/g	06-OCT-21	0.04		
	Endrin	<0.0050	DLM	0.0050	ug/g	06-OCT-21	0.04		
	Heptachlor	<0.0020	DLM	0.0020	ug/g	06-OCT-21	0.15		
	Heptachlor Epoxide	<0.0040	DLM	0.0040	ug/g	06-OCT-21	0.05		
	Hexachlorobenzene	<0.0050	DLM	0.0050	ug/g	06-OCT-21	0.52		
	Hexachlorobutadiene	<0.0050	DLM	0.0050	ug/g	06-OCT-21	0.012		
	Hexachloroethane	<0.0050	DLM	0.0050	ug/g	06-OCT-21	0.089		
	Methoxychlor	<0.0050	DLM	0.0050	ug/g	06-OCT-21	0.13		
	Surrogate: Decachlorobiphenyl	110.1		50-150	%	06-OCT-21			
	Surrogate: Tetrachloro-m-xylene	75.9		50-150	%	06-OCT-21			
L2644541-6	TP2								
Sampled By: RK on 27-SEP-21 @ 13:10							#1		
Matrix: SOIL									
<b>Physical Tests</b>									
	Conductivity	0.225		0.0040	mS/cm	29-SEP-21	0.7		
	% Moisture	20.0		0.25	%	30-SEP-21			
	pH	7.07		0.10	pH units	30-SEP-21			
<b>Cyanides</b>									
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	30-SEP-21	0.051		

\*\* 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:

**T3-Soil-Res/Park/Inst. Property Use (Coarse)**

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



# ANALYTICAL GUIDELINE REPORT

CEGP 5619

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits				
Grouping	Analyte										
L2644541-6	TP2										
Sampled By: RK on 27-SEP-21 @ 13:10											
Matrix: SOIL											
							#1				
<b>Saturated Paste Extractables</b>											
	SAR	0.10		0.10	SAR	29-SEP-21	5				
	Calcium (Ca)	29.0		0.50	mg/L	29-SEP-21					
	Magnesium (Mg)	4.12		0.50	mg/L	29-SEP-21					
	Sodium (Na)	2.26		0.50	mg/L	29-SEP-21					
<b>Metals</b>											
	Antimony (Sb)	<1.0		1.0	ug/g	29-SEP-21	7.5				
	Arsenic (As)	3.5		1.0	ug/g	29-SEP-21	18				
	Barium (Ba)	41.9		1.0	ug/g	29-SEP-21	390				
	Beryllium (Be)	<0.50		0.50	ug/g	29-SEP-21	4				
	Boron (B)	<5.0		5.0	ug/g	29-SEP-21	120				
	Boron (B), Hot Water Ext.	0.63		0.10	ug/g	29-SEP-21	1.5				
	Cadmium (Cd)	<0.50		0.50	ug/g	29-SEP-21	1.2				
	Chromium (Cr)	10.6		1.0	ug/g	29-SEP-21	160				
	Cobalt (Co)	4.7		1.0	ug/g	29-SEP-21	22				
	Copper (Cu)	13.6		1.0	ug/g	29-SEP-21	140				
	Lead (Pb)	25.6		1.0	ug/g	29-SEP-21	120				
	Mercury (Hg)	0.0256		0.0050	ug/g	29-SEP-21	0.27				
	Molybdenum (Mo)	<1.0		1.0	ug/g	29-SEP-21	6.9				
	Nickel (Ni)	10.8		1.0	ug/g	29-SEP-21	100				
	Selenium (Se)	<1.0		1.0	ug/g	29-SEP-21	2.4				
	Silver (Ag)	<0.20		0.20	ug/g	29-SEP-21	20				
	Thallium (Tl)	<0.50		0.50	ug/g	29-SEP-21	1				
	Uranium (U)	<1.0		1.0	ug/g	29-SEP-21	23				
	Vanadium (V)	17.0		1.0	ug/g	29-SEP-21	86				
	Zinc (Zn)	58.0		5.0	ug/g	29-SEP-21	340				
<b>Speciated Metals</b>											
	Chromium, Hexavalent	<0.20		0.20	ug/g	01-OCT-21	8				
<b>Organochlorine Pesticides</b>											
	Aldrin	<0.0020	DLM	0.0020	ug/g	06-OCT-21	0.05				
	Lindane	<0.0020	DLM	0.0020	ug/g	06-OCT-21	0.056				
	a-chlordane	<0.0050	DLM	0.0050	ug/g	06-OCT-21					
	Chlordane (Total)	<0.0086		0.0086	ug/g	06-OCT-21	0.05				
	g-chlordane	<0.0070	DLM	0.0070	ug/g	06-OCT-21					
	o,p-DDD	<0.0030	DLM	0.0030	ug/g	06-OCT-21					
	pp-DDD	<0.0170	DLM	0.017	ug/g	06-OCT-21					
	Total DDD	<0.017		0.017	ug/g	06-OCT-21	3.3				
	o,p-DDE	<0.0350	DLM	0.035	ug/g	06-OCT-21					
	pp-DDE	<0.0500	DLM	0.050	ug/g	06-OCT-21					
	Total DDE	<0.061		0.061	ug/g	06-OCT-21	0.26				
	op-DDT	<0.0350	DLM	0.035	ug/g	06-OCT-21					
	pp-DDT	<0.0140	DLM	0.014	ug/g	06-OCT-21					
	Total DDT	<0.038		0.038	ug/g	06-OCT-21	1.4				
	Dieldrin	<0.0120	DLM	0.012	ug/g	06-OCT-21	0.05				
	alpha-Endosulfan	<0.0030	DLM	0.0030	ug/g	06-OCT-21					
	beta-Endosulfan	<0.0030	DLM	0.0030	ug/g	06-OCT-21					
	Endosulfan (Total)	<0.0042		0.0042	ug/g	06-OCT-21	0.04				

\*\* 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:

**T3-Soil-Res/Park/Inst. Property Use (Coarse)**

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





# ANALYTICAL GUIDELINE REPORT

CEGP 5619

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte									
L2644541-6	TP2						#1			
Sampled By: RK on 27-SEP-21 @ 13:10										
Matrix: SOIL										
<b>Organochlorine Pesticides</b>										
	Endrin	<0.0050	DLM	0.0050	ug/g	06-OCT-21	0.04			
	Heptachlor	<0.0020	DLM	0.0020	ug/g	06-OCT-21	0.15			
	Heptachlor Epoxide	<0.0020	DLM	0.0020	ug/g	06-OCT-21	0.05			
	Hexachlorobenzene	<0.0050	DLM	0.0050	ug/g	06-OCT-21	0.52			
	Hexachlorobutadiene	<0.0050	DLM	0.0050	ug/g	06-OCT-21	0.012			
	Hexachloroethane	<0.0050	DLM	0.0050	ug/g	06-OCT-21	0.089			
	Methoxychlor	<0.0050	DLM	0.0050	ug/g	06-OCT-21	0.13			
	Surrogate: Decachlorobiphenyl	117.9		50-150	%	06-OCT-21				
	Surrogate: Tetrachloro-m-xylene	77.5		50-150	%	06-OCT-21				
L2644541-7	TP3						#1			
Sampled By: RK on 27-SEP-21 @ 13:12										
Matrix: SOIL										
<b>Physical Tests</b>										
	Conductivity	0.433		0.0040	mS/cm	01-OCT-21	0.7			
	% Moisture	22.2		0.25	%	30-SEP-21				
	pH	7.05		0.10	pH units	30-SEP-21				
<b>Cyanides</b>										
	Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	30-SEP-21	0.051			
<b>Saturated Paste Extractables</b>										
	SAR	0.10		0.10	SAR	30-SEP-21	5			
	Calcium (Ca)	44.4		0.50	mg/L	30-SEP-21				
	Magnesium (Mg)	5.63		0.50	mg/L	30-SEP-21				
	Sodium (Na)	2.69		0.50	mg/L	30-SEP-21				
<b>Metals</b>										
	Antimony (Sb)	<1.0		1.0	ug/g	30-SEP-21	7.5			
	Arsenic (As)	4.6		1.0	ug/g	30-SEP-21	18			
	Barium (Ba)	54.4		1.0	ug/g	30-SEP-21	390			
	Beryllium (Be)	<0.50		0.50	ug/g	30-SEP-21	4			
	Boron (B)	7.5		5.0	ug/g	30-SEP-21	120			
	Boron (B), Hot Water Ext.	0.53		0.10	ug/g	30-SEP-21	1.5			
	Cadmium (Cd)	0.52		0.50	ug/g	30-SEP-21	1.2			
	Chromium (Cr)	17.5		1.0	ug/g	30-SEP-21	160			
	Cobalt (Co)	5.2		1.0	ug/g	30-SEP-21	22			
	Copper (Cu)	24.6		1.0	ug/g	30-SEP-21	140			
	Lead (Pb)	79.8		1.0	ug/g	30-SEP-21	120			
	Mercury (Hg)	0.0448		0.0050	ug/g	30-SEP-21	0.27			
	Molybdenum (Mo)	<1.0		1.0	ug/g	30-SEP-21	6.9			
	Nickel (Ni)	15.2		1.0	ug/g	30-SEP-21	100			
	Selenium (Se)	<1.0		1.0	ug/g	30-SEP-21	2.4			
	Silver (Ag)	<0.20		0.20	ug/g	30-SEP-21	20			
	Thallium (Tl)	<0.50		0.50	ug/g	30-SEP-21	1			
	Uranium (U)	<1.0		1.0	ug/g	30-SEP-21	23			
	Vanadium (V)	20.2		1.0	ug/g	30-SEP-21	86			
	Zinc (Zn)	135		5.0	ug/g	30-SEP-21	340			

\*\* 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:

**T3-Soil-Res/Park/Inst. Property Use (Coarse)**

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





# ANALYTICAL GUIDELINE REPORT

CEGP 5619

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte									
L2644541-7	TP3									
Sampled By: RK on 27-SEP-21 @ 13:12							#1			
Matrix: SOIL										
<b>Speciated Metals</b>										
Chromium, Hexavalent		<0.20		0.20	ug/g	01-OCT-21	8			
<b>Organochlorine Pesticides</b>										
Aldrin		<0.0020	DLM	0.0020	ug/g	06-OCT-21	0.05			
Lindane		<0.0020	DLM	0.0020	ug/g	06-OCT-21	0.056			
a-chlordane		0.0770	DLM	0.00060	ug/g	08-OCT-21				
Chlordane (Total)		0.184		0.00085	ug/g	08-OCT-21	*0.05			
g-chlordane		0.107	DLM	0.00060	ug/g	08-OCT-21				
o,p-DDD		<0.0030	DLM	0.0030	ug/g	06-OCT-21				
pp-DDD		<0.0060	DLM	0.0060	ug/g	06-OCT-21				
Total DDD		<0.0067		0.0067	ug/g	08-OCT-21	3.3			
o,p-DDE		<0.0030	DLM	0.0030	ug/g	06-OCT-21				
pp-DDE		<0.0160	DLM	0.016	ug/g	06-OCT-21				
Total DDE		<0.016		0.016	ug/g	08-OCT-21	0.26			
op-DDT		<0.0030	DLM	0.0030	ug/g	06-OCT-21				
pp-DDT		<0.0050	DLM	0.0050	ug/g	06-OCT-21				
Total DDT		<0.0058		0.0058	ug/g	08-OCT-21	1.4			
Dieldrin		0.184	DLM	0.0020	ug/g	08-OCT-21	*0.05			
alpha-Endosulfan		<0.0130	DLM	0.013	ug/g	06-OCT-21				
beta-Endosulfan		<0.0030	DLM	0.0030	ug/g	06-OCT-21				
Endosulfan (Total)		<0.013		0.013	ug/g	08-OCT-21	0.04			
Endrin		<0.0050	DLM	0.0050	ug/g	06-OCT-21	0.04			
Heptachlor		<0.0020	DLM	0.0020	ug/g	06-OCT-21	0.15			
Heptachlor Epoxide		<0.0100	DLM	0.010	ug/g	06-OCT-21	0.05			
Hexachlorobenzene		<0.0050	DLM	0.0050	ug/g	06-OCT-21	0.52			
Hexachlorobutadiene		<0.0050	DLM	0.0050	ug/g	06-OCT-21	0.012			
Hexachloroethane		<0.0050	DLM	0.0050	ug/g	06-OCT-21	0.089			
Methoxychlor		<0.0050	DLM	0.0050	ug/g	06-OCT-21	0.13			
Surrogate: Decachlorobiphenyl		115.4		50-150	%	06-OCT-21				
Surrogate: Tetrachloro-m-xylene		82.6		50-150	%	06-OCT-21				
L2644541-8	TP4									
Sampled By: RK on 27-SEP-21 @ 13:18							#1			
Matrix: SOIL										
<b>Physical Tests</b>										
Conductivity		0.349		0.0040	mS/cm	01-OCT-21	0.7			
% Moisture		20.8		0.25	%	30-SEP-21				
pH		7.12		0.10	pH units	30-SEP-21				
<b>Cyanides</b>										
Cyanide, Weak Acid Diss		<0.050		0.050	ug/g	30-SEP-21	0.051			
<b>Saturated Paste Extractables</b>										
SAR		<0.10		0.10	SAR	30-SEP-21	5			
Calcium (Ca)		44.8		0.50	mg/L	30-SEP-21				
Magnesium (Mg)		6.19		0.50	mg/L	30-SEP-21				
Sodium (Na)		1.42		0.50	mg/L	30-SEP-21				
<b>Metals</b>										
Antimony (Sb)		<1.0		1.0	ug/g	30-SEP-21	7.5			

\*\* 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:

**T3-Soil-Res/Park/Inst. Property Use (Coarse)**

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



# ANALYTICAL GUIDELINE REPORT

CEGP 5619

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits		
Grouping	Analyte								
L2644541-8	TP4								
Sampled By: RK on 27-SEP-21 @ 13:18							#1		
Matrix: SOIL									
<b>Metals</b>									
	Arsenic (As)	13.0		1.0	ug/g	30-SEP-21	18		
	Barium (Ba)	68.6		1.0	ug/g	30-SEP-21	390		
	Beryllium (Be)	<0.50		0.50	ug/g	30-SEP-21	4		
	Boron (B)	6.1		5.0	ug/g	30-SEP-21	120		
	Boron (B), Hot Water Ext.	0.63		0.10	ug/g	30-SEP-21	1.5		
	Cadmium (Cd)	0.57		0.50	ug/g	30-SEP-21	1.2		
	Chromium (Cr)	16.4		1.0	ug/g	30-SEP-21	160		
	Cobalt (Co)	6.2		1.0	ug/g	30-SEP-21	22		
	Copper (Cu)	34.9		1.0	ug/g	30-SEP-21	140		
	Lead (Pb)	142		1.0	ug/g	30-SEP-21	*120		
	Mercury (Hg)	0.0909		0.0050	ug/g	30-SEP-21	0.27		
	Molybdenum (Mo)	<1.0		1.0	ug/g	30-SEP-21	6.9		
	Nickel (Ni)	23.6		1.0	ug/g	30-SEP-21	100		
	Selenium (Se)	<1.0		1.0	ug/g	30-SEP-21	2.4		
	Silver (Ag)	<0.20		0.20	ug/g	30-SEP-21	20		
	Thallium (Tl)	<0.50		0.50	ug/g	30-SEP-21	1		
	Uranium (U)	<1.0		1.0	ug/g	30-SEP-21	23		
	Vanadium (V)	21.7		1.0	ug/g	30-SEP-21	86		
	Zinc (Zn)	190		5.0	ug/g	30-SEP-21	340		
<b>Speciated Metals</b>									
	Chromium, Hexavalent	<0.20		0.20	ug/g	01-OCT-21	8		
<b>Organochlorine Pesticides</b>									
	Aldrin	<0.00050	DLM	0.00050	ug/g	06-OCT-21	0.05		
	Lindane	<0.00050	DLM	0.00050	ug/g	06-OCT-21	0.056		
	a-chlordane	<0.00150	DLM	0.0015	ug/g	06-OCT-21			
	Chlordane (Total)	<0.0034		0.0034	ug/g	06-OCT-21	0.05		
	g-chlordane	<0.00300	DLM	0.0030	ug/g	06-OCT-21			
	o,p-DDD	<0.00090	DLM	0.00090	ug/g	06-OCT-21			
	pp-DDD	<0.0130	DLM	0.013	ug/g	06-OCT-21			
	Total DDD	<0.013		0.013	ug/g	06-OCT-21	3.3		
	o,p-DDE	<0.00060	DLM	0.00060	ug/g	06-OCT-21			
	pp-DDE	<0.0350	DLM	0.035	ug/g	06-OCT-21			
	Total DDE	<0.035		0.035	ug/g	06-OCT-21	0.26		
	op-DDT	<0.00090	DLM	0.00090	ug/g	06-OCT-21			
	pp-DDT	<0.0120	DLM	0.012	ug/g	06-OCT-21			
	Total DDT	<0.012		0.012	ug/g	06-OCT-21	1.4		
	Dieldrin	<0.0050	DLM	0.0050	ug/g	06-OCT-21	0.05		
	alpha-Endosulfan	<0.00060	DLM	0.00060	ug/g	06-OCT-21			
	beta-Endosulfan	<0.00060	DLM	0.00060	ug/g	06-OCT-21			
	Endosulfan (Total)	<0.00085		0.00085	ug/g	06-OCT-21	0.04		
	Endrin	<0.0010	DLM	0.0010	ug/g	06-OCT-21	0.04		
	Heptachlor	<0.00050	DLM	0.00050	ug/g	06-OCT-21	0.15		
	Heptachlor Epoxide	<0.00090	DLM	0.00090	ug/g	06-OCT-21	0.05		
	Hexachlorobenzene	<0.0010	DLM	0.0010	ug/g	06-OCT-21	0.52		
	Hexachlorobutadiene	<0.0010	DLM	0.0010	ug/g	06-OCT-21	0.012		
	Hexachloroethane	<0.0010	DLM	0.0010	ug/g	06-OCT-21	0.089		

\*\* 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:

### T3-Soil-Res/Park/Inst. Property Use (Coarse)

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



# ANALYTICAL GUIDELINE REPORT

CEGP 5619

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte						#1			
L2644541-8	TP4									
Sampled By: RK on 27-SEP-21 @ 13:18										
Matrix: SOIL										
<b>Organochlorine Pesticides</b>										
	Methoxychlor	<0.0010	DLM	0.0010	ug/g	06-OCT-21	0.13			
	Surrogate: Decachlorobiphenyl	110.4		50-150	%	06-OCT-21				
	Surrogate: Tetrachloro-m-xylene	78.5		50-150	%	06-OCT-21				

\*\* 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:

**T3-Soil-Res/Park/Inst. Property Use (Coarse)**

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

## 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 and as of November 30, 2020), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

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 and as of November 30, 2020), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

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 200.2/6020B (mod)

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

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, H<sub>2</sub>S) 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)

OCP-TRACE-WT            Soil                      Low level OC Pesticides in      SW846 8270

Soil/Sediment

A 5g representative sub-sample of the soil sample is mixed with methanol and extracted with toluene. An aliquot is taken and analyzed by GC/MSD.

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

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).

PSA-75UM-SIEVE-WT      Soil                      % Particles>75um (Coarse/Fine)      CARTER CSSS 55.4 (modified)

An air-dried sample is reduced to < 2 mm size and mixed with a dispersing agent (sodium metaphosphate). The sample is washed through a 200 mesh (75 µm) sieve. The retained mass of sample is used to determine % sand fraction. If the percentage of sand is >50%, the soil is considered to be coarse textured soil. If the percentage of sand is <50%, the soil is considered to be fine textured.

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 and as of November 30, 2020), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

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

Chain of Custody numbers:

17-845797

*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: L2644541

Report Date: 08-OCT-21

Page 1 of 13

Client: CEGP Consultants Ltd.  
29 Larkspur Drive  
Markham ON L6B 0N1

Contact: Rakesh Koneru

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>B-HWS-R511-WT</b>								
	<b>Soil</b>							
<b>Batch</b>	<b>R5604385</b>							
<b>WG3627134-4</b>	<b>DUP</b>	<b>L2644292-4</b>						
Boron (B), Hot Water Ext.		0.10	0.11		ug/g	6.4	30	29-SEP-21
<b>WG3627134-2</b>	<b>IRM</b>	<b>WT SAR4</b>						
Boron (B), Hot Water Ext.			105.4		%		70-130	29-SEP-21
<b>WG3627134-3</b>	<b>LCS</b>							
Boron (B), Hot Water Ext.			102.0		%		70-130	29-SEP-21
<b>WG3627134-1</b>	<b>MB</b>							
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	29-SEP-21
<b>Batch</b>	<b>R5605282</b>							
<b>WG3628110-4</b>	<b>DUP</b>	<b>L2645120-3</b>						
Boron (B), Hot Water Ext.		0.12	0.12		ug/g	5.5	30	30-SEP-21
<b>WG3628110-2</b>	<b>IRM</b>	<b>WT SAR4</b>						
Boron (B), Hot Water Ext.			107.2		%		70-130	30-SEP-21
<b>WG3628110-3</b>	<b>LCS</b>							
Boron (B), Hot Water Ext.			103.0		%		70-130	30-SEP-21
<b>WG3628110-1</b>	<b>MB</b>							
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	30-SEP-21
<b>CN-WAD-R511-WT</b>								
	<b>Soil</b>							
<b>Batch</b>	<b>R5605914</b>							
<b>WG3627151-3</b>	<b>DUP</b>	<b>L2644809-3</b>						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	30-SEP-21
<b>WG3628202-3</b>	<b>DUP</b>	<b>L2645491-1</b>						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	30-SEP-21
<b>WG3627151-2</b>	<b>LCS</b>							
Cyanide, Weak Acid Diss			95.7		%		80-120	30-SEP-21
<b>WG3628202-2</b>	<b>LCS</b>							
Cyanide, Weak Acid Diss			92.5		%		80-120	30-SEP-21
<b>WG3627151-1</b>	<b>MB</b>							
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	30-SEP-21
<b>WG3628202-1</b>	<b>MB</b>							
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	30-SEP-21
<b>WG3627151-4</b>	<b>MS</b>	<b>L2644809-3</b>						
Cyanide, Weak Acid Diss			103.2		%		70-130	30-SEP-21
<b>WG3628202-4</b>	<b>MS</b>	<b>L2645491-1</b>						
Cyanide, Weak Acid Diss			100.7		%		70-130	30-SEP-21
<b>CR-CR6-IC-WT</b>								
	<b>Soil</b>							



### Quality Control Report

Workorder: L2644541

Report Date: 08-OCT-21

Page 2 of 13

Client: CEGP Consultants Ltd.  
29 Larkspur Drive  
Markham ON L6B 0N1

Contact: Rakesh Koneru

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>CR-CR6-IC-WT</b>		<b>Soil</b>						
<b>Batch</b>	<b>R5605333</b>							
<b>WG3627149-4 CRM</b>		<b>WT-SQC012</b>						
Chromium, Hexavalent			81.4		%		70-130	30-SEP-21
<b>WG3627149-3 DUP</b>		<b>L2644809-1</b>						
Chromium, Hexavalent		0.24	<0.20	RPD-NA	ug/g	N/A	35	30-SEP-21
<b>WG3627149-2 LCS</b>			95.2		%		80-120	30-SEP-21
Chromium, Hexavalent								
<b>WG3627149-1 MB</b>			<0.20		ug/g		0.2	30-SEP-21
Chromium, Hexavalent								
<b>Batch</b>	<b>R5606039</b>							
<b>WG3627799-4 CRM</b>		<b>WT-SQC012</b>						
Chromium, Hexavalent			82.9		%		70-130	01-OCT-21
<b>WG3627799-3 DUP</b>		<b>L2644661-5</b>						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	01-OCT-21
<b>WG3627799-2 LCS</b>			93.4		%		80-120	01-OCT-21
Chromium, Hexavalent								
<b>WG3627799-1 MB</b>			<0.20		ug/g		0.2	01-OCT-21
Chromium, Hexavalent								
<b>EC-WT</b>		<b>Soil</b>						
<b>Batch</b>	<b>R5604323</b>							
<b>WG3627122-4 DUP</b>		<b>WG3627122-3</b>						
Conductivity		0.646	0.641		mS/cm	0.8	20	29-SEP-21
<b>WG3627122-2 IRM</b>		<b>WT SAR4</b>						
Conductivity			104.0		%		70-130	29-SEP-21
<b>WG3627445-1 LCS</b>			96.2		%		90-110	29-SEP-21
Conductivity								
<b>WG3627122-1 MB</b>			<0.0040		mS/cm		0.004	29-SEP-21
Conductivity								
<b>Batch</b>	<b>R5606277</b>							
<b>WG3628121-5 DUP</b>		<b>WG3628121-4</b>						
Conductivity		0.935	0.917		mS/cm	1.9	20	01-OCT-21
<b>WG3628121-2 IRM</b>		<b>WT SAR4</b>						
Conductivity			104.8		%		70-130	01-OCT-21
<b>WG3629627-1 LCS</b>			102.7		%		90-110	01-OCT-21
Conductivity								
<b>WG3628121-1 MB</b>			<0.0040		mS/cm		0.004	01-OCT-21
Conductivity								
<b>HG-200.2-CVAA-WT</b>		<b>Soil</b>						





## Quality Control Report

Workorder: L2644541

Report Date: 08-OCT-21

Page 3 of 13

**Client:** CEGP Consultants Ltd.  
29 Larkspur Drive  
Markham ON L6B 0N1

**Contact:** Rakesh Koneru

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>HG-200.2-CVAA-WT</b>		<b>Soil</b>						
<b>Batch</b>	<b>R5604457</b>							
<b>WG3627121-2</b>	<b>CRM</b>	<b>WT-SS-2</b>						
Mercury (Hg)			106.6		%		70-130	29-SEP-21
<b>WG3627121-6</b>	<b>DUP</b>	<b>WG3627121-5</b>						
Mercury (Hg)		0.0118	0.0103		ug/g	14	40	29-SEP-21
<b>WG3627121-3</b>	<b>LCS</b>							
Mercury (Hg)			105.0		%		80-120	29-SEP-21
<b>WG3627121-1</b>	<b>MB</b>							
Mercury (Hg)			<0.0050		mg/kg		0.005	29-SEP-21
<b>Batch</b>		<b>R5605192</b>						
<b>WG3628060-2</b>	<b>CRM</b>	<b>WT-SS-2</b>						
Mercury (Hg)			105.0		%		70-130	30-SEP-21
<b>WG3628060-7</b>	<b>DUP</b>	<b>WG3628060-6</b>						
Mercury (Hg)		<0.0050	<0.0050	RPD-NA	ug/g	N/A	40	30-SEP-21
<b>WG3628060-3</b>	<b>LCS</b>							
Mercury (Hg)			101.0		%		80-120	30-SEP-21
<b>WG3628060-1</b>	<b>MB</b>							
Mercury (Hg)			<0.0050		mg/kg		0.005	30-SEP-21
<b>MET-200.2-CCMS-WT</b>		<b>Soil</b>						
<b>Batch</b>	<b>R5604572</b>							
<b>WG3627121-2</b>	<b>CRM</b>	<b>WT-SS-2</b>						
Antimony (Sb)			99.9		%		70-130	29-SEP-21
Arsenic (As)			107.9		%		70-130	29-SEP-21
Barium (Ba)			109.5		%		70-130	29-SEP-21
Beryllium (Be)			105.0		%		70-130	29-SEP-21
Boron (B)			8.4		mg/kg		3.5-13.5	29-SEP-21
Cadmium (Cd)			104.2		%		70-130	29-SEP-21
Chromium (Cr)			102.2		%		70-130	29-SEP-21
Cobalt (Co)			103.5		%		70-130	29-SEP-21
Copper (Cu)			103.7		%		70-130	29-SEP-21
Lead (Pb)			105.6		%		70-130	29-SEP-21
Molybdenum (Mo)			108.3		%		70-130	29-SEP-21
Nickel (Ni)			102.9		%		70-130	29-SEP-21
Selenium (Se)			0.14		mg/kg		0-0.34	29-SEP-21
Thallium (Tl)			0.073		mg/kg		0.029-0.129	29-SEP-21
Uranium (U)			99.5		%		70-130	29-SEP-21
Vanadium (V)			101.4		%		70-130	29-SEP-21



## Quality Control Report

Workorder: L2644541

Report Date: 08-OCT-21

Page 4 of 13

Client: CEGP Consultants Ltd.  
29 Larkspur Drive  
Markham ON L6B 0N1

Contact: Rakesh Koneru

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>MET-200.2-CCMS-WT</b>		<b>Soil</b>						
<b>Batch</b>	<b>R5604572</b>							
<b>WG3627121-2</b>	<b>CRM</b>							
Zinc (Zn)		<b>WT-SS-2</b>	105.0		%		70-130	29-SEP-21
<b>WG3627121-6</b>	<b>DUP</b>	<b>WG3627121-5</b>						
Antimony (Sb)		0.12	0.12		ug/g	1.1	30	29-SEP-21
Arsenic (As)		4.69	4.75		ug/g	1.2	30	29-SEP-21
Barium (Ba)		103	108		ug/g	4.3	40	29-SEP-21
Beryllium (Be)		0.62	0.67		ug/g	8.1	30	29-SEP-21
Boron (B)		12.8	13.2		ug/g	2.9	30	29-SEP-21
Cadmium (Cd)		0.100	0.102		ug/g	1.6	30	29-SEP-21
Chromium (Cr)		20.1	20.5		ug/g	1.8	30	29-SEP-21
Cobalt (Co)		8.70	8.86		ug/g	1.8	30	29-SEP-21
Copper (Cu)		17.9	18.6		ug/g	3.7	30	29-SEP-21
Lead (Pb)		9.32	9.73		ug/g	4.3	40	29-SEP-21
Molybdenum (Mo)		0.34	0.33		ug/g	3.3	40	29-SEP-21
Nickel (Ni)		18.5	18.8		ug/g	1.5	30	29-SEP-21
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	29-SEP-21
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	29-SEP-21
Thallium (Tl)		0.104	0.109		ug/g	4.4	30	29-SEP-21
Uranium (U)		0.690	0.707		ug/g	2.5	30	29-SEP-21
Vanadium (V)		30.0	30.0		ug/g	0.2	30	29-SEP-21
Zinc (Zn)		57.4	58.1		ug/g	1.2	30	29-SEP-21
<b>WG3627121-4</b>	<b>LCS</b>							
Antimony (Sb)			103.5		%		80-120	29-SEP-21
Arsenic (As)			99.5		%		80-120	29-SEP-21
Barium (Ba)			99.0		%		80-120	29-SEP-21
Beryllium (Be)			100.1		%		80-120	29-SEP-21
Boron (B)			95.0		%		80-120	29-SEP-21
Cadmium (Cd)			95.8		%		80-120	29-SEP-21
Chromium (Cr)			96.9		%		80-120	29-SEP-21
Cobalt (Co)			97.7		%		80-120	29-SEP-21
Copper (Cu)			95.8		%		80-120	29-SEP-21
Lead (Pb)			98.9		%		80-120	29-SEP-21
Molybdenum (Mo)			103.3		%		80-120	29-SEP-21
Nickel (Ni)			96.2		%		80-120	29-SEP-21

COMMENTS: RRQC: Silver recovery outside of ALS DQOs due to issue with standard. Reported data was not affected by this issue.



### Quality Control Report

Workorder: L2644541

Report Date: 08-OCT-21

Page 5 of 13

Client: CEGP Consultants Ltd.  
29 Larkspur Drive  
Markham ON L6B 0N1

Contact: Rakesh Koneru

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>MET-200.2-CCMS-WT</b>								
	<b>Soil</b>							
<b>Batch</b>	<b>R5604572</b>							
<b>WG3627121-4</b>	<b>LCS</b>							
Selenium (Se)			95.8		%		80-120	29-SEP-21
Silver (Ag)			49.3	RRQC	%		80-120	29-SEP-21
Thallium (Tl)			97.2		%		80-120	29-SEP-21
Uranium (U)			102.2		%		80-120	29-SEP-21
Vanadium (V)			99.7		%		80-120	29-SEP-21
Zinc (Zn)			103.7		%		80-120	29-SEP-21
COMMENTS: RRQC: Silver recovery outside of ALS DQOs due to issue with standard. Reported data was not affected by this issue.								
<b>WG3627121-1</b>	<b>MB</b>							
Antimony (Sb)			<0.10		mg/kg		0.1	29-SEP-21
Arsenic (As)			<0.10		mg/kg		0.1	29-SEP-21
Barium (Ba)			<0.50		mg/kg		0.5	29-SEP-21
Beryllium (Be)			<0.10		mg/kg		0.1	29-SEP-21
Boron (B)			<5.0		mg/kg		5	29-SEP-21
Cadmium (Cd)			<0.020		mg/kg		0.02	29-SEP-21
Chromium (Cr)			<0.50		mg/kg		0.5	29-SEP-21
Cobalt (Co)			<0.10		mg/kg		0.1	29-SEP-21
Copper (Cu)			<0.50		mg/kg		0.5	29-SEP-21
Lead (Pb)			<0.50		mg/kg		0.5	29-SEP-21
Molybdenum (Mo)			<0.10		mg/kg		0.1	29-SEP-21
Nickel (Ni)			<0.50		mg/kg		0.5	29-SEP-21
Selenium (Se)			<0.20		mg/kg		0.2	29-SEP-21
Silver (Ag)			<0.10		mg/kg		0.1	29-SEP-21
Thallium (Tl)			<0.050		mg/kg		0.05	29-SEP-21
Uranium (U)			<0.050		mg/kg		0.05	29-SEP-21
Vanadium (V)			<0.20		mg/kg		0.2	29-SEP-21
Zinc (Zn)			<2.0		mg/kg		2	29-SEP-21
<b>Batch</b>	<b>R5605553</b>							
<b>WG3628060-2</b>	<b>CRM</b>	<b>WT-SS-2</b>						
Antimony (Sb)			95.8		%		70-130	30-SEP-21
Arsenic (As)			105.8		%		70-130	30-SEP-21
Barium (Ba)			101.3		%		70-130	30-SEP-21
Beryllium (Be)			98.7		%		70-130	30-SEP-21
Boron (B)			7.9		mg/kg		3.5-13.5	30-SEP-21
Cadmium (Cd)			96.1		%		70-130	30-SEP-21



## Quality Control Report

Workorder: L2644541

Report Date: 08-OCT-21

Page 6 of 13

Client: CEGP Consultants Ltd.  
29 Larkspur Drive  
Markham ON L6B 0N1

Contact: Rakesh Koneru

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>MET-200.2-CCMS-WT</b>								
	<b>Soil</b>							
<b>Batch</b>	<b>R5605553</b>							
<b>WG3628060-2</b>	<b>CRM</b>	<b>WT-SS-2</b>						
Chromium (Cr)			97.1		%		70-130	30-SEP-21
Cobalt (Co)			101.5		%		70-130	30-SEP-21
Copper (Cu)			100.7		%		70-130	30-SEP-21
Lead (Pb)			98.4		%		70-130	30-SEP-21
Molybdenum (Mo)			99.8		%		70-130	30-SEP-21
Nickel (Ni)			100.6		%		70-130	30-SEP-21
Selenium (Se)			0.10		mg/kg		0-0.34	30-SEP-21
Silver (Ag)			88.8		%		70-130	30-SEP-21
Thallium (Tl)			0.069		mg/kg		0.029-0.129	30-SEP-21
Uranium (U)			89.3		%		70-130	30-SEP-21
Vanadium (V)			99.6		%		70-130	30-SEP-21
Zinc (Zn)			97.6		%		70-130	30-SEP-21
<b>WG3628060-7</b>	<b>DUP</b>	<b>WG3628060-6</b>						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	30-SEP-21
Arsenic (As)		1.76	1.56		ug/g	12	30	30-SEP-21
Barium (Ba)		17.4	14.5		ug/g	18	40	30-SEP-21
Beryllium (Be)		0.15	0.13		ug/g	9.0	30	30-SEP-21
Boron (B)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	30-SEP-21
Cadmium (Cd)		0.055	0.042		ug/g	26	30	30-SEP-21
Chromium (Cr)		21.2	17.8		ug/g	18	30	30-SEP-21
Cobalt (Co)		2.48	2.11		ug/g	16	30	30-SEP-21
Copper (Cu)		8.59	7.36		ug/g	15	30	30-SEP-21
Lead (Pb)		3.10	2.71		ug/g	13	40	30-SEP-21
Molybdenum (Mo)		4.30	3.52		ug/g	20	40	30-SEP-21
Nickel (Ni)		6.59	5.57		ug/g	17	30	30-SEP-21
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	30-SEP-21
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	30-SEP-21
Thallium (Tl)		<0.050	<0.050	RPD-NA	ug/g	N/A	30	30-SEP-21
Uranium (U)		0.498	0.426		ug/g	16	30	30-SEP-21
Vanadium (V)		15.6	13.6		ug/g	14	30	30-SEP-21
Zinc (Zn)		20.8	16.6		ug/g	22	30	30-SEP-21
<b>WG3628060-4</b>	<b>LCS</b>							
Antimony (Sb)			101.3		%		80-120	30-SEP-21



### Quality Control Report

Workorder: L2644541

Report Date: 08-OCT-21

Page 7 of 13

Client: CEGP Consultants Ltd.  
29 Larkspur Drive  
Markham ON L6B 0N1

Contact: Rakesh Koneru

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>MET-200.2-CCMS-WT</b>								
	<b>Soil</b>							
<b>Batch</b>	<b>R5605553</b>							
<b>WG3628060-4</b>	<b>LCS</b>							
Arsenic (As)			105.4		%		80-120	30-SEP-21
Barium (Ba)			100.5		%		80-120	30-SEP-21
Beryllium (Be)			100.8		%		80-120	30-SEP-21
Boron (B)			95.7		%		80-120	30-SEP-21
Cadmium (Cd)			99.4		%		80-120	30-SEP-21
Chromium (Cr)			99.8		%		80-120	30-SEP-21
Cobalt (Co)			101.6		%		80-120	30-SEP-21
Copper (Cu)			99.8		%		80-120	30-SEP-21
Lead (Pb)			101.5		%		80-120	30-SEP-21
Molybdenum (Mo)			102.4		%		80-120	30-SEP-21
Nickel (Ni)			99.7		%		80-120	30-SEP-21
Selenium (Se)			106.4		%		80-120	30-SEP-21
Silver (Ag)			87.4		%		80-120	30-SEP-21
Thallium (Tl)			105.2		%		80-120	30-SEP-21
Uranium (U)			102.6		%		80-120	30-SEP-21
Vanadium (V)			104.4		%		80-120	30-SEP-21
Zinc (Zn)			98.0		%		80-120	30-SEP-21
<b>WG3628060-1</b>	<b>MB</b>							
Antimony (Sb)			<0.10		mg/kg		0.1	30-SEP-21
Arsenic (As)			<0.10		mg/kg		0.1	30-SEP-21
Barium (Ba)			<0.50		mg/kg		0.5	30-SEP-21
Beryllium (Be)			<0.10		mg/kg		0.1	30-SEP-21
Boron (B)			<5.0		mg/kg		5	30-SEP-21
Cadmium (Cd)			<0.020		mg/kg		0.02	30-SEP-21
Chromium (Cr)			<0.50		mg/kg		0.5	30-SEP-21
Cobalt (Co)			<0.10		mg/kg		0.1	30-SEP-21
Copper (Cu)			<0.50		mg/kg		0.5	30-SEP-21
Lead (Pb)			<0.50		mg/kg		0.5	30-SEP-21
Molybdenum (Mo)			<0.10		mg/kg		0.1	30-SEP-21
Nickel (Ni)			<0.50		mg/kg		0.5	30-SEP-21
Selenium (Se)			<0.20		mg/kg		0.2	30-SEP-21
Silver (Ag)			<0.10		mg/kg		0.1	30-SEP-21
Thallium (Tl)			<0.050		mg/kg		0.05	30-SEP-21
Uranium (U)			<0.050		mg/kg		0.05	30-SEP-21



### Quality Control Report

Workorder: L2644541

Report Date: 08-OCT-21

Page 8 of 13

Client: CEGP Consultants Ltd.  
29 Larkspur Drive  
Markham ON L6B 0N1

Contact: Rakesh Koneru

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>MET-200.2-CCMS-WT</b>								
	<b>Soil</b>							
<b>Batch</b>	<b>R5605553</b>							
<b>WG3628060-1</b>	<b>MB</b>							
Vanadium (V)			<0.20		mg/kg		0.2	30-SEP-21
Zinc (Zn)			<2.0		mg/kg		2	30-SEP-21
<b>MOISTURE-WT</b>								
	<b>Soil</b>							
<b>Batch</b>	<b>R5604938</b>							
<b>WG3627168-3</b>	<b>DUP</b>	<b>L2644525-1</b>						
% Moisture		10.5	10.4		%	1.0	20	30-SEP-21
<b>WG3627168-2</b>	<b>LCS</b>							
% Moisture			99.6		%		90-110	30-SEP-21
<b>WG3627168-1</b>	<b>MB</b>							
% Moisture			<0.25		%		0.25	30-SEP-21
<b>Batch</b>	<b>R5604943</b>							
<b>WG3627225-3</b>	<b>DUP</b>	<b>L2644661-5</b>						
% Moisture		12.5	12.5		%	0.1	20	30-SEP-21
<b>WG3627225-2</b>	<b>LCS</b>							
% Moisture			99.5		%		90-110	30-SEP-21
<b>WG3627225-1</b>	<b>MB</b>							
% Moisture			<0.25		%		0.25	30-SEP-21
<b>OCP-TRACE-WT</b>								
	<b>Soil</b>							
<b>Batch</b>	<b>R5610484</b>							
<b>WG3628148-3</b>	<b>DUP</b>	<b>WG3628148-5</b>						
Aldrin		<0.00050	<0.00050	RPD-NA	ug/g	N/A	50	06-OCT-21
a-chlordane		<0.00160	<0.00160	RPD-NA	ug/g	N/A	50	06-OCT-21
g-chlordane		<0.00310	<0.00310	RPD-NA	ug/g	N/A	50	06-OCT-21
o,p-DDD		<0.00090	<0.00090	RPD-NA	ug/g	N/A	50	06-OCT-21
pp-DDD		<0.0130	<0.0130	RPD-NA	ug/g	N/A	50	06-OCT-21
o,p-DDE		<0.00060	<0.00060	RPD-NA	ug/g	N/A	50	06-OCT-21
pp-DDE		<0.0310	<0.0310	RPD-NA	ug/g	N/A	50	06-OCT-21
op-DDT		<0.00090	<0.00060	RPD-NA	ug/g	N/A	50	06-OCT-21
pp-DDT		<0.0120	<0.0120	RPD-NA	ug/g	N/A	50	06-OCT-21
Dieldrin		<0.00500	<0.00500	RPD-NA	ug/g	N/A	50	06-OCT-21
alpha-Endosulfan		<0.00060	<0.00060	RPD-NA	ug/g	N/A	50	06-OCT-21
beta-Endosulfan		<0.00060	<0.00060	RPD-NA	ug/g	N/A	50	06-OCT-21
Endrin		<0.0010	<0.0010	RPD-NA	ug/g	N/A	50	06-OCT-21
Heptachlor		<0.00050	<0.00050	RPD-NA	ug/g	N/A	50	06-OCT-21



### Quality Control Report

Workorder: L2644541

Report Date: 08-OCT-21

Page 9 of 13

Client: CEGP Consultants Ltd.  
29 Larkspur Drive  
Markham ON L6B 0N1

Contact: Rakesh Koneru

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>OCP-TRACE-WT</b>								
	<b>Soil</b>							
<b>Batch</b>	<b>R5610484</b>							
<b>WG3628148-3</b>	<b>DUP</b>	<b>WG3628148-5</b>						
Heptachlor Epoxide		<0.00090	<0.00050	RPD-NA	ug/g	N/A	50	06-OCT-21
Hexachlorobenzene		<0.0010	<0.0010	RPD-NA	ug/g	N/A	50	06-OCT-21
Hexachlorobutadiene		<0.0010	<0.0010	RPD-NA	ug/g	N/A	50	06-OCT-21
Hexachloroethane		<0.0010	<0.0010	RPD-NA	ug/g	N/A	50	06-OCT-21
Lindane		<0.00050	<0.00050	RPD-NA	ug/g	N/A	50	06-OCT-21
Methoxychlor		<0.0010	<0.0010	RPD-NA	ug/g	N/A	50	06-OCT-21
<b>WG3628148-2</b>	<b>LCS</b>							
Aldrin			91.4		%		50-150	06-OCT-21
a-chlordane			81.6		%		50-150	06-OCT-21
g-chlordane			87.7		%		50-150	06-OCT-21
o,p-DDD			84.8		%		50-150	06-OCT-21
pp-DDD			97.3		%		50-150	06-OCT-21
o,p-DDE			74.2		%		50-150	06-OCT-21
pp-DDE			81.3		%		50-150	06-OCT-21
op-DDT			65.5		%		50-150	06-OCT-21
pp-DDT			57.3		%		50-150	06-OCT-21
Dieldrin			79.2		%		50-150	06-OCT-21
alpha-Endosulfan			78.2		%		50-150	06-OCT-21
beta-Endosulfan			81.1		%		50-150	06-OCT-21
Endrin			61.8		%		50-150	06-OCT-21
Heptachlor			78.4		%		50-150	06-OCT-21
Heptachlor Epoxide			85.7		%		50-150	06-OCT-21
Hexachlorobenzene			87.9		%		50-150	06-OCT-21
Hexachlorobutadiene			79.1		%		50-150	06-OCT-21
Hexachloroethane			81.9		%		50-150	06-OCT-21
Lindane			83.3		%		50-150	06-OCT-21
Methoxychlor			68.2		%		50-150	06-OCT-21
<b>WG3628148-1</b>	<b>MB</b>							
Aldrin			<0.00020		ug/g		0.0002	06-OCT-21
a-chlordane			<0.00030		ug/g		0.0003	06-OCT-21
g-chlordane			<0.00030		ug/g		0.0003	06-OCT-21
o,p-DDD			<0.00030		ug/g		0.0003	06-OCT-21
pp-DDD			<0.00030		ug/g		0.0003	06-OCT-21
o,p-DDE			<0.00030		ug/g		0.0003	06-OCT-21



## Quality Control Report

Workorder: L2644541

Report Date: 08-OCT-21

Page 10 of 13

Client: CEGP Consultants Ltd.  
29 Larkspur Drive  
Markham ON L6B 0N1

Contact: Rakesh Koneru

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>OCP-TRACE-WT</b>								
	<b>Soil</b>							
<b>Batch</b>	<b>R5610484</b>							
<b>WG3628148-1</b>	<b>MB</b>							
pp-DDE			<0.00030		ug/g		0.0003	06-OCT-21
op-DDT			<0.00030		ug/g		0.0003	06-OCT-21
pp-DDT			<0.00030		ug/g		0.0003	06-OCT-21
Dieldrin			<0.00020		ug/g		0.0002	06-OCT-21
alpha-Endosulfan			<0.00030		ug/g		0.0003	06-OCT-21
beta-Endosulfan			<0.00030		ug/g		0.0003	06-OCT-21
Endrin			<0.00050		ug/g		0.0005	06-OCT-21
Heptachlor			<0.00020		ug/g		0.0002	06-OCT-21
Heptachlor Epoxide			<0.00020		ug/g		0.0002	06-OCT-21
Hexachlorobenzene			<0.00050		ug/g		0.0005	06-OCT-21
Hexachlorobutadiene			<0.00050		ug/g		0.0005	06-OCT-21
Hexachloroethane			<0.00050		ug/g		0.0005	06-OCT-21
Lindane			<0.00020		ug/g		0.0002	06-OCT-21
Methoxychlor			<0.00050		ug/g		0.0005	06-OCT-21
Surrogate: Tetrachloro-m-xylene			83.8		%		50-150	06-OCT-21
Surrogate: Decachlorobiphenyl			103.0		%		50-150	06-OCT-21
<b>WG3628148-4</b>	<b>MS</b>	<b>WG3628148-5</b>						
Aldrin			79.5		%		50-150	06-OCT-21
a-chlordane			89.3		%		50-150	06-OCT-21
g-chlordane			93.7		%		50-150	06-OCT-21
o,p-DDD			85.9		%		50-150	06-OCT-21
pp-DDD			156.5	K	%		50-150	06-OCT-21
o,p-DDE			60.1		%		50-150	06-OCT-21
pp-DDE			293.9	K	%		50-150	06-OCT-21
op-DDT			30.3	K	%		50-150	06-OCT-21
pp-DDT			46.6	K	%		50-150	06-OCT-21
Dieldrin			89.0		%		50-150	06-OCT-21
alpha-Endosulfan			65.8		%		50-150	06-OCT-21
beta-Endosulfan			81.0		%		50-150	06-OCT-21
Endrin			53.3		%		50-150	06-OCT-21
Heptachlor			58.0		%		50-150	06-OCT-21
Heptachlor Epoxide			72.8		%		50-150	06-OCT-21
Hexachlorobenzene			78.9		%		50-150	06-OCT-21
Hexachlorobutadiene			68.7		%		50-150	06-OCT-21





### Quality Control Report

Workorder: L2644541

Report Date: 08-OCT-21

Page 11 of 13

Client: CEGP Consultants Ltd.  
29 Larkspur Drive  
Markham ON L6B 0N1

Contact: Rakesh Koneru

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>OCP-TRACE-WT</b>		<b>Soil</b>						
<b>Batch</b>	<b>R5610484</b>							
<b>WG3628148-4</b>	<b>MS</b>	<b>WG3628148-5</b>						
Hexachloroethane			69.5		%		50-150	06-OCT-21
Lindane			65.4		%		50-150	06-OCT-21
Methoxychlor			21.4	K	%		50-150	06-OCT-21
<b>PH-WT</b>		<b>Soil</b>						
<b>Batch</b>	<b>R5605596</b>							
<b>WG3628100-1</b>	<b>DUP</b>	<b>L2644734-1</b>						
pH		7.95	8.05	J	pH units	0.10	0.3	30-SEP-21
<b>WG3628821-1</b>	<b>LCS</b>							
pH			6.94		pH units		6.9-7.1	30-SEP-21
<b>Batch</b>	<b>R5608076</b>							
<b>WG3627166-1</b>	<b>DUP</b>	<b>L2643989-7</b>						
pH		5.36	5.26	J	pH units	0.10	0.3	05-OCT-21
<b>WG3631316-1</b>	<b>LCS</b>							
pH			6.99		pH units		6.9-7.1	05-OCT-21
<b>PSA-75UM-SIEVE-WT</b>		<b>Soil</b>						
<b>Batch</b>	<b>R5609703</b>							
<b>WG3631578-2</b>	<b>DUP</b>	<b>L2644437-1</b>						
% >75um		86.3	86.2	J	%	0.1	5	05-OCT-21
<b>WG3631578-1</b>	<b>IRM</b>	<b>PSA_IRM</b>						
% >75um			98.4		%		70-130	05-OCT-21
<b>SAR-R511-WT</b>		<b>Soil</b>						
<b>Batch</b>	<b>R5604409</b>							
<b>WG3627122-4</b>	<b>DUP</b>	<b>WG3627122-3</b>						
Calcium (Ca)		7.00	6.58		mg/L	6.2	30	29-SEP-21
Sodium (Na)		116	115		mg/L	0.9	30	29-SEP-21
Magnesium (Mg)		3.07	2.90		mg/L	5.7	30	29-SEP-21
<b>WG3627122-2</b>	<b>IRM</b>	<b>WT SAR4</b>						
Calcium (Ca)			96.3		%		70-130	29-SEP-21
Sodium (Na)			96.4		%		70-130	29-SEP-21
Magnesium (Mg)			98.3		%		70-130	29-SEP-21
<b>WG3627122-5</b>	<b>LCS</b>							
Calcium (Ca)			106.3		%		80-120	29-SEP-21
Sodium (Na)			109.8		%		80-120	29-SEP-21
Magnesium (Mg)			103.2		%		80-120	29-SEP-21
<b>WG3627122-1</b>	<b>MB</b>							



### Quality Control Report

Workorder: L2644541

Report Date: 08-OCT-21

Page 12 of 13

Client: CEGP Consultants Ltd.  
29 Larkspur Drive  
Markham ON L6B 0N1

Contact: Rakesh Koneru

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>SAR-R511-WT</b>								
	<b>Soil</b>							
<b>Batch</b>	<b>R5604409</b>							
<b>WG3627122-1</b>	<b>MB</b>							
Calcium (Ca)			<0.50		mg/L		0.5	29-SEP-21
Sodium (Na)			<0.50		mg/L		0.5	29-SEP-21
Magnesium (Mg)			<0.50		mg/L		0.5	29-SEP-21
<b>Batch</b>	<b>R5605500</b>							
<b>WG3628121-5</b>	<b>DUP</b>	<b>WG3628121-4</b>						
Calcium (Ca)		12.8	12.5		mg/L	2.4	30	30-SEP-21
Sodium (Na)		151	148		mg/L	2.0	30	30-SEP-21
Magnesium (Mg)		6.87	6.71		mg/L	2.4	30	30-SEP-21
<b>WG3628121-2</b>	<b>IRM</b>	<b>WT SAR4</b>						
Calcium (Ca)			97.2		%		70-130	30-SEP-21
Sodium (Na)			91.0		%		70-130	30-SEP-21
Magnesium (Mg)			99.1		%		70-130	30-SEP-21
<b>WG3628121-3</b>	<b>LCS</b>							
Calcium (Ca)			106.0		%		80-120	30-SEP-21
Sodium (Na)			103.4		%		80-120	30-SEP-21
Magnesium (Mg)			104.4		%		80-120	30-SEP-21
<b>WG3628121-1</b>	<b>MB</b>							
Calcium (Ca)			<0.50		mg/L		0.5	30-SEP-21
Sodium (Na)			<0.50		mg/L		0.5	30-SEP-21
Magnesium (Mg)			<0.50		mg/L		0.5	30-SEP-21

# Quality Control Report

Workorder: L2644541

Report Date: 08-OCT-21

Client: CEGP Consultants Ltd.  
29 Larkspur Drive  
Markham ON L6B 0N1

Page 13 of 13

Contact: Rakesh Koneru

## 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.
K	Matrix Spike recovery outside ALS DQO due to sample matrix effects.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.
RRQC	Refer to report remarks for information regarding this QC result.

---

## 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

Canada Toll Free: 1 800 668 9878



COC Number: 17 - 845797

Page 1 of 1

AP

<b>Report To</b> Contact and company name below will appear on the final report Company: <u>CEEP Consultants Ltd</u> Contact: <u>Rakesh</u> Phone: <u>647 987 1384</u> Company address below will appear on the final report Street: <u>29 Larkspur Drive</u> City/Province: <u>Markham ON</u> Postal Code: <u>L6B0N1</u>		<b>Report From</b> Select Report Format: <input checked="" type="checkbox"/> EDD (DIGITAL) Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: <u>rakesh@ceep.ca</u> Email 2: Email 3:		<b>Select Service Level Below - Contact your AM to confirm all E&amp;P TATs (surcharges may apply)</b> Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply 4 day [P4-20%] <input type="checkbox"/> 3 day [P3-25%] <input type="checkbox"/> 2 day [P2-50%] <input type="checkbox"/> EMERGENCY 1 Business day [E - 100%] Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] <input type="checkbox"/> 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.																															
<b>Invoice To</b> Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Copy of Invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Company: Contact:		<b>Invoice Distribution</b> Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: <u>rakesh@ceep.ca</u> Email 2:		<b>Analysis Request</b> Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below <table border="1"> <tr> <th rowspan="2">NUMBER OF CONTAINERS</th> <th colspan="2">Metals</th> <th rowspan="2">Grain Size</th> </tr> <tr> <th>As</th> <th>Se</th> </tr> <tr> <td>1</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> <tr> <td>1</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> <tr> <td>1</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>1</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> <tr> <td>1</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> <tr> <td>1</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> </table>		NUMBER OF CONTAINERS	Metals		Grain Size	As	Se	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
NUMBER OF CONTAINERS	Metals		Grain Size																																
	As	Se																																	
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																	
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																	
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																	
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																	
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																	
<b>Project Information</b> ALS Account # / Quote #: <u>CEEP 5619</u> Job #: <u>CEEP 5619</u> PO / AFE: LSD:		<b>Oil and Gas Required Fields (client use)</b> AFE/Cost Center: Major/Minor Code: Requisitioner: Location:		<b>ALS Lab Work Order # (lab use only):</b> <u>L2644541</u> ALS Contact: <u>Emily Smith</u> Sampler: <u>RK</u>																															
<b>ALS Sample # (lab use only)</b>	<b>Sample Identification and/or Coordinates (This description will appear on the report)</b>	<b>Date (dd-mmm-yy)</b>	<b>Time (hh:mm)</b>	<b>Sample Type</b>	<b>NUMBER OF CONTAINERS</b>	<input checked="" type="checkbox"/> OCP <input checked="" type="checkbox"/> Metals <input checked="" type="checkbox"/> Grain Size	<b>SAMPLES ON HOLD</b>	<b>SUSPECTED HAZARD (see Special Instructions)</b>																											
	<u>BH4 SS1</u>	<u>28/9/21</u>	<u>1200</u>	<u>Soil</u>	<u>1</u>	<input checked="" type="checkbox"/>																													
	<u>4B</u>		<u>1</u>		<u>1</u>	<input checked="" type="checkbox"/>																													
	<u>BH5 SS1</u>		<u>1255</u>		<u>1</u>	<input checked="" type="checkbox"/>																													
	<u>BH5 SS2</u>		<u>1301</u>		<u>1</u>	<input checked="" type="checkbox"/>																													
	<u>TP1</u>		<u>1305</u>		<u>1</u>	<input checked="" type="checkbox"/>																													
	<u>TP2</u>		<u>1310</u>		<u>1</u>	<input checked="" type="checkbox"/>																													
	<u>TP3</u>		<u>1312</u>		<u>1</u>	<input checked="" type="checkbox"/>																													
	<u>TP4</u>		<u>1318</u>		<u>1</u>	<input checked="" type="checkbox"/>																													
<b>Drinking Water (DW) Samples<sup>1</sup> (client use)</b> Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO Are samples for human consumption/ use? <input type="checkbox"/> YES <input type="checkbox"/> NO		<b>Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)</b> <u>0 Reg 153/04 Table 3 RPE Coarse</u>		<b>SAMPLE CONDITION AS RECEIVED (lab use only)</b> Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/> Ice Packs <input type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/> Cooling Initiated <input checked="" type="checkbox"/> INITIAL COOLER TEMPERATURES °C: <u>1.0</u> FINAL COOLER TEMPERATURES °C: <u>7.9</u>																															
<b>SHIPMENT RELEASE (client use)</b> Released by: <u>Rakesh</u> Date: <u>28/9/21</u> Time: <u>10:30</u>		<b>INITIAL SHIPMENT RECEPTION (lab use only)</b> Received by: <u>SS</u> Date: <u>30 Sep 28/21</u> Time: <u>9:00</u>		<b>FINAL SHIPMENT RECEPTION (lab use only)</b> Received by: <u>09/28/21</u> Time: <u>11:30</u>																															

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