

ARBORIST REPORT

VAUGHAN FIRE STATION 7-12 9541 WESTON ROAD

for:

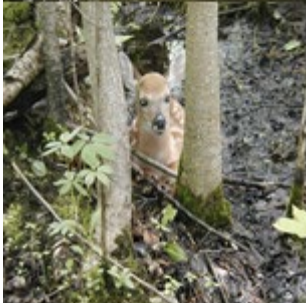
THOMASBROWN**ARCHITECTS**

by:



MARCH 2022

LGL FILE TA9196



VAUGHAN FIRE STATION 7-12

9541 WESTON ROAD

ARBORIST REPORT

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MARCH 2022
LGL PROJECT TA9196

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1.0 INTRODUCTION

LGL Limited (LGL) has been retained by Thomas Brown Architects to provide arborist services for the Vaughan Fire Station 7-12 located at 9541 Weston Road in the City of Vaughan (City). The location of the property is presented in **Figure 1**.

This Arborist Report documents the results of the tree inventory conducted in February 2022 and includes an impact assessment which provides recommendations for tree protection, removals and mitigation measure. The impact assessment and mitigation is based on a review of the grading limits provided by Thomas Brown Architects.



LEGEND

- Subject Property
- Waterbody

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0 100 200 300 400 M



9541 Weston Road KEY MAP



Project: TA9196	Figure: 1
Date: February 22, 2022	Prepared By: AM
Scale: 1:10,000	Verified By: JB

2.0 METHODOLOGY

An ISA Certified Arborist conducted an inventory of tree resources on February 15, 2022, to identify potential tree resources on and within six metres adjacent to the property. Tree locations were captured by an Ontario Land Surveyor and matched in the field where feasible. Attention was paid to canopy size and shape where tree canopies overhang the work zone and may conflict with machinery manoeuvring. The tree inventory was conducted in accordance with the *York Region Street Tree and Forest Preservation Guidelines* (Environmental Services Department 2016) and the *Tree Protection Protocol* (City of Vaughan 2018).

The following information was collected for each tree:

- Species: each tree was identified to species level using common and scientific name;
- Size: diameter at breast height (DBH) measured in centimetres at 1.37 meters above ground level;
- Dripline diameter: the radial dripline for each tree was estimated to the nearest metre;
- Health Assessment: assessed as per the York Region Tree Condition Rating Specifications on qualities such as trunk integrity, crown structure, vigour, disease and dieback; and,
- General comments as warranted.

Tree locations that were not identified in the survey provided to LGL were captured in the field using a differential EOS Arrow 100 GPS unit. GPS accuracy is generally within 1 metre horizontal distance; however, it is noted that densely treed areas, tall buildings and satellite reception can affect accuracy.

Surveyed trees have been screened for rare species as referenced by the Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Centre (NHIC), which includes classification of Endangered, Threatened, and Special Concern species both at a provincial and federal scale.

3.0 RESULTS

A total of 225 trees were identified and assessed during the tree inventory. Trees within the study area range in size from 1 to 180 cm DBH and range from good to poor condition. Trees surveyed include planted amenity trees within the subject property, and naturally occurring trees bordering the property. A detailed summary of all trees surveyed are presented in the **Appendix A Tree Inventory** and the locations of each tree (by identifier number) are presented in **Figure 2**.



LEGEND

- Subject Property
- Construction Limits
- Butternut to be Retained
- Tree to be Retained
- Tree to be Relocated
- Tree to be Impacted
- Tree to be Removed
- Proposed Relocation Tree 73
- Tree Protection Fencing
- Minimum Tree Protection Zone
- Dripline

Data Source: LGL Field Survey (2022). Contains public sector information made available under The Regional Municipality of York Open Data Licence. Contains information licensed under the Open Government Licence - Ontario. Produced by LGL Limited under License with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2022.



9541 Weston Road TREE RESOURCES



Project: TA9196	Figure: 2
Date: April 1, 2022	Prepared By: AM
Scale: 1:800	Verified By: JB

3.1 SPECIES AT RISK

Two tree species that are regulated under the Ontario *Endangered Species Act*, 2007 were identified within the study area including Kentucky coffee tree (*Gymnocladus dioica*) and butternut (*Juglans cinerea*).

3.1.1 Kentucky Coffee Tree

Kentucky coffee tree is regulated as Threatened under the *Ontario Endangered Species Act*, 2007 and was noted within the property. Three (3) Kentucky coffee trees were planted as amenity trees (LGL Tree #28, 54, 55). Ministry of Natural Resources and Forestry (MNR) has advised that amenity and streetscape Kentucky coffee trees are not regulated under the *Endangered Species Act*, 2007, due to their non-native origin.

3.1.2 Butternut

Four (4) butternut (*Juglans cinerea*) were identified within and adjacent to the study area (LGL Tree #129, 143, 182, 183). Butternut is regulated as Endangered under the *Ontario Endangered Species Act*, 2007. The butternut trees were identified on the southern edge of the property and within the adjacent Vellore Tract Woodlot. In general, all butternut trees had signs of canker (sooty marks and open wounds) and evidence of crown dieback. One butternut tree (LGL Tree #143) was determined to be dead. Butternut locations are depicted in **Figure 2**. Consultation with the MNR should be undertaken given that works are proposed to occur within the 50 m butternut habitat protection zone and a Butternut Health Assessment will be required during the growing season.

TABLE 1. BUTTERNUT TREES LOCATED ADJACENT TO THE SUBJECT PROPERTY

Tree #	Scientific Name	Common Name	DBH (cm)	York Region Tree Condition Rating	Radial Dripline (m)	Distance from proposed disturbance limits (m)
129	<i>Juglans cinerea</i>	butternut	14.0	Satisfactory	2	31
143	<i>Juglans cinerea</i>	butternut	16.0	Dead	2	3
182	<i>Juglans cinerea</i>	butternut	55.0	Potential trouble	5	12
183	<i>Juglans cinerea</i>	butternut	45.0	Satisfactory	4	65

3.2 MEMORIAL TREES

A memorial tree was identified on the subject property (LGL Tree #73). The tree is a small pear tree (*Pyrus sp.*) with a diameter of 5 cm. Since the proposed development will impact this tree, it is recommended that it be relocated to another suitable location within the property, outside of the limits of disturbance. A proposed relocation site has

been included in **Figure 2**. It is recommended that the City of Vaughan Parks, Forestry and Horticulture Operations department be consulted before relocation.

4.0 IMPACT ASSESSMENT

An impact assessment was completed to determine impacts to tree resources as a result of the proposed development. This assessment was conducted using the grading limits provided by Thomas Brown Architects in March 2022. The impact assessment was completed by comparing the extent of tree dripline and tree protection zones with the proposed disturbance limits. Trees recommended for removal include trees within or outside the disturbance limits that would not be able to withstand construction related impacts. Trees identified as impacted likely will require root and/or canopy pruning; however, impacts will be minor or unavoidable and the trees should be retained by using proper mitigation techniques. Note that this impact assessment is an estimate based on the information available at the time of report preparation and some assumptions have been made since the exact machine type and dimension, limits of disturbance, and roots zones are not known.

4.1 TREES IDENTIFIED FOR REMOVAL

As noted in **Section 4.0**, trees identified for removal includes trees within the proposed disturbance limits and those trees outside of the disturbance limits where the amount of critical root zone that will be removed will likely cause significant and irreversible decline of the health of the tree. As such, a total 13 trees have been identified for removal as a result of the proposed development. Of the 13 trees to be removed, 10 trees measure 20 cm DBH and greater. Trees identified for removal are listed in **Appendix A** and presented in **Figure 2**.

4.2 TREES IDENTIFIED AS IMPACTED

Impacted trees are those that are identified for retention, but encroachment into the minimum tree protection zone (TPZ) will occur. A total of 1 tree has been identified as impacted as a result of the proposed works. Trees identified as injured and the reason for the injury are listed in **Appendix A** and are presented in **Figure 2**.

4.3 TREES IDENTIFIED FOR RETENTION

A total of 211 trees have been identified for retention and listed in **Appendix A** and presented in **Figure 2**.

5.0 MITIGATION

5.1 GENERAL RECOMMENDATIONS

The following general recommendations conform to good forestry practices and are designed to help ensure impacts to trees surrounding the work zone, and those identified to be retained are minimized. General recommendations include:

- Tree protection fencing must be installed as per the approved Tree Preservation Plan. The contract administrator must review and approve the fencing prior to the commencement of any grading work and the fencing will be maintained until all construction is complete;
- Tree protection fencing must be installed in accordance with York Region specifications and as per the locations outline on **Figure 2**;
- Heavy machinery should not to be operated within the TPZ (including overhead swinging of machine arms);
- Construction materials, equipment, soil, construction waste or debris are not to be stored within the TPZ or dripline of the trees identified for protection;
- There should be no movement or parking of vehicles, placement of equipment or pedestrian traffic within the TPZ;
- No grade changes shall occur within the TPZ unless approved by the Tree Protection Plan;
- Trees shall not have any rigging cables or hardware of any sort attached or wrapped around them, nor shall any contaminants be dumped within protected areas;
- All removals must be felled into the work zone to ensure that damage does not occur to trees within the TPZ;
- Should any additional, incidental or accidental tree injuries occur during construction, a qualified Arborist should be consulted to determine whether additional mitigation measures should be employed; and
- Tree clearing shall not be conducted during the *Migratory Bird Convention Act* (MBCA) breeding season commonly considered April 1 – August 31, unless under appropriate permitting.

5.2 PRUNING

The following recommendations shall be implemented for any root or canopy pruning taken on the property.

5.2.1 Root Pruning

All approved root pruning shall be undertaken by an ISA Certified Arborist or an Ontario College of Trades 444A Arborist or Arborist Apprentice and in accordance with Best

Management Practices. The following practices shall be implemented for any root pruning:

- Prior to root pruning low pressure hydro-vac excavation should be undertaken in a 0.5 m wide section within and along the length of the TPZ to a depth of 500 mm to expose the roots;
- No roots greater than 6 cm in diameter shall be pruned;
- Exposed roots shall not be allowed to dry out, where roots are exposed they shall be covered by dampened mulch or topsoil to prevent desiccation;
- All pruning shall maintain the integrity of the root bark ridge;
- A slow release deep root low nitrogen fertilizer shall be applied to any trees requiring root pruning to increase vigour; and,
- Backfilling shall occur as soon as possible and shall occur with clean native uncontaminated topsoil.

5.2.2 Canopy Pruning

All canopy and clearance pruning shall be undertaken by an ISA Certified Arborist or an Ontario College of Trades 444A Arborist or Arborist Apprentice. Any branches that overhang the work site and require pruning shall be pruned using good arboricultural practices in accordance with American National Standard (ANSI) A300 (Part 1) – 2008 Pruning.

6.0 COMPENSATION FOR TREE REMOVALS

The City of Vaughan requires the replacement of all individual trees removed as per the Tree Protection Protocol (2018). **Table 2** calculates the required number of replacement trees.

TABLE 2. RATIO OF TREE REPLACEMENT FOR PRIVATE TREES

DBH of Tree to be Removed	Ratio of Replacement Trees Required	Number of Removed trees	Number of Trees to be Planted
20-30 cm	1:1	7	7
31-40 cm	2:1	1	2
41-50 cm	3:1	1	3
51 cm or greater	4:1	1	4
	Total	10	16

The total number of calculated replacement trees is 16. A total of 50 trees have been recommended for planting as per the Vaughan Fire Station 7-12 Site Plan provided by Thomas Brown Architects and as such, the compensation requirements have been satisfied.

7.0 SUMMARY AND CONCLUSION

An evaluation of tree resources within the study area was conducted in the winter of 2022. An impact assessment (**Section 5.0**) has been undertaken based on the design and has identified the following potential concerns regarding construction near trees in the study area include:

- Removals – Thirteen (13) trees have been identified for removal;
- Injure – One (1) tree has been identified as injured;
- Retained – Two-hundred and eleven (211) trees have been identified for retention without injury.

One tree has been identified as a memorial tree and is recommended for transplanting. A detailed summary of the impact assessment is provided in **Appendix A**.

8.0 DISCLAIMER

8.1 LIMITATIONS OF THIS ASSESSMENT

This Assessment is based on the circumstances and observations as they existed at the time of the site inspection of the Client's Property and the trees situate thereon and upon information provided by the Client to LGL Limited. The opinions in this Assessment are given based on observations made and using generally accepted professional judgment, however, because trees and plants are living organisms and subject to change, damage and disease, the results, observations, recommendations, and analysis as set out in this Assessment are valid only as at the date any such testing, observations and analysis took place and no guarantee, warranty, representation or opinion is offered or made as to the length of the validity of the results, observations, recommendations and analysis contained within this Assessment. As a result, the Client shall not rely upon this Assessment, save and except for representing the circumstances and observations, analysis and recommendations that were made as at the date of such inspections. It is recommended that the trees discussed in this Assessment should be re-assessed periodically.

8.2 RESTRICTION OF ASSESSMENT

The Assessment carried out was restricted to the Property. No assessment of any other trees or plants has been undertaken by LGL. LGL is not legally liable for any other trees

or plants on the Property except those expressly discussed herein. The conclusions of this Assessment do not apply to any areas, trees, plants or any other property not within the study area or referenced in this Assessment.

8.3 PROFESSIONAL RESPONSIBILITY

In carrying out this Assessment, LGL Limited and any Assessor appointed for and on behalf of LGL Limited to perform and carry out the Assessment has exercised a reasonable standard of care, skill and diligence as would be customarily and normally provided in carrying out this Assessment. The Assessment has been made using accepted arboricultural techniques. These include a visual examination of each tree for structural defects, scars, external indications of decay such as fungal fruiting bodies, evidence of insect attack, discoloured foliage, the condition of any visible root structures, the degree and direction of lean (if any), the general condition of the tree(s) and the surrounding site, and the current or planned proximity of property and people. Except where specifically noted in the Assessment, none of the trees examined on the property were dissected, cored, probed, or climbed and detailed root crown examinations involving excavation were not undertaken.

While reasonable efforts have been made to ensure that the trees recommended for retention are healthy, no guarantees are offered, or implied, that these trees, or all parts of them will remain standing. It is professionally impossible to predict with absolute certainty the behaviour of any single tree or group of trees, or all their component parts, in all given circumstances. Inevitably, a standing tree will always pose some risk. Most trees have the potential to fall, lean, or otherwise pose a danger to property and persons in the event of adverse weather conditions, and this risk can only be eliminated if the tree is removed.

Without limiting the foregoing, no liability is assumed by LGL or its directors, officers, employers, contractors, agents or Assessors for:

- a) any legal description provided with respect to the Property;
- b) issues of title and or ownership respect to the Property;
- c) the accuracy of the Property line locations or boundaries with respect to the Property;
- d) the accuracy of any other information provided to LGL by the Client or third parties;
- e) any consequential loss, injury or damages suffered by the Client or any third parties, including but not limited to replacement costs, loss of use, earnings and business interruption; and,
- f) the unauthorized distribution of the Assessment.

8.4 GENERAL

Any plans and/or illustrations in this Assessment are included only to help the Client visualize the issues in this Assessment and shall not be relied upon for any other purpose.

Appendix A

Tree Inventory

Tree #	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	York Region Tree Condition Rating	Radial Dripline (m)	Location		ESASARA	Memorial Tree	Tree Protection Zone (m)	Impact Assessment				Tree Preservation Measures						COMMENTS
								Number	Street				Remove	Protect	Impacted	Reason	Canopy Pruning	Protect with Hoarding	Root Pruning	Air-spade/hand dig pit	Open Trench Excavation	Trenchless Excavation	
1	Quercus rubra	red oak	18.0			Good	3					1.80											Girdling root
2	Fagus sylvatica	European Beech	15.0			Good	1					1.80											Wound a base, columnar
3	Fagus sylvatica	European Beech	17.0			Good	2					1.80											
4	Fagus sylvatica	European Beech	18.0			Good	2					1.80											
5	Fagus sylvatica	European Beech	17.0			Good	2					1.80											
6	Fagus sylvatica	European Beech	17.0			Good	2					1.80											
7	Fagus sylvatica	European Beech	16.0			Good	3					1.80											
8	Fagus sylvatica	European Beech	16.0			Good	3					1.80											
9	Fagus sylvatica	European Beech	18.0			Good	3					1.80											
10	Fagus sylvatica	European Beech	10.0			Good	1					1.80											
11	Fagus sylvatica	European Beech	17.0			Good	2					1.80											
12	Fagus sylvatica	European Beech	18.0			Good	3					1.80											
13	Acer saccharinum	silver maple	26.0			Good	3					1.80											
14	Acer saccharinum	silver maple	22.0			Good	3					1.80											
15	Tilia americana	basswood	62.0			Good	5					4.20											
16	Quercus rubra	red oak	21.0			Good	4					1.80											
17	Quercus rubra	red oak	32.0			Good	3					2.40											
18	Acer saccharum ssp. saccharum	sugar maple	48.0			Good	5					3.00											
19	Juglans nigra	black walnut	44.0			Good	5					3.00											
20	Tilia americana	basswood	22.0			Good	3					1.80											
21	Acer saccharinum	silver maple	19.0			Good	3					1.80											
22	Acer saccharinum	silver maple	23.0			Good	3					1.80											
23	Acer saccharinum	silver maple	20.0			Good	3					1.80											
24	Acer saccharinum	silver maple	22.0			Good	3					1.80											
25	Malus baccata c.v.	Crabapple	19.0			Good	2					1.80											
26	Gleditsia triacanthos var. inermis	honey locust	17.0			Good	2					1.80											
27	Gleditsia triacanthos var. inermis	honey locust	17.0			Good	2					1.80											
28	Gymnocladus dioica	Kentucky coffee tree	13.0			Good	2					1.80											
29	Gleditsia triacanthos var. inermis	honey locust	14.0			Good	2					1.80											
30	Fagus sylvatica	European Beech	20.0			Good	3					1.80											
31	Fagus sylvatica	European Beech	17.0			Good	2					1.80											
32	Fagus sylvatica	European Beech	17.0			Good	2					1.80											
33	Fagus sylvatica	European Beech	16.0			Good	2					1.80											
34	Fagus sylvatica	European Beech	19.0			Good	2					1.80											
35	Fagus sylvatica	European Beech	19.0			Good	3					1.80											
36	Fagus sylvatica	European Beech	16.0	14, 14		Good	3					1.80											
37	Fagus sylvatica	European Beech	22.0			Good	3					1.80											
38	Fagus sylvatica	European Beech	18.0			Good	2					1.80											
39	Fagus sylvatica	European Beech	17.0			Good	2					1.80											
40	Fagus sylvatica	European Beech	17.0			Good	1					1.80											Columnar, wounds on bark
41	Acer saccharinum	silver maple	11.0			Good	2					1.80											
42	Ulmus sp.	elm	12.0			Good	2					1.80											
43	Ulmus sp.	elm	14.0			Good	2					1.80											
44	Ulmus sp.	elm	13.0			Good	2					1.80											
45	Gleditsia triacanthos var. inermis	honey locust	18.0			Good	3					1.80											
46	Platanus x acerifolia	London plane tree	20.0			Good	3					1.80											
47	Gleditsia triacanthos var. inermis	honey locust	17.0			Good	2					1.80											
48	Gleditsia triacanthos var. inermis	honey locust	14.0			Good	2					1.80											
49	Platanus x acerifolia	London plane tree	29.0			Good	4					1.80											

Tree #	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	York Region Tree Condition Rating	Radial Dripline (m)	Location		ESA/SARA	Memorial Tree	Tree Protection Zone (m)	Impact Assessment				Tree Preservation Measures						COMMENTS
								Number	Street				Remove	Protect	Impacted	Reason	Canopy Pruning	Protect with Rounding	Root Pruning	Air-spade and dig pit	Open Trench Excavation	Trenchless Excavation	
50	Platanus x acerifolia	London plane tree	26.0			Good	4					1.80											
51	Acer saccharinum	silver maple	24.0			Good	3					1.80											
52	Acer saccharinum	silver maple	29.0			Good	4					1.80											
53	Platanus x acerifolia	London plane tree	20.0			Good	3					1.80											
54	Gymnocladus dioicus	Kentucky coffee tree	14.0			Good	3					1.80											
55	Gymnocladus dioicus	Kentucky coffee tree	11.0			Good	2					1.80											
56	Picea pungens	blue spruce	7.0			Good	1					1.20											
57	Acer saccharinum	silver maple	180.0			Good	12					10.80											
58	Tilia cordata	little leaf linden	23.0			Good	3					1.80											
59	Tilia cordata	little leaf linden	26.0			Good	3					1.80											
60	Acer negundo	Manitoba maple	20.0			Good	4					1.80											
61	Acer negundo	Manitoba maple	11.0			Good	2					1.80											
62	Pinus strobus	white pine	25.0			Good	3					1.80											
63	#N/A	Unknown	15.0			Good	2					1.80											
64	Picea glauca	white spruce	22.0			Good	2					1.80											
65	Picea glauca	white spruce	20.0			Good	2					1.80											
66	Picea glauca	white spruce	29.0			Good	3					1.80											
67	Malus baccata c.v.	Crabapple	23.0			Good	3					1.80											
68	Malus baccata c.v.	Crabapple	18.0			Good	3					1.80											
69	Ulmus sp.	elm	14.0			Good	2					1.80											
70	Ulmus sp.	elm	13.0			Good	2					1.80											
71	Ulmus sp.	elm	15.0			Good	2					1.80											
72	Picea glauca	white spruce	17.0			Good	2					1.80											
73	Pyrus sp.	pear	5.0			Good	1				x	1.20											Memorial tree: Graziano Agnoluzzi
74	Picea pungens	blue spruce	13.0			Good	2					1.80											
75	Picea pungens	blue spruce	19.0			Good	2					1.80											
76	Picea pungens	blue spruce	17.0			Good	2					1.80											Wound at base
77	Ostrya virginiana	ironwood	15.0			Good	3					1.80											
78	Acer saccharum ssp. saccharum	sugar maple	20.0			Good	4					1.80											Wound at base
79	Acer saccharum ssp. saccharum	sugar maple	29.0			Good	4					1.80											
80	Acer negundo	Manitoba maple	23.0			Good	5					1.80											Heavy lean south
81	Ulmus americana	White elm	25.0			Good	3					1.80											
82	Acer negundo	Manitoba maple	35.0			Good	5					2.40											Mod lean south
83	Acer saccharum ssp. saccharum	sugar maple	30.0			Good	4					2.40											
84	Ostrya virginiana	ironwood	18.0			Good	0					1.80											Heavy lean south
85	Ostrya virginiana	ironwood	33.0	15,11		Good	4					2.40											
86	Acer saccharum ssp. saccharum	sugar maple	12.0			Good	3					1.80											Wound at base
87	Ostrya virginiana	ironwood	15.0	13.0		Good	3					1.80											
88	Tilia americana	basswood	30.0	28,24		Good	4					2.40											
89	Tilia americana	basswood	21.0			Good	3					1.80											
90	Tilia americana	basswood	26.0			Good	2					1.80											
91	Tilia americana	basswood	21.0			Good	3					1.80											
92	Ostrya virginiana	ironwood	21.0			Good	3					1.80											
93	Acer saccharum ssp. saccharum	sugar maple	11.0			Good	3					1.80											
94	Acer negundo	Manitoba maple	20.0			Good	4					1.80											Mod lean west
95	Quercus bicolor	swamp white oak	17.0			Good	3					1.80											
96	Acer saccharum ssp. saccharum	sugar maple	19.0			Good	3					1.80											
97	Ulmus americana	White elm	43.0			Good	6					3.00											
98	Acer saccharum ssp. saccharum	sugar maple	18.0			Potential trouble	2					1.80											Large wound at base
99	Acer saccharum ssp. saccharum	sugar maple	18.0	15.0		Good	4					1.80											
100	Acer saccharum ssp. saccharum	sugar maple	10.0			Potential trouble	2					1.80											Wounds on trunk

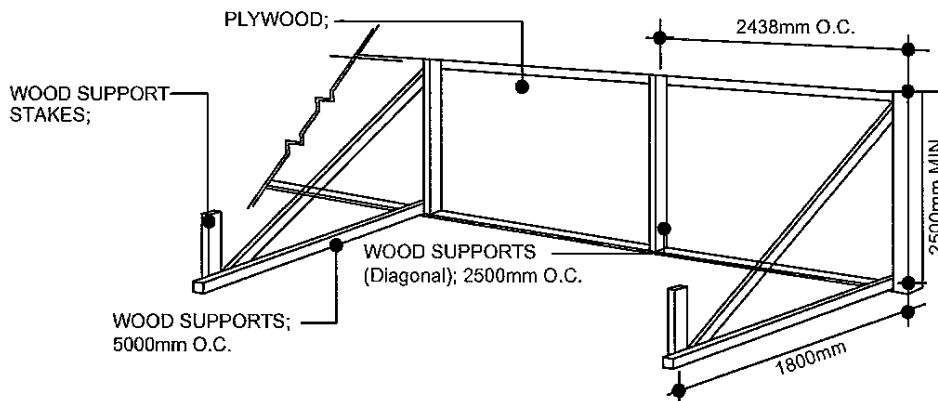
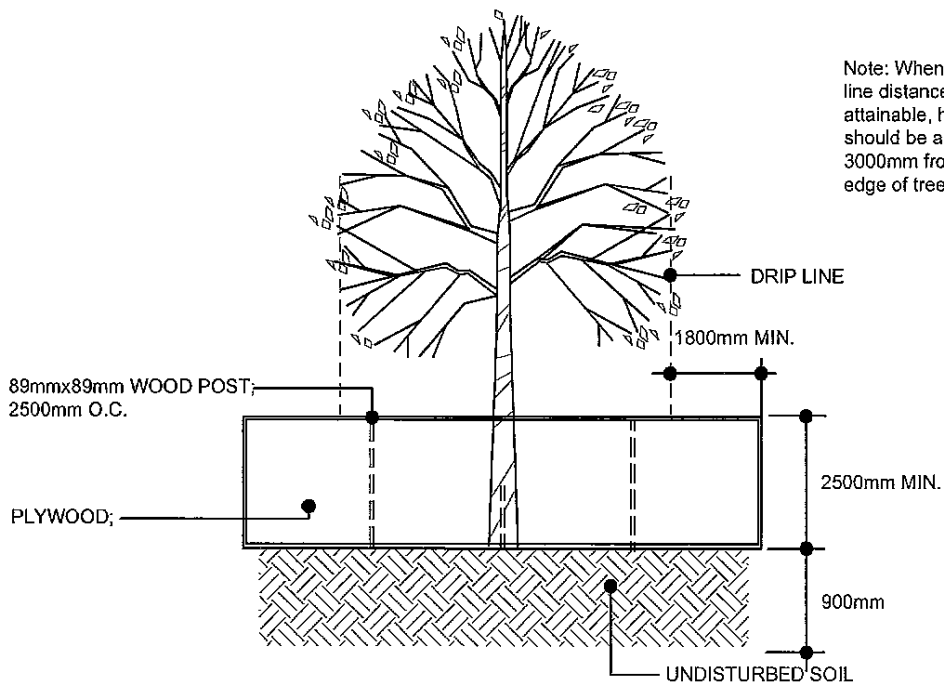
Tree #	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	York Region Tree Condition Rating	Radial Dripline (m)	Location		ESA/SARA	Memorial Tree	Tree Protection Zone (m)	Impact Assessment				Tree Preservation Measures						COMMENTS
								Number	Street				Remove	Protect	Impacted	Reason	Canopy Pruning	Protect with Rounding	Root Pruning	Air-spade and dig pit	Open Trench Excavation	Trenchless Excavation	
101	Acer saccharum ssp. saccharum	sugar maple	10.0			Potential trouble	1					1.80											Wounds on trunk
102	Acer saccharum ssp. saccharum	sugar maple	21.0			Satisfactory	3					1.80											Wounds on trunk and in canopy
103	Acer saccharum ssp. saccharum	sugar maple	15.0			Potential trouble	3					1.80											Wounds on trunk
104	Acer saccharum ssp. saccharum	sugar maple	52.0			Good	5					3.60											
105	Acer saccharum ssp. saccharum	sugar maple	24.0			Good	2					1.80											
106	Ulmus americana	White elm	13.0			Good	2					1.80											
107	Acer saccharum ssp. saccharum	sugar maple	39.0			Good	4					2.40											
108	Acer saccharum ssp. saccharum	sugar maple	25.0			Good	4					1.80											
109	Acer saccharum ssp. saccharum	sugar maple	55.0			Good	5					3.60											
110	Acer saccharum ssp. saccharum	sugar maple	68.0			Good	6					4.20											
111	Acer saccharum ssp. saccharum	sugar maple	45.0			Good	5					3.00											
112	Acer saccharum ssp. saccharum	sugar maple	42.0			Good	5					3.00											
113	Acer saccharum ssp. saccharum	sugar maple	39.0			Good	4					2.40											
114	Acer saccharum ssp. saccharum	sugar maple	35.0			Satisfactory	4					2.40											Lower branch damage
115	Acer saccharum ssp. saccharum	sugar maple	11.0			Potential trouble	2					1.80											Bark damage from rodent
116	Ulmus americana	White elm	18.0			Death imminent	3					1.80											Snapped trunk
117	Acer saccharum ssp. saccharum	sugar maple	11.0			Good	2					1.80											
118	Acer saccharum ssp. saccharum	sugar maple	8.0			Good	2					1.20											
119	Tilia americana	basswood	15.0			Good	2					1.80											
120	Acer saccharum ssp. saccharum	sugar maple	79.0			Good	6					4.80											
121	Acer saccharum ssp. saccharum	sugar maple	11.0			Good	2					1.80											
122	Tilia americana	basswood	31.0			Good	3					2.40											
123	Acer saccharum ssp. saccharum	sugar maple	15.0			Good	2					1.80											
124	Acer saccharum ssp. saccharum	sugar maple	15.0			Good	2					1.80											
125	Acer saccharum ssp. saccharum	sugar maple	49.0			Good	5					3.00											
126	Acer saccharum ssp. saccharum	sugar maple	55.0			Good	6					3.60											Widowmaker in canopy
127	Acer saccharum ssp. saccharum	sugar maple	43.0			Good	4					3.00											
128	Juglans nigra	black walnut	27.0			Good	4					1.80											
129	Juglans cinerea	butternut	14.0			Satisfactory	2			x		1.80											
130	Juglans nigra	black walnut	12.0			Satisfactory	2					1.80											Dead leader, removed
131	Acer saccharum ssp. saccharum	sugar maple	55.0			Good	4					3.60											
132	Acer saccharum ssp. saccharum	sugar maple	54.0			Good	6					3.60											
133	Acer saccharum ssp. saccharum	sugar maple	50.0			Good	4					3.00											
134	Acer saccharum ssp. saccharum	sugar maple	37.0			Good	4					2.40											
135	Acer saccharum ssp. saccharum	sugar maple	12.0			Good	2					1.80											
136	Acer saccharum ssp. saccharum	sugar maple	10.0			Good	2					1.80											
137	Acer saccharum ssp. saccharum	sugar maple	9.0			Good	2					1.20											
138	Prunus avium	sweet cherry	18.0			Potential trouble	2					1.80											
139	Acer saccharum ssp. saccharum	sugar maple	57.0			Good	5					3.60											Minor branch dieback
140	Acer saccharum ssp. saccharum	sugar maple	49.0			Good	4					3.00											Minor branch dieback
141	Juglans nigra	black walnut	34.0			Good	5					2.40											
142	Fraxinus sp.	ash	15.0			Death imminent	2					1.80											Crown 90% dead
143	Juglans cinerea	butternut	16.0			Dead	2			x		1.80											
144	Fraxinus sp.	ash	11.0			Good	2					1.80											
145	Fraxinus sp.	ash	9.0			Good	2					1.20											
146	Fraxinus sp.	ash	6.0			Good	2					1.20											
147	Juglans nigra	black walnut	33.0			Good	5					2.40											
148	Juglans nigra	black walnut	18.0			Good	3					1.80											
149	Juglans nigra	black walnut	21.0			Good	4					1.80											
150	Juglans nigra	black walnut	28.0			Good	4					1.80											
151	Juglans nigra	black walnut	32.0			Good	4					2.40											

Tree #	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	York Region Tree Condition Rating	Radial Dripline (m)	Location		ESA/SARA	Memorial Tree	Tree Protection Zone (m)	Impact Assessment				Tree Preservation Measures						COMMENTS
								Number	Street				Remove	Protect	Impacted	Reason	Canopy Pruning	Protect with Rounding	Root Pruning	Air-spade and dig pit	Open Trench Excavation	Trenchless Excavation	
152	Juglans nigra	black walnut	34.0			Good	4					2.40											
153	Juglans nigra	black walnut	32.0			Good	5					2.40											
154	Juglans nigra	black walnut	51.0			Good	6					3.60											
155	Acer saccharum ssp. saccharum	sugar maple	21.0			Good	4					1.80											Wounds on trunk
156	Tilia americana	basswood	25.0			Good	3					1.80											
157	Tilia americana	basswood	28.0			Good	4					1.80											
158	Tilia americana	basswood	13.0	12.0		Good	3					1.80											
159	Fraxinus sp.	ash	11.0			Satisfactory	2					1.80											
160	Pinus strobus	white pine	38.0			Good	4					2.40											
161	Acer platanoides	Norway maple	15.0	10.0		Good	0					1.80											
162	Juglans nigra	black walnut	35.0			Good	5					2.40											
163	Juglans nigra	black walnut	32.0			Good	4					2.40											
164	Juglans nigra	black walnut	37.0			Good	6					2.40											
165	Juglans nigra	black walnut	25.0			Satisfactory	3					1.80											
166	Juglans nigra	black walnut	31.0			Good	4					2.40											
167	Juglans nigra	black walnut	42.0			Good	6					3.00											
168	Juglans nigra	black walnut	24.0			Good	3					1.80											Grape vine up trunk
169	Juglans nigra	black walnut	18.0			Good	2					1.80											Grape vine up trunk
170	Juglans nigra	black walnut	19.0			Potential trouble	2					1.80											Crown 40% dead
171	Acer saccharum ssp. saccharum	sugar maple	20.0			Declining	2					1.80											Large wound up trunk
172	Juglans nigra	black walnut	14.0			Good	2					1.80											Vines up trunk
173	Juglans nigra	black walnut	28.0			Good	4					1.80											
174	Juglans nigra	black walnut	28.0			Satisfactory	4					1.80											Cavity at base of crown
175	Juglans nigra	black walnut	28.0			Potential trouble	4					1.80											Large wound/cavity at branch union
176	Juglans nigra	black walnut	21.0			Good	3					1.80											
177	Acer platanoides	Norway maple	18.0			Potential trouble	2					1.80											Crack up trunk, 20% dead canopy, wound at base
178	Acer platanoides	Norway maple	25.0			Potential trouble	2					1.80											Crack up trunk, 20% dead canopy, epi
179	Juglans nigra	black walnut	31.0			Good	3					2.40											10% dead crown
180	Juglans nigra	black walnut	15.0			Satisfactory	2					1.80											
181	Juglans nigra	black walnut	14.0			Good	4					1.80											
182	Juglans cinerea	butternut	55.0			Potential trouble	5			x		3.60											
183	Juglans cinerea	butternut	45.0			Satisfactory	4			x		3.00											
184	Ostrya virginiana	ironwood	18.0			Satisfactory	2					1.80											Wound up trunk
185	Acer saccharum ssp. saccharum	sugar maple	11.0			Good	2					1.80											
186	Acer saccharum ssp. saccharum	sugar maple	41.0			Good	4					3.00											
187	Acer saccharum ssp. saccharum	sugar maple	41.0			Good	4					3.00											
188	Acer saccharum ssp. saccharum	sugar maple	49.0			Good	4					3.00											
189	Acer saccharum ssp. saccharum	sugar maple	35.0			Good	4					2.40											
190	Acer saccharum ssp. saccharum	sugar maple	12.0			Good	2					1.80											
191	Acer saccharum ssp. saccharum	sugar maple	15.0			Good	3					1.80											
192	Acer saccharum ssp. saccharum	sugar maple	50.0			Good	5					3.00											
193	Acer saccharum ssp. saccharum	sugar maple	42.0			Good	4					3.00											
194	Acer saccharum ssp. saccharum	sugar maple	43.0			Good	4					3.00											
195	Acer saccharum ssp. saccharum	sugar maple	10.0			Good	2					1.80											
196	Acer saccharum ssp. saccharum	sugar maple	10.0			Good	2					1.80											
197	Acer saccharum ssp. saccharum	sugar maple	27.0			Potential trouble	2					1.80											Large wound midway on trunk, fungus in cavity
198	Acer saccharum ssp. saccharum	sugar maple	12.0			Good	2					1.80											
199	Acer saccharum ssp. saccharum	sugar maple	11.0			Good	2					1.80											
200	Fraxinus sp.	ash	20.0			Declining	2					1.80											Eab, thin canopy
201	Acer saccharum ssp. saccharum	sugar maple	37.0			Good	4					2.40											
202	Acer saccharum ssp. saccharum	sugar maple	12.0			Good	2					1.80											

Tree #	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	York Region Tree Condition Rating	Radial Dripline (m)	Location		ESA/SARA	Memorial Tree	Tree Protection Zone (m)	Impact Assessment				Tree Preservation Measures						COMMENTS
								Number	Street				Remove	Protect	Impacted	Reason	Canopy Pruning	Protect with Rounding	Root Pruning	Air-spade/hand dig pit	Open Trench Excavation	Trenchless Excavation	
203	Acer saccharum ssp. saccharum	sugar maple	18.0			Good	3					1.80											
204	Acer saccharum ssp. saccharum	sugar maple	12.0			Good	2					1.80											
205	Acer saccharum ssp. saccharum	sugar maple	40.0			Good	5					2.40											
206	Acer saccharum ssp. saccharum	sugar maple	36.0			Good	3					2.40											
207	Acer saccharum ssp. saccharum	sugar maple	29.0			Good	3					1.80											
208	Acer saccharum ssp. saccharum	sugar maple	20.0			Declining	2					1.80											Severe wound on trunk
209	Acer saccharum ssp. saccharum	sugar maple	11.0			Good	2					1.80											
210	Acer saccharum ssp. saccharum	sugar maple	15.0			Good	2					1.80											Wound on trunk
211	Acer saccharum ssp. saccharum	sugar maple	11.0			Good	3					1.80											
212	Ginkgo biloba	ginkgo	10.0			Good	1					1.80											
213	Ostrya virginiana	ironwood	11.0			Good	3					1.80											
214	Acer saccharum ssp. saccharum	sugar maple	31.0			Good	4					2.40											
215	Ostrya virginiana	ironwood	12.0			Good	2					1.80											
216	Ulmus americana	White elm	12.0	6.0		Good	3					1.80											
217	Acer saccharum ssp. saccharum	sugar maple	13.0			Good	2					1.80											
218	Acer saccharum ssp. saccharum	sugar maple	12.0			Good	2					1.80											
219	Tilia americana	basswood	22.0			Good	3					1.80											
220	Quercus bicolor	swamp white oak	11.0			Good	1					1.80											
221	Carpinus caroliniana	blue beech	12.0	10.0		Declining	2					1.80											Declining crown 80%
222	Ostrya virginiana	ironwood	11.0			Good	2					1.80											
223	Quercus macrocarpa	bur oak	27.0			Good	3					1.80											
224	Tilia americana	basswood	25.0	19,15		Good	4					1.80											
225	Ulmus americana	White elm	11.0			Good	2					1.80											

Appendix B

City of Vaughan Tree Protection



Note: All Support Stakes and Hoarding Posts to be wood 2" x 4" member.


Note: All Plywood to be 4'x8' sheets.

Note: All Connection Points to be Rigid.

NOTES:

1. Attachment of fence to trees to be preserved is not allowed.
2. Ensure fence is continuous and is located beyond the drip line of trees to be preserved.
3. Fencing to be installed prior to start of construction.
4. All supports and bracing should be inside the Tree Protection Zone. All such supports should minimize damaging roots outside the Tree Protection Barrier.
5. No Construction activity, grade changes, surface treatment or excavations of any kind is permitted within the Tree Protection Zone.

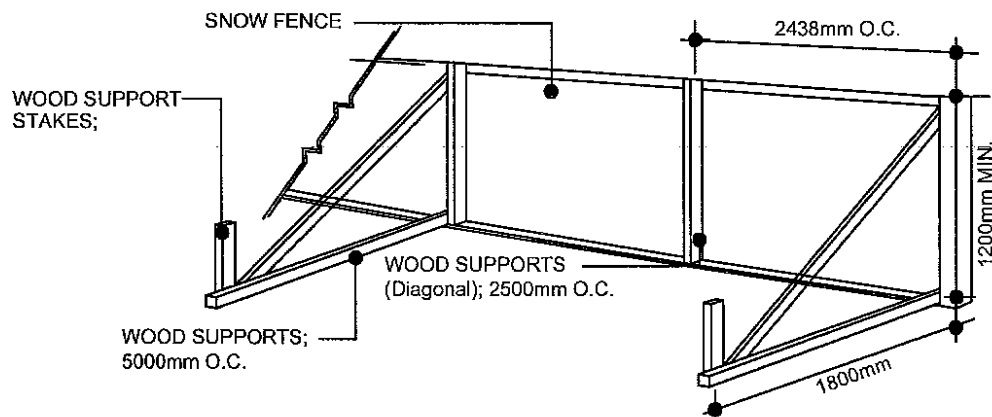
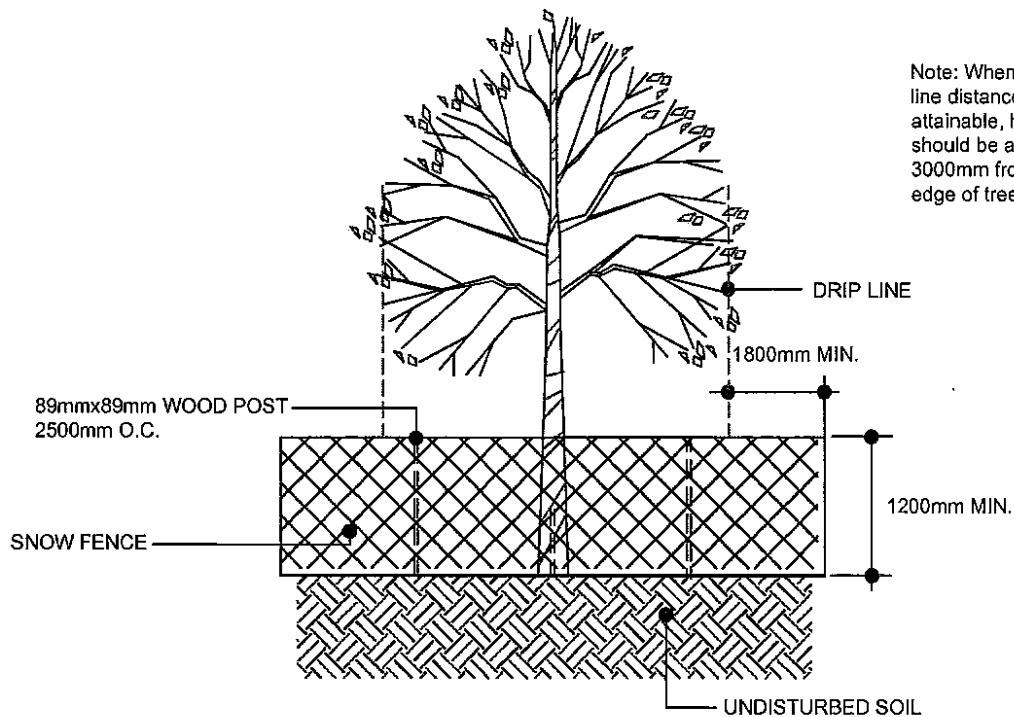
2.	HEIGHT OF FENCING UPDATE	PD	12/10/16
1.	DETAIL UPDATE	PD	09/12/11
#	REVISIONS	APR'D	DATE



VAUGHAN

HEAVY DUTY PLYWOOD TREE PROTECTION

DRAWN: S.T.	APPROVED: M.T.	DRAWING NO.
NOT TO SCALE	DATE: 14/11/08	MLA 107



Note: All Support Stakes and Hoarding Posts to be wood 2" x 4" member.
Note: All Connection Points to be Rigid.

NOTES:

1. Attachment of fence to trees to be preserved is not allowed.
2. Ensure fence is continuous and is located beyond the drip line of trees to be preserved.
3. Fencing to be installed prior to start of construction.
4. All supports and bracing should be inside the Tree Protection Zone. All such supports should minimize damaging roots outside the Tree Protection Barrier.
5. No Construction activity, grade changes, surface treatment or excavations of any kind is permitted within the Tree Protection Zone.

2.			
1.			
#	REVISIONS	APR'D	DATE
LIGHT DUTY TREE HOARDING PROTECTION DETAIL (SNOW FENCE)			
DRAWN: JC		APPROVED: KH	
NOT TO SCALE		DATE: 04/07/2016	
		DRAWING NO. MLA 107B	

Martin O'Halloran, BHA#708
LGL Limited
environmental research associates
445 Thompson Drive, Unit 2
Cambridge Ontario N1T 2K7
519 622 3300
mohalloran@lgl.com

City of Vaughan
Vaughan City Hall
2141 Major Mackenzie Dr.
Vaughan, ON L6A 1T1
905 832 2281
station7-12@vaughan.ca

September 6, 2022

RE: 9511 Weston Road, City of Vaughan, Proposed Fire Station 7-12
BHA Report Number: OHA-002
Date(s) of Butternut health assessment: September 2, 2022

Dear Adriana Tantalo,

This letter is in regard to my assessment of the Butternut trees on your property. Please read this letter carefully as it contains important information about the Endangered Species Act, 2007 (ESA).

Butternut is classified as an endangered species on the Species At Risk in Ontario (SARO) List and therefore it and its habitat are protected under the ESA. Section 9 of the ESA includes prohibitions against killing, harming, harassing, capturing or taking Butternut. Section 10 of the ESA includes prohibitions against damage or destruction of Butternut habitat.

The conditional exemption for Butternut in Part V of O. Reg. 830/21 provides an exemption to the section 9 and 10 prohibitions in certain circumstances and for certain actions. For the exemption to apply, a person must comply with all the conditions to the exemption. Alternatively, a person may seek authorization of these actions under a permit or agreement issued under the ESA.

The Butternut Assessment Guidelines contain procedures that inform how a Butternut tree is classified into one of three categories. Classification is relevant to whether and how the conditional exemption applies to a Butternut tree and the extent of required beneficial actions for impacted trees in a permit or agreement. In addition, parts of the guidelines are used to inform the calculation of species conservation charges, as prescribed in O. Reg. 829/21.

A complete and accurate assessment of a Butternut tree can only be conducted during the "leaf-on" season, subject to the circumstances set out below for conducting an assessment outside the "leaf-on" season. Leaf-on season begins with the flushing of leaves in the spring (late May/early

June) and ends with leaf yellowing and leaf fall (August). Exact dates vary depending on the geographic location of the tree and seasonal variability from year to year. For the purposes of the ESA, an assessment will be considered to have been conducted during the leaf-on season if it was conducted between the dates of May 15 and August 31. A Butternut Health Expert can conduct an assessment outside the leaf-on season, but the assessment would be limited to the extent of Butternut Canker on the main trunk (also referred to as the bole) because it would not be possible to assess the crown and it may not be possible to assess the root flare. Therefore, only trees that are assessed as Category 1 trees can be definitively categorized outside the leaf-on season, which can occur only if the number and type of Butternut Cankers on the main trunk result in a Category 1 classification (i.e., the total of the assigned canker widths for cankers observed on the main trunk would need to equal at least 40% of the main trunk circumference because the values entered for root flare cankers must be zero). Otherwise, the assessment cannot be completed until the next leaf-on season, because assessment of the crown could change the categorization. If the tree cannot be categorized, the BHE Report is incomplete and will not be considered valid. Note that this BHA was conducted September 2, 2022, and considered outside of the typical assessment period. However, there were no trees that were assessed as Category 2 or Category 3. All assessed trees were either dead or Category 1 based on degree of canker present on the main trunk. One of the Butternut trees was dead, another nearly dead exhibiting significant canopy dieback, another had one of two trunks fail/fall. Therefore, concerns regarding the date of assessment are not anticipated.

Clause 9 (1) of the ESA does not apply to a person who kills, harms, or takes one or more Butternut trees if a Butternut health expert's report referred to in section 24 has confirmed that the Butternut trees are Category 1 Butternut trees (O.Reg. 830/21, s.25(1)). Therefore, ESA permitting is not required in this case, and no species conservation charges are required.

The BHE is to be submitted to the person who requested the health assessment (i.e., City of Vaughan). A person who intends to undertake actions that will impact one or more Butternut trees is required to submit the BHE Report to MECP if they wish to register under the conditional exemption for Butternut in ss. 25 (2) of O. Reg. 830/21. If the proposed actions are not eligible for the conditional exemption, a person may seek an authorization of these actions under a permit or agreement issued under the ESA.

This Butternut Health Assessment Report must be submitted to MECP a minimum of 30 days before registering an eligible activity under ss. 25 (2) of O. Reg. 830/21. During this 30-day period, no Butternut trees (of any category) may be killed, harmed, or taken.

As a designated Butternut Health Expert (BHE), I am providing the following Butternut Health Assessment Report for the trees located at the above noted property, for which I completed an assessment during the site visit on the above noted date.

Note that municipal by-laws and legislation other than the ESA may also be applicable to the removal or harming of trees.

Please retain this letter and a copy of the BHA Report for your records, along with any other documentation you may receive from the MECP should an examination of the trees occur. If you have any questions, please do not hesitate to contact me or your local MECP office.

Sincerely,

Martin O'Halloran
Fish and Wildlife Technologist,
ISA Certified Arborist
Butternut Health Assessor #708

Enclosures:

1. Butternut Health Assessor's Report
2. Electronic copies of the BHA Tree Analysis
3. Figure detailing Butternut locations
4. Photographic Documentation



LEGEND

- Subject Property
- Construction Limits
- Butternut to be Retained
- Tree to be Retained
- Tree to be Relocated
- Tree to be Impacted
- Tree to be Removed
- Proposed Relocation Tree 73
- Tree Protection Fencing
- Minimum Tree Protection Zone
- Dripline

Data Source: LGL Field Survey (2022). Contains public sector information made available under The Regional Municipality of York Open Data Licence. Contains information licensed under the Open Government Licence - Ontario. Produced by LGL Limited under License with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2022.



9541 Weston Road TREE RESOURCES



Project: TA9196	Figure: 2
Date: April 1, 2022	Prepared By: AM
Scale: 1:800	Verified By: JB

PHOTO APPENDIX



Photo 1: Tree 143, dead tree, main trunk and root flare.



Photo 2: Tree 143, dead tree, main trunk.

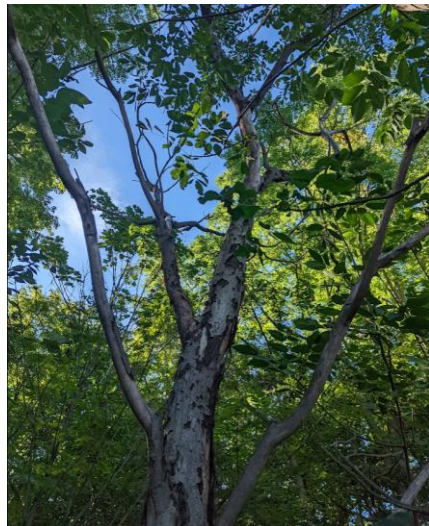


Photo 3: Tree 143, dead tree, canopy.



Photo 4: Tree 129 100% live canopy.

PHOTO APPENDIX



Photo 5: Tree 129 root flare.



Photo 6: Tree 129 main trunk.

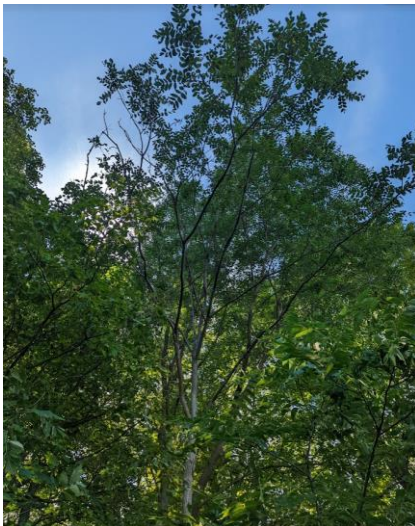


Photo 7: Tree 129 canopy.

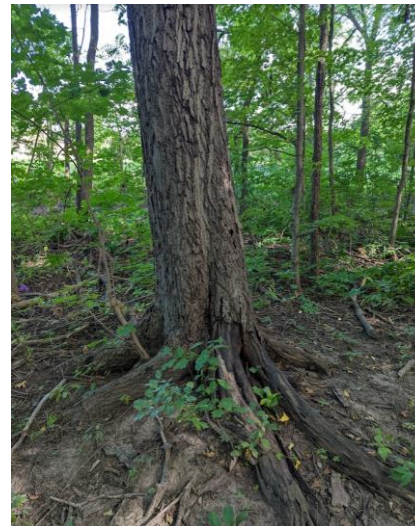


Photo 8: Tree 182 root flare.

PHOTO APPENDIX



Photo 9: Tree 182 80% canopy dieback.



Photo 10: Tree 182 main trunk.



Photo 11: Tree 183 fallen main stem (1 of 2).



Photo 12: Tree 183 failed stem, live buttress and bole.

PHOTO APPENDIX



Photo 13: Tree 183 main living stem.



Photo 14: Tree 183 main living stem.

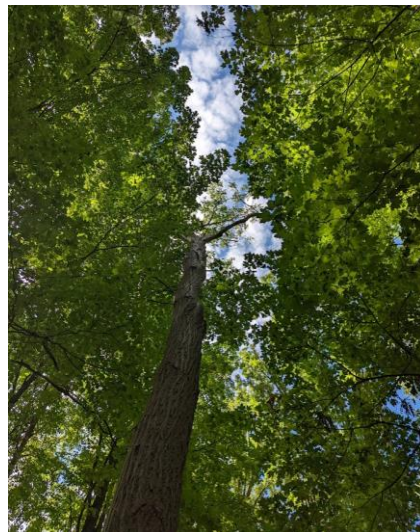


Photo 15: Tree 183 canopy (30% dieback).

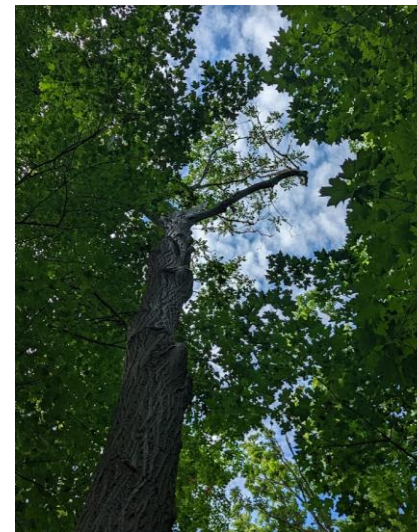


Photo 16: Tree 183 canopy.



Vaughan Fire Station 7-12

9541 Weston Road, Woodbridge, Ontario

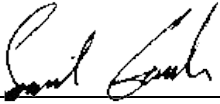
City of Vaughan
Final Geotechnical report
SEL Project No.20210932

June 8, 2022
02112512.000-0100-GS-R-0001-00

City of Vaughan

SEL Project No.20210932

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Summary

Englobe Corp. has completed a geotechnical investigation for the proposed development of Vaughn Fire Station 7-12 in the City of Vaughan, Ontario. The investigation primarily consisted of borehole drilling, installation of monitoring, laboratory testing. Various engineering analyses were carried out for the site of the proposed facilities using methods considered suitable for more detailed conceptual design and feasibility assessment purposes. A description of the physical properties, cohesion and friction angles, soil constraints (rest, active and passive conditions), unit weights, and modulus of subgrade reaction for the various subsoil types are presented in the report. Recommendation for flexible and rigid pavement, sidewalk construction and floor slab are also discussed in the report. Both shallow and deep foundation were considered to support the proposed building. The bearing capacity under serviceability limit state and ultimate limit state using both type of foundations is presented in the report.

A total of fifteen (15) boreholes were advanced to depths ranging from approximately 4.4 m to 8.2 m below grade. The borehole investigations were carried out to determine the soil stratigraphy and assess the site groundwater conditions. A flexible pavement structure was observed at eleven (11) borehole locations. A surficial topsoil layer of an average depth of 0.2 m in thickness was encountered at four (4) borehole locations. The soil stratigraphy as revealed in the boreholes comprised primarily of a native sandy silt and silty sand. The sandy silt fill was encountered below the pavement structure and was generally in a loose to dense state with SPT 'N' values ranging from 7 to 40 per 300 mm penetration recorded. The silty sand was encountered under the sandy silt and was in a loose to very dense state with SPT 'N' values ranging from 7 to 73. A total of five (5) 50 mm monitoring wells were installed to determine the groundwater levels within the project limits. Groundwater was present in two (2) of the boreholes where monitoring wells were installed. The stabilized groundwater level ranges from 2.69 to 7.57 mbgs at the time of the investigation. It is likely that this water is perched within the soils at these levels.

In Englobe laboratory, the moisture content testing was carried out on all recovered granular and subsoil samples. Representative subsoil samples were collected in the field to assess the subsoil classifications and frost susceptibility characteristics. A total of six (6) sets of Atterberg Limits tests were completed on representative samples of the subsoil within the area. The results from the Atterberg test indicates that the subsoil is predominantly a clayey silt with a low degree of plasticity. The grain size distribution analysis on the ten (10) representative subsoil samples indicates that the subsoil is considered to have predominantly high susceptibility to frost heaving.

A conventional shallow foundation system utilizing strip/square footings founded on an engineered fill pad, and below all fill material and organic soils, is generally deemed to be suitable to support the structural loadings of the proposed type of buildings for this development. The frost penetration at the project site is approximately 1.2 m. All footings subject to frost action should be provided with a minimum of 1.2 m of soil cover. If the minimum required soil cover over foundation footings cannot feasibly be achieved, foundation insulation such as a 50-mm thick layer of extruded polystyrene rigid thermal insulation can be installed between the foundation element and the underlying subgrade soil.

Based on the borehole information, the subject site founded on the native soils can be classified as "Class D" for seismic site response.

The subsoil encountered at site contains more than one type of soil (Type 2 and Type 3). Excavations should be able to be carried out to the depths required for the installation of the various utilities using conventional excavation equipment. Seepage of ground or surface water can be control using conventional construction dewatering techniques; open pumping from properly constructed sumps

and/or ditches. Provision for trench plugging can also be considered to address the potential influx of water. Considering the observed groundwater levels at the time of this investigation and the current anticipated maximum depth of excavation, a Permit to Take Water (PTTW) is not anticipated to be required for this project.

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1 Introduction

Englobe Corp. (Englobe) was retained by City of Vaughan to conduct a geotechnical investigation for the proposed development of Vaughn Fire Station 7-12 in the City of Vaughan, Ontario. The investigation was carried out at the request of Adriana Tantalo, B.Arch. Sci, PMP, Project Manager at the City of Vaughn in the Design and Construction, Facility Management.

It is understood that the City of Vaughan is developing a Fire Station on a parcel of land located at 9541 Weston Road, Woodbridge, Ontario. The site is located in the southeastern quadrant of the intersection of Weston Road and Ashberry Boulevard in Woodbridge, Ontario and is currently occupied with a paved parking lot and grassed area that is part of Vellore Hall Park. The current development plans include a two-storey building.

The purpose of this investigation was to explore the subsurface soil and groundwater conditions at the subject site and prepare a geotechnical report with geotechnical design parameters and recommendations pertaining to foundations, basement, shallow underground utility installation and trench backfill, and pavement structure.

In accordance with O.Reg. 406/19 separate reports are submitted for Assessment of Past Uses, Sampling and Analysis Plan, Soil Characterization and Soil Destination. The Assessment of Past Uses Report provides an overview on previous activities that were carried out at the project site and to identify potential environmental and contaminants concerns. The Sampling and Analysis Report includes the minimum frequency of sampling to comply with O.Reg. 406/19 to determine the concentration of contaminants in the excavated soil. The Soil Characterization Report describes in details the characterization of the soil including the quality and quantity of excess soil to be generated at the project site. The Soil Destination Report provides recommendations of where the materials are to be reused or disposed. It also details the volumes of soil to be received at the location and verify that the quality of the soil being sent at the site meets the standards applicable at that location.

Hydraulic conductivity and infiltration rates were not done because of the weather condition. These tests will be conducted as soon as there favorable weather conditions, and the results will be incorporated in the Final Report.



2 Project methodology

2.1 Field program

The fieldwork for this investigation was completed from January 13, 14 and 21, 2022 and involved the drilling of fifteen (15) boreholes (Boreholes BH01 through BH16, except BH14) to depths ranging from approximately 4.4 m to 8.2 m below grade. The borehole locations are shown in Appendix A. The field investigation was carried out in general conformance with the professional standards set out in the Canadian Foundation Engineering Manual (CFEM 2006, 4th Edition), applicable Ontario Regulations and ASTM International. The following is a summary of field investigation tasks:

- Public and private utility companies were contacted prior to the start of drilling activities in order to demarcate underground utilities on the site.
- The boreholes were advanced using a D-50 track-mounted drill rig equipped using a continuous flight solid stem augers equipment supplied and operated by Drilltech Drilling Ltd. under the supervision of an Englobe's drilling supervisor. The boreholes were logged by Englobe's geotechnical supervisor.
- All borehole locations and ground surface elevations were surveyed by Englobe. The boreholes were referenced to Universal Transverse Mercator North American Datum of 1983 (UTM NAD83) coordinates.

Table 1: Borehole Survey Details

Borehole ID	Northing	Easting	Elevation	Depth
BH01	4854296.61	615967.53	225.59	4.40
BH02	4854300.33	615988.76	225.01	4.40
BH03	4854305.11	616028.72	224.94	4.40
BH04	4854288.74	615980.07	225.40	8.20
BH05	4854296.05	616010.29	225.07	8.20
BH06	4854299.18	616019.58	224.95	8.20
BH07	4854281.30	615973.69	225.29	4.40
BH08	4854284.19	615997.34	225.16	8.20
BH09	4854275.65	615983.37	225.16	8.20
BH10	4854285.52	616013.24	225.06	8.20
BH11	4854275.36	616002.16	224.97	8.20
BH12	4854275.87	616022.48	225.02	8.20
BH13	4854286.17	616050.54	225.78	4.40
BH15	4854317.90	616043.57	224.85	4.40
BH16	4854334.48	616039.55	224.93	4.40

- Soil samples were recovered from the boreholes at regular depth intervals using a 50 mm outside diameter split spoon sampler in accordance with ASTM D1586 Standard Penetration Test (SPT). The recorded SPT N-values are provided on the borehole logs (Appendix B).
- Groundwater levels were measured in the open boreholes upon completion of drilling and the observations are noted on the borehole logs (Appendix B).
- Five (5) monitoring wells were installed in Borehole BH01, BH08, BH09, BH12, and BH15 to allow measurement of groundwater levels and analyse for infiltration rate. The monitoring wells were constructed using stick-up and threaded 50 mm diameter PVC pipe with 3.0 m long 10-slot well screens, delivered to the site pre-cleaned in individually sealed plastic bags. The screen and riser pipes were not allowed to come into contact with the ground or any drilling equipment prior to installation.
- Groundwater level measured in the monitoring wells on different dates are provided on the borehole log and summarized in Table 5.
- The boreholes were backfilled with soil cuttings and bentonite in accordance with Ontario Regulation 903 as amended, under the Ontario Water Resources Act.
- In-situ infiltration testing were completed at borehole BH15 on April 11, 2022 and in BH01 on May 25, 2022. Infiltration rates were determined using the One-Head Analysis as described in the Soil Moisture Equipment Corp. 2800K1 Operating Instructions (Dec. 2012).

2.2 Laboratory testing

The recovered subsoil samples were visually examined in the field and then preserved and transported to Englobe Toronto laboratory for examination and testing. In the laboratory, each soil sample was examined as to its visual and textural characteristics. Moisture content testing was completed on all recovered subsoil samples with the results plotted on the borehole logs. In addition, Englobe selected representative subsoil samples and completed grain size and hydrometer analyses to assess the subsoil permeability and frost susceptibility characteristics. A summary of the type and number of tests carried out during this stage, is provided in Table 2. The complete laboratory test results are presented in Appendix C.

Table 2: Summary of laboratory testing conducted for soil classifications

Geotechnical Laboratory Test	Applicable Standard	No. of tests
Natural Moisture Content	ASTM D2216	114
Particle Size Distribution (Sieve and Hydrometer)	ASTM D6913 / ASTM D7928	10
Atterberg Limits	ASTM D4318 10e1	6



3 Description of subsurface Condition

Details of the subsurface conditions encountered during the field investigation are presented on the borehole logs (provided in Appendix B) and summarized, in the following sections. Summaries of the subsurface stratigraphy, and depths of different soil layers encountered in the boreholes, are presented in Table 3.

It should be noted that the boundaries between strata have been inferred from observations made during drilling. The strata boundaries generally represent a transition from one soil type to another and should not be inferred to represent an exact plane of geological change. Conditions may vary between and beyond the borehole locations.

Table 3: Summary of Generalized Stratigraphy Encountered in the Boreholes with Elevations (m)

	Topsoil (or Fill)	Asphalt Concrete	Sand & Gravel	Native Sandy Silt	Native Sandy Silty Clay	Native Silt	Native Silty Sand	Clayey Silt	Clayey Sandy Silt
BH01	-	225.6 - 225.5	225.5 - 225.3	225.3 - 223.4	-	223.4 - 221.2 (EOB)	-	-	-
BH02	-	225.0 - 224.9	224.9 - 224.8	-	-	224.4 - 220.6 (EOB)	224.8 - 224.4	-	-
BH03	-	224.9 - 224.8	224.8 - 224.7	224.7 - 222.0	-	-	222.0 - 220.5 (EOB)	-	-
BH04	225.4 - 225.2	-	225.2 - 225.1	225.1 - 223.2	-	-	223.2 - 217.2 (EOB)	-	-
BH05	-	225.1 - 225.0	225.0 - 224.8	224.8 - 222.8	-	-	222.8 - 218.4	218.4 - 216.8 (EOB)	-
BH06	-	225.0 - 224.9	224.9 - 224.7	224.7 - 222.1	-	-	222.1 - 218.3	218.3 - 216.7 (EOB)	-
BH07	-	225.3 - 225.2	225.2 - 225.0	225.0 - 223.1	-	-	223.1 - 220.9 (EOB)	-	-
BH08	-	225.2 - 225.1	225.1 - 224.8	224.8 - 223.8	-	223.8 - 218.5	-	-	218.5 - 216.9 (EOB)
BH09	-	225.2 - 225.1	225.1 - 224.8	224.8 - 222.9	-	-	222.9 - 216.9 (EOB)	-	-
BH10	-	225.1 - 224.9	224.9 - 224.7	224.7 - 223.7	-	-	223.7 - 218.4	218.4 - 216.8 (EOB)	-
BH11	-	225.0 - 224.9	224.9 - 224.7	-	-	224.7 - 216.7 (EOB)	-	-	-
BH12	-	225.0 - 224.9	224.9 - 224.8	222.8 - 222.1	-	-	222.1 - 218.3	224.8 - 222.8	218.3 - 216.8 (EOB)
BH13	225.8 - 225.6	-	225.6 - 225.4	-	-	-	-	-	225.4 - 221.4 (EOB)
BH15	224.8 - 224.6	-	-	-	224.6 - 220.4 (EOB)	-	-	-	-
BH16	224.9 - 224.7	-	-	-	-	-	-	224.7 - 220.5 (EOB)	-

3.1 Pavement structure and subsurface conditions

3.1.1 Pavement structure

A flexible pavement structure was encountered at eleven (11) of the borehole locations. within the project limits. The asphalt thickness ranges from 80 to 110. The granular base/ subbase material at the borehole locations consisted of sand and gravel that ranges from 120 mm to 300 mm. The in-situ moisture content of this material ranged from 8 to 26 percent (moist to wet).

The average pavement structure thicknesses including thickness ranges are summarized in Table 4.

Table 4: Summary of existing pavement structure

No. of Observations	Asphaltic Concrete (mm) Range (Average)	Granular Base/Subbase (mm) Range (Average)
Eleven (11) boreholes	80 to 110 (105)	120 to 300 180

3.1.2 Topsoil

A surficial topsoil layer of an average depth of 0.2 m in thickness was encountered in BH04, BH13, BH15 and BH16. Beneath the topsoil, native deposits of sandy silty clay and silty clay till was encountered in BH15 and BH16, respectively. Granular material was found below the topsoil layer in BH04 and BH13.

3.1.3 Native sandy silt

The subsoil at the borehole locations within the project limits predominantly consisted of sandy silt. This material was encountered below the pavement structure. The sandy silt was generally in a loose to dense state with SPT 'N' values ranging from 4 to 49 per 300 mm penetration recorded. The natural moisture content of this material ranged from 11 to 20 percent (moist to wet).

3.1.4 Native silt

Silt deposit was encountered below the native sandy silt fill in BH01, BH02, BH08 and under the pavement structure in BH11. This material extended to the depth of exploration in these boreholes except BH08. The native silt was generally in a compact to very dense state with SPT 'N' values ranging from 10 to 71 per 300 mm penetration recorded. The natural moisture content of this material ranged from 9 to 22 percent (moist to wet).

3.1.5 Native silty sand

The subsoil below the sandy silt predominantly consisted of silty sand and generally extended to the depth of exploration. The sandy silt deposit was generally in a loose to very dense state with SPT 'N' values ranging from 7 to 73 per 300 mm penetration recorded. The natural moisture content of this material ranged from 6 to 23 percent (moist to wet).

3.1.6 Clayey silt/Silty Clay

Clayey silt was encountered below the silty sand in BH05, BH06, BH10, and BH12 and extended to the depth of exploration. In BH 12 and 16, Clayey silt was encountered below the pavement structure and topsoil respectively. It extended to the depth of exploration in BH12. The clayey silt was generally in a firm to hard state with SPT 'N' values ranging from 6 to 32 per 300 mm penetration recorded. The natural moisture content of this material ranged from 9 to 20 percent (moist to wet).

3.1.7 Clayey sandy silt

Clayey sandy silt was encountered below the cohesionless deposit in borehole BH8, 12 and 13 respectively. This material extended to the depth of exploration in these three boreholes. The clayey sandy silt till was generally in a loose to compact state with SPT 'N' values ranging from 4 to 21 per 300 mm penetration recorded. The natural moisture content of this material ranged from 6.7 to 17.6 percent (moist).

3.2 Ground water measurement

Five (5) 50mm monitoring wells were installed in BH01, BH08, BH09, BH12 and BH15 to record the stabilized ground water level. The monitoring wells were each constructed by installing a 1.5 m length with 50 mm diameter slotted, schedule 40 PVC well screen and riser pipes of various length into the open auger holes. The annular space around the screen was filled with clean filter sand (up to approximately 0.3 m above the top of the screened section) with bentonite seals then placed above the sand pack to prevent the infiltration of surface water. The top of all the wells riser pipes were vented to allow the groundwater levels to stabilize, and flush mount/ stick-up protective casings set in concrete were installed at each of the monitoring well location.

Groundwater was present in two (2) of the boreholes where monitoring wells were installed after completion. To measure the stabilized groundwater level at the site, water readings were taken after completion of drilling. Two stabilized water level readings were taken at the well locations as shown in the Table 5. Groundwater levels finding are summarized in Table 5. Details of the groundwater conditions encountered at the monitoring well and other borehole locations are provided on the borehole logs in Appendix B.

Table 5: Water level measurements

Borehole No.	Ground Surface Elevation (m)	Groundwater depth					
		Date	Elevation (m)	Date	Elevation (m)	Date	Elevation (m)
BH01	225.6	January 14, 2022	Dry	February 14, 2022	Dry	February 24, 2022	4.0/221.6
BH08	225.2	January 13, 2022	7.6/217.6		7.6/217.6		Dry
BH09	225.2	January 13, 2022	Dry		Dry		7.7/217.5
BH12	225.0	January 21, 2022	Dry		Dry		7.6/217.4
BH15	224.8	January 21, 2022	2.7/222.1		2.7/222.1		1.3/223.5

It is important to note that the groundwater conditions described in this report refer only to those observed at the place and time of observation noted in the report. These elevations and conditions

may vary locally due to seasonal fluctuations, groundwater regimes encountered at the site or as a consequence of construction activities on the site or adjacent sites.

It should be noted that the groundwater level could rise over time and fluctuate seasonally (potentially up to 1 m) in response to climatic conditions. Some seepage of groundwater from permeable layers within the soil profile should also be anticipated during construction. Seepage of ground or surface water can be control using conventional construction dewatering techniques; open pumping from properly constructed sumps and/or ditches. Provision for trench plugging can also be considered in order to address the potential influx of water.

Dewatering effort required will depend on several factors, including excavation depth, season and weather conditions and the length of time the excavation is left open. Considering the observed groundwater levels at the time of this investigation and the current anticipated maximum depth of excavation, the volumes of water anticipated to be involved in dewatering during construction are not expected to exceed 50,000 L/day. A Permit to Take Water (PTTW) is not anticipated to be required for this project.

3.3 Laboratory testing results

A comprehensive laboratory testing program was completed to aid in the confirmation of soil descriptions and the characterization of the recovered soil samples. In Englobe laboratory, moisture content testing was carried out on all the recovered granular base/subbase and subsoil samples. Gradation analyses were performed on ten (10) selected soil samples. Atterberg Limits test was performed on six (6) selected fine-grained soil samples. The in-place liquid limit, plastic limit, and plasticity index of this sample are summarized in Table 5.

3.3.1 Sieve and hydrometer

A total of ten (10) gradations (sieve and hydrometer) were completed on representative samples of the subsoil. Based on the grain size distribution analysis on the ten (10) selected samples of the subsoil; the subsoil is considered to have predominantly high susceptibility to frost heaving. A summary of the gradations results is shown in Table 6 with the detail laboratory results provided in Appendix C. In addition, the results are presented on the borehole logs in Appendix B.

Table 6: Summary of Laboratory Particle Size Distribution Results

Borehole/ Sample	Depth (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	ASTM Unified Soil Classifications	Susceptibility to frost heave
BH01/SS5	3.7	0	0	90.7	9.3	Silt, trace clay	High
BH02/SS3	2.1	0	0.9	91.2	7.9	Silt, trace clay	High
BH08/SS7	5.2	0	13.8	78.3	7.9	Silt, some sand, trace clay	High
BH09/SS8	6.7	1.4	19.2	46.0	33.4	Clay and silt, some sand	Moderate
BH10/SS4	2.8	0	5.5	88.0	6.5	Silt, trace clay, trace sand	High
BH11/SS2	1.9	0	0	87.7	12.3	Silt, some clay	High
BH12/SS7	5.7	0	68.9	23.8	7.3	Silty sand, some clay	Low

Borehole/ Sample	Depth (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	ASTM Unified Soil Classifications	Susceptibility to frost heave
BH13/SS1	0.6	0.3	25.2	43.7	30.8	Sandy clayey silt	Moderate
BH15/SS5	3.7	2.7	18.2	37.0	42.1	Clay and silt, some sand	Low
BH16/SS3	2.1	0	10.4	65.6	24.0	Clayey silt, some sand	High

3.3.2 Atterberg limits

A total of six (6) sets of Atterberg Limits tests were completed on representative samples of the subsoil within the area. The in-place liquid limit, plastic limit, and plasticity index of this sample are summarized in Table 7. Based on the results, the subsoil test is predominantly a clayey silt with a low degree of plasticity.

Table 7: Summary of Laboratory Particle Size Distribution of subsoil

Borehole/ Sample	Depth (m)	Plastic Limit (%)	Liquid Limit (%)	Plastic Index (%)	Plasticity
BH05/SS8	6.7	11.2	18.3	7.1	CL+ML
BH06/SS8	6.7	12.5	20.3	7.8	CL+ML
BH08/SS8	6.7	12.4	20.8	8.4	CL+ML
BH10/SS8	6.7	13.4	20.1	6.7	CL+ML
BH12/SS8	6.7	12.0	18.8	6.8	CL+ML
BH15/SS5	3.7	11.9	23.1	11.2	CL

3.3.3 Soil infiltration test result

The in-situ infiltration testing near Borehole BH15 and BH1 at 1.0 m depth were completed on April 11, 2022 and May 25, 2022 respectively, on the underlying silty clay. The soil description is based on visual inspection of the soils encountered at the time of excavation and will be confirmed by laboratory tests.

Infiltration rates for BH15 were determined using the One-Head Analysis as described in the Soil Moisture Equipment Corp. 2800K1 Operating Instructions (Dec. 2012). This method is expressed by the following equation:

$$K_{fs} = \frac{C_1 Q_1}{2\pi(H_1)^2 + \pi a^2 C_1 + 2\pi \left(\frac{H_1}{\alpha^*} \right)}$$

Where:

Kfs =Field saturated hydraulic conductivity (entrapped air present) (cm/sec)

C1 = Shape factor

Q1 = Discharge from combined reservoir (cm³/min)

H1 = Well height (cm)

a = Well radius (cm)

α^* = Soil texture (cm⁻¹)

Field saturated hydraulic conductivities have been indirectly measured using the Guelph Permeameter. One (1) test was completed at the site allowing for pre-soaking of the initially unsaturated soils encountered. This hydraulic conductivity is measured when ponded water is allowed to infiltrate into an initially unsaturated soil.

Infiltration rates for BH1 was estimated using a datalogger that records the instant water level change. In this method water was poured into the well and left to percolate into the soil while having the datalogger lowered at the bottom of the well, recording the water level rise and fall. The following expression was used to calculate the hydraulic conductivity (Hvorslev's Method, Applied Hydrogeology 4th Edition. C.W. Fetter, Prentice-Hall Inc., 2001).

$$K = \frac{r^2}{2LT_0} \ln \left[\frac{L}{R} \right]$$

Where:

K = hydraulic conductivity (m/s)

L = length of the screen, 3.05 m

R = radius of the borehole:

- Hollow Stem Auger, 0.1048 m

r = radius of the well casing, 0.0254 m

T₀ = basic time lag in seconds

The estimated infiltration rate is based on recommendations found in the "Low Impact Development Stormwater Management Planning and Design Guide, Appendix C", published by the Toronto and Region (TRCA) and the Credit Valley (CVC) Conservation Authority, and the assumed relationship between hydraulic conductivity and infiltration rate. It should be noted that hydraulic conductivity and infiltration rate are two different concepts and that conversion from one parameter to another must account for the hydraulic gradient and consequently cannot be done through unit conversion. A factor of safety of 2.5 was applied to the approximate infiltration rate to account for soil variability, gradual accumulation of fine soil sediments during the lifespan of the facility, and compaction during construction. The field measured hydraulic conductivities and estimated factored infiltration rates assuming a favourable hydraulic gradient of 1 is presented in Table 8 below. The infiltration computations are presented in Appendix D.

Table 8: Summary of infiltration rate calculations

Borehole No.	Test depth (m)	Soil type	Field saturated K-value (cm/sec)	Factored infiltration rate (mm/hr)
BH15	1.0	Silty Clay	4.74E-05	15.2
BH1	1.0	Silt	6.70E-05	16.6

4

4 Discussion and Recommendations

4.1 Suggested Geotechnical Parameters

The following recommendations are intended for the City of Vaughan, with any reliance on this report by other parties at their sole risk. If significant differences or changes in subsurface soil and groundwater conditions are found at the time of construction, Englobe should be contacted immediately in order to review and revise the following recommendations, as required.

Englobe recommends the general geotechnical engineering design parameters summarized in Table 9 for the subsoils encountered across the site. These values are based on observations recorded during the drilling program and the results of the geotechnical index testing, and Englobe's local experience.

Table 9: Suggested parameters for geotechnical analysis

Soil type	Unit Weight, γ (kN/m ³)	Effective Friction Angle, ϕ' (°)	Cohesion, c_u (kPa)	K_0	K_a	K_p
Loose to compact sandy silt/silt	18	30	-	0.50	0.33	3.00
Compact to very dense silty sand	19	32	-	0.47	0.31	3.25
Soft to hard silty clay to clayey silt	20	26	5	0.56	0.39	2.56

Note:

(1) K_0 : Coefficient of at-rest lateral earth pressure

(2) K_a : Coefficient of active earth pressure

(3) K_p : Coefficient of passive earth pressure

(4) Each of the three earth pressure coefficients above have been calculated for an assumed level backfill surface. Earth pressure coefficients should be re-calculated if slope of backfill is to exceed 10° from the horizontal.

4.2 Foundation

4.2.1 Shallow foundation

Preliminary foundation design parameters are provided in this report for static, vertically and concentrically loaded foundations in compression, unless specifically noted otherwise. All foundation design recommendations presented in this report should be considered preliminary in nature for feasibility and volume considerations and subject to refinements and change during subsequent supplementary analysis during more detailed design stages of the project. In addition, all recommendations assume that an adequate level of construction monitoring during foundation excavation and installation will be provided. An adequate level of construction monitoring is considered to include:

- For shallow foundations, examination of all excavation surfaces before engineered fill placement to ensure the suitability of the subgrade; and
- For earthwork, full-time monitoring and compaction testing or engineered fill below footings.

Based on OPSD 3090.000 “Foundation Frost Depths for Southern Ontario”, the frost penetration at the project site is approximately 1.2 m. A conventional shallow foundation system utilizing strip/square footings founded on an engineered fill pad, and below all fill material and organic soils, is generally deemed to be suitable to support the structural loadings of the proposed type of buildings for this development.

The topsoil must be removed from all new foundation areas. Footings must be founded on the native silty sand/sandy silt or on engineering fill. In area where the silty clay or clayey silt is encountered, it recommended that the existing inorganic native soil is removed at the footing locations and a granular pad (extending 0.5 m width on either side of the footing) shall be placed with minimum thickness of 1.0 m below the foundation depths. The static groundwater table shall be lowered at least 1.0 below the base of the proposed footings. A maximum total length of 10 m was considered for estimation of the strip footing geotechnical resistances.

Strip and spread footings can be designed using limit state static bearing pressures listed in Table 10. These values assumed that the width of the foundation is not smaller than 1 m. For these estimated bearing pressure to be realized, minimum soil covers of 1.2 m are required above the footing. A minimum distance of one footing width is also required between adjacent footings. The geotechnical resistance of the proposed granular pad can be estimated for the ultimate limit state (ULS) and serviceability limit state (SLS) for a maximum settlement of 25 mm. The geotechnical resistance at ULS was calculated by applying load resistance factor of 0.5 according to the 2006 Canadian Foundation Engineering Manual (4th Edition).

Table 10: Geotechnical resistance and reactions of strip and square footing

Possible Bearing Strata	Depth of footing, D, m	Recommended geotechnical bearing resistance, kPa	
		Factored ULS	SLS for maximum 25 mm settlement
Native Sandy silt to silt (Loose)	1.5	165	110
Native Sandy Clayey Silt to Silty Clay (CL) (Stiff to Very Stiff)	2.0	300	200

Possible Bearing Strata	Depth of footing, D, m	Recommended geotechnical bearing resistance, kPa	
		Factored ULS	SLS for maximum 25 mm settlement
Native Sandy silt to silty sand (Compact)	2.5	375	250

Note: Subject to satisfactory site-specific settlement checks and necessary adjustments for each individual footing during detailed design stage

It should be noted that where unsuitable (e.g., peat/organic soil and others) or unstable (e.g., disturbed during excavating) soils are encountered during construction; the foundation soils must be removed and replaced with engineered fill to the foundation grade. The unsuitable material should be excavated, under the direction of a geotechnical engineer, to competent subgrade and then backfilled either with Granular 'B' Type I material compacted to 100% standard Proctor maximum dry density (SPMDD) or with a lean concrete mix. The footprint of such removal of weak soils and replacement with engineered fill, should be considered on a case-by-case basis depending on depths required for removal so that bearing pressures can be distributed accordingly.

As previously stated, the granular pad below footings, or for engineered fill to raise site grade below footings, should comprise of Granular 'B' Type I material meeting Ontario Provincial Standard Specifications (OPSS). The engineered fill should be placed and compacted in an unfrozen condition and the subgrade should always be protected from frost penetration. The material should be compacted to 100% standard Proctor maximum dry density (SPMDD). Engineered fill below footings shall be placed immediately upon excavation and subgrade approval, using equipment compatible with lift thicknesses suitable based on-site conditions, and generally in level consistently placed lifts not exceeding 300 mm in thickness.

Bearing areas will require very careful preparation. Following excavation, all bearing surfaces should be cleaned of all organic, loose, disturbed, or slough material prior to concreting or placing compacted engineered fill. Bearing surfaces should be protected at all times from rain, freezing temperatures and the ingress of groundwater before, during, and after construction. All foundation excavations and bearing surfaces should be inspected by a qualified geotechnical engineer to confirm the suitability of bearing surfaces and to confirm that the resistances provided in this report are consistent with what is observed during construction inspection.

Backfill against foundation walls should consist of granular backfill such as Granular B Type I compacted to at least 95% of the SPMDD. Backfill for foundation walls should be placed a minimum of 50 mm above finished exterior grade and sloped 2 percent away from the building envelope to prevent long term surface drainage into the footings.

4.2.2 Excavation Considerations

All excavations must be carried out in accordance with the Ontario Occupational Health and Safety Act (OHSA). The consistency of the subsoils encountered ranges from loose to very dense. In accordance with OHSA criteria 226 the subsoil encountered at site would typically be considered:

- Type 2 - Moist, dense to very dense silty sand/sandy silt/silt
- Type 3 - Moist, stiff to firm clayey silt
- Type 3 - Moist, loose to compact silty sand/sandy silt/silt

All wet and/or disturbed material, or other obviously objectionable material such as organics, should be sub-excavated to the depths required for placement of the watermain bedding. If an excavation contains more than one type of soil, the soil shall be classified as the type with the highest number as per section 227.3 of O.Reg.213/91. Every excavation that a worker may be required to enter shall be

kept reasonably free of water. Care should be taken to direct surface runoff away from open excavations. Based on the field evaluation of the subsurface conditions excavations for all footings must be cut back at side slopes of 1H:1V. Excavation side slopes may require further flattening in zones of persistent seepage. If it is not possible to cut back the excavation side slopes due to space restrictions, it is recommended the excavations be undertaken within the confines of an engineered support system designed and installed in accordance with OHSA.

Surface surcharges (such as stockpiles or excavated soils) should not be placed closer to the edge of the excavation than a distance equal to twice the depth of the excavation, unless the excavation support system has been designed to accommodate such surcharge.

Attention should be paid to structures or buried service lines close to the excavation. A general guideline is that the extent of the proposed excavation should not intersect a line originating from the foundation base of an adjacent structure projected 30 degrees downward from the horizontal. If this cannot be avoided, underpinning or special shoring techniques may be required to avoid producing potentially damaging earth movements.

A pre-construction condition survey of nearby buildings, infrastructure (such as roadways, underground services) and any other settlement sensitive structures should be undertaken prior to the start of construction activities.

4.3 Subgrade preparation, engineering fill construction and compaction

Prior to preparation of a new subgrade, the footprint area should be stripped of any existing topsoil, existing asphalt pavements, organic material, deleterious material and removing any disturbed material. Any soft, loose, or otherwise unsuitable material revealed by proof rolling or inspection of the native sub-grade stratum should be sub-excavated, removed and replaced with approved fill soil material and compacted as per the recommendations below. Approved fill materials comprise debris-free, inorganic granular material or imported granular material meeting Granular “A” or Granular “B” Type II specifications in accordance with Ontario Provincial Standard Specification (OPSS) 1010. The prepared subgrade should then be proof-rolled and inspected by a qualified geotechnical professional prior to the placement of bulk fill to raise the site grades.

Engineered fill supporting foundations or slabs-on-grade should extend beyond the face of the footing/slab by a distance equal to not less than the depth of fill. Engineered fill for foundations and hardscapes should be placed in maximum 250 mm thick loose lifts and compacted to minimum 100% SPMDD. Foundation backfill material should be placed in the same manner and compacted to minimum 98% SPMDD. It should be noted that the lift thickness for engineered fill depends on type/size of compactor, if heavier size compactor can not be accommodated the lift thickness should be reduced to 150 mm.

Final site grading should be provided to direct water to areas remote from all proposed structures and hardscapes. Minimum landscape gradients of 2% are recommended to reduce the risk of runoff ponding in localized areas.

Engineered fill and subgrade preparation should take place in favourable weather conditions. If work is carried out during freezing temperatures, all material affected by frost must be removed prior to placement of frost-free engineered fill material.

4.4 Groundwater Control

Given the observed short-term groundwater level, at the time of the field investigation, the static and elevated groundwater levels is expected to be close or below the depths of excavation for footings.

Minor seepage should generally be anticipated during any excavations in the relatively permeable silt to sand (granular) materials near surface. It should be possible to control and remove any such groundwater seepage using conventional filtered sump pump techniques. Nevertheless, it should be noted that the required dewatering effort will depend on several factors, including excavation depth, season and weather conditions and the length of time the excavations are to be left open.

4.5 Frost Protection and Foundation Insulation Requirements

Based on OPSD 3090.000 “Foundation Frost Depths for Southern Ontario”, the frost penetration at the project site is approximately 1.2 m. All footings subject to frost action should be provided with a minimum of 1.2 m of soil cover. If the minimum required soil cover over foundation footings cannot feasibly be achieved, foundation insulation is an acceptable alternative. Where soil cover is deemed to be inadequate, Englobe generally recommends that a 50-mm thick layer of extruded polystyrene rigid thermal insulation be installed between the foundation element and the underlying subgrade soil. The insulation sheets are recommended to be placed with at least 600 mm of soil cover and to extend laterally in all directions at least 1800 mm beyond the foundation. The insulation recommendation from the manufacture shall be incorporated in the foundation insulation design.

4.6 Seismic site classification

Based on the borehole information and according to Table 4.1.8.4.A of Ontario Building Code (OBC 2012), the subject site founded on the native soils can be classified as “Class D” for seismic site response.

The OBC 2012 requires a Seismic Site Class for calculations of earthquake design forces based on a two percent probability of exceedance in 50 years. In accordance with OBC 2012, the Seismic Site Class can be classified based on the average properties of the subsoil strata to a depth of 30 m below the ground surface. The information obtained in the geotechnical field investigation was gathered from the upper 4.4 m to 8.2 m of strata.

Englobe can provide a site-specific measurement such as shear wave velocities to a depth of 30 m below ground surface, to further refine the seismic site class classification if warranted. Englobe utilizes a geophysical technique (Multi-channel Analyses of Surface Waves, or MASW) for direct measurement of shear wave velocity profiles with depth.

4.7 Pavement Structures

4.7.1 Flexible pavement

The existing asphalt, granular materials, foundations and slabs, any existing surficial vegetation, and organic soil should be removed from below the pavement areas and if required, grades should be raised with approved granular fill. The subgrade should be thoroughly proof rolled with a smooth drum vibratory roller. The subgrade fill should be placed in 150 mm thick lifts and compacted to 100% SPMDD.

The flexible pavement component thicknesses in Table 12 are recommended based on the anticipated light-duty and heavy-duty pavement usage, the frost-susceptibility, and strength of the subgrade soils.

Table 11 Flexible Pavement Component Thicknesses

Pavement Component	Light Duty Thickness mm	Heavy Duty Thickness mm
Hot-Mix Asphalt Surface course (SP 12.5/HL3)	40	40
Hot-Mix Asphalt Binder course (SP 19.0/HL8)	50	80
Granular A Base Course	150	150
Granular B Type II Subbase Course	300	300

Samples of both the Granular A and Granular B aggregates should be checked for conformance to OPSS.MUNI 1010 prior to utilization on site and during construction. The Granular B Type II subbase and Granular A base courses should be placed in maximum 150 mm thick lifts and must be compacted to 100% SPMDD, as verified by insitu density testing.

The hot-mix asphalt paving materials should conform to the requirements of OPSS.MUNI 1150. The asphalt should be placed and compacted in accordance with OPSS 310. Performance graded asphalt cement (PGAC) 64-28 should be utilized in the hot mix asphalt in accordance with the recommendations of OPSS.MUNI 1101.

The subgrade and granular courses will lose their strength to support traffic loads if allowed to become wet due to surface water or groundwater infiltration; therefore, drainage of the pavement and the granular courses is essential. In order to provide proper drainage for the pavement structure, it is recommended that subdrains be installed to intercept and remove excess subsurface moisture. Where required the subdrains should be placed parallel to the parking lot edges and positively sloped to frost free outlets (OPSS.MUNI 405 and OPSD 216.021). The finished pavement surface and underlying subgrade should be free of depressions and should be sloped to provide effective drainage. Surface water should not be allowed to pond adjacent to the outside edges of pavement areas.

The need for continuous paving supervision by a qualified pavement technician, and quality control testing during pavement construction cannot be over emphasized. All materials and construction services required for the work should be in accordance with the applicable sections of the Ontario Provincial Standard Specifications.

4.7.2 Concrete pavement

We understand that City will construct some areas with rigid pavement for vehicle. Englobe recommend the following rigid pavement thicknesses listed in Table 12.

Table 12 Rigid Pavement Component Thicknesses

Pavement Component	Concrete Paving Thickness mm
Concrete	250
OGDL (Open Graded Drainage Layer)	100
Granular "A" Base	200

The proposed concrete pavement is recommended to be constructed as follows:

- Mill/excavate the existing asphalt full depth (ranging between 80 and 110 mm) and dispose off-site. The existing asphalt concrete millings may be re-used as reclaimed asphalt pavement (RAP) in recycled hot-mix asphalt mixtures. Where require strip the existing top soil/ any unsuitable underline material to full depth;
- Excavate the existing granular fill material and subgrade to a depth of 550 mm below ground surface to accommodate the new pavement structure and dispose the excavated material off-site;
- Install new subdrains for improved drainage in accordance with OPSD 207.041;
- Proof-roll the exposed sub-grade material to identify "weak zones/soft area" under the supervision of a qualified geotechnical engineer. In weak areas excavate granular to competent subgrade and replace with new Granular B, Type I and compact to 100% of the materials' Standard Proctor Maximum Dry Density (SPMDD). The minimum depth of soft spot repairs is typically 450 mm;
- Place a minimum of 200 mm Granular A (OPSS 1010) sub-base course on the prepared subgrade in conformance with TS1010, compact to 100% of the material's Standard Proctor Maximum Dry Density (SPMDD) and provide the required crossfall. It should be noted that excessive rolling using heavy rollers and/or dynamic compaction can lead to subgrade softening;
- Place curbs and gutters;
- Place 100 mm OGDL (Open Graded Drainage Layer), curb to curb
- Place 250 mm of Jointed Plain Concrete Pavement d cement concrete. The concrete should satisfy the requirements of CAN/CSA A 23 -1.00 Class C2 concrete with a minimum compressive strength of 32 MPa and a minimum flexural strength of 4.8 MPa. Control joints in the new Portland cement concrete shall be spaced at 4.5 m. The dowels shall be 35 mm diameter glass-fibre reinforced polymer (GFRP), 450 mm long spaced at 300 mm. Proper joint spacing and construction techniques are critical when constructing a durable concrete pavement. Joints should be constructed in accordance with OPSD 551 and 552. For concrete base specification, Dowel Detail, Joint details, concrete joint layout and joint spacing, please refer to OPSS 350, OPSD 552.051, 552.010, 551.031 and 551.010, respectively.

4.8 Sidewalk Construction

The concrete sidewalk should be constructed using the following procedure.

- Remove the existing topsoil/ any unsuitable underline material to a depth of 275 mm below the proposed finished sidewalk surface. The width of the excavation should be sufficient to accommodate a minimum finished sidewalk width of 2 m as per OPSD 310.010, Concrete Sidewalk;
- Regrade and compact the exposed subgrade to achieve 2 to 4 percent crossfall toward the curb and gutter;
- Place 150 mm of new OPSS 1010 Granular A material. The granular material should be compacted to 100 percent Standard Proctor Maximum Dry Density, noting that excessive rolling using heavy rollers and/or dynamic compaction can lead to subgrade softening, and graded to maintain 2 to 4 percent crossfall toward the existing curb and gutter;
- Place 125 mm of portland cement concrete (PCC) in accordance with OPSD 310.010 and conforming to OPSS 1350 specifications, except for driveways where the thickness shall be 150 mm.

4.9 Floor Slab and Permanent Drainage

The existing fill is not considered suitable to support slab-on-grade construction without further site-specific field evaluations and appropriate and necessary ground improvements. For the design of the floor slabs on native soils or engineered fill, a modulus of subgrade reaction of $k = 25 \text{ MPa/m}$ can be used.

A moisture barrier consisting of at least 200 mm of 19 mm clear crushed stone should be installed under the floor slabs.

For structures with a basement or partial basement area, a perimeter drainage system and underfloor drainage will be required around the exterior basement walls. Perimeter drainage is not considered to be necessary for areas without basement if the floor slab is more than 300 mm higher than the exterior grade.

4.10 Underground Utilities

It is understood that underground utility will be installed as a part of the site development. Design drawings or invert levels of the proposed utilities are not available to us at the time of writing this report.

4.10.1 Pipe Bedding

The contacted fill and any encountered very loose/loose native mineral soils may not be suitable to support the proposed pipes without undergoing possible detrimental post-construction settlement. Any organic material (topsoil, peat), fill and/or any encountered loose native mineral soils must be removed from below the pipe invert. Sub excavated fill or loose native soils should be replaced with OPSS.MUNI 1010 Granular A to ensure adequate support for the pipe. The fill should be placed in 150 mm thick lifts and compacted to a minimum 95% SPMDD. The compact to very dense native mineral soils or well compacted granular fill are generally considered suitable for support of buried pipes.

The pipe bedding for the services should be conventional Class B pipe bedding comprising a minimum 150 mm thick layer of OPSS.MUNI 1010 Granular A aggregate below the pipe invert. The bedding course may be thickened if portions of the subgrade become wet during excavation. OPSS.MUNI 1010 Granular A type aggregate should be provided around the pipe to at least 300 mm above the top, and the bedding should be compacted to 95% SPMDD. Service lines installed outside of heated areas should be provided with a minimum 1.2 m of soil cover or equivalent insulation for frost protection.

4.10.2 Backfilling of Trenches

The trenches above the specified pipe cover material should be backfilled with inorganic soils that are not excessively wet, placed in 150 mm thick lifts, and compacted to at least 95% SPMDD. Where the service trenches enter the building, the trench backfill must be compacted as structural fill to a minimum of 100% SPMDD. Any trench backfill below a pavement structure should be compacted to 100% SPMDD within 1 m from the top of subgrade level.

Organic material (topsoil) and fill containing debris (asphalt, concrete, plastic, etc.) are not considered suitable for reuse as trench backfill and if encountered, shall be separated. Inorganic fill may be suitable for reuse on-site following approval by a geotechnical engineer/technician and should be stockpiled separately. Based on the results of insitu moisture content tests carried out on the fill and native overburden deposits, the existing inorganic fill and native soil deposits from above the groundwater table will be geotechnically suitable for reuse as trench backfill. Any overly wet material may require air drying or may need to be excluded from the backfill material.

To minimize potential problems, backfilling operations should follow closely after excavation so that only a minimal length of trench is exposed. Care should be taken to direct surface runoff away from the excavations. Should construction extend into the winter season then backfilling operations should be planned to ensure that backfill material is kept to a minimum and ensured that frozen material is not used as backfill.

Particular attention must be made to backfilling service connections where the trenches are narrow. If work is carried out during very dry weather, then water could be added to the backfill to improve compaction.

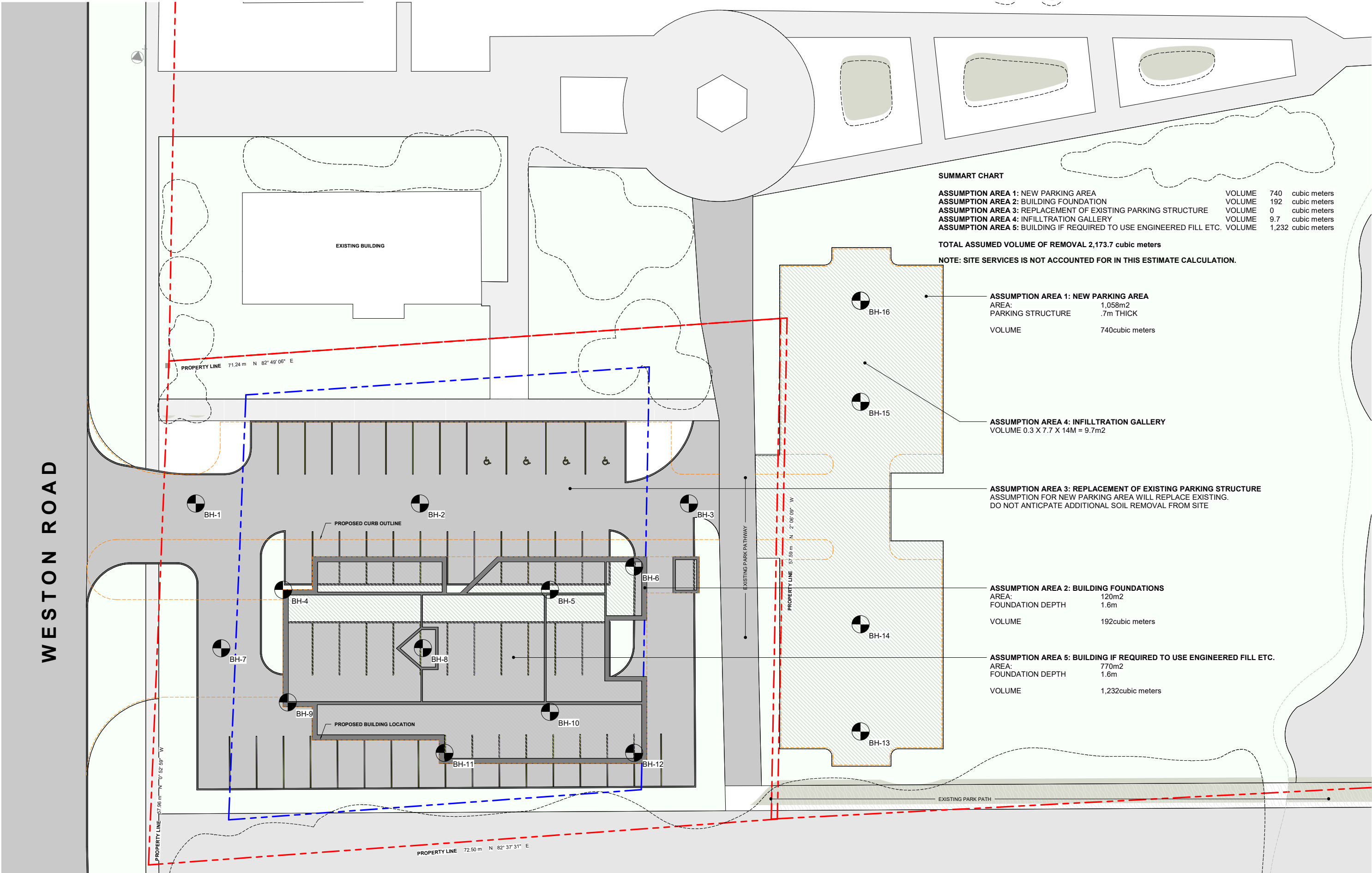
Frequent inspection and compaction testing by experienced geotechnical personnel should be carried out to examine and approve backfill material, and to verify that the specified degree of compaction has been achieved.

Appendix A

Borehole Plan



eNGLOBE



Appendix B

Borehole Logs



eNGLOBE

LOG OF BOREHOLE No. BH01

Englobe

Project No. 02112512.000

DRAWING No. BH1

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,296.606 E 615,967.529

Date Drilled: 2022-1-14

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



% Strain at Failure

Shear Strength by



Penetrometer Test

GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLING METHOD	Soil Type	Natural Unit Weight kN/m ³	Percent of Fines, %
					40	80					
		ASPHALT CONCRETE (110 mm)	225.6	0	50	100	20		SS1		
		SAND AND GRAVEL (Granular Base/Subbase, 180 mm)	225.5		50		7.5				
		SANDY SILT: trace to some clay, brown, moist, loose to compact	225.3								
				1	5		17.5		SS2		
					14		17.6		SS3		
			2.2								
		SILT: trace clay, brown, moist, compact to very dense Gr: 0%, Sa: 0%, Si: 90.7%, Cl: 9.3%	223.4	2	22		14.9		SS4		
				3	62		20.7		SS5		
				4	62		20.8		SS6		
		Terminated at 4.4 m	4.4								
		Borehole advanced using continuous flight solid stem augering equipment on January 14, 2022 by DrillTech Drilling LTD.	221.2								

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-4-6

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion Feb 14, 2022 Feb 24, 2022	Dry Dry 4.0	none

LOG OF BOREHOLE No. BH02

Englobe

Project No. 02112512.000

DRAWING No. BH2

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,300.325 E 615,988.755

Date Drilled: 2022-1-14

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



% Strain at Failure

Shear Strength by



Penetrometer Test

GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLING METHOD	Soil Zone	Natural Unit Weight kN/m ³	Percent of Fines, %
					40	80	120	160			
		ASPHALT CONCRETE (110 mm)	225.0	0							
		SAND AND GRAVEL (Granular Base/Subbase, 140 mm)	224.9	0.1							
			224.8	0.2							
			224.6	0.4							
		SILTY SAND: brown, moist, compact	224.4	0.6							
		SILT: trace clay, trace sand, brown, moist, compact to dense									
		Gr: 0%, Sa: 0.9%, Si: 91.2%, Cl: 7.9%									
				1	14				13.1		
				2	24				14.9		
				3	59				17.1		
				4	57				17.1		
				5					8.6		
				6					14.6		
		Terminated at 4.4 m	220.6	4.4							
		Borehole advanced using continuous flight solid stem augering equipment on January 14, 2022 by DrillTech Drilling LTD.									

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-4-6

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

LOG OF BOREHOLE No. BH03

Englobe

Project No. 02112512.000

DRAWING No. BH3

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,305.111 E 616,028.716

Date Drilled: 2022-1-14

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



% Strain at Failure

Shear Strength by



Penetrometer Test

GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLING METHOD	Soil Type	Natural Unit Weight kN/m ³	Percent of Fines, %
					40	80	120	160			
		ASPHALT CONCRETE (90 mm)	224.9	0							
		SAND AND GRAVEL (Granular Base/Subbase, 120 mm)	224.8								
		SANDY SILT: trace clay, brown, moist, compact to dense	224.7								
				1							
				2							
				3							
				4							
		SILTY SAND: brown, moist, dense to very dense	222.0								
				1							
				2							
				3							
				4							
		Terminated at 4.4 m	220.5								
		Borehole advanced using continuous flight solid stem augering equipment on January 14, 2022 by DrillTech Drilling LTD.									

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-4-6

Checked By: A. Rahman

Logged By: P. Jin

LOG OF BOREHOLE No. BH04

Englobe

Project No. 02112512.000

DRAWING No. BH4

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,288.738 E 615,980.069

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



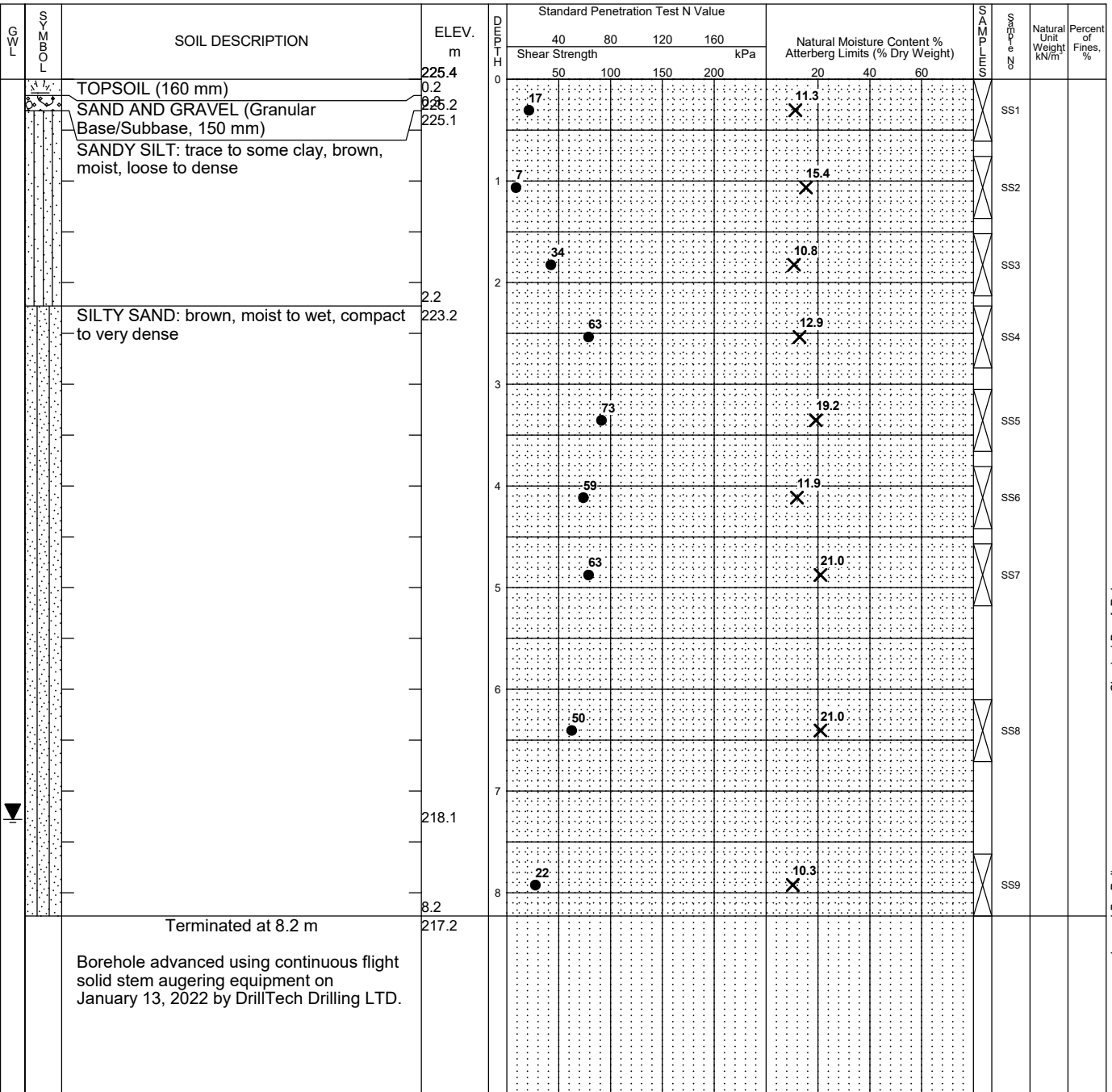
% Strain at Failure



Shear Strength by



Penetrometer Test



Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	7.3	none

LOG OF BOREHOLE No. BH05

Englobe

Project No. 02112512.000

DRAWING No. BH5

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,296.052 E 616,010.286

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by
Vane Test



Natural Moisture Content



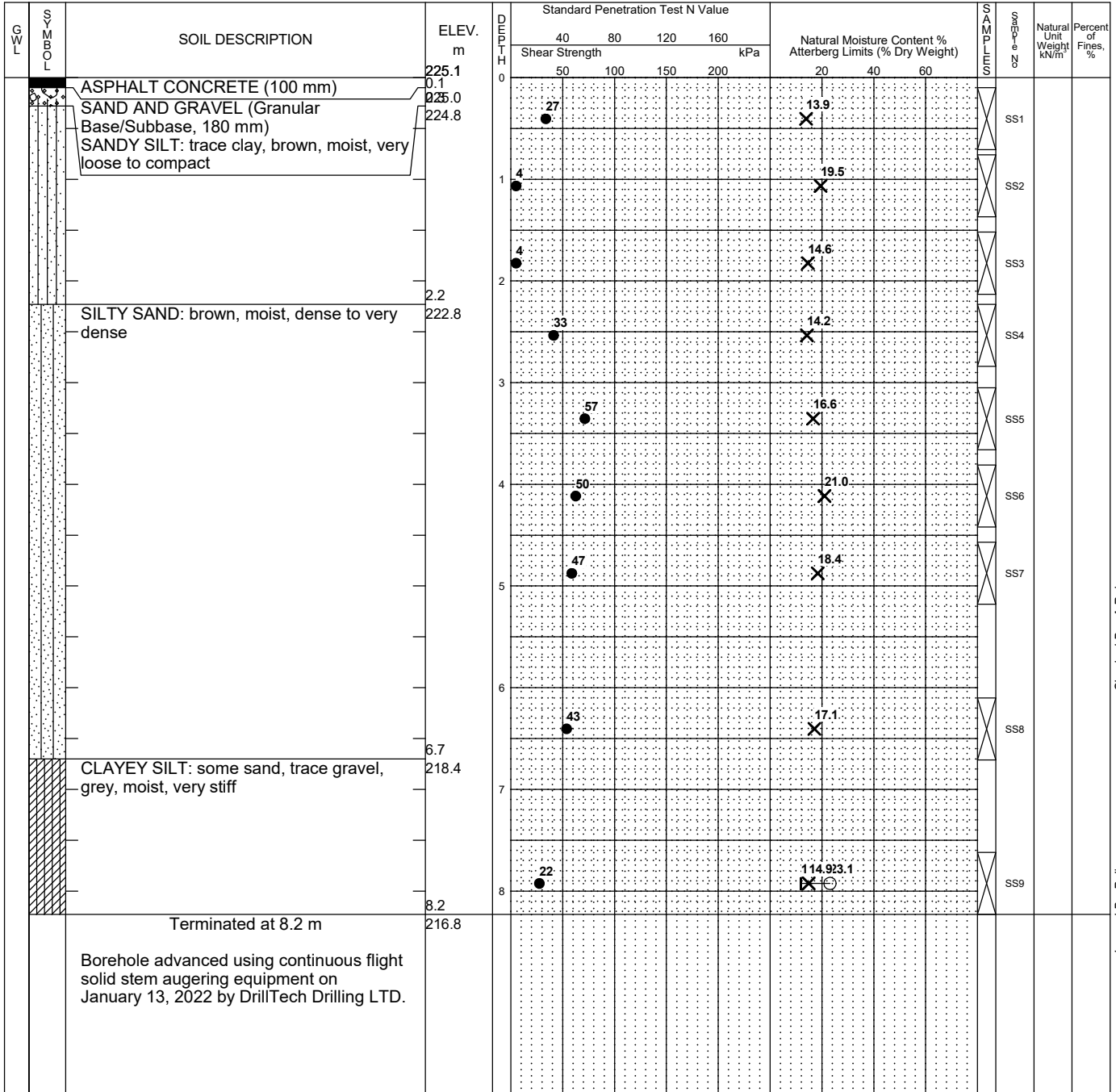
Atterberg Limits



Undrained Triaxial at

% Strain at Failure

Shear Strength by
Penetrometer Test



Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

Checked By: A. Rahman

Logged By: P. Jin

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-4-6

LOG OF BOREHOLE No. BH06

Englobe

Project No. 02112512.000

DRAWING No. BH6

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,299.182 E 616,019.578

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

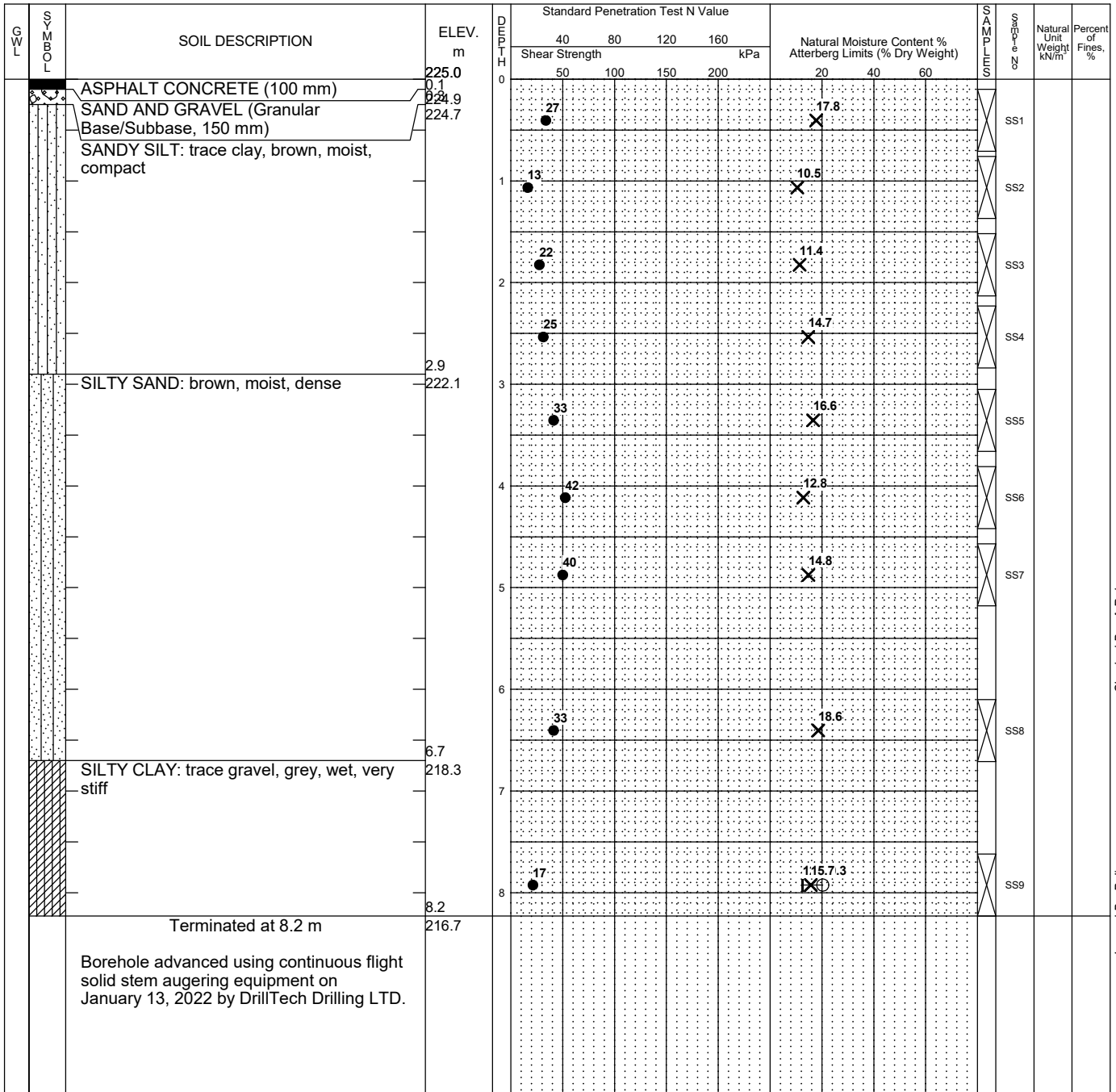


% Strain at Failure

Shear Strength by



Penetrometer Test



CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-4-6

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

LOG OF BOREHOLE No. BH07

Englobe

Project No. 02112512.000

DRAWING No. BH7

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,281.299 E 615,973.690

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



% Strain at Failure

Shear Strength by



Penetrometer Test

GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLING METHOD	Soil Zone	Natural Unit Weight kN/m³	Percent of Fines, %
					40	80	120	160			
		ASPHALT CONCRETE (110 mm)	225.3	0							
		SAND AND GRAVEL (Granular Base/Subbase, 150 mm)	225.2								
		SANDY SILT: trace to some clay, brown, moist, loose to compact	225.0								
				1	5				15.1		
				2	13				17.5		
				3	32				14.4		
				4	45				14.0		
				4	39				18.6		
		Terminated at 4.4 m	220.9								
		Borehole advanced using continuous flight solid stem augering equipment on January 13, 2022 by DrillTech Drilling LTD.									

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-4-6

Checked By: A. Rahman

Logged By: P. Jin

LOG OF BOREHOLE No. BH08

Englobe

Project No. 02112512.000

DRAWING No. BH8

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,284.188 E 615,997.335

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

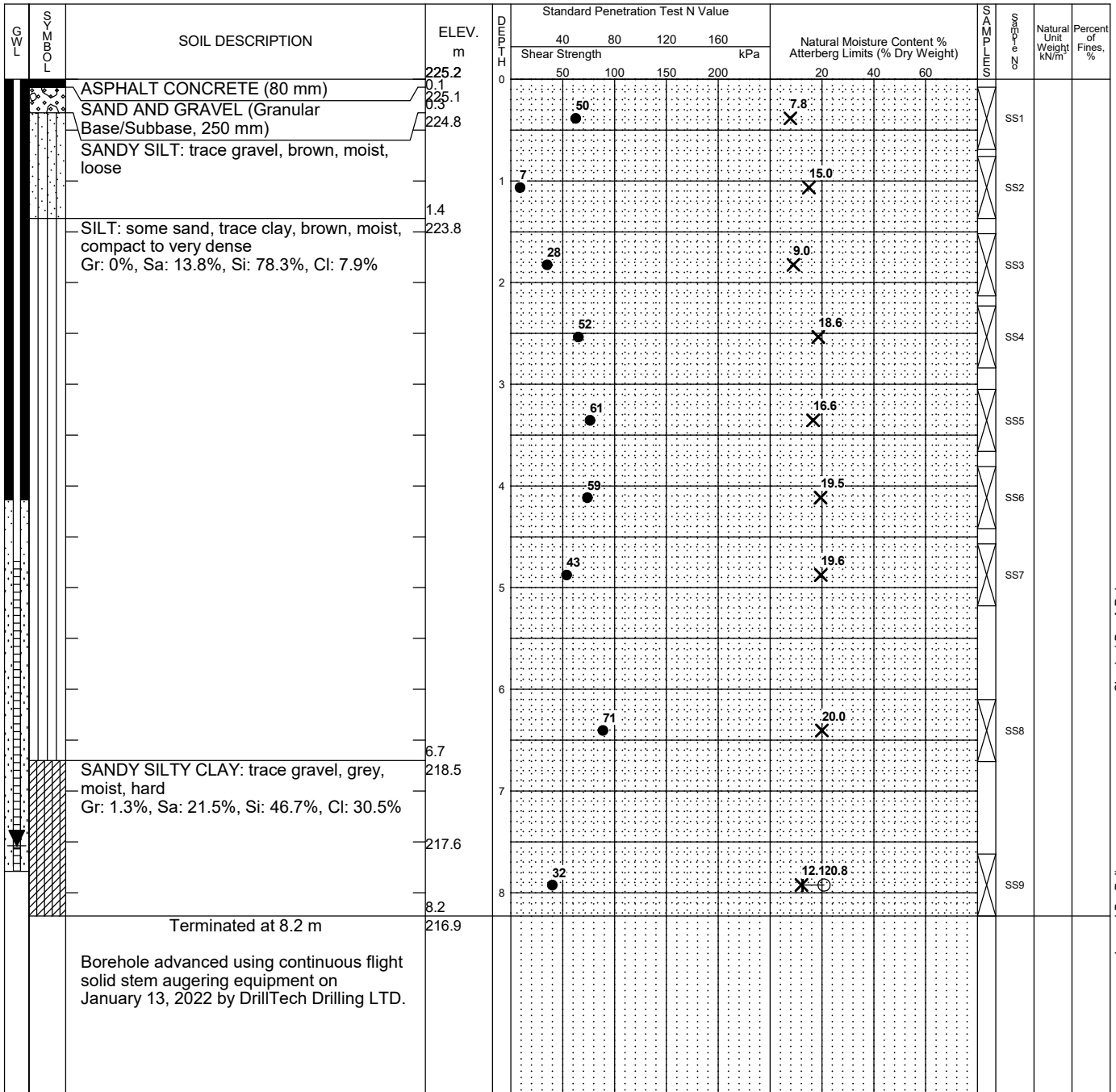


% Strain at Failure

Shear Strength by



Penetrometer Test



Time	Water Level (m)	Depth to Cave (m)
Upon Completion	7.6	none
Feb 14, 2022	7.6	
Feb 24, 2022	Dry	

Checked By: A. Rahman

Logged By: P. Jin

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-4-6

LOG OF BOREHOLE No. BH09

Englobe

Project No. 02112512.000

DRAWING No. BH9

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,275.648 E 615,983.373

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



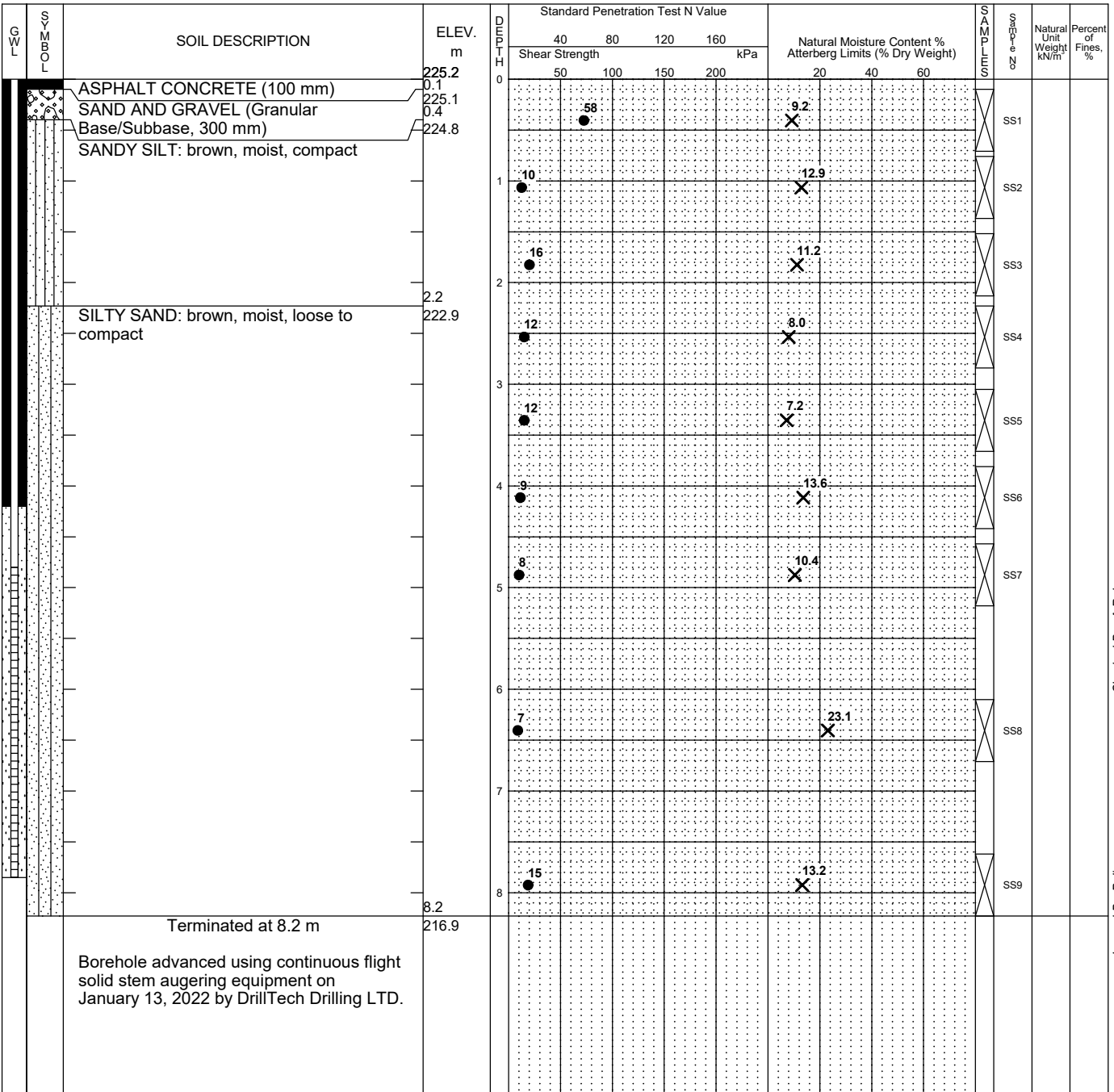
% Strain at Failure



Shear Strength by



Penetrometer Test



Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none
Feb 14, 2022	Dry	
Feb 24, 2022	7.7	

Checked By: A. Rahman

Logged By: P. Jin

LOG OF BOREHOLE No. BH10

Englobe

Project No. 02112512.000

DRAWING No. BH10

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,285.523 E 616,013.237

Date Drilled: 2022-1-14

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

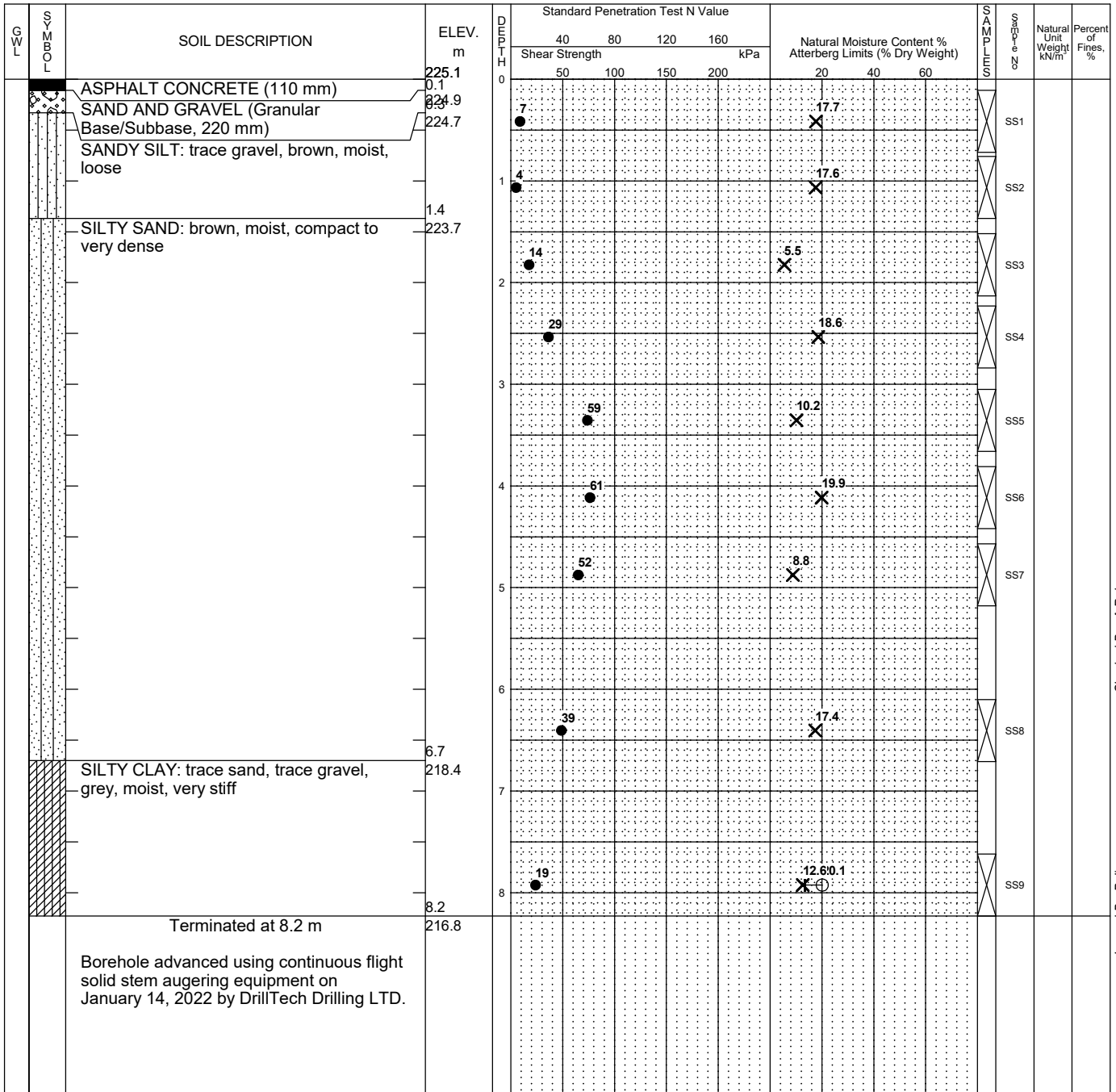


% Strain at Failure

Shear Strength by



Penetrometer Test



CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-4-6

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

LOG OF BOREHOLE No. BH11

Englobe

Project No. 02112512.000

DRAWING No. BH11

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,275.359 E 616,002.160

Date Drilled: 2022-1-21

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



% Strain at Failure



Shear Strength by



Penetrometer Test



GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLING METHOD	Soil Type	Natural Unit Weight kN/m³	Percent of Fines, %
					40	80					
		ASPHALT CONCRETE (110 mm)	225.0	0	50	100	20		SS1		
		SAND AND GRAVEL (Granular Base/Subbase, 120 mm)	224.9				17.9				
		SILT: with clay, brown, moist, loose to very dense Gr: 0%, Sa: 0%, Si: 87.7%, Cl: 12.3%	224.7								
				1	10		13.0		SS2		
				2	16		20.3		SS3		
					47		13.2		SS4		
				3		65	17.5		SS5		
				4	50		15.8		SS6		
				5	58		17.2		SS7		
				6							
					29		16.1		SS8		
				7							
					28		22.4		SS9		
				8							
		Terminated at 8.2 m	216.7								
		Borehole advanced using continuous flight solid stem augering equipment on January 21, 2022 by DrillTech Drilling LTD.									

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-4-6

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	7.5	none

LOG OF BOREHOLE No. BH12

Englobe

Project No. 02112512.000

DRAWING No. BH12

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,275.874 E 616,022.481

Date Drilled: 2022-1-21

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

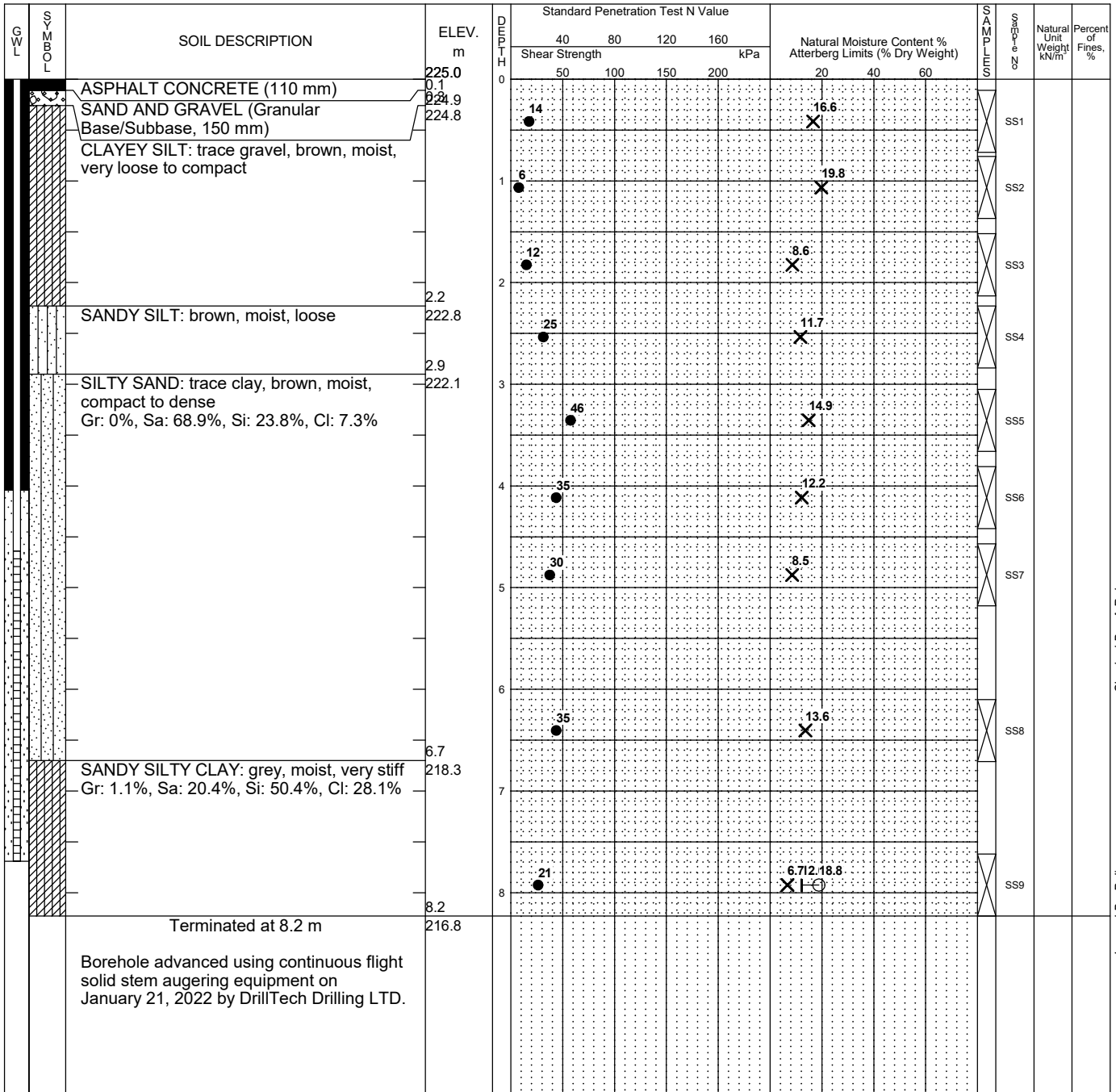


% Strain at Failure

Shear Strength by



Penetrometer Test



Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none
Feb 14, 2022	Dry	
Feb 24, 2022	7.6	

LOG OF BOREHOLE No. BH13

Englobe

Project No. 02112512.000

DRAWING No. BH13

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,286.170 E 616,050.535

Date Drilled: 2022-1-21

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



% Strain at Failure



Shear Strength by



Penetrometer Test



GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLING LOG	Soil Type	Natural Unit Weight kN/m ³	Percent of Fines, %
					40	80	120	160			
		TOPSOIL (200 mm)	225.8	0							
		SAND AND GRAVEL (Granular Base/Subbase, 150 mm)	225.6	0.2							
		SANDY SILTY CLAY: brown, moist, firm to hard Gr: 0.3%, Sa: 25.2%, Si: 43.7%, Cl: 30.8%	225.4	0.4							
				1							
				2							
				3							
				4							
		Terminated at 4.4 m	221.4								
		Borehole advanced using continuous flight solid stem augering equipment on January 21, 2022 by DrillTech Drilling LTD.									

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-4-6

Checked By: A. Rahman

Logged By: P. Jin

LOG OF BOREHOLE No. BH15

Englobe

Project No. 02112512.000

DRAWING No. BH15

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,317.902 E 616,043.569

Date Drilled: 2022-1-21

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

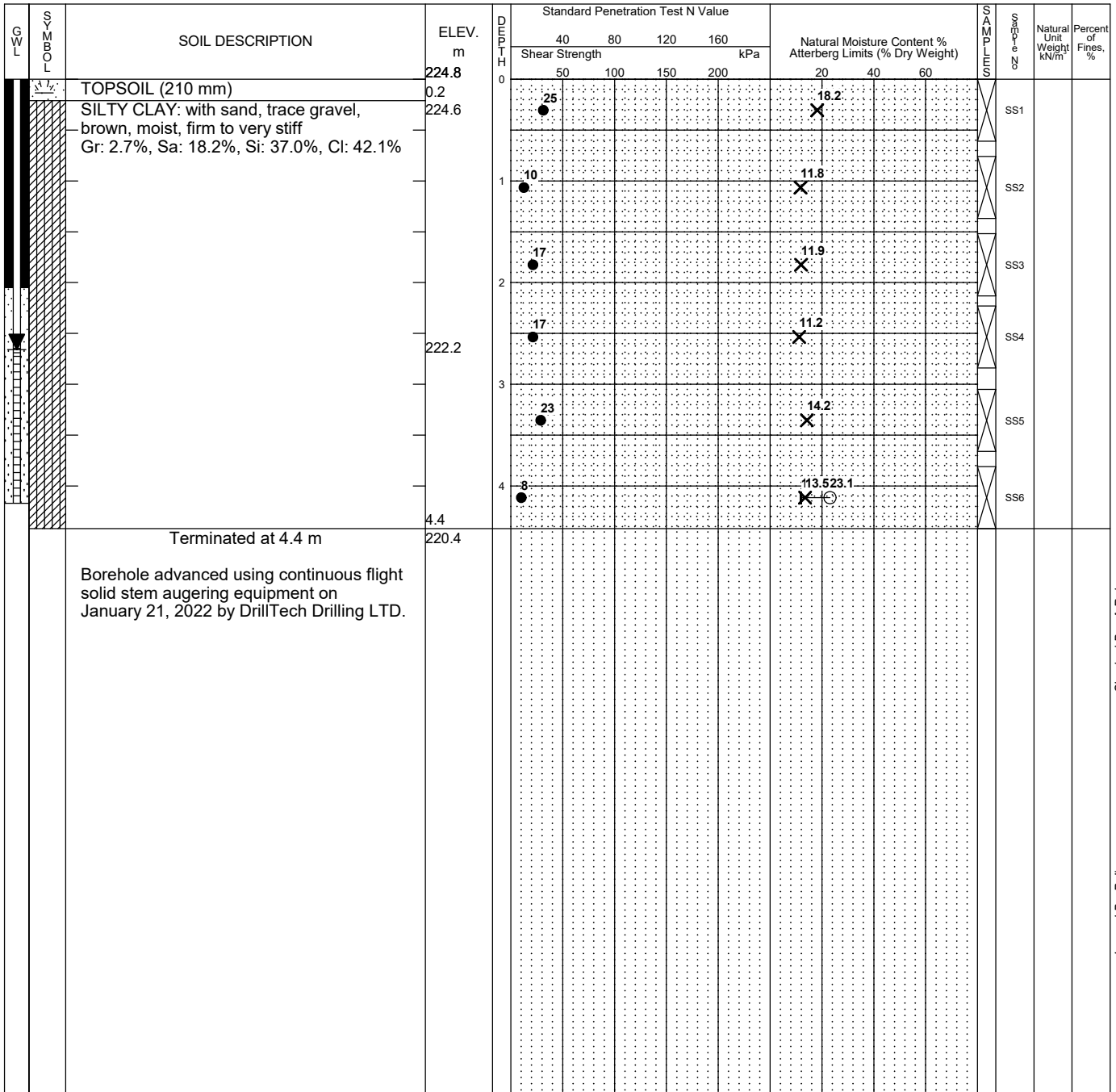


% Strain at Failure

Shear Strength by



Penetrometer Test



CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-4-6

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	2.7	none
Feb 14, 2022	2.7	
Feb 24, 2022	1.3	

LOG OF BOREHOLE No. BH16

Englobe

Project No. 02112512.000

DRAWING No. BH16

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,334.484 E 616,039.548

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



% Strain at Failure

Shear Strength by



Penetrometer Test

GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLING LOG	Soil Type	Natural Unit Weight kN/m ³	Percent of Fines, %
					40	80	120	160			
		TOPSOIL (200 mm)	224.9	0	50	100	150	200	20	40	60
		SILTY CLAY: with sand, brown, moist, compact Gr: 0%, Sa: 10.4%, Si: 65.6%, Cl: 24%	224.7	0.2	15				14.6		
				1	15				12.2		
				2	13				12.4		
				3	23				13.5		
				4	22				20.4		
				4.4	16				20.2		
		Terminated at 4.4 m	220.5								
		Borehole advanced using continuous flight solid stem augering equipment on January 13, 2022 by DrillTech Drilling LTD.									

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-4-6

Checked By: A. Rahman

Logged By: P. Jin

Appendix C

Laboratory Results



eNGLOBE

GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH1_SS5
SAMPLING DEPTH, m: 3.50
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Silt trace Clay
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %
% GRAVEL (> 4.75 mm): 0.0
% SAND (75 µm to 4.75 mm): 0.0
% Silt (5 µm to 75 µm): 90.7
% Clay (< 5 µm): 9.3
SUSCEPTIBILITY TO FROST HEAVING: High

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	82.2
37.5	100.0	0.026	67.4
26.5	100.0	0.017	42.4
19.0	100.0	0.010	21.5
13.2	100.0	0.007	13.7
9.5	100.0	0.005	9.3
4.75	100.0	0.003	5.3
2.36	100.0	0.001	2.7
1.18	100.0	ATTERBERG LIMITS, %	
0.60	100.0		
0.30	100.0		
0.15	100.0	Plastic Limit	
0.075	100.0	Liquid Limit	
		Plastic Index	

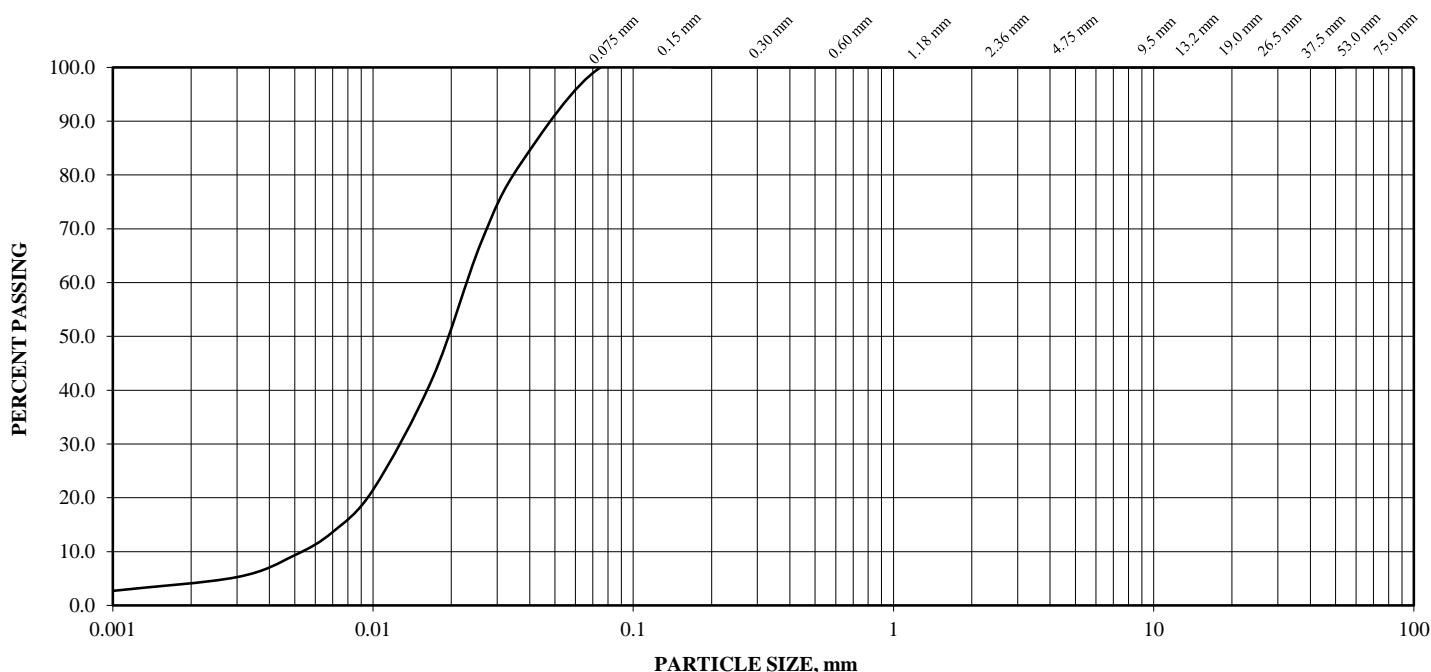
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
------	------	----------------	-----------	-------------	-------------	-------------	--------

UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH2_SS3
SAMPLING DEPTH, m: 2.00
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Silt, trace clay, trace
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %
% GRAVEL (> 4.75 mm): 0.0
% SAND (75 µm to 4.75 mm): 0.9
% Silt (5 µm to 75 µm): 91.2
% Clay (<5 µm): 7.9
SUSCEPTIBILITY TO FROST HEAVING: High

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	75.2
37.5	100.0	0.026	60.1
26.5	100.0	0.017	39.1
19.0	100.0	0.010	20.6
13.2	100.0	0.007	11.8
9.5	100.0	0.005	7.9
4.75	100.0	0.003	4.4
2.36	100.0	0.001	1.8
1.18	100.0	ATTERBERG LIMITS, %	
0.60	100.0		
0.30	100.0		
0.15	100.0	Plastic Limit	
0.075	99.1	Liquid Limit	
		Plastic Index	

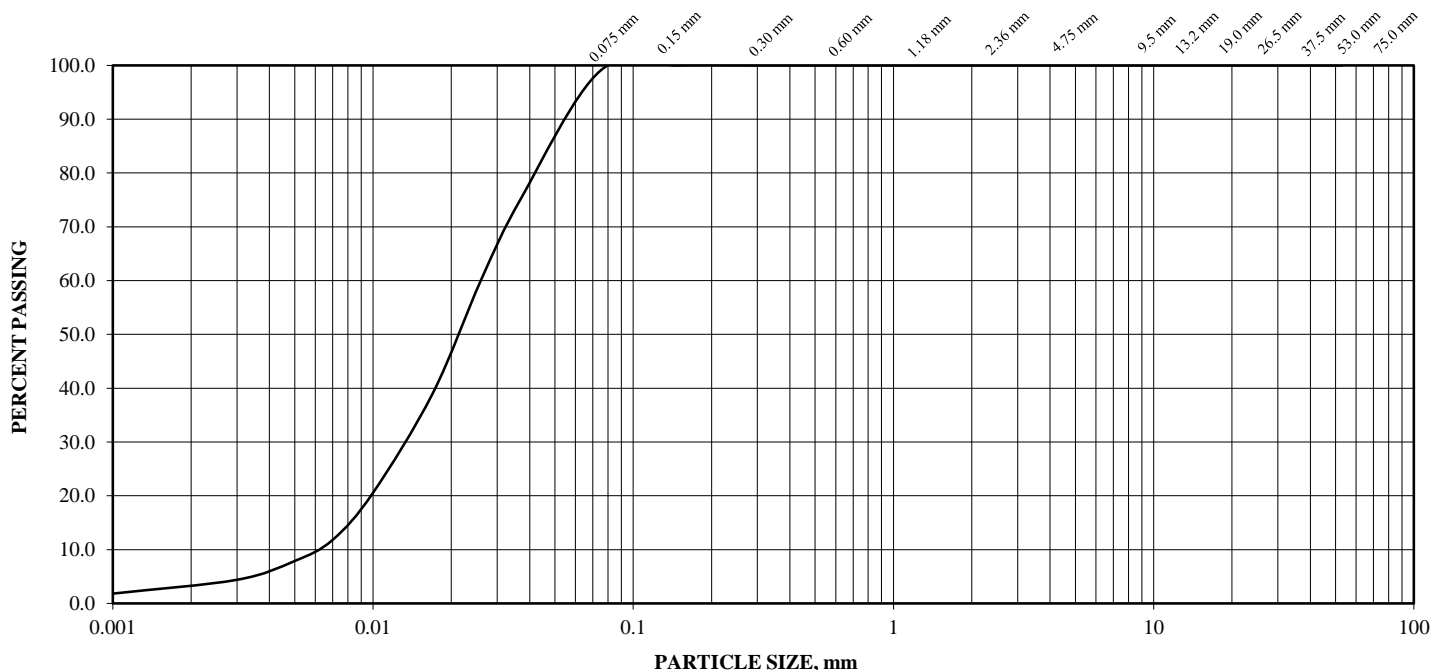
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
------	------	----------------	-----------	-------------	-------------	-------------	--------

UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH8_SS7
SAMPLING DEPTH, m: 5.00
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Silt, some sand, trace clay
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %
% GRAVEL (> 4.75 mm): 0.0
% SAND (75 µm to 4.75 mm): 13.8
% Silt (5 µm to 75 µm): 78.3
% Clay (< 5 µm): 7.9
SUSCEPTIBILITY TO FROST HEAVING: High

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	58.5
37.5	100.0	0.026	44.7
26.5	100.0	0.017	31.0
19.0	100.0	0.010	18.7
13.2	100.0	0.007	11.9
9.5	100.0	0.005	7.9
4.75	100.0	0.003	4.5
2.36	100.0	0.001	2.7
1.18	100.0	ATTERBERG LIMITS, %	
0.60	100.0		
0.30	100.0		
0.15	99.4	Plastic Limit	
0.075	86.2	Liquid Limit	
		Plastic Index	

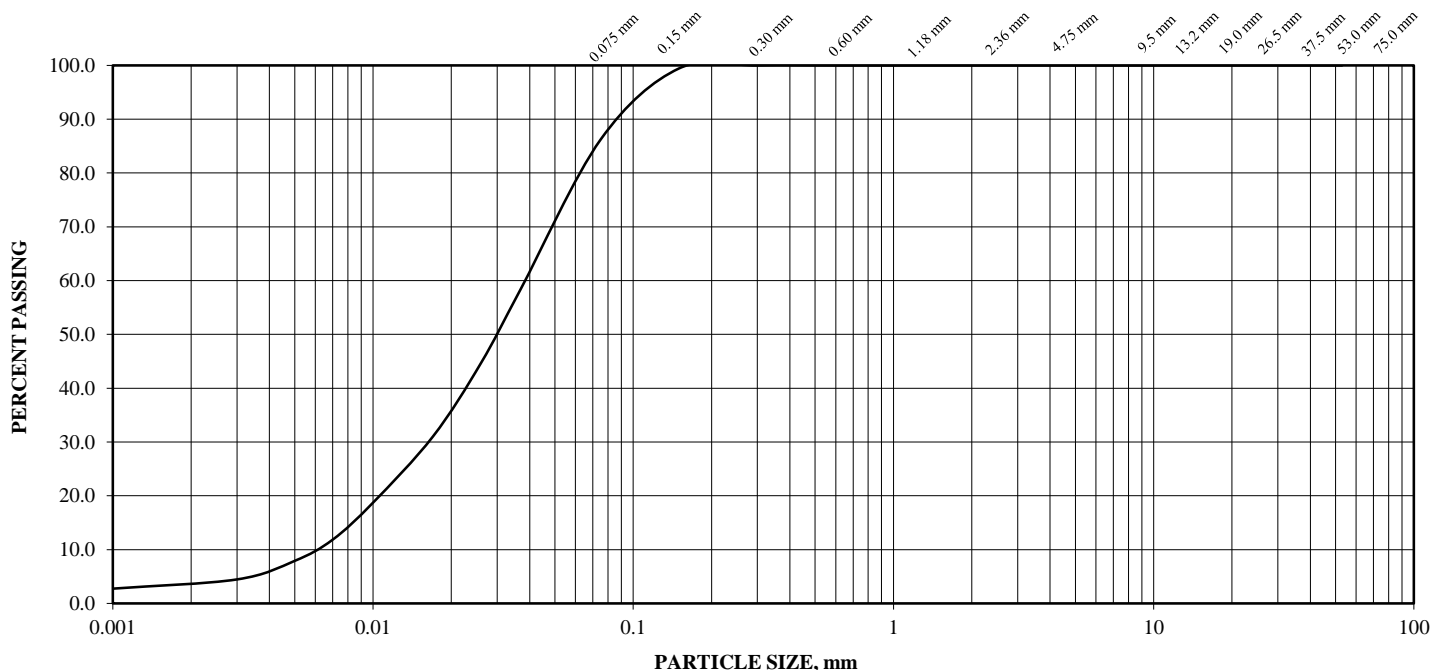
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
------	------	----------------	-----------	-------------	-------------	-------------	--------

UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
---------------------	-----------	-------------	-------------	-------------	---------------



GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH8_SS8
SAMPLING DEPTH, m: 6.50
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Clayey Sandy Silt, trace gravel
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %

% GRAVEL (> 4.75 mm): 1.3
% SAND (75 µm to 4.75 mm): 21.5
% Silt (5 µm to 75 µm): 46.7
% Clay (<5 µm): 30.5
SUSCEPTIBILITY TO FROST HEAVING: Moderate

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	65.9
37.5	100.0	0.026	59.8
26.5	100.0	0.017	52.5
19.0	100.0	0.010	43.1
13.2	100.0	0.007	36.5
9.5	100.0	0.005	30.5
4.75	98.7	0.003	22.3
2.36	97.2	0.001	13.0
1.18	95.5	ATTERBERG LIMITS, %	
0.60	93.2		
0.30	89.7		
0.15	84.1	Plastic Limit	12.4
0.075	77.2	Liquid Limit	20.8
		Plastic Index	8.4

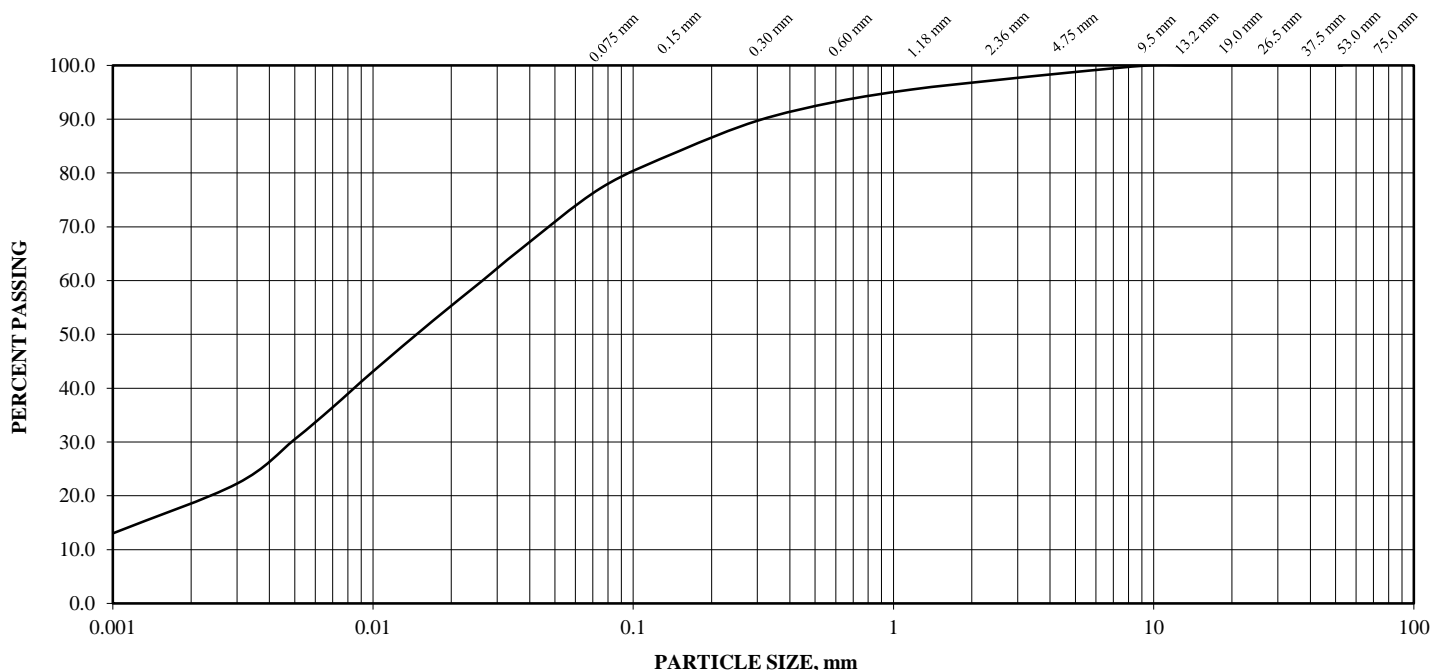
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
------	------	----------------	-----------	-------------	-------------	-------------	--------

UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
---------------------	-----------	-------------	-------------	-------------	---------------



GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH9_SS8
SAMPLING DEPTH, m: 6.50
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Clayey Silt, some sand, trace gravel
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %

% GRAVEL (> 4.75 mm): 1.4
% SAND (75 µm to 4.75 mm): 19.2
% Silt (5 µm to 75 µm): 46.0
% Clay (< 5 µm): 33.4
SUSCEPTIBILITY TO FROST HEAVING: Moderate

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	68.7
37.5	100.0	0.026	62.4
26.5	100.0	0.017	54.8
19.0	100.0	0.010	45.0
13.2	100.0	0.007	38.4
9.5	100.0	0.005	33.4
4.75	98.6	0.003	27.3
2.36	97.5	0.001	15.4
1.18	96.7	ATTERBERG LIMITS, %	
0.60	95.6		
0.30	93.4		
0.15	87.3		
0.075	79.4	Plastic Limit	
		Liquid Limit	
		Plastic Index	

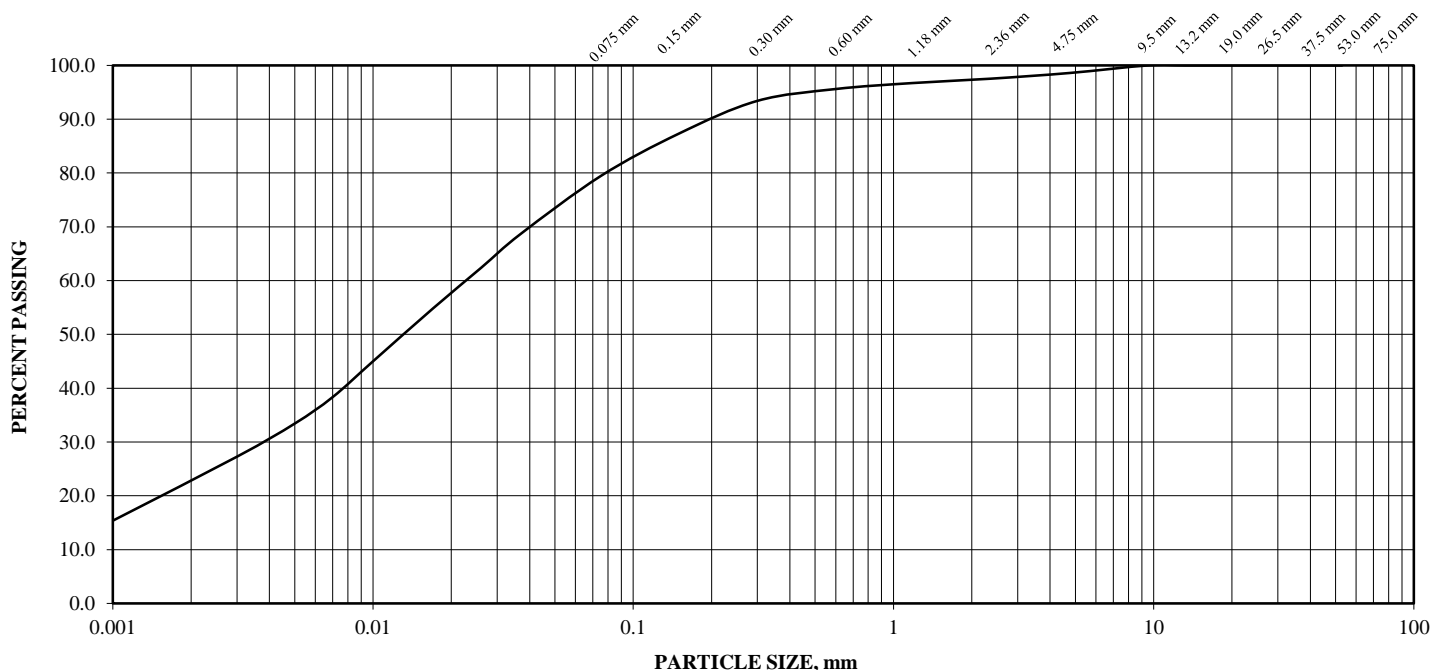
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH10_SS4
SAMPLING DEPTH, m: 2.50
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Silt, trace clay, trace sand
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %
% GRAVEL (> 4.75 mm): 0.0
% SAND (75 µm to 4.75 mm): 5.5
% Silt (5 µm to 75 µm): 88.0
% Clay (<5 µm): 6.5
SUSCEPTIBILITY TO FROST HEAVING: High

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	54.6
37.5	100.0	0.026	37.3
26.5	100.0	0.017	23.3
19.0	100.0	0.010	13.9
13.2	100.0	0.007	9.1
9.5	100.0	0.005	6.5
4.75	100.0	0.003	4.7
2.36	100.0	0.001	2.9
1.18	100.0	ATTERBERG LIMITS, %	
0.60	100.0		
0.30	100.0		
0.15	100.0	Plastic Limit	
0.075	94.5	Liquid Limit	
		Plastic Index	

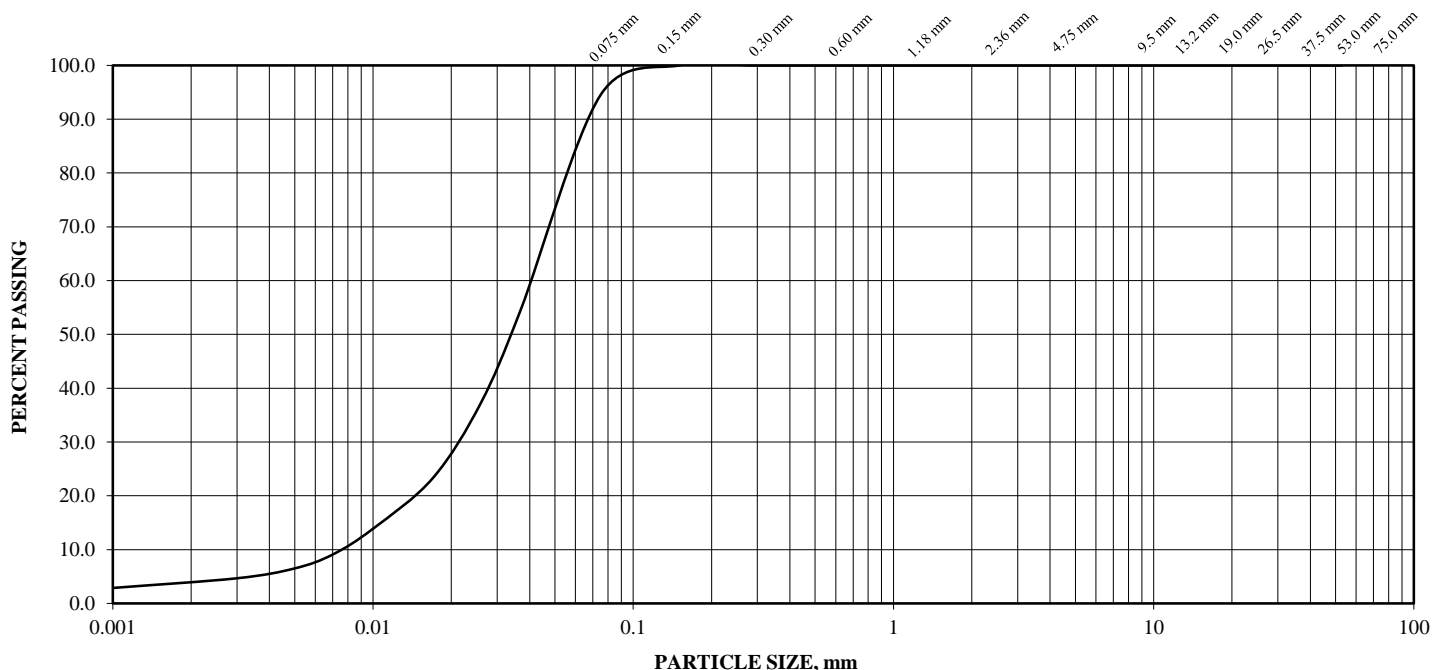
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH11_SS2
SAMPLING DEPTH, m: 1.00
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Silt, some clay
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %

% GRAVEL (> 4.75 mm): 0.0
% SAND (75 µm to 4.75 mm): 0.0
% Silt (5 µm to 75 µm): 87.7
% Clay (<5 µm): 12.3
SUSCEPTIBILITY TO FROST HEAVING: High

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	97.7
37.5	100.0	0.026	81.5
26.5	100.0	0.017	60.0
19.0	100.0	0.010	29.7
13.2	100.0	0.007	19.0
9.5	100.0	0.005	12.3
4.75	100.0	0.003	6.3
2.36	100.0	0.001	4.6
1.18	100.0	ATTERBERG LIMITS, %	
0.60	100.0		
0.30	100.0		
0.15	100.0	Plastic Limit	
0.075	100.0	Liquid Limit	
		Plastic Index	

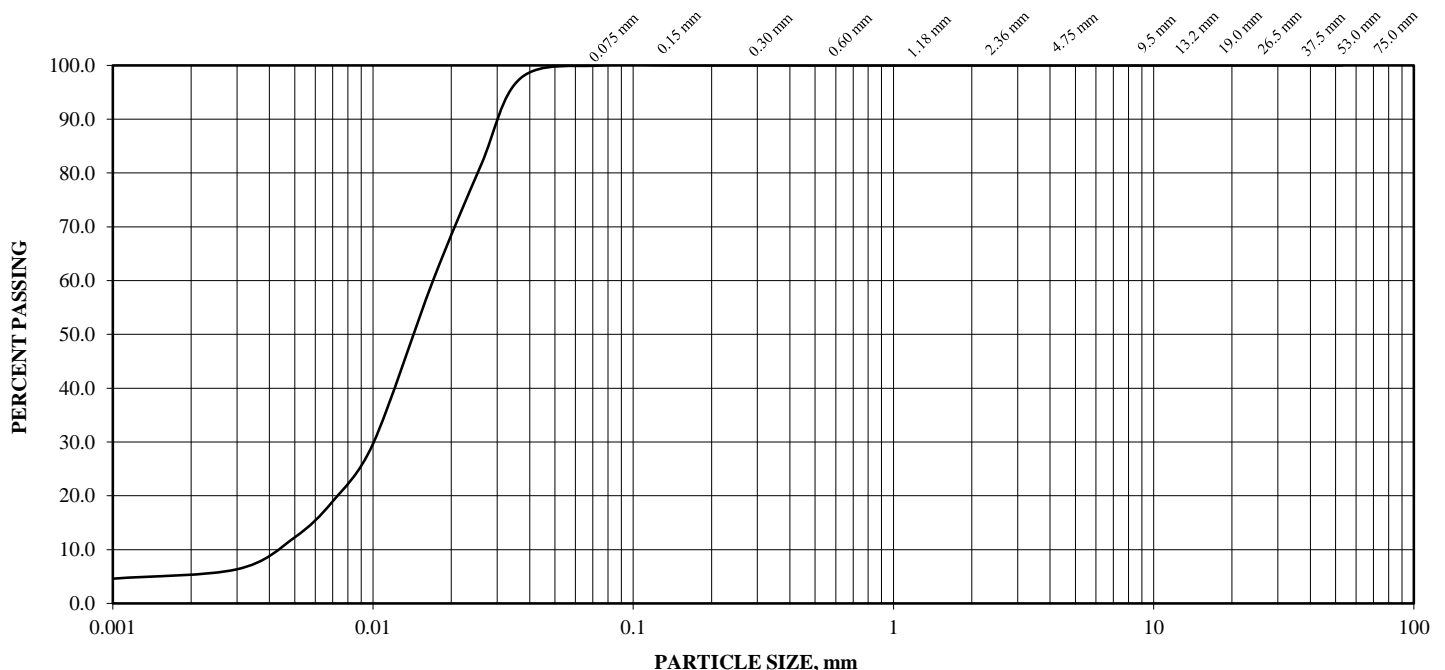
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH12_SS7

SAMPLING DEPTH, m: 5.00

SAMPLING METHOD: Split Spoon

SAMPLED BY: P.J. Englobe Corp

SAMPLE DESCRIPTION: Silty Sand, trace Clay

SAMPLING DATE: 2022-01-21

SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %

% GRAVEL (> 4.75 mm): 0.0

% SAND (75 µm to 4.75 mm): 68.9

% Silt (5 µm to 75 µm): 23.8

% Clay (<5 µm): 7.3

SUSCEPTIBILITY TO FROST HEAVING: Low

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	20.1
37.5	100.0	0.026	17.0
26.5	100.0	0.017	14.1
19.0	100.0	0.010	10.9
13.2	100.0	0.007	8.9
9.5	100.0	0.005	7.3
4.75	100.0	0.003	5.5
2.36	99.2	0.001	3.7
1.18	98.5	ATTERBERG LIMITS, %	
0.60	97.0		
0.30	88.1		
0.15	56.1		
0.075	31.1	Plastic Limit	
		Liquid Limit	
		Plastic Index	

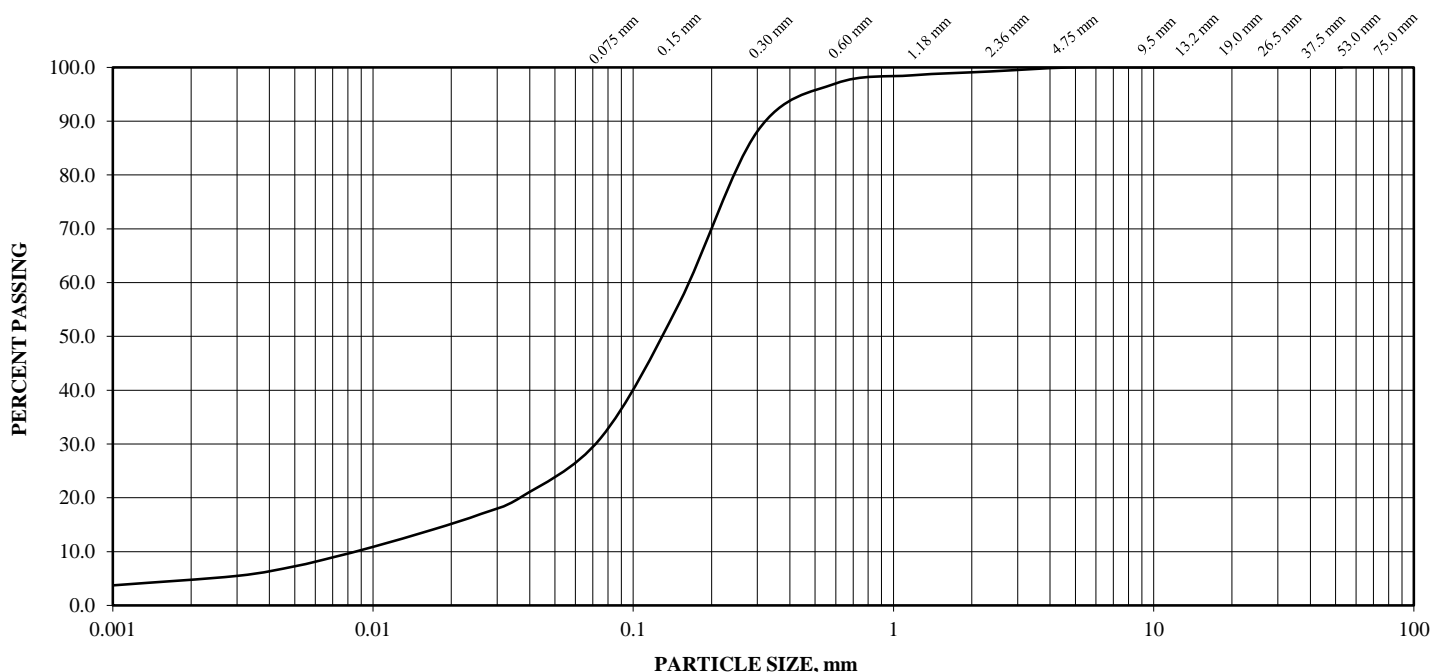
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH12_SS8
SAMPLING DEPTH, m: 6.50
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Clayey Silt, some sand, trace gravel
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %
% GRAVEL (> 4.75 mm): 1.1
% SAND (75 µm to 4.75 mm): 20.4
% Silt (5 µm to 75 µm): 50.4
% Clay (<5 µm): 28.1
SUSCEPTIBILITY TO FROST HEAVING: Moderate

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	61.5
37.5	100.0	0.026	54.5
26.5	100.0	0.017	47.4
19.0	100.0	0.010	39.0
13.2	100.0	0.007	32.8
9.5	100.0	0.005	28.1
4.75	98.9	0.003	22.1
2.36	97.9	0.001	12.9
1.18	97.2	ATTERBERG LIMITS, %	
0.60	96.5		
0.30	94.2		
0.15	88.5	Plastic Limit	12.0
0.075	78.5	Liquid Limit	18.8
		Plastic Index	6.8

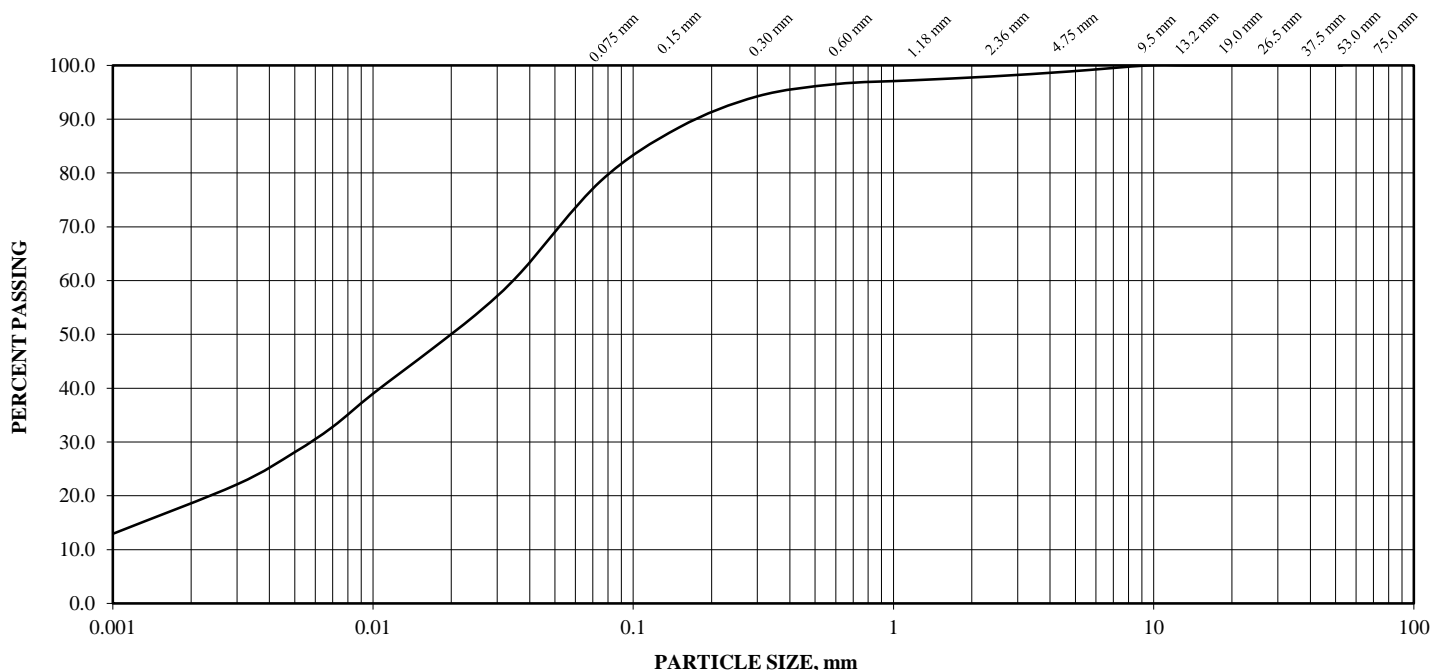
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH13_SS1
SAMPLING DEPTH, m: 0.50
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Clayey Sandy Silt, trace gravel
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %

% GRAVEL (> 4.75 mm): 0.3
% SAND (75 µm to 4.75 mm): 25.2
% Silt (5 µm to 75 µm): 43.7
% Clay (< 5 µm): 30.8
SUSCEPTIBILITY TO FROST HEAVING: Moderate

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	60.2
37.5	100.0	0.026	54.0
26.5	100.0	0.017	47.5
19.0	100.0	0.010	39.7
13.2	100.0	0.007	34.3
9.5	100.0	0.005	30.8
4.75	99.7	0.003	27.1
2.36	99.2	0.001	21.1
1.18	98.7	ATTERBERG LIMITS, %	
0.60	97.7		
0.30	93.8		
0.15	84.9	Plastic Limit	
0.075	74.5	Liquid Limit	
		Plastic Index	

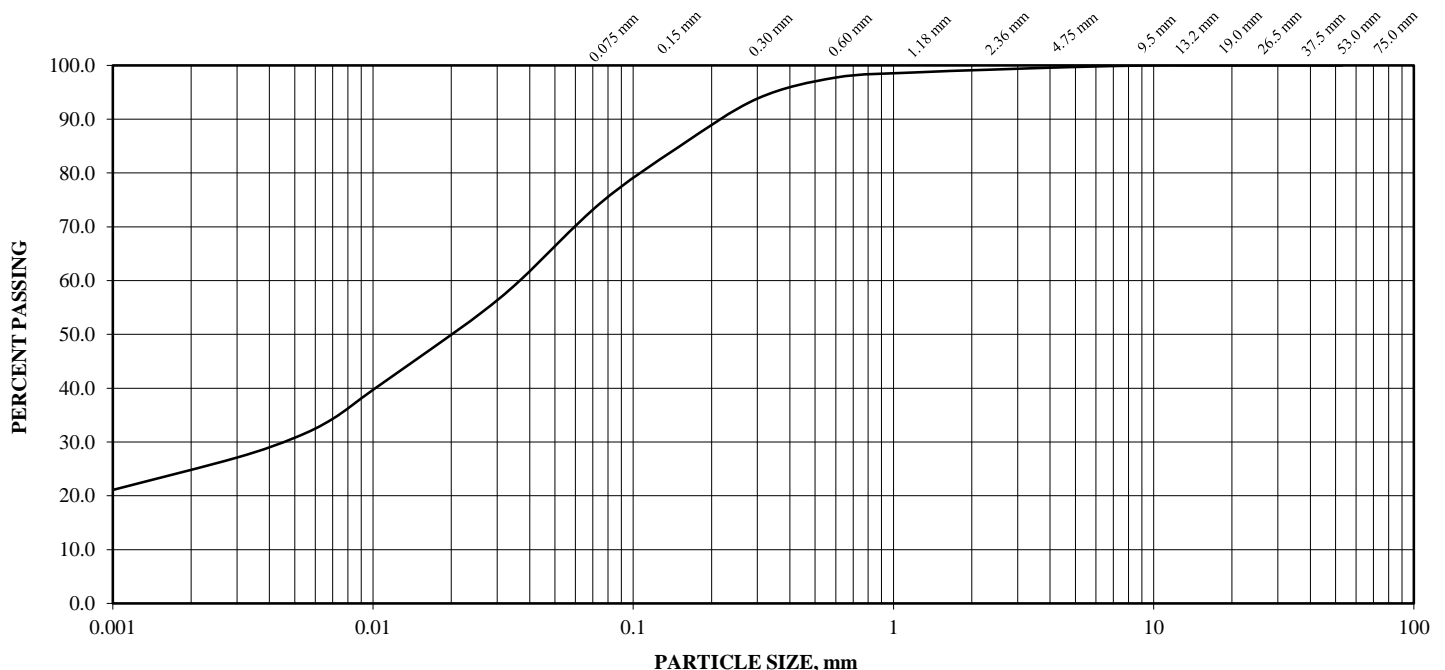
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH15_SS5
SAMPLING DEPTH, m: 3.50
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Silty Clay, some sand, trace gravel
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %

% GRAVEL (> 4.75 mm): 2.7
% SAND (75 µm to 4.75 mm): 18.2
% Silt (5 µm to 75 µm): 37.0
% Clay (< 5 µm): 42.1
SUSCEPTIBILITY TO FROST HEAVING: Low

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	72.2
37.5	100.0	0.026	68.1
26.5	100.0	0.017	62.5
19.0	100.0	0.010	54.6
13.2	100.0	0.007	48.2
9.5	100.0	0.005	42.1
4.75	97.3	0.003	33.8
2.36	96.6	0.001	23.2
1.18	95.4	ATTERBERG LIMITS, %	
0.60	93.9		
0.30	90.5		
0.15	84.9	Plastic Limit	11.9
0.075	79.0	Liquid Limit	23.1
		Plastic Index	11.2

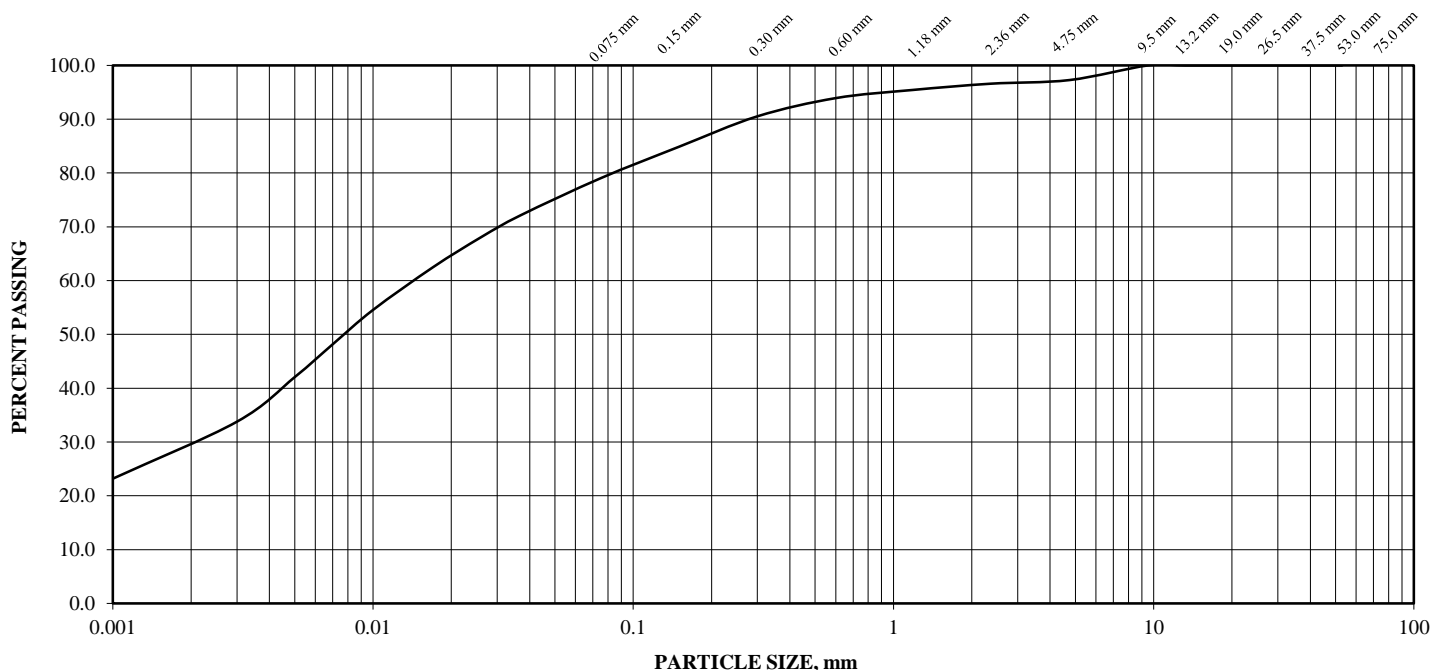
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH16_SS3
SAMPLING DEPTH, m: 2.00
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Clayey Silt, some sand
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %
% GRAVEL (> 4.75 mm): 0.0
% SAND (75 µm to 4.75 mm): 10.4
% Silt (5 µm to 75 µm): 65.6
% Clay (<5 µm): 24.0
SUSCEPTIBILITY TO FROST HEAVING: High

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	72.7
37.5	100.0	0.026	65.0
26.5	100.0	0.017	54.9
19.0	100.0	0.010	41.2
13.2	100.0	0.007	31.1
9.5	100.0	0.005	24.0
4.75	100.0	0.003	16.8
2.36	99.6	0.001	9.3
1.18	99.2	ATTERBERG LIMITS, %	
0.60	98.6		
0.30	97.3		
0.15	95.4	Plastic Limit	
0.075	89.6	Liquid Limit	
		Plastic Index	

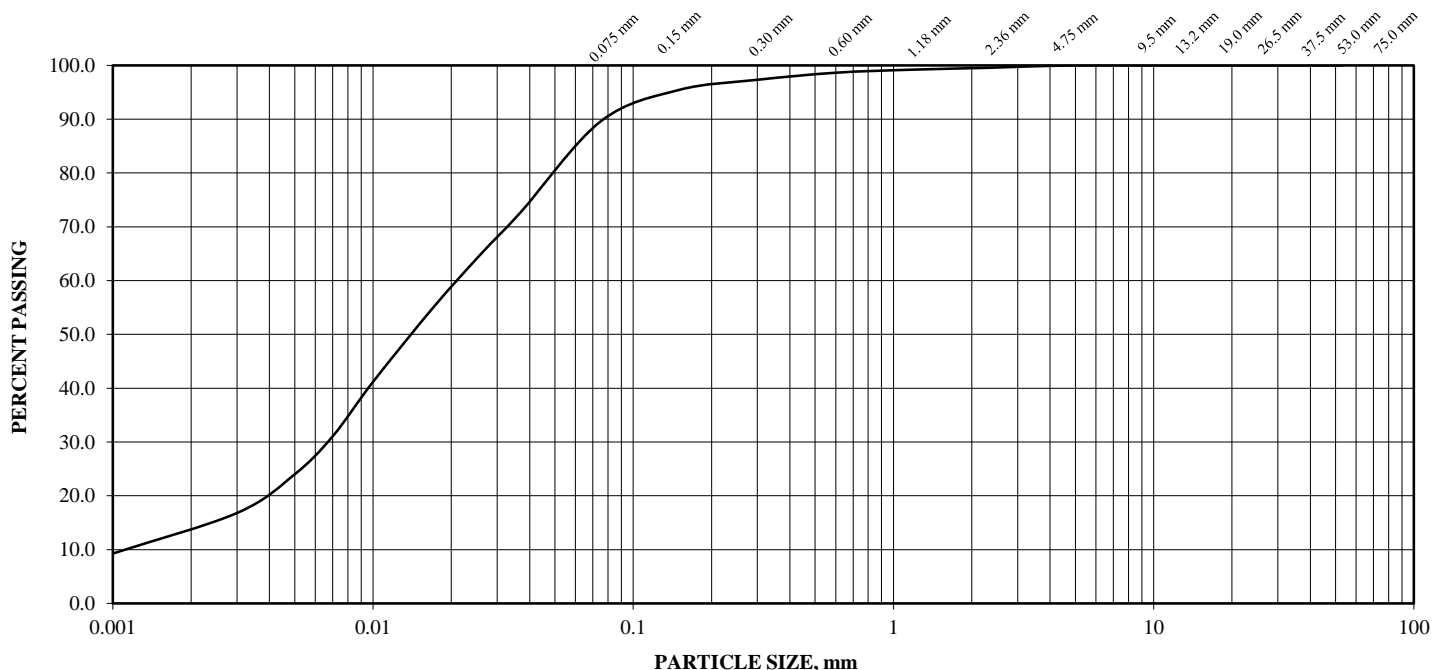
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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ATTERBERG LIMITS MTO LS-703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan DATE: 21/01/2022

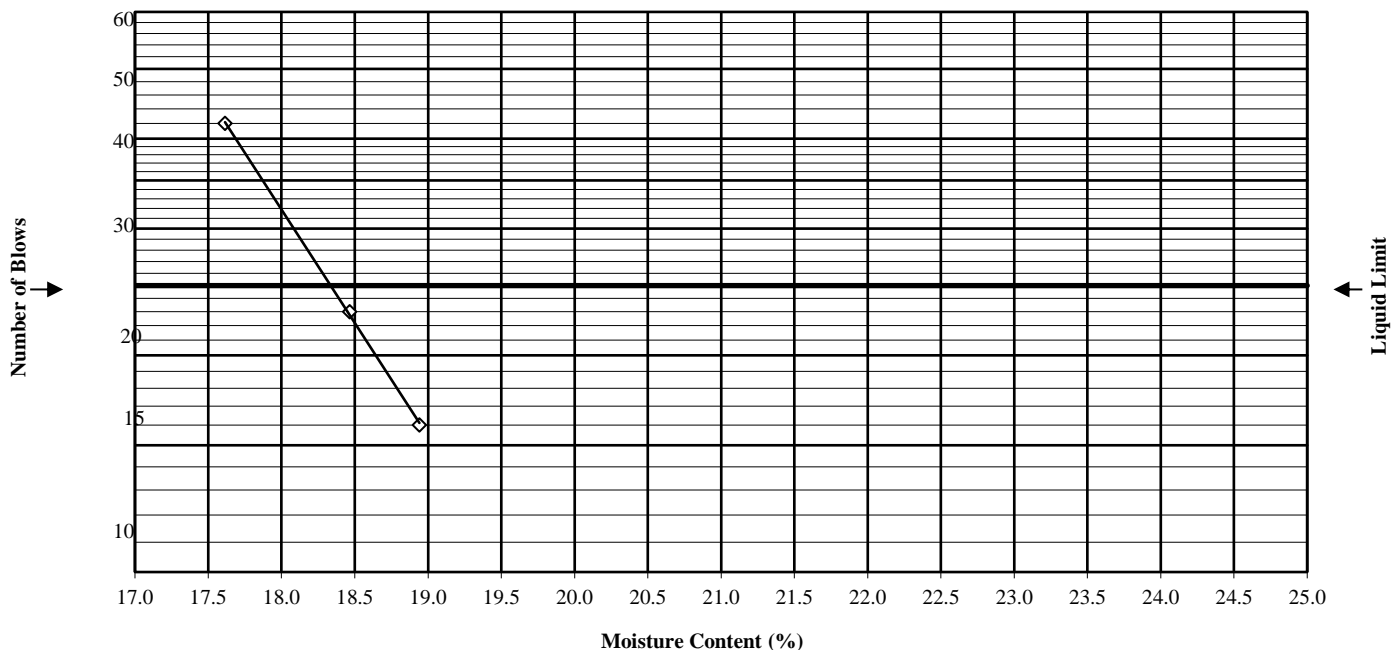
ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation, City of Vaughan Fire Station 7-12

SAMPLE DESCRIPTION: - SAMPLE LOCATION: BH5_SS8

IMTE used: SA71-TO & SA77-TO, SA11-TO

Part A		Liquid Limit						
Sample No.					Retest			
No. of Blows		42	23	16				
Dish No.								
Dish + Wet Soil		31.27	31.39	34.44				
Dish + Dry Soil		29.04	29.20	31.65				
Moisture		2.23	2.19	2.79				
Dish		16.38	17.34	16.92				
Dry Soil		12.66	11.86	14.73				
% Moisture		17.6	18.5	18.9				
Part B		Plastic Limit						
Dish No.								
Dish + Wet Soil		20.76	20.98					
Dish + Dry Soil		20.39	20.6					
Moisture		0.37	0.38					
Dish		17.05	17.25					
Dry Soil		3.34	3.35					
% Moisture		11.1	11.3					
Plastic Limit, %		11.2						
Liquid Limit, %		18.3						
Plastic Index		7.1						

Atterburg - Limits of Soils Data Card



TECHNICIAN: SA CHECKED BY: LB DATE: 21/01/2022

ATTERBERG LIMITS MTO LS-703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan DATE: 21/01/2022

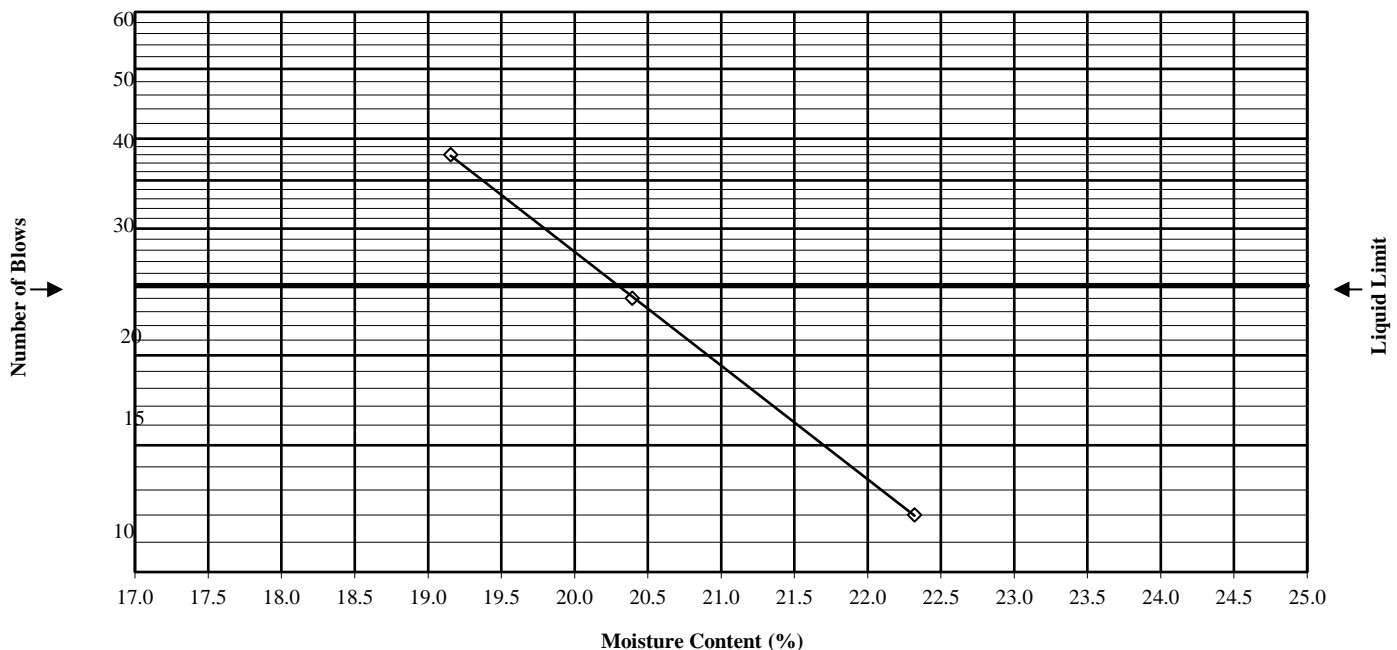
ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation, City of Vaughan Fire Station 7-12

SAMPLE DESCRIPTION: - SAMPLE LOCATION: BH6_SS8

IMTE used: SA71-TO & SA77-TO, SA11-TO

Part A		Liquid Limit						
Sample No.					Retest			
No. of Blows		38	24	12				
Dish No.								
Dish + Wet Soil		29.04	30.12	32.39				
Dish + Dry Soil		27.09	27.85	29.60				
Moisture		1.95	2.27	2.79				
Dish		16.91	16.72	17.10				
Dry Soil		10.18	11.13	12.5				
% Moisture		19.2	20.4	22.3				
Part B		Plastic Limit						
Dish No.								
Dish + Wet Soil		21.02	20.18					
Dish + Dry Soil		20.58	19.81					
Moisture		0.44	0.37					
Dish		17.13	16.78					
Dry Soil		3.45	3.03					
% Moisture		12.8	12.2					
Plastic Limit, %		12.5						
Liquid Limit, %		20.3						
Plastic Index		7.8						

Atterburg - Limits of Soils Data Card



TECHNICIAN: SA CHECKED BY: LB DATE: 21/01/2022

ATTERBERG LIMITS MTO LS-703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan DATE: 21/01/2022

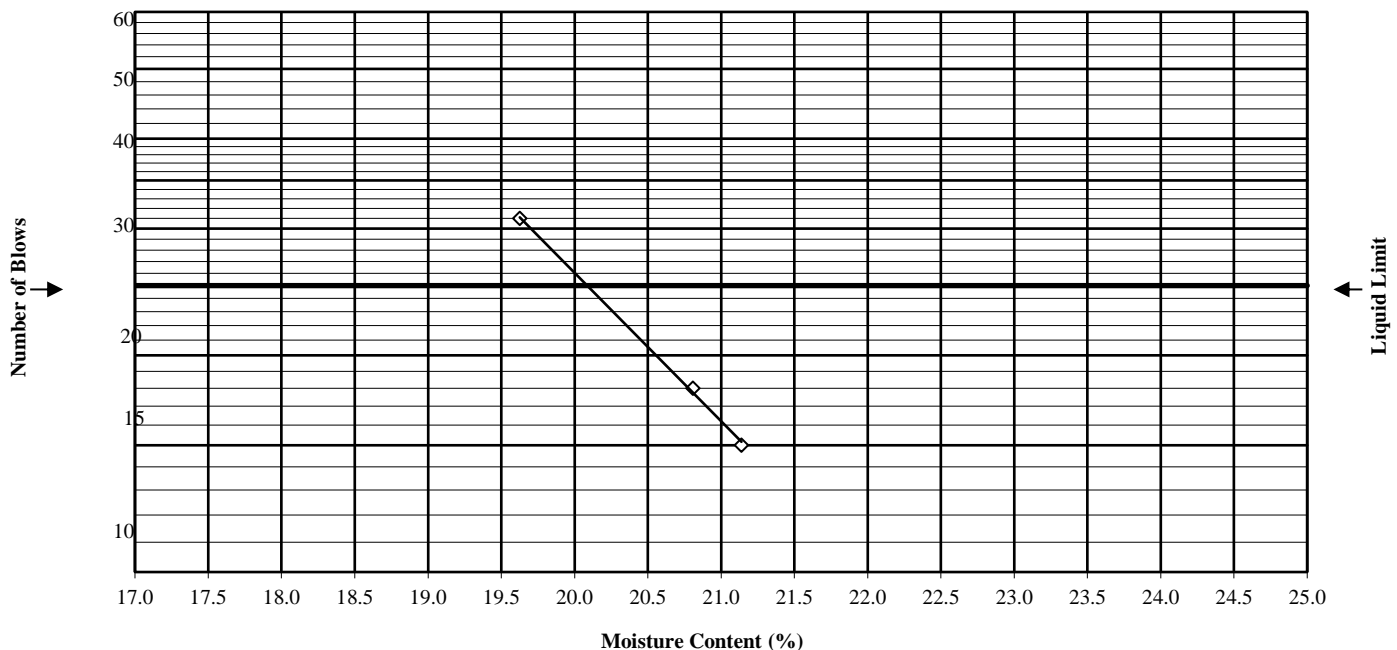
ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation, City of Vaughan Fire Station 7-12

SAMPLE DESCRIPTION: - SAMPLE LOCATION: BH10_SS8

IMTE used: SA71-TO & SA77-TO, SA11-TO

Part A		Liquid Limit						
Sample No.					Retest			
No. of Blows		18	31	15				
Dish No.								
Dish + Wet Soil		29.06	27.32	29.52				
Dish + Dry Soil		26.95	25.64	27.33				
Moisture		2.11	1.68	2.19				
Dish		16.81	17.08	16.97				
Dry Soil		10.14	8.56	10.36				
% Moisture		20.8	19.6	21.1				
Part B		Plastic Limit						
Dish No.								
Dish + Wet Soil		20.74	20.6					
Dish + Dry Soil		20.28	20.17					
Moisture		0.46	0.43					
Dish		16.86	16.95					
Dry Soil		3.42	3.22					
% Moisture		13.5	13.4					
Plastic Limit, %		13.4						
Liquid Limit, %		20.1						
Plastic Index		6.7						

Atterburg - Limits of Soils Data Card



TECHNICIAN: SA CHECKED BY: LB DATE: 21/01/2022

Appendix D

Infiltration Test Results

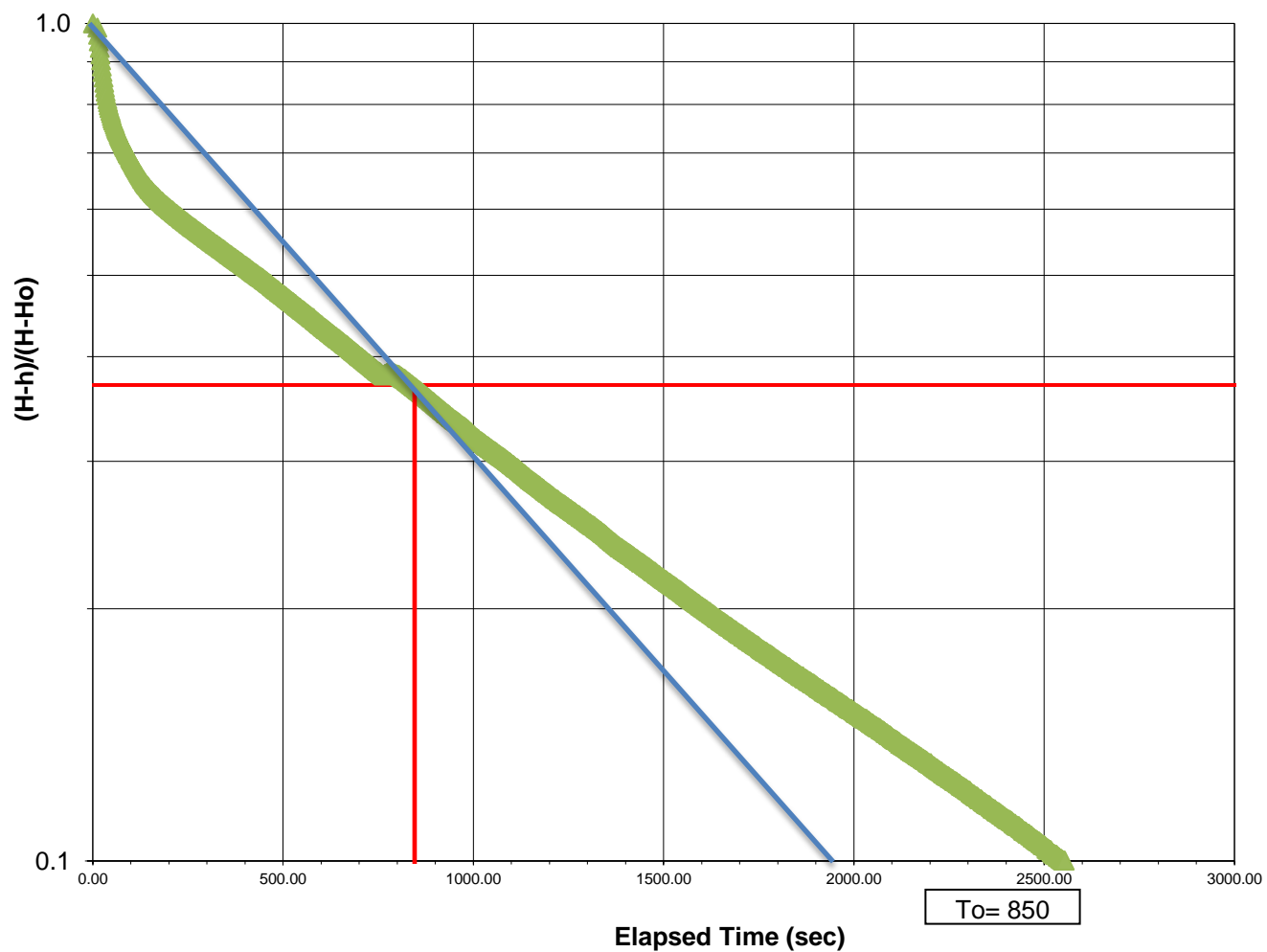


eNGLOBE

Infiltration Test: BH1 - 9541 Weston Rd
(Based on data from Datalogger - Falling Head Method)

Project No.:	2112512.000		
Date:	26-May-22	H =	Initial Water Head prior to test
Conducted by:	Alfred Iskander	Ho =	Water Head at time = 0
Processed by:	Alfred Iskander	h =	Water Head/Level at time t
Well Number:	BH1		
Screen Depth (mbgs):	2.5m - 4.0m		
Well Elevation:	225.600	L =	150 cm
Well Diameter:	2.0" ID	R =	10.48 cm
Static Water Level (mbgs):	3.99	r =	2.54 cm
Initial Datalogger Reading (H)	3.98	To =	850 sec
		$K = r^2 \ln(L/R) / (2LT_o) = $ <div style="border: 1px solid black; padding: 2px;">6.7E-07</div> m/s	

Slug Test Result (Hvorslev Method)
Based on Datalogger Readings



HYDRAULIC CONDUCTIVITY ESTIMATES AND INFILTRATION RATES

Vaughan Fire Station 7-12

Location	Test ID	Test Used	Depth (m)	Soil Description	K (cm/s)	LN(I)	Infiltration Rate (mm/hour)	Design Infiltration Rate (Safety factor of 2.5)
BH 15	Test 1	Guelph Permeameter	1	Silty Clay some sand	4.7E-05	3.6	37.9	15.2
BH1	Test 1	Datalogger	1	Silt	6.7E-05	3.7	41.6	16.6

For Guelph Permeameter:

$y=6E-11(X^{3.7363})$

$LN(K)=LN6-11LN10+3.7363LN(I)$

$K = \text{cm/s}$

$I = \text{mm/hour}$

$LN(I)=(LN(K)+11LN(10)-LN(6))/3.7363$

Note regarding safety factors as referenced from *Toronto and Region Conservation Authority (2012) Stormwater Management Criteria, Appendix C: Water Balance and Recharge*:

1. The measured infiltration rate (in mm/hour) at the proposed bottom elevation of the infiltration gallery must be divided by a safety factor selected from Table C 3 to calculate the design infiltration rate. To select a safety correction factor from Table C 3, calculate the ratio of the mean (geometric) measured infiltration rate at the proposed bottom elevation of the infiltration gallery to the rate in the least permeable
2. Where the soil horizon is continuous within 1.5 m below the proposed bottom elevation of the gallery, the mean infiltration rate measured at the bottom of the gallery should be divided by a safety correction factor of 2.5 to calculate the design infiltration rate.



englobecorp.com



January 11, 2022

Ms. Adriana Tantalo
Project Manager
City of Vaughan
2141 Major Mackenzie Dr.
Vaughan (ON) L6A 1T1

Subject: Sampling and Analysis Plan, Vaughan Fire Station 7-12
9541 Weston Road, Vaughan, Ontario
Project Reference: 02112512.000
01-02112512-0100-EN-002-00

1 INTRODUCTION

Englobe Corp. (Englobe) was retained by the City of Vaughan (hereinafter referred to as the “Client”) to complete a Sampling and Analysis Plan for the property located at 9541 Weston Road in Vaughan, Ontario (hereinafter referred to as “Site” or “Project Area”). The Site is located in the southeastern quadrant of the intersection of Weston Road and Ashberry Boulevard in the City of Vaughan, Ontario. The Project Area is approximately 4,092 m² and is irregular in shape. The location of the Site is shown in the Site Location Plan, Figure 1, Appendix A.

Englobe understands that the Project Area is proposed to redevelop from a parking lot to a fire station, including a two-storey building and remove the asphalt pavement and underlying material that may be required as part of the project. Based on the information provided by the Client, it is anticipated that approximately 4,000 m³ of excavated soil or excess soil may be removed during the fire station development.

Englobe previously completed an Assessment of Past Uses for the Project Area, which should be read in conjunction with this Sampling and Analysis Plan. Furthermore, the work described herein is to be completed in general accordance with the Ontario Regulation (O. Reg.) 406/19, On-Site and Excess Soil Management.

The purpose of the Sampling and Analysis Plan is to develop a field program to investigate any Areas of Potential Environmental Concern (APECs) within the Project Area as identified from the Assessment of Past Uses, which may have affected the soil quality within the areas where soil excavation is required as part of the proposed development activities.

2 ASSESSMENT OF PAST USES

Based on the information obtained and reviewed as part of the Assessment of Past Uses, current and/or historical Potentially Contaminating Activities (PCAs) associated with the Project Area and surrounding properties within the Study Area were identified. A summary of the PCAs and associated APECs identified at the Site is presented in Table 1.

Table 1: Areas of Potential Environmental Concern

APEC	Location of APEC	Potentially Contaminating Activity (PCA)	Location of PCA	Contaminants of Potential Concern*	Media Potentially Impacted
APEC 1	Entire Site	Historical use of fill materials PCA# 30 - Importation of Fill Materials of Unknown Quality	On-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR and pH, PHCs, BTEX, VOCs, PAHs, PCBs, OCPs	Soil
APEC 2	The north portion of the Site	Registered as a waste generator of photo processing wastes and inorganic laboratory chemicals PCA# Undefined PCA No.	Off-site	Metals As, Sb, Se, Cr (VI), Hg, B-HWS, CN, VOCs	Soil

Notes:*

- PHCs - Petroleum Hydrocarbon Fractions F1 to F4
- BTEX - Benzene, Toluene, Ethylbenzene and Xylenes
- VOCs - Volatile Organic Compounds
- PAHs - Polycyclic Aromatic Hydrocarbons
- PCBs - Polychlorinated Biphenyl
- OCPs - Organochlorine Pesticides
- B-HWS - Hot Water Soluble Boron
- EC - Electrical Conductivity
- SAR - Sodium Absorption Ratio

3 PREVIOUS SAMPLING

No previous sampling program was conducted by Englobe on this Project Area.

4 SAMPLING AND ANALYSIS PLAN

Based on the information provided by the Client, the total estimated quantity of soil to be excavated/managed during the proposed Fire Station development activities is approximately 4,000 m³. According to the approximate volume of excess soil anticipated to be generated, the minimum number of soil samples by in situ sampling methodology would be twenty-two (22) soil samples (including 2 field duplicates) to meet the specifications outlined in the O. Reg. 406/19. The number of soil samples will be adjusted based on the site condition and findings of field work.

Therefore, the number of borehole locations, soil samples, and analytical parameters proposed for this Sampling and Analysis Plan are as follows:

- Fifteen (15) boreholes will be advanced, which seven (7) of them will be advanced to the depth of approximately 4.0 m and eight (8) to the depth of approximately 8.0 m below ground surface (bgs) at the Project Area;
- Twenty-two (22) soil samples (including two duplicates) for Metals and Inorganics and Petroleum Hydrocarbons (PHCs), including Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX);
- Seven (7) soil samples (including one duplicate) for Polycyclic Aromatic Hydrocarbons (PAHs);
- Five (5) soil samples (including one duplicate) for Volatile Organic Compounds (VOCs);
- Three (3) soil samples (including one duplicate) for Polychlorinated Biphenyl (PCBs);
- Three (3) soil samples (including one duplicate) for Organochlorine Pesticides (OCPs);
- Five (5) representative soil samples for analysis of modified Synthetic Precipitation Leaching Procedure (mSPLP) parameters for reuse purposes, including five samples (5) for metals; two (2) samples for VOCs, one (1) sample for semi-VOCs, and one (1) sample for OCPs analysis;
- Five (5) representative soil samples of Toxicity Characteristic Leaching Procedure (TCLP) parameters for disposal to the landfill facility.

The soil samples would be collected using a solid stem drill rig operated by an MECP-licensed drilling contractor in accordance with O. Reg. 903. Public and private utility locates would be completed before the drilling activities. The proposed borehole locations are presented in Appendix A, Borehole Location Plan, Figure 2.

Soil samples will be collected for field screening purposes to measure total organic vapours (TOVs) using a hand-held gas meter (i.e. RKL Eagle). Soil samples will be selected from each borehole based on the field screening results, visual/olfactory evidence of impacts, the APECs and contaminants of potential concern (COPCs) identified at the Project Area and submitted for laboratory analyses with Chain of Custody protocols. The details corresponding to sampling location, frequency, and analytical parameters are outlined in the following table.

Table 2: Sampling and Analysis Plan

Borehole ID	Associated APEC	Location	Total Borehole Depth	Soil Sample Collection Intervals	Parameters for Sample Submission*
BH-1	APEC 1 and APEC 2	Northwest portion of the Site	4.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	PHCs, BTEX, VOCs, PAHs, Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR, mSPLP, and TCLP
BH-2	APEC 1 and APEC 2	Central north portion of the Site	4.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	PHCs, BTEX, VOCs, PAHs, EC and SAR

Borehole ID	Associated APEC	Location	Total Borehole Depth	Soil Sample Collection Intervals	Parameters for Sample Submission*
BH-3	APEC 1 and APEC 2	Northeast portion of the Site	4.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	PHCs, BTEX, PCBs, Metals, mSPLP, TCLP, pH, EC and SAR
BH-4	APEC 1	Central west portion of the Site	8.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	PHCs, BTEX, PAHs, Metals, EC and SAR,
BH-5	APEC 1	Central east portion of the Site	8.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	PHCs, BTEX, Metals, OCPs
BH-6	APEC 1	Central east portion of the Site	8.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	PHCs, BTEX, PAHs, Metals, EC and SAR
BH-7	APEC 1	Southwest portion of the Site	4.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	PHCs, BTEX, PAHs, Metals, EC and SAR,
BH-8	APEC 1	Central portion of the Site	8.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	PHCs, BTEX, VOCs, PAHs, Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR, mSPLP, and TCLP
BH-9	APEC 1	Southwest portion of the Site	8.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	PHCs, BTEX, VOCs, PAHs, PCBs, Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR, and mSPLP
BH-10	APEC 1	Southeast portion of the Site	8.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	PHCs, BTEX, Metals, EC and SAR, mSPLP
BH-11	APEC 1	Southcentral portion of the Site	8.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	PHCs, BTEX, VOCs, Metals, EC and SAR,
BH-12	APEC 1	Southeast portion of the Site	8.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	PHCs, BTEX, VOCs, PAHs, Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR, and TCLP
BH-13	APEC 1	Southeast side out of the Site	4.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	PHCs, BTEX, Metals, EC and SAR, pH

Borehole ID	Associated APEC	Location	Total Borehole Depth	Soil Sample Collection Intervals	Parameters for Sample Submission*
BH-15	APEC 1	Northeast side out of the SIte	4.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR, and TCLP
BH-16	APEC 1	Northeast side out of the SIte	4.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	PHCs, BTEX, VOCs, Metals, EC and SAR, mSPLP, and OCPs

Notes: * Selected sample is to be submitted for laboratory analysis
 PHCs - Petroleum Hydrocarbon Fractions F1 to F4
 BTEX - Benzene, Toluene, Ethylbenzene and Xylenes
 VOCs - Volatile Organic Compounds
 PAHs - Polycyclic Aromatic Hydrocarbons
 PCBs - Polychlorinated Biphenyl
 OCPs - Organochlorine Pesticides
 B-HWS - Hot Water Soluble Boron
 EC - Electrical Conductivity
 SAR - Sodium Absorption Ratio
 mSPLP - modified Synthetic Precipitation Leaching Procedure
 TCLP - Toxicity Characteristic Leaching Procedure

Bulk Soil Sample Selection and Submission: Based on the soil sample field screening results, apparent worst-case soil samples will be selected and reviewed with the Qualified Person/Project Manager prior to submitting to the contracted external laboratory (Eurofins Environment Testing Canada Inc.) for chemical analysis as listed in Table 2 above.

mSPLP Analysis: Five (5) representative or composite soil samples will be submitted to the laboratory for mSPLP analysis for the following parameters to determine the potential reuse of the excess soil on-site and/or off-site.

- mSPLP Metals and Hydride-forming metals
- mSPLP Volatile Organic Compounds (VOCs)
- mSPLP Semi-Volatile Organic Compounds (SVOCs)
- mSPLP OC Pesticides

TCLP Analyses: Five (5) worst-case or composite soil samples will be submitted to the laboratory for TCLP analysis for the following parameters to determine the off-site disposal of investigation-derived wastes and/or contaminated excess soil.

- TCLP Metals and Hydride-forming metals
- TCLP Volatile Organic Compounds (VOCs)
- TCLP Benzo(a)pyrene
- TCLP Ignitibility

Waste Management: soil characterization investigation-derived wastes (soil cuttings, purged groundwater) will be stored at the Site in sealed, labelled drums in a location agreed upon by the Client for future off-site disposal.

Soil QA/QC: The laboratory program includes the submission of Six (6) duplicate soil samples for analyses of metals and hydride-forming metals, EC and SAR, PAHs, VOCs, and PHCs F1 to F4, including BTEX. Soil samples are to be homogenized prior to collection in laboratory-supplied sample containers to minimize variance in soil heterogeneity.

It should be noted that soil samples will be collected from the select boreholes with the APECs identified at the Site. This Sampling and Analysis Plan is prepared to meet the requirements of O. Reg. 406/19, On-Site and Excess Soil Management.

We thank you for the opportunity to be of continuous service on this project and trust that the above Sampling and Analysis Plan meets your current requirements.

Yours very truly,
Englobe Corp.



Feng Li, M.Sc., P.Eng.
Project Engineer
Environment (GTA and East)



Sam Voore, M.Eng., P.Eng., QP_{ESA}
Director of Operations
Environment GTA/East - ON

Appendix A

Figures

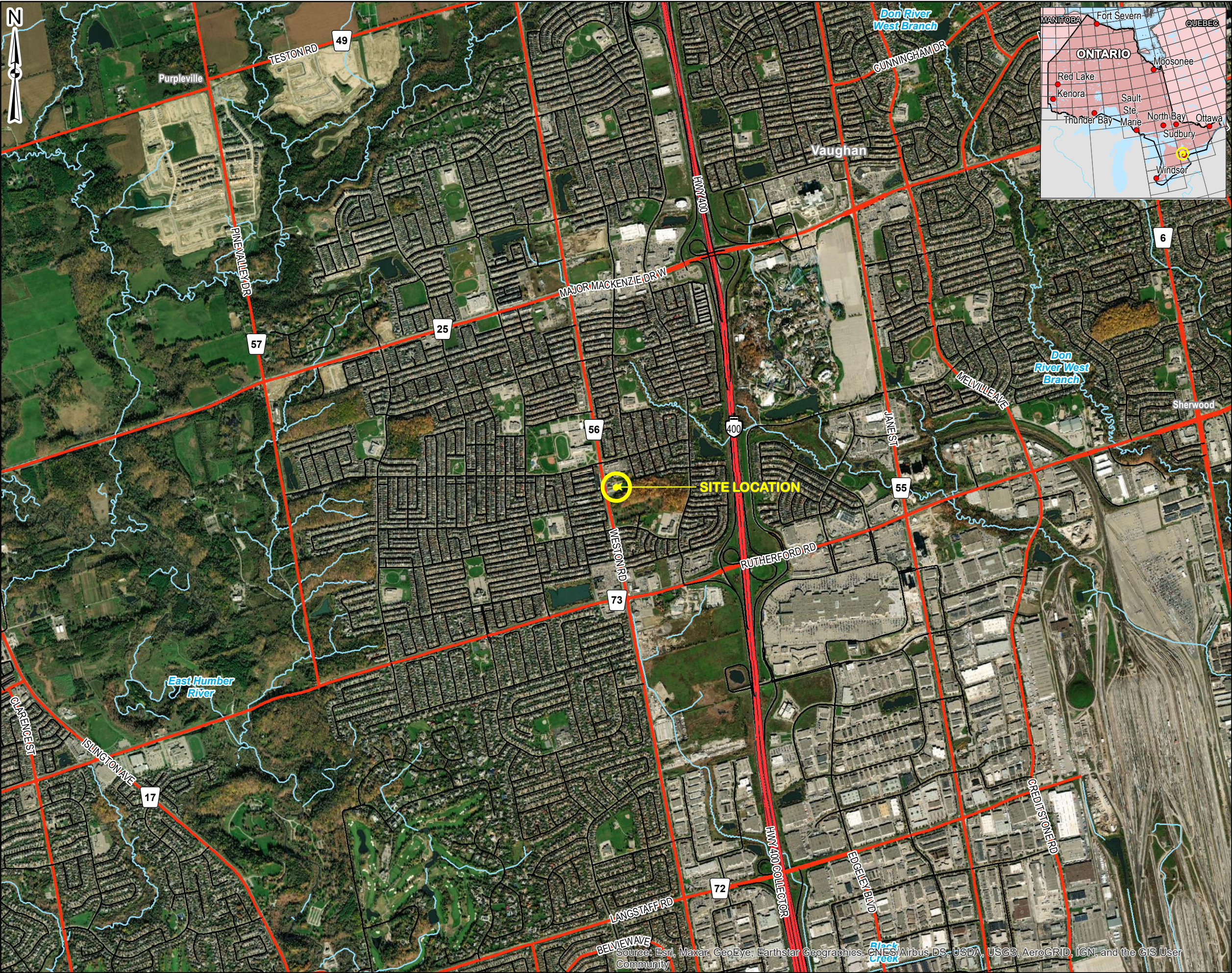
Figure 1: Site Location Plan

Figure 2: Borehole Location Plan



eNGLOBE

APPROX. DATE OF IMAGERY: 10/15/2019

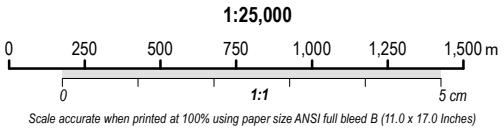


Notes

- 1. This drawing shall be read in conjunction with the associated technical report.
- 2. Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

Legend

- Site Location
- Expressway / Highway
- Major Road
- Minor Road
- Railway
- Watercourse



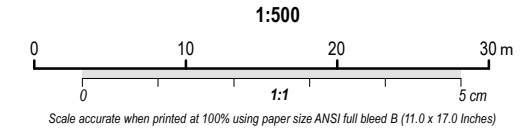
A	2022-04-05	-	02112512
Revision	Date	Issue	GIS #
Client			
City of Vaughan			
Site			
9541 Weston Road, Vaughan, Ontario			
Report Title			
Sampling and Analysis Plan			
Drawing Title			
Site Location Plan			
Designed By	S.W.	Scale	1:25,000
Drawn By	C.M.	Date	April, 2022
Approved By	W.J.	Project No.	02112512.000
Figure No.	1		

Drawing: Figure 01 - Site Location Folder: A:\GIS\02112512 Weston Road\Map Documents\SCR\Figure 01 - Site Location.mxd Tuesday, April 5, 2022 @ Time: 2:30:35 PM by Christopher Mitchell



- Notes**
- 1. This drawing shall be read in conjunction with the associated technical report.
 - 2. Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

- Legend**
- Borehole
 - Site Boundary



A	2022-04-05	-	02112512
Revision	Date	Issue	GIS #

Client
City of Vaughan

Site
9541 Weston Road, Vaughan, Ontario

Report Title
Sampling and Analysis Plan

Drawing Title
Borehole Location Plan

Designed By	S.W.	Scale	1:500
Drawn By	C.M.	Date	April, 2022
Approved By	W.J.	Project No.	02112512.000

Figure No.
2

Soil Characterization

9541 Weston Road, Vaughan, Ontario

City of Vaughan

Final Report

Reference No.02112512.000

June 22, 2022

01-02112512.000-0100-EN-003-00



eNGLOBE

City of Vaughan
Client Reference No. 02112512.000

Prepared by:



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City of Vaughan

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-----------------	--------------------------------------

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Revisions and publications log

REVISION No.	DATE	DESCRIPTION
0A	April 20, 2022	Draft report published for comments
00	June 22, 2022	Final report published for the Client

Distribution

1 PDF copy	Ms. Adriana Tantalo
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Summary

Englobe Corp. (Englobe) was retained by the City of Vaughan (hereinafter referred to as the “Client”) to complete a Soil Characterization Report for the property located at 9541 Weston Road in Vaughan, Ontario (hereinafter referred to as the “Project Area” or “Site”). The location of the Project Area is shown on the Site Location Plan, Figure 1 in Appendix A.

The Site is located on the east side of Weston Road, approximately 200 m south of the intersection of Weston Road and Ashberry Boulevard in the City of Vaughan, Ontario. It is an irregularly shaped parcel of land with approximately 4,092 m² in area, currently comprised of an asphalt paved parking lot and grassed area. The Site is surrounded by residential, commercial community and institutional buildings to the north and west, and woodlands to the south and east. Weston Road runs from north to south at west adjacent to the Site. The Site and surrounding properties are presented on the Site and Surrounding Land Use Plan, Figure 2 in Appendix A.

Based on the information provided by the Client, the total estimated quantity of soil to be excavated/managed at the Site during the proposed construction of the new Fire Hall is approximately 4,000 m³. Englobe understands that this Soil Characterization Report is being completed for the Client for excess soil management purposes prior to the proposed Fire Station development. The work described herein was completed in general accordance with the Ontario Regulation (O. Reg.) 406/19, On-Site and Excess Soil Management. Furthermore, Englobe understands that filing a Record of Site Condition (RSC) for the Site with the Ontario Ministry of the Environment, Conservation and Parks (MECP) is not required at this time.

The purpose of this Soil Characterization Report is to present the findings of the Field Program completed to investigate the Areas of Potential Environmental Concern (APECs) resulting from the Potentially Contaminating Activities (PCAs) associated with the Project Area and surrounding properties within the study area, as identified in the Assessment of Past Uses, which may have affected the soil quality within the areas where soil excavation is required as part of the construction activities on the Project Area. This Soil Characterization Report has been completed to document the field activities and methods used, review and evaluate the field data and analytical results generated, and to identify and categorize areas (or zones) of soils that are appropriate for reuse at the Site, and which would be required for off-site reuse and/or disposal.

The Soil Characterization Field Program consisted of advancement of fifteen (15) boreholes (BH-1 to BH-13, BH-15 and BH-16) to a drilling depth of approximately 4.4 m or 8.2 m below ground surface (bgs) at the Project Area. The boreholes were drilled between January 13, 14 and January 21, 2022, using continuous flight solid stem auger equipment supplied by Drilltech Drilling Limited, operated under the continuous supervision of an Englobe field technician. Overall, the following soil samples were collected and submitted for laboratory analyses during the Englobe 2022 Field Program:

- Fifteen (15) boreholes were advanced at the Site;
- Forty-eight (48) soil samples (including six duplicates) for analysis for one or more of PHCs (fractions F1 to F4), BTEX, metals/inorganics including EC and SAR, VOCs, PAHs, PCBs, and/or OCPs;

- Six (6) representative soil samples for analysis of modified Synthetic Precipitation Leaching Procedure (mSPLP) parameters for reuse purposes, for one or more of metals, VOCs, semi-VOCs, and OCPs analysis; and
- Five (5) representative or composite soil samples for analysis of Toxicity Characteristic Leaching Procedure (TCLP) parameters for disposal to the landfill facility.

The soil sample analytical results have been assessed using the MECP Excess Soil Standards:

- Table 1: Full Depth Background Site Condition Standards (SCS) for Residential/Parkland/Institutional (RPI) and Industrial/Commercial/Community (ICC) property use, presented in O. Reg. 406/19 (Table 1 Standards);
- Table 2.1: Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for ICC and RPI property use, presented in O. Reg. 406/19 (Table 2.1 Standards); and
- Table 3.1: Full Depth Excess Soil Quality Standards in a Non-Potable Ground Water Condition for ICC and RPI property use, presented in O. Reg. 406/19 (Table 3.1 Standards).

The soil analytical results for analyses of mSPLP were compared to the Leachate Screening Levels,

- Table 1: Leachate Screening Levels for Excess Soil Reuse for RPI and ICC property use (Table 1 Leachate Screening Levels);
- Table 2.1: Leachate Screening Levels for Full Depth Excess Soil in a Potable Groundwater Conditions for RPI and ICC property use (Table 2.1 Leachate Screening Levels); and
- Table 3.1: Leachate Screening Levels for Full Depth Excess Soil in a Non-Potable Groundwater Conditions for RPI and ICC property use (Table 3.1 Leachate Screening Levels).

The analytical results for the samples submitted for TCLP were compared to the applicable Standards in Schedule 4 Leachate Quality Criteria presented in O. Reg. 558/00.

Based on a review of the laboratory analytical results, the following exceedances were identified in the soil samples analyzed:

- EC was measured at concentrations above Table 1, Table 2.1 and Table 3.1 Standard for RPI and ICC Property use in soil samples BH 1-1, BH 1-2, BH 2-1, BH 3-1, BH 4-1, BH 5-1, BH 6-1, BH 7-1, BH 8-1, BH 8-2, BH 9-1, BH 9-2, BH 10-1, BH 11-1, BH 12-1, and BH 12-2.
- SAR was measured at concentrations above Table 1, Table 2.1 and Table 3.1 Standard for RPI and/or ICC Property use in soil samples BH 1-1, BH 1-2, BH 2-1, BH 3-1, BH 4-1, BH 5-1, BH 6-1, BH 7-1, BH 8-1, BH 9-1, BH 9-2, BH 10-1, BH 11-1, BH 12-1, BH 12-2 and BH15-2.
- Methyl ethyl ketone (MEK) was measured at concentrations above Table 1 and Table 2.1 Standard for RPI and ICC Property use in soil samples BH1-5, BH 2-6, BH 8-7, BH 9-3, BH 11-7, BH 12-8, BH 16-6 and Dup-4 (duplicate sample of BH 2-6).
- All other measured parameters were not detected above the laboratory method detection limits or were measured at concentrations less than the applicable Table 1, 2.1 and 3.1 RPI and ICC Standards in the soil samples analyzed.

Based on a review of the laboratory mSPLP analytical results, the following exceedances were identified in the soil samples analyzed:

- Copper (Cu) was measured at a concentration above Table 2.1 and 3.1 Leachate Screening Levels for RPI and ICC property use in soil sample BH 10-1.
- All other measured parameters were not detected above the laboratory method detection limits or were measured at concentrations less than the applicable Table 1, 2.1 and 3.1 RPI and ICC Leachate Screening Levels in the soil samples analyzed.

Based on a review of the laboratory analytical results, all analyzed parameters were reported below the Schedule 4 Leachate Quality Criteria in O. Reg. 558/00 in the soil samples analyzed.

According to a review of the laboratory QA/QC sample results, calculated relative percent difference (RPD) values didn't exceed the alert limits, and were deemed to meet the objectives of this soil characterization investigation. Therefore, the quality of analytical data is reliable.

Based on the findings of this Soil Characterization Report, the Client should be aware that Methyl ethyl ketone (MEK) was measured above the MECP Table 1, 2.1 Standards for RPI and/or ICC property use at some borehole locations. Therefore, excess soil with those exceedances in the vicinity of these boreholes should be shipped offsite and disposed of an appropriate soil receiving site or landfill facilities.

EC and/or SAR were detected in all borehole locations above Table 2.1, 3.1 RPI and/or ICC Standards. Since the EC and SAR exceedances are likely related to the application of de-icing and salting substances in the Project Area, in accordance with section 49.1, paragraph 1 of O. Reg. 153/04, as amended, the Standards are deemed to be met. The excess soil with EC and/or SAR exceedances generated from the Project Area may only be reused onsite or reused at a receiving facility that would accept soil containing EC and SAR.

The Client should be also aware that some metals were measured above Table 1, 2.1 and/or Table 3.1 Leachate Screening Levels for RPI and ICC property use at BH10. Therefore, excess soil with the exceedance in the vicinity of BH10 should be disposed of at landfill facilities.

This Soil Characterization Report is based on the field observations made by Englobe and soil samples collected from the investigated locations and submitted for selected chemical analysis. The environmental quality of the soils may vary beyond and between the sampling locations. Furthermore, in the event, during the construction activities, if soils are appeared to be environmentally impacted (i.e., staining, odours and/or debris, etc.), such soils should be segregated into separate stockpiles (plastic sheeting placed below and above the stockpile), inspected, and analyzed to determine appropriate handling and/or disposal requirements at that time.

Property and Confidentiality

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If tests have been carried out, the results of these tests are valid only for the sample described in this report.

Englobe Corp.’s subcontractors who have carried out on-site or laboratory work are duly assessed according to the purchase procedure of our quality system. For further information, please contact your project manager.”

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1 Introduction

Englobe Corp. (Englobe) was retained by the City of Vaughan (hereinafter referred to as the “Client”) to complete a Soil Characterization Report for the property located at 9541 Weston Road in Vaughan, Ontario (hereinafter referred to as the “Project Area” or “Site”). The location of the Project Area is shown on the Site Location Plan, Figure 1 in Appendix A.

The Site is located on the east side of Weston Road, approximately 200 m south of the intersection of Weston Road and Ashberry Boulevard in the City of Vaughan, Ontario. It is an irregularly shaped parcel of land with approximately 4,092 m² in area, currently comprised of an asphalt paved parking lot and grassed area. The Site is surrounded by residential, commercial community and institutional buildings to the north and west, and woodlands to the south and east. Weston Road is adjacent to the west of the Site. The Site and surrounding properties are presented on the Site and Surrounding Land Use Plan, Figure 2 in Appendix A.

Based on the information provided by the Client, the total estimated quantity of soil to be excavated/managed at the Site during the proposed construction of the new Fire Hall is approximately 4,000 m³. Englobe understands that this Soil Characterization Report is being completed for the Client for excess soil management purposes prior to the proposed Fire Station development. The work described herein was completed in general accordance with the Ontario Regulation (O. Reg.) 406/19, On-Site and Excess Soil Management. Furthermore, Englobe understands that filing a Record of Site Condition (RSC) for the Site with the Ontario Ministry of the Environment, Conservation and Parks (MECP) is not required at this time.

Englobe previously completed an Assessment of Past Uses and a Sampling and Analysis Plan for the Site, which should be read in conjunction with this Soil Characterization Report.

This Soil Characterization Report aims to present the findings of the Field Program, which were completed to investigate the Areas of Potential Environmental Concern (APECs). APECs are resulting from the Potentially Contaminating Activities (PCAs) associated with the Project Area and surrounding properties within the study area, as identified in the Assessment of Past Uses, which may affect the soil quality within the areas where soil excavation is required as part of the construction activities on the Project Area. This Soil Characterization Report has been completed to document the field activities and methods used, review and evaluate the field data and analytical results generated, and to identify and categorize areas (or zones) of soils that are appropriate for reuse at the Site, and which would be required for off-site reuse and/or disposal.

The work described herein was carried out according to Englobe’s scope of work and cost estimation in correspondence with the Client and authorized via email on December 16, 2021. This report was developed and published in April of 2022.

2 Background Information

2.1 Englobe: Geotechnical Investigation Report

Englobe completed a Geotechnical Investigation Report for the Project in March 2022, and the findings are summarized in a document titled “Vaughan Fire Station 7-12, 9541 Weston Road, Woodbridge, Ontario”, dated March 30, 2022. The geotechnical investigation aimed to determine the subsurface conditions at the borehole locations and provide engineering recommendations for the development and relative construction of the proposed Fire Station.

Fifteen (15) boreholes (BH1 to BH13, BH15 and BH16) were advanced at the Project Area; seven (7) of them were advanced to the depth of approximately 4.4 m, and eight (8) boreholes to the depth of 8.2 m bgs. The boreholes were drilled on January 13, 14 and January 21, 2022, using continuous flight solid stem auger equipment, supplied by Drilltech Drilling Limited, operated under the continuous supervision of an Englobe field technician.

In general, the soils encountered underneath the Asphalt concrete and/or top soil, overlaying sand and gravel as granular base/subbase, followed by native silty sand and clayey silt.

The Geotechnical investigation recommendation can be referred to the Englobe Geotechnical Investigation report.

2.2 Englobe: Assessment of Past Uses

Englobe completed an Assessment of Past Uses for the Project Area. The findings are summarized in a document titled “Assessment of Past Uses, 9541 Weston Road, Vaughan, Ontario, Englobe File: 021122512.000”, dated April 6, 2022.

Based on the information obtained and reviewed as part of the Assessment of Past Uses, current and/or historic PCAs associated with the Project Area and surrounding properties were identified, resulting in APECs at the Project Area. A summary of the PCAs and associated APECs identified at the Project Area are summarized as follows in Table 1. The PCAs and APECs are identified on the figure of Potentially Contaminating Activities (PCAs) and Areas of Potential Environmental Concern (APECs) in Appendix A, Figure 3.

Table 1: Areas of Potential Environmental Concern

APEC	Location of APEC	Potentially Contaminating Activity	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC 1	Entire Site	Historical use of fill materials # 30 - Importation of Fill Materials of Unknown Quality	On-site	Metals As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR and pH, PHCs, BTEX, VOCs, PAHs, PCBs, OCPs	Soil

APEC	Location of APEC	Potentially Contaminating Activity	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC 2	The north portion of the Site	Registered as a waste generator of photo processing wastes and inorganic laboratory chemicals # Undefined PCA No.	Off-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, and VOCs	Soil

Notes:*

PHCs - Petroleum Hydrocarbon Fractions F1 to F4
 BTEX - Benzene, Toluene, Ethylbenzene and Xylenes
 VOCs - Volatile Organic Compounds
 PAHs - Polycyclic Aromatic Hydrocarbons
 PCBs- Polychlorinated Biphenyl
 OCPs - Organochlorine Pesticides
 B-HWS-Hot Water Soluble Boron
 EC-Electrical Conductivity
 SAR-Sodium Absorption Ratio

2.3 Englobe: Sampling and Analysis Plan

Englobe completed a Sampling and Analysis Plan for the Project Area that is summarized in a document titled “Sampling and Analysis Plan, 9541 Weston Road, Vaughan, Ontario, Englobe File: 021122512.000”, dated January 11, 2022.

The Sampling and Analysis Plan outlines the Field Program developed to investigate the soil quality with respect to the APECs identified at the Project Area and corresponding PCAs. Sampling locations are across the parking lot, located at 9541 Weston Road, Vaughan, Ontario, from BH-1 on the northwest to BH-16 on the northeast, sequentially. A summary of the sampling frequency and associated analytical parameters included in the Sampling and Analysis Plan are summarized in Table 2.

Table 2: Sampling and Analysis Plan

Borehole ID	Associated APEC	Location	Total Borehole Depth	Soil Sample Collection Intervals	Parameters for Sample Submission*
BH-1	APEC 1 and APEC 2	Northwest portion of the Site	4.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	PHCs, BTEX, VOCs, PAHs, Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR, mSPLP, and TCLP
BH-2	APEC 1 and APEC 2	Central north portion of the Site	4.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	PHCs, BTEX, VOCs, PAHs, EC and SAR
BH-3	APEC 1 and APEC 2	Northeast portion of the Site	4.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	PHCs, BTEX, PCBs, Metals, mSPLP, TCLP, pH, EC and SAR
BH-4	APEC 1	Central west portion of the Site	8.0 m bgs	Topsoil and every 0.75 m interval in the underlying native material	PHCs, BTEX, PAHs, Metals, EC and SAR,

Borehole ID	Associated APEC	Location	Total Borehole Depth	Soil Sample Collection Intervals	Parameters for Sample Submission*
BH-5	APEC 1	Central east portion of the Site	8.0 m bgs	Topsoil and every 0.7 m interval in the underlying native material	PHCs, BTEX, Metals, OCPs
BH-6	APEC 1	Central east portion of the Site	8.0 m bgs	Topsoil and every 0.7 m interval in the underlying native material	PHCs, BTEX, PAHs, Metals, EC and SAR
BH-7	APEC 1	Southwest portion of the Site	4.0 m bgs	Topsoil and every 0.7 m interval in the underlying native material	PHCs, BTEX, PAHs, Metals, EC and SAR,
BH-8	APEC 1	Central portion of the Site	8.0 m bgs	Topsoil and every 0.7 m interval in the underlying native material	PHCs, BTEX, VOCs, PAHs, Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR, mSPLP, and TCLP
BH-9	APEC 1	Southwest portion of the Site	8.0 m bgs	Topsoil and every 0.7 m interval in the underlying native material	PHCs, BTEX, VOCs, PAHs, PCBs, Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR, and mSPLP
BH-10	APEC 1	Southeast portion of the Site	8.0 m bgs	Topsoil and every 0.7 m interval in the underlying native material	PHCs, BTEX, Metals, EC and SAR, mSPLP
BH-11	APEC 1	Southcentral portion of the Site	8.0 m bgs	Topsoil and every 0.7 m interval in the underlying native material	PHCs, BTEX, VOCs, Metals, EC and SAR,
BH-12	APEC 1	Southeast portion of the Site	8.0 m bgs	Topsoil and every 0.7 m interval in the underlying native material	PHCs, BTEX, VOCs, PAHs, Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR, and TCLP
BH-13	APEC 1	Southeast side out of the Site	4.0 m bgs	Topsoil and every 0.7 m interval in the underlying native material	PHCs, BTEX, Metals, EC and SAR, pH
BH-15	APEC 1	Northeast side out of the Site	4.0 m bgs	Topsoil and every 0.7 m interval in the underlying native material	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR, and TCLP
BH-16	APEC 1	Northeast side out of the Site	4.0 m bgs	Topsoil and every 0.7 m interval in the underlying native material	PHCs, BTEX, VOCs, Metals, EC and SAR, mSPLP, and OCPs

Notes: * Selected sample is to be submitted for laboratory analysis
 PHCs - Petroleum Hydrocarbon Fractions F1 to F4
 BTEX - Benzene, Toluene, Ethylbenzene and Xylenes
 VOCs - Volatile Organic Compounds
 PAHs - Polycyclic Aromatic Hydrocarbons
 PCBs - Polychlorinated Biphenyl
 OCPs - Organochlorine Pesticides
 B-HWS - Hot Water Soluble Boron
 EC - Electrical Conductivity
 SAR - Sodium Absorption Ratio
 mSPLP - modified Synthetic Precipitation Leaching Procedure
 TCLP - Toxicity Characteristic Leaching Procedure

3 Scope of Work

3.1 Overview of the Field Program

The scope of work for the Field Program was developed to characterize the environmental quality of soil at the Project Area and consisted of the following tasks:

- Prepare a Site-specific health and safety plan;
- Coordinate the mobilization and demobilization of all personnel and equipment required to complete the work;
- Obtain public and private utility locates;
- Advance fifteen (15) boreholes, seven (7) of which to a depth of 4 m bgs, and eight (8) of which to a depth of 8 m bgs;
- Submit selected soil samples from each borehole to an accredited laboratory for chemical analysis for one or more following parameters: PHCs (fractions F1 to F4), BTEX, VOCs, metals/inorganics, EC, SAR, PAHs, PCBs, OCPs, mSPLP, and/or TCLP;
- Prepare and submit field duplicate soil samples for quality assurance/quality control (QA/QC) purposes. Duplicate samples submitted at a frequency of one (1) for every ten (10) samples for each parameter analyzed;
- Evaluate and interpret the field data and analytical results; and
- Prepare a soil characterization report documenting the field methodologies and the findings of the Field Program.

3.2 Medium Investigated

Medium investigated as part of this Soil Characterization Report consisted of soil collected during the Field Program completed by Englobe in January 2022. The numbers of soil samples collected and chemical parameters analyzed in this soil characterization investigation met the requirements as outlined in the O. Reg. 406/19.

The following soil samples were collected and submitted for laboratory analyses during the Englobe 2022 Field Program:

- Fifteen (15) boreholes were advanced at the Site;
- Four-eight (48) soil samples (including six duplicates) for analysis for one or more of PHCs (fractions F1 to F4), BTEX, VOCs, metals/inorganics including EC and SAR, PAHs, PCBs and/or OCPs;
- Six (6) soil samples for analysis of mSPLP parameters for reuse purposes; and
- Five (5) soil samples to analyze TCLP parameters for disposal to the landfill facility.

3.3 Deviations from the Sampling and Analysis Plan

No significant deviations from the sampling and analysis plan were encountered that would impact the proposed soil characterization investigation at the Site.

3.4 Physical Impediments

No physical impediments were encountered during the drilling activities for this soil characterization project.

4 Methodology

4.1 Borehole Drilling

Following clearance of public utility locates, a total of fifteen (15) boreholes (BH-1 to BH-13, BH-15 and BH-16) were advanced at the Project Area on January 13, January 14 and January 21, 2022. The boreholes were advanced to approximate depths of 4.4 and 8.2 m bgs. The approximate borehole locations are shown in the Borehole Location Plan, Figure 4 in Appendix A.

The boreholes were advanced in accordance with O. Reg. 903 using a solid stem auger supplied and operated by an MECP-licensed drilling contractor, Drilltech Drilling. Subsoil samples were recovered at regular intervals of depth using a 50 mm O.D. split-barrel sampler driven into the subsoil in accordance with the Standard Penetration Test (SPT) procedure (ASTM D1586). The recovered subsoil samples were visually examined in the field and then preserved and transported to the Englobe Toronto laboratory for further examination and testing by an Englobe project engineer.

The Field Program was overseen by a member of Englobe's field staff, who documented the drilling and sampling procedures, logged stratigraphic details of recovered soil cores, and collected samples from recovered soil cores for laboratory chemical analyses.

4.2 Soil Screening and Sampling

During the drilling activities, soil cores were recovered from the boreholes at discontinuous sampling 0.7 m intervals, with samples being retrieved from 0.6 m lengths per interval using split-spoon samplers. Augers and split spoon sampler were cleaned with soap and distilled water between each use to prevent cross-contamination between samples.

Soil samples selected for laboratory analysis were collected into pre-cleaned, laboratory-supplied containers provided with necessary preservatives and placed in an ice-chilled cooler to minimize sample degradation prior to and during transportation to the laboratory. One COC relating to repeat mSPLP for metals analysis stated "no ice". Sample containers were labelled with a unique sample number, project reference, date, and sampling time.

Soil samples were selected for laboratory analysis based on olfactory evidence of odours, physical evidence of staining or deleterious matter, and/or evaluation of analytical test groups associated with specific APECs. The soil samples selected for laboratory chemical testing were submitted to a Canadian Association for Laboratory Accreditation Inc. (CALA)-accredited laboratory, Eurofins Environment Testing Canada Inc., Ottawa, Ontario.

The soil descriptions and stratigraphy details for each borehole advanced at the Site by Englobe in 2022 are shown on the Borehole Logs in Appendix B.

4.3 Borehole Mapping and Elevation Surveying

An elevation survey was conducted for boreholes at the Site.

The references obtained for each borehole advanced as part of the Field Program are shown on the Borehole Logs in Appendix B.

4.4 Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) measures were incorporated into the field sampling and laboratory analytical programs to evaluate the field and analytical data for acceptable accuracy, precision, representativeness, and comparability. Specific QA/QC measures were followed regarding equipment decontamination, equipment calibration, sample collection and handling, field documentation, and contractor provision.

The borehole drilling was undertaken by an MECP-licensed drilling contractor in accordance with the O. Reg. 903 using appropriate equipment, methodologies, and materials as documented by Englobe field personnel. Specific procedures pertaining to the characterization and description of soil cores and, by extension, subsurface conditions were followed by trained field personnel.

Decontamination procedures were followed during the soil sampling activities, including:

- All drilling and sampling equipment potential to come into contact with contaminated soil and/or groundwater was decontaminated prior to and following each sample. Decontamination consisted of washing equipment with a non-phosphate detergent and distilled water.
- New disposable chemical-resistant nitrile gloves were worn to handle and collect soil samples from each retrieved core to minimize the potential of cross-contamination.

Specific procedures were followed for the documentation, handling, and transport of the soil samples, including:

- Soil samples, upon collection, were placed directly in ice-chilled coolers to minimize the potential for chemical activity and sample degradation.
- Soil samples were assigned unique identification numbers and submitted by the sampler to the contractual laboratory following chain of custody protocols within required holding times.

The contractual laboratory, Eurofins, performed chemical analyses following referenced methods incorporating QA/QC protocols as provided by the MECP and Canada Wide Standards for Petroleum Hydrocarbons. Chemical analyses for specific analytical test groups were performed in general accordance with the MECP document titled “Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act,” dated March 9, 2004, amended as of July 1, 2011.

Analytical test group specific quality control samples were prepared and analyzed by the contractual laboratory, including:

- Laboratory duplicate samples to evaluate method reproducibility and sample homogeneity.

- Method blanks to evaluate potential bias.
- Spike blanks to evaluate method accuracy.
- Surrogate compounds to evaluate extraction efficiency.
- Matrix spikes to evaluate extraction efficiency and matrix interferences.
- Quality control standards to evaluate method accuracy.

Quality control results reported by the contractual laboratory were compared to applicable alert and control criteria and were presented in the quality control reports accompanying the certificates of analysis (COAs). The laboratory QA/QC results are discussed in Section 5.5.

5 Results

5.1 Geology

Based on Ontario Base Map (OBM), most of the region is characterized by flat topography with gentle slopes to south. The Project Area is generally flat, with an elevation ranging from approximately 225 m to 226 m above sea level (asl). The Project Area consists of Halton Till, including predominantly silt to silty clay matrix, high in matrix carbonate content and clast poor Pleistocene. The surficial geology of the Project Area and Study Area consists of clayey silt to sandy silt. The bedrock geology consists of Georgina Bay Formation, Blue Mountain Formation, Billings Formation, Collingwood Member, Eastview Member with shale, limestone, dolostone and siltstone.

Based on the site visit and aerial photographs, the nearest water body is a water pond and/or an unnamed creek located approximately 600 m northeast of the Project Area, which drains southeast. The shallow groundwater in the Project Area appears to flow in a south direction. Depending on climate conditions, surface water, seasonal fluctuation, ditching, underground services, and ground surface cover may affect the shallow groundwater flow on a local level.

Based on the Englobe 2022 Field Program described herein and a review of the borehole logs completed as part of the geotechnical investigation by Englobe in 2022, the stratigraphy is generally comprised of the Asphalt concrete and/or top soil, overlaying sand and gravel as granular base/subbase, followed by native silty sand and clayey silt.

The soil stratigraphic profile is shown in the Borehole Logs provided in Appendix B.

5.2 Chemical Analysis

Representative soil samples were selected from each borehole for chemical analysis based on locations where potential contaminants may be expected (i.e., fill materials or soil near the water table, etc.). Selected soil samples collected from the boreholes were submitted to Eurofins for analysis of the following parameters:

- PHCs (fractions F1 to F4) and BTEX;
- Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, pH, EC and SAR;
- VOCs;
- PAHs;
- PCBs;
- OCPs;
- Leachable metals, VOCs and SVOCs using the mSPLP; and/or
- Leachate metals, VOCs, benzo(a)pyrene and ignitibility using TCLP.

5.3 Applicable Site Condition Standards

5.3.1 Reuse Soil Quality Assessment Criteria

The soil analytical results were compared to the criteria presented in the MECP document titled “Rules for Soil Management and Excess Soil Quality Standards,” dated December 2020 (hereinafter referred to as the MECP Excess Soil Standards). Based on the anticipated quantity of 4,000 m³ of excess soil to be excavated/managed (i.e., volume greater than 350 m³), the volume independent MECP Excess Soil Standards were selected to assess the soil quality at the Site. To determine appropriate off-site reuse of the excess soil, the following O. Reg. 406/19 Excess Soil Quality Standards were used to assess the soil quality:

- Table 1: Full Depth Background Site Condition Standards for residential/parkland/institutional (RPI) and industrial/commercial/community (ICC) property use, presented in O. Reg. 406/19 (Table 1 Standards);
- Table 2.1: Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for RPI and ICC property use, presented in O. Reg. 406/19 (Table 2.1 Standards);
- Table 3.1: Full Depth Excess Soil Quality Standards in a Non-Potable Ground Water Condition for RPI and ICC property use, presented in O. Reg. 406/19 (Table 3.1 Standards).

5.3.2 Reuse Soil Leachate Assessment Criteria

The soil analytical results for the samples submitted for mSPLP analysis were compared to the volume independent MECP Leachate Screening Levels:

- Table 1: Leachate Screening Levels for Excess Soils Reuse for RPI and ICC property use (Table 1 Leachate Screening Levels);
- Table 2.1: Leachate Screening Levels for Full Depth Soils in a Potable Groundwater Conditions for RPI and ICC property use (Table 2.1 Leachate Screening Levels); and
- Table 3.1: Leachate Screening Levels for Full Depth Soils in a Non-Potable Groundwater Conditions for RPI and ICC property use (Table 3.1 Leachate Screening Levels).

5.3.3 Waste Management Leachate Quality Criteria

The soil analytical results for the samples submitted for TCLP were compared to the applicable Standards in Schedule 4 Leachate Quality Criteria presented in O. Reg. 558/00, as amended.

5.4 Soil Quality

The soil analytical results for PHCs (fractions F1 to F4) and BTEX, VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS, EC, SAR, pH, PAHs, PCBs, OCPs, mSPLP and/or TCLP, are summarized in Tables 201 to 209, respectively, which are contained in Appendix C. In addition, the laboratory

certificates of analysis provided by Eurofins for soil samples analyzed during the Englobe 2022 Field Program are contained in Appendix D.

5.4.1 Assessment to Table 1, 2.1 and 3.1 Excess Soil Quality Standards for RPI and ICC Property Use

Based on a review of the laboratory analytical results, the following exceedances were identified in the soil samples analyzed:

Metals and Inorganic Parameters:

- EC was measured at concentrations above Table 1, Table 2.1 and Table 3.1 Standard for RPI and ICC Property use in soil samples BH 1-1, BH 1-2, BH 2-1, BH 3-1, BH 4-1, BH 5-1, BH 6-1, BH 7-1, BH 8-1, BH 8-2, BH 9-1, BH 9-2, BH 10-1, BH 11-1, BH 12-1, and BH 12-2.
- SAR was measured at concentrations above Table 1, Table 2.1 and Table 3.1 Standard for RPI and/or ICC Property use in soil samples BH 1-1, BH 1-2, BH 2-1, BH 3-1, BH 4-1, BH 5-1, BH 6-1, BH 7-1, BH 8-1, BH 9-1, BH 9-2, BH 10-1, BH 11-1, BH 12-1, BH 12-2 and BH15-2.

VOCs:

- Methyl ethyl ketone (MEK) was measured at concentrations above Table 1 and Table 2.1 Standard for RPI and ICC Property use in soil samples BH1-5, BH 2-6, BH 8-7, BH 9-3, BH 11-7, BH 12-8, BH 16-6 and Dup-4 (duplicate sample of BH 2-6).

All other measured parameters were not detected above the laboratory method detection limits or were measured at concentrations less than the applicable Table 1, 2.1 and 3.1 RPI and ICC Standards in the soil samples analyzed. The lateral distribution of EC and SAR exceedances in the soil is presented on Figure 5 in Appendix A. The lateral distribution and the estimated extent of MEK exceedance in soil is presented on Figure 6 in Appendix A.

5.4.2 Assessment to Table 1, 2.1 and 3.1 Leachate Screening Levels for RPI and ICC Property Use

Based on a review of the laboratory mSPLP analytical results, the following exceedances were identified in the soil samples analyzed:

- Copper (Cu) was measured at a concentration above Table 2.1 and 3.1 Leachate Screening Levels for RPI and ICC property use in soil sample BH 10-1.

All other measured parameters were not detected above the laboratory method detection limits or were measured at concentrations less than the applicable Table 1, 2.1 and 3.1 RPI and ICC Leachate Screening Levels in the soil samples analyzed. The lateral distribution and the estimated extent of mSPLP metals exceedances in soil is presented on Figure 7 in Appendix A.

5.4.3 Assessment to Schedule 4 Leachate Quality Criteria in O. Reg. 558/00

Based on a review of the laboratory analytical results, all analyzed parameters were reported below the Schedule 4 Leachate Quality Criteria in O. Reg. 558/00 in the soil samples analyzed.

5.5 Quality Assurance/Quality Control

Soil sampling undertaken during the Field Program followed written procedures to ensure sample integrity and reliable data collection. Soil samples were collected into pre-cleaned test group specific containers prepared with any necessary preservatives by the contractual laboratory, Eurofins. Sample integrity was maintained by placing containerized samples immediately upon collection into ice-chilled insulated coolers to minimize chemical activity or sample degradation and delivered to the laboratory within test group specific holding times. One COC relating to repeat mSPLP for metals analysis stated “no ice”. Decontamination protocols were followed, and new/clean disposable sampling equipment (i.e., gloves) was used to minimize the potential for sample cross contamination and bias.

Certificates of analysis prepared by the contractual laboratory were received for all soil samples analyzed. Review of the certificates of analysis indicated that they were prepared in a manner consistent with the requirements of O. Reg. 153/04, as amended and O. Reg. 406/19. Copies of the laboratory certificates of analysis are presented in Appendix D.

Six (6) duplicate samples were collected and sent for laboratory analyses. Based on the review of the laboratory QA/QC sample results from Dup-1 (duplication of BH 11-1), Dup-2 (duplication of BH 7.1), Dup-3 (duplication of BH 7-3), and Dup-4 (duplication of BH 2-6), Dup-5 (duplication of BH 5-1), and Dup-7 (duplication of BH 3-2), calculated relative percent difference (RPD) values didn't exceed the alert limits, and were deemed to meet the objectives of this soil characterization investigation. Therefore, the quality of analytical data is reliable. A summary of the RPD calculations for soil samples is shown in the table below:

Table 3 Soil RPD

Sample ID	Sample Depth	Parameters	Analyzed Concentration (µg/g)	Duplicate Concentration (µg/g)	RPD (%)	Alert Criteria
Dup1 (Duplicate of BH 11-1)	0.1-0.7 mbgs	Chromium	30	20	10	60%
		Cobalt	6	7	4	
		Copper	16	17	2	
		Lead	17	21	5	
		Nickel	19	16	4	
		Vanadium	26	27	1	
		Zinc	56	64	3	

6 Conclusions

The findings of this Soil Characterization Report, taking into consideration of the Assessment of Past Uses and the Sampling and Analysis Plan previously completed by Englobe, are summarized as follows:

- The Project Area, which is currently owned by the City of Vaughan, consists of an asphalt paved parking lot and grassed area. The Project Area is approximately 4,092 m² in area.
- Englobe understands that this Soil Characterization Report was completed for the Client for excess soil management purposes prior to the proposed Fire Station development activities. The work described herein was completed in general accordance with O. Reg. 406/19, On-Site and Excess Soil Management. Furthermore, Englobe understands that filing a Record of Site Condition (RSC) with the MECP is not required at this time. The Client has indicated to Englobe that the total estimated quantity of soil to be excavated/managed during the proposed development activities is approximately 4,000 m³.
- Englobe previously completed an Assessment of Past Uses and a Sampling and Analysis Plan for the Project Area, which should be read in conjunction with this Soil Characterization Report. The purpose of this Soil Characterization Report was to present the findings of the Field Program completed to investigate the APECs resulting from the PCAs associated with the Project Area and/or surrounding areas that may have affected the soil quality at the areas where soil excavation is required as part of the proposed development activities.
- A total of fifteen (15) boreholes (BH1 to BH16, excluding BH14) were advanced at the Site by Englobe in 2022 to approximate depths ranging from 4.4 m to 8.2 m bgs.
- To meet sampling requirements outlined in O. Reg. 406/19, the numbers of soil samples collected and parameters analyzed during the Englobe 2022 Field Program were applied. A total of 48 soil samples (including six (6) duplicates) were collected for analyses of PHCs (fractions F1 to F4), BTEX, VOCs, metals/inorganics including EC and SAR, PAHs, PCBs, and/or OCPs; six (6) samples collected for mSPLP analysis and five (5) samples collected for TCLP analysis were submitted to the laboratory.
- The soil stratigraphy at the Site generally comprised of the Asphalt concrete and/or top soil, overlaying sand and gravel as granular base/subbase, followed by native silty sand and clayey silt.
- Based on a review of the laboratory analytical results, the following exceedances were identified in the soil samples analyzed:
 - EC was measured at concentrations above Table 1, Table 2.1 and Table 3.1 Standard for RPI and ICC Property use in soil samples BH 1-1, BH 1-2, BH 2-1, BH 3-1, BH 4-1, BH 5-1, BH 6-1, BH 7-1, BH 8-1, BH 8-2, BH 9-1, BH 9-2, BH 10-1, BH 11-1, BH 12-1, and BH 12-2.
 - SAR was measured at concentrations above Table 1, Table 2.1 and Table 3.1 Standard for RPI and/or ICC Property use in soil samples BH 1-1, BH 1-2, BH 2-1, BH 3-1, BH 4-1, BH 5-1, BH 6-1, BH 7-1, BH 8-1, BH 9-1, BH 9-2, BH 10-1, BH 11-1, BH 12-1, BH 12-2 and BH15-2.

- Methyl ethyl ketone (MEK) was measured at concentrations above Table 1 and Table 2.1 Standard for RPI and ICC Property use in soil samples BH1-5, BH 2-6, BH 8-7, BH 9-3, BH 11-7, BH 12-8, BH 16-6 and Dup-4 (duplicate sample of BH 2-6).
- All other measured parameters were not detected above the laboratory method detection limits or were measured at concentrations less than the applicable Table 1, 2.1 and 3.1 RPI and ICC Standards in the soil samples analyzed.
- Based on a review of the laboratory mSPLP analytical results, the following exceedances were identified in the soil samples analyzed:
 - Copper (Cu) was measured at a concentration above Table 2.1 and 3.1 Leachate Screening Levels for RPI and ICC property use in soil sample BH 10-1.
 - All other measured parameters were not detected above the laboratory method detection limits or were measured at concentrations less than the applicable Table 1, 2.1 and 3.1 RPI and ICC Leachate Screening Levels in the soil samples analyzed.
- Based on a review of the laboratory analytical results, all analyzed parameters were reported below the Schedule 4 Leachate Quality Criteria in O. Reg. 558/00 in the soil samples analyzed.
- Based on a review of the laboratory QA/QC sample results, no relative percent difference (RPD) values exceeded the alert limits were deemed to meet the objectives of this soil characterization investigation, and the quality of analytical data is reliable.
- Based on the findings of this Soil Characterization Report, the Client should be aware that Methyl ethyl ketone (MEK) was measured above the MECP Table 1, 2.1 Standards for RPI and/or ICC property use at some borehole locations. Therefore, excess soil with those exceedances in the vicinity of these boreholes should be shipped offsite and disposed of an appropriate soil receiving site or landfill facilities.
- EC and/or SAR were detected in all borehole locations above Table 2.1, 3.1 RPI and/or ICC Standards. Since the EC and SAR exceedances are likely related to the application of de-icing and salting substances in the Project Area, in accordance with section 49.1, paragraph 1 of O. Reg. 153/04, as amended, the Standards are deemed to be met. The excess soil with EC and/or SAR exceedances generated from the Project Area may only be reused onsite or reused at a receiving facility that would accept soil containing EC and SAR.
- The Client should be also aware that some metals were measured above Table 1, 2.1 and/or Table 3.1 Leachate Screening Levels for RPI and ICC property use at BH10. Therefore, excess soil with the exceedance in the vicinity of BH10 should be disposed of at landfill facilities.
- This Soil Characterization Report is based on the field observations made by Englobe and soil samples collected from the investigated locations and submitted for selected chemical analysis. The environmental quality of the soils may vary beyond and between the sampling locations. Furthermore, in the event, during the construction activities, if soils are appeared to be environmentally impacted (i.e., staining, odours and/or debris, etc.), such soils should be segregated into separate stockpiles (plastic sheeting placed below and above the stockpile), inspected, and analyzed to determine appropriate handling and/or disposal requirements at that time.

7 Statement of Limitations

This report (hereinafter, the “Report”) was prepared by Englobe Corp. (hereinafter the “Company”) and is provided for the sole and exclusive use and benefit of the City of Vaughan (the “Client”). Ownership in and copyright for the contents of the Report belong to the Company.

No other person is authorized to rely on, use, copy, duplicate, reproduce or disseminate this Report, in whole or in part and for any reason whatsoever, without the express prior written consent of the Company. Any person using this Report, other than the person(s) to whom it is directly addressed, does so entirely at its own risk. The Company assumes no responsibility or liability in connection with decisions made or actions taken based on the Report, or the observations and/or comments contained within the Report. Others with interest in the Site and/or subject matter of this Report should undertake their own investigations and studies to determine how or if they or their plans could be affected.

This Report should be considered in its entirety; selecting specific portions of the Report may result in the misinterpretation of the content.

The work performed by the Company was carried out in accordance with the terms and conditions specified in the Professional Services Agreement between the Company and the Client, in accordance with currently accepted engineering standards and practices and in a manner consistent with the level of skill, care and competence ordinarily exercised by members of the same profession currently practicing under similar conditions and like circumstances in the same jurisdiction in which the services were provided. Standards, guidelines and practices may change over time; those which were applied to produce this Report may be obsolete or unacceptable at a later date.

The findings, recommendations, suggestions, or opinions expressed in this Report reflect the Company’s best professional judgement based on observations and/or information reasonably available at the time the work was performed, as appropriate for the scope, work schedule and budgetary constraints established by the Client. No other warranty or representation, expressed or implied, is included in this Report including, but not limited to, that the Report deals with all issues potentially applicable to the Site and/or that the Report deals with any and all of the important features of the Site, except as expressly provided in the scope of work.

This Report has been prepared for the specific Site, development, building, design or building assessment objectives and/or purposes that were described to the Company by the Client. The applicability and reliability of the content of this Report, subject to the limitations provided herein, are only valid to the extent that there has been no material alteration or variation thereto, and the Company expressly disclaims any obligation to update the Report. However, the Company reserves the right to amend or supplement this Report based on additional information, documentation or evidence made available to it.

The Company makes no representation concerning the legal significance of its findings, nor as to the present or future value of the property, or its fitness for a particular purpose and hereby disclaims any responsibility or liability for consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

Since the passage of time, natural occurrences, and direct or indirect human intervention may affect the views, conclusions and recommendations (if any) provided in this Report, it is intended for immediate use.

In preparing this Report, the Company has relied in good faith on information provided by others and has assumed that such information is factual, accurate and complete. The Company accepts no responsibility or liability for any deficiency, misstatement or inaccuracy in this Report resulting from the information provided, concealed or not fully disclosed by those individuals.

The conclusions presented herein are based on information gathered from a limited historical review of readily available geological, historical and regulatory information and a field inspection program. Sampling and analysis of soil, groundwater or any other material were not carried out as part of this assessment. Consequently, the presence and/or extent of any adverse environmental impact cannot be verified. The potential for environmental liability and/or environmental impact is an opinion that has been arrived at within the scope of this assessment.

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

Any description of the Site and its physical setting documented in this Report is presented for informational purposes only, to provide the reader a better understanding of the Site and scope of work. Any topographic benchmarks and elevations are primarily to establish relative elevation differences between sampling locations and should not be used for other purposes such as grading, excavation, planning, development, or similar purposes.

Any results from laboratory or other subcontractors reported herein have been carried out by others, and the Company cannot warrant their accuracy.

This Statement of Limitations forms an integral part of this report.

REFERENCES

Englobe Corp. October 2021. Geotechnical Investigation Report, Stormwater Management Improvements Site 3, Villa Park Pond, City of Vaughan, Ontario, Project Number: OC01-02101989.000-03-GE-R-001-0A.

Englobe Corp. April 2022. Assessment of Past Uses Report, 9541 Weston Road, Vaughan, Ontario, Englobe File: 021122512.000

Englobe Corp. April 2022. Sampling and Analysis Plan, 9541 Weston Road, Vaughan, Ontario, Englobe File: 021122512.000

Ministry of Environment and Energy. December 1996. Guidance on Sampling and Analytical Methods for use at Contaminated Sites in Ontario.

Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act,” dated March 9, 2004, amended as of July 1, 2011

Ontario Geological Survey. 2011. Bedrock Geology of Ontario. Miscellaneous Release - Data 126-Revision 1.

Ontario Geological Survey. 2010. Surficial Geology of Southern Ontario. Miscellaneous Release-Data 128-Revised.

Ontario Ministry of Environment, Conservation and Parks. December 24, 2020. Rules for Soil Management and Excess Soil Quality Standards.

Appendix A

Figures

Figure 1: Project Area Location Plan

Figure 2: Project Area and Surrounding Land Use Location Plan

Figure 3: Potentially Contaminating Activities and Areas of Potential Environmental Concern

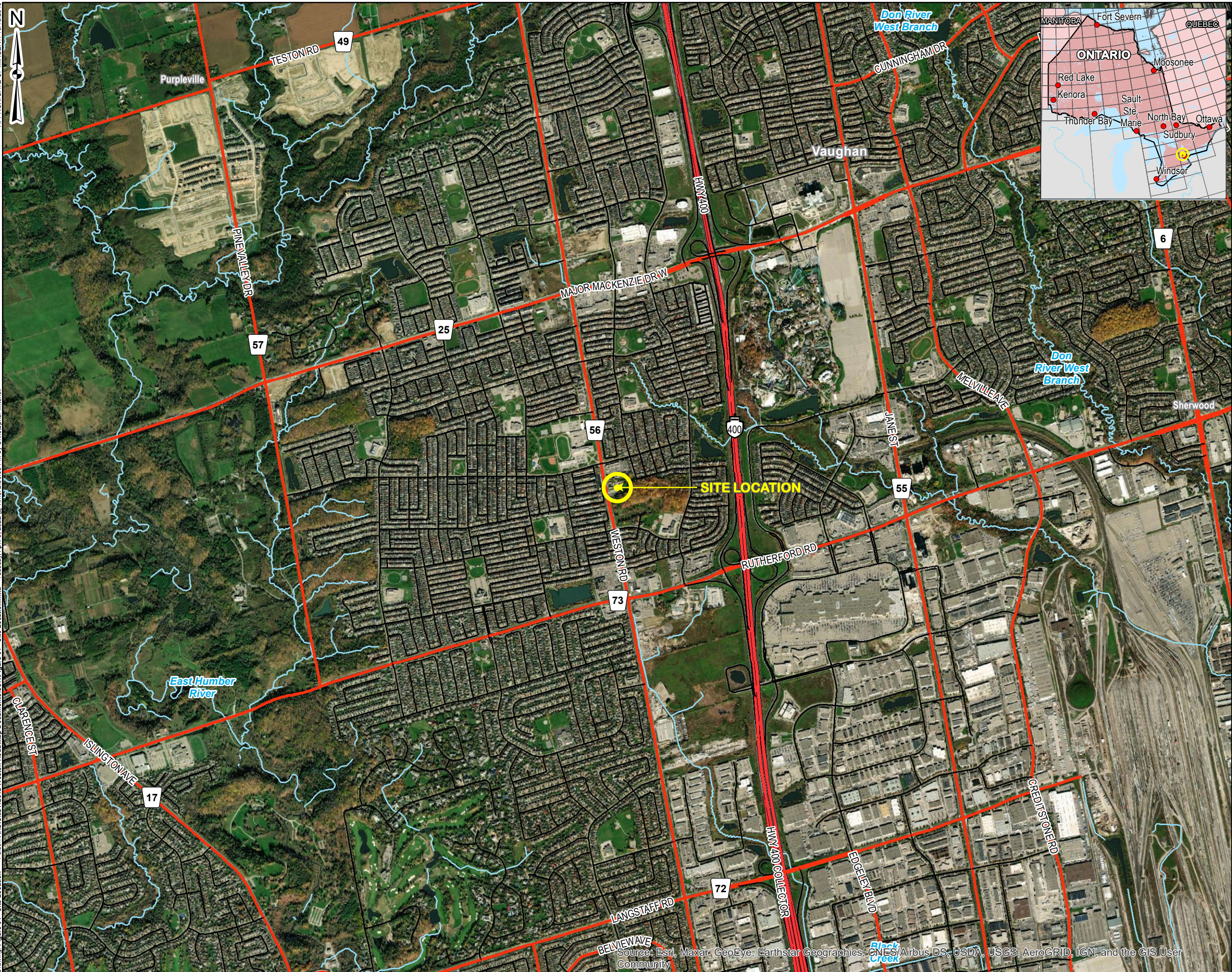
Figure 4: Borehole Location Plan

Figure 5: Lateral Distribution of EC and SAR Exceedance in Soil

Figure 6: Lateral Distribution of VOCs Exceedance in Soil

Figure 7: Lateral Distribution of mSPLP (metals) Exceedance in Soil









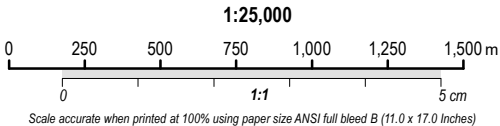
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1. This drawing shall be read in conjunction with the associated technical report.
2. Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

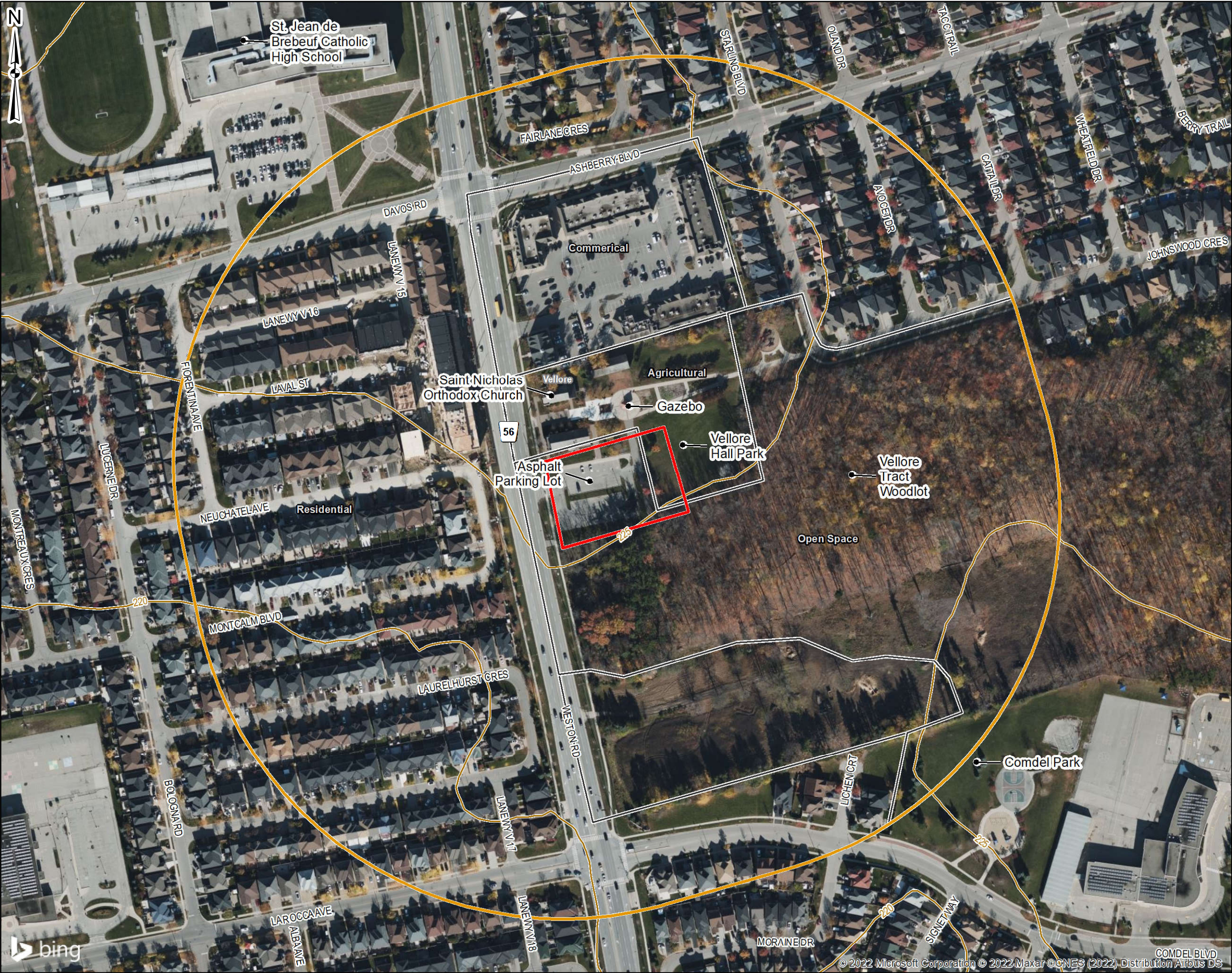
Legend



-  Expressway / Highway
-  Major Road
-  Minor Road
-  Railway
-  Watercourse

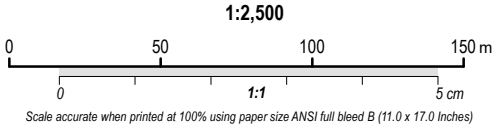


A	2022-04-05	-	02112512
Revision	Date	Issue	GIS #
Client			
City of Vaughan			
Site			
9541 Weston Road, Vaughan, Ontario			
Report Title			
Soil Characterization Report			
Drawing Title			
Site Location Plan			
Designed By		Scale	
S.W.		1:25,000	
Drawn By		Date	
C.M.		April, 2022	
Approved By		Project No.	
W.J.		02112512.000	
Figure No.			
1			



- Notes**
1. This drawing shall be read in conjunction with the associated technical report.
 2. Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

- Legend**
- Site Boundary
 - 250 m Study Area
 - City of Vaughn Zoning
 - Contour (5 m Interval)



A	2022-04-05	-	02112512
Revision	Date	Issue	GIS #

Client
City of Vaughan

Site
9541 Weston Road, Vaughan, Ontario

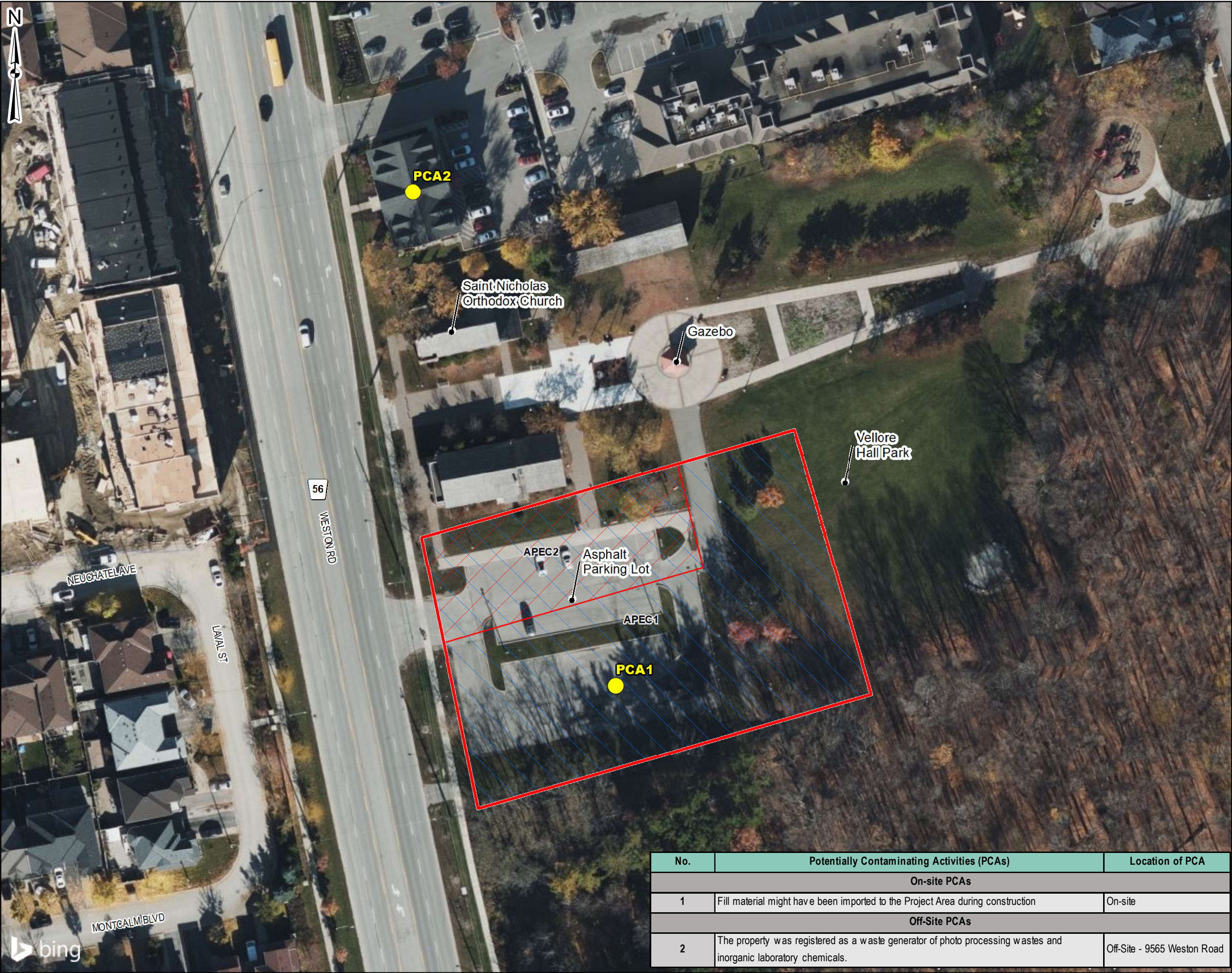
Report Title
Soil Characterization Report

Drawing Title
Study Area and Surrounding Land Use Plan

Designed By	S.W.	Scale	1:2,500
Drawn By	C.M.	Date	April, 2022
Approved By	W.J.	Project No.	02112512.000

Figure No.
2





Notes

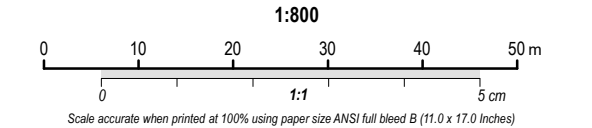
1. This drawing shall be read in conjunction with the associated technical report.
2. Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

Legend

● Potentially Contaminating Activity (PCA)
 Site Boundary

Area of Potential Environmental Concern (APEC)

APEC1
 APEC2



A	2022-04-19	-	02112512
Revision	Date	Issue	GIS #

Client
City of Vaughan

Site
9541 Weston Road, Vaughan, Ontario

Report Title
Soil Characterization Report

Drawing Title
Site Plan

Designed By	S.W.	Scale	1:800
Drawn By	C.M.	Date	April, 2022
Approved By	W.J.	Project No.	02112512.000

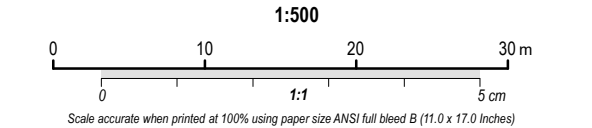
Figure No.
3

No.	Potentially Contaminating Activities (PCAs)	Location of PCA
On-site PCAs		
1	Fill material might have been imported to the Project Area during construction	On-site
Off-Site PCAs		
2	The property was registered as a waste generator of photo processing wastes and inorganic laboratory chemicals.	Off-Site - 9565 Weston Road



- Notes**
- 1. This drawing shall be read in conjunction with the associated technical report.
 - 2. Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

- Legend**
- Borehole
 - Site Boundary



A	2022-04-05	-	02112512
Revision	Date	Issue	GIS #

Client
City of Vaughan

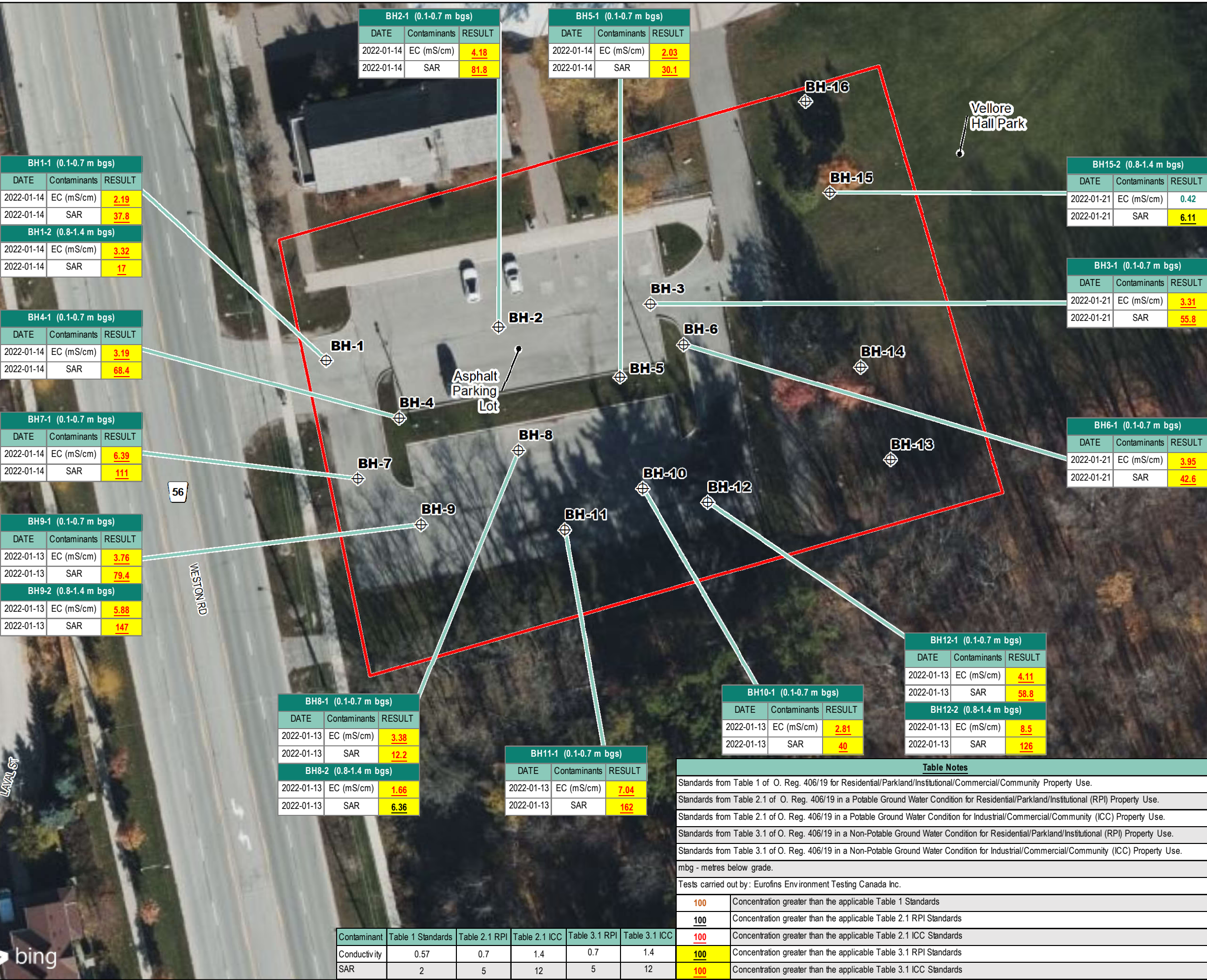
Site
9541 Weston Road, Vaughan, Ontario

Report Title
Soil Characterization Report

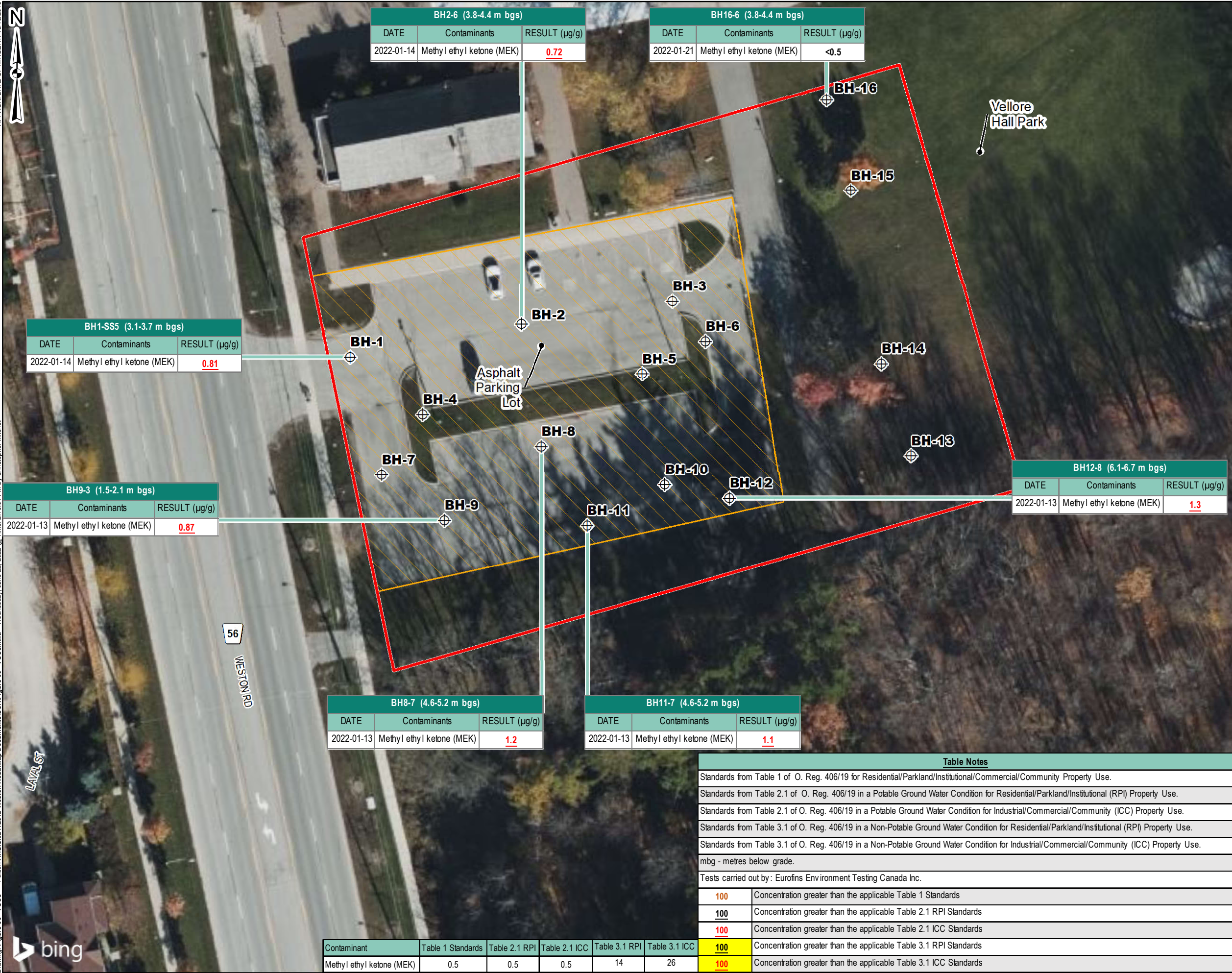
Drawing Title
Borehole Location Plan

Designed By	S.W.	Scale	1:500
Drawn By	C.M.	Date	April, 2022
Approved By	W.J.	Project No.	02112512.000

Figure No.
4



APPROX. DATE OF IMAGERY: 10/15/2019
Drawing: Figure 06 - VOCs
Folder: A:\GIS\0212512_Veston Road\Map Documents\SCR\Figure 06 - VOCs.mxd
Wednesday, June 22, 2022 @ 2:10:04 PM by Christopher Mitchell

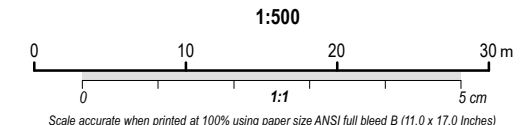


Notes

- This drawing shall be read in conjunction with the associated technical report.
- Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

Legend

- Borehole
- Site Boundary
- Estimated area of VOCs exceedance in soil



A	2022-06-22	-	02112512
Revision	Date	Issue	GIS #

Client

City of Vaughan

Site

9541 Weston Road, Vaughan, Ontario

Report Title

Soil Characterization Report

Drawing Title

Lateral Distribution of VOCs
Exceedance in Soil

Designed By

S.W.

Scale

1:500

Drawn By

C.M.

Date

June, 2022

Approved By

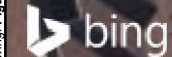
W.J.

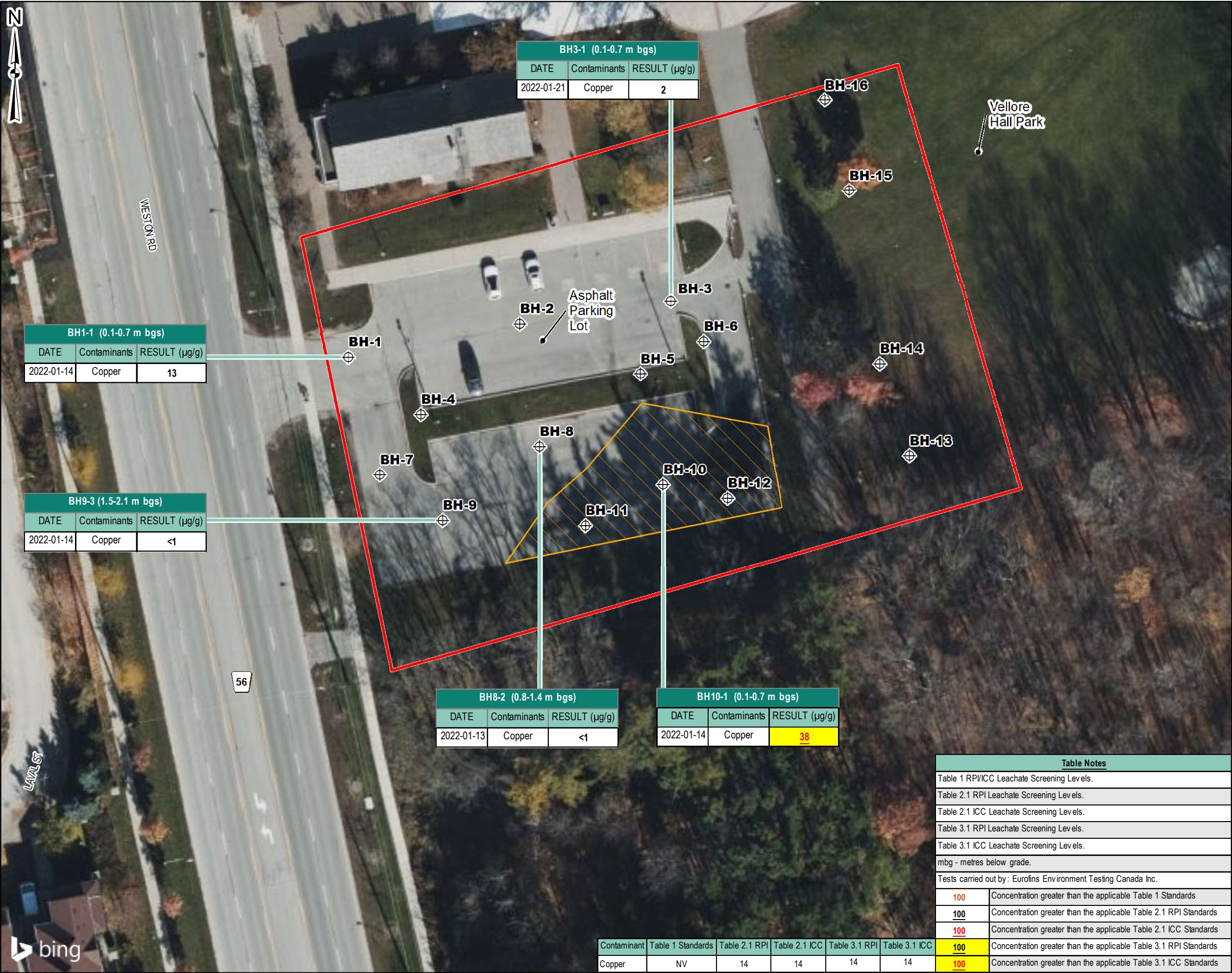
Project No.

02112512.000

Figure No.

6





Notes

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

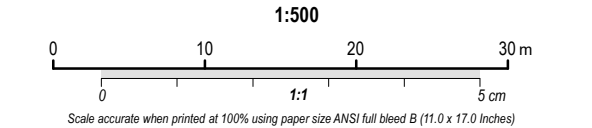
2. Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

Legend

⊕ Borehole

Estimated area of metal exceedance in soil

Site Boundary



A	2022-06-22	-	02112512
Revision	Date	Issue	GIS #

Client
City of Vaughan

Site
9541 Weston Road, Vaughan, Ontario

Report Title
Soil Characterization Report

Drawing Title
**Lateral Distribution of mSPLP (metals)
Exceedances in Soil**

Designed By
S.W.

Scale
1:500

Drawn By
C.M.

Date
June, 2022

Approved By
W.J.

Project No.
02112512.000

Figure No.
7

Appendix B

Borehole Logs

Englobe 2022 Field Program: BH-1 to BH-13 and BH-15 to BH-16



ENGLOBE

LOG OF BOREHOLE No. BH03

Englobe

Project No. 02112512.000

DRAWING No. BH3

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,305.111 E 616,028.716

Date Drilled: 2022-1-14

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

% Strain at Failure



Shear Strength by

Penetrometer Test



GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value				Natural Moisture Content % Atterberg Limits (% Dry Weight)				SAMPLES	Sample No	Natural Unit Weight kN/m³	Percent of Fines %
					Shear Strength kPa											
					40	80	120	160	20	40	60					
		ASPHALT CONCRETE (90 mm)	224.9	0												
		SAND AND GRAVEL (Granular Base/Subbase, 120 mm)	224.8													
		SANDY SILT: trace clay, brown, moist, compact to dense	224.7													
				1												
				2												
				3												
				4												
		SILTY SAND: brown, moist, dense to very dense	222.0													
				3												
				4												
		Terminated at 4.4 m	220.5													
		Borehole advanced using continuous flight solid stem augering equipment on January 14, 2022 by DrillTech Drilling LTD.														

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

Checked By: A. Rahman

Logged By: P. Jin

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

LOG OF BOREHOLE No. BH04

Englobe

Project No. 02112512.000

DRAWING No. BH4

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,288.738 E 615,980.069

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

% Strain at Failure



Shear Strength by

Penetrometer Test



0
15
10



GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLES	SPT NO	Natural Unit Weight kN/m ³	Percent of Fines, %
					40	80	120	160			
		TOPSOIL (160 mm)	225.4	0							
		SAND AND GRAVEL (Granular Base/Subbase, 150 mm)	225.2	0.2	17				11.3		
		SANDY SILT: trace to some clay, brown, moist, loose to dense	225.1								
				1	7				15.4		
				2	34				10.8		
		SILTY SAND: brown, moist to wet, compact to very dense	223.2								
				3	63				12.9		
				4	73				19.2		
				5	59				11.9		
				6	63				21.0		
				7	50				21.0		
				8	22				10.3		
		Terminated at 8.2 m	217.2								
		Borehole advanced using continuous flight solid stem augering equipment on January 13, 2022 by DrillTech Drilling LTD.									

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	7.3	none

Checked By: A. Rahman

Logged By: P. Jin

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

LOG OF BOREHOLE No. BH05

Englobe

Project No. 02112512.000

DRAWING No. BH5

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,296.052 E 616,010.286

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

% Strain at Failure



Shear Strength by

Penetrometer Test



0
15
10



GWL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLES	SPT NO	Natural Unit Weight kN/m ³	Percent of Fines, %
				40	80	120				
	ASPHALT CONCRETE (100 mm)	225.1	0							
	SAND AND GRAVEL (Granular Base/Subbase, 180 mm)	225.0	0.1							
	SANDY SILT: trace clay, brown, moist, very loose to compact	224.8	0.2	27			13.9	SS1		
			1	4			19.5	SS2		
			2	4			14.6	SS3		
	SILTY SAND: brown, moist, dense to very dense	222.8	2.2	33			14.2	SS4		
			3	57			16.6	SS5		
			4	50			21.0	SS6		
			5	47			18.4	SS7		
			6							
			7	43			17.1	SS8		
	CLAYEY SILT: some sand, trace gravel, grey, moist, very stiff	218.4	6.7							
			8	22			114.923.1	SS9		
	Terminated at 8.2 m	216.8	8.2							
	Borehole advanced using continuous flight solid stem augering equipment on January 13, 2022 by DrillTech Drilling LTD.									

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02 GDT 22-3-1

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

LOG OF BOREHOLE No. BH06

Englobe

Project No. 02112512.000

DRAWING No. BH6

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,299.182 E 616,019.578

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

% Strain at Failure



Shear Strength by

Penetrometer Test



0
15
10



GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLES	SPT NO.	Natural Unit Weight kN/m³	Percent of Fines, %
					40	80					
		ASPHALT CONCRETE (100 mm)	225.0	0							
		SAND AND GRAVEL (Granular Base/Subbase, 150 mm)	224.9	0.1							
		SANDY SILT: trace clay, brown, moist, compact	224.7	0.2	27		17.8	X	SS1		
				1	13		10.5	X	SS2		
				2	22		11.4	X	SS3		
				3	25		14.7	X	SS4		
		SILTY SAND: brown, moist, dense	222.1	3	33		16.6	X	SS5		
				4	42		12.8	X	SS6		
				5	40		14.8	X	SS7		
				6							
				7	33		18.6	X	SS8		
		CLAYEY SILT: trace gravel, grey, wet, very stiff	218.3	6.7							
				8	17		115.7.3	X	SS9		
		Terminated at 8.2 m	216.7	8.2							
		Borehole advanced using continuous flight solid stem augering equipment on January 13, 2022 by DrillTech Drilling LTD.									

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02 GDT 22-3-1

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

LOG OF BOREHOLE No. BH07

Englobe

Project No. 02112512.000

DRAWING No. BH7

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,281.299 E 615,973.690

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

% Strain at Failure



Shear Strength by

Penetrometer Test



GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value				Natural Moisture Content %				SAMPLES	SPT NO	Natural Unit Weight kN/m ³	Percent of Fines, %
					Shear Strength				Atterberg Limits (% Dry Weight)							
					40	80	120	160	20	40	60					
		ASPHALT CONCRETE (110 mm)	225.3	0.1												
		SAND AND GRAVEL (Granular Base/Subbase, 150 mm)	225.2													
		SANDY SILT: trace to some clay, brown, moist, loose to compact	225.0													
				1												
				2												
			2.2													
		SILTY SAND: brown, moist, dense to very dense	223.1													
				3												
				4												
			4.4													
		Terminated at 4.4 m	220.9													
		Borehole advanced using continuous flight solid stem augering equipment on January 13, 2022 by DrillTech Drilling LTD.														

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

LOG OF BOREHOLE No. BH08

Englobe

Project No. 02112512.000

DRAWING No. BH8

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,284.188 E 615,997.335

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

% Strain at Failure



Shear Strength by

Penetrometer Test



0
15
10

GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLES	SPT No.	Natural Unit Weight kN/m³	Percent of Fines %		
					Shear Strength								
					kPa								
		ASPHALT CONCRETE (80 mm)	225.2	0									
		SAND AND GRAVEL (Granular Base/Subbase, 250 mm)	225.1	0.1									
		SANDY SILT: trace gravel, brown, moist, loose	224.8	0.3			7.8		SS1				
				1	7		15.0		SS2				
				2	28		9.0		SS3				
				3	52		18.6		SS4				
				4	61		16.6		SS5				
				5	59		19.5		SS6				
				6	43		19.6		SS7				
				7	71		20.0		SS8				
		SANDY CLAYEY SILT: trace gravel, grey, moist, hard Gr: 1.3%, Sa: 21.5%, Si: 46.7%, Cl: 30.5%	218.5	6.7									
			217.6	7									
				8	32		12, 120.8		SS9				
		Terminated at 8.2 m	216.9	8.2									
		Borehole advanced using continuous flight solid stem augering equipment on January 13, 2022 by DrillTech Drilling LTD.											

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	7.6	none
Feb 14, 2022	7.6	
Feb 24, 2022	Dry	

Englobe

Project No. 02112512.000

DRAWING No. BH10

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,285.523 E 616,013.237

Date Drilled: 2022-1-14

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

% Strain at Failure

Shear Strength by Penetrometer Test



G W L	S Y M B O L	SOIL DESCRIPTION	ELEV. m	D E P T H m	Standard Penetration Test N Value				S A M P L E N O	S S N O	Natural Unit Weight kN/m ³	Percent of Fines %	
					Shear Strength kPa								Natural Moisture Content % Atterberg Limits (% Dry Weight)
					40	80	120	160					
		ASPHALT CONCRETE (110 mm)	225.1	0									
		SAND AND GRAVEL (Granular Base/Subbase, 220 mm)	224.9	0.1	7				17.7				
		SANDY SILT: trace gravel, brown, moist, loose	224.7										
				1	4				17.6				
		SILTY SAND: brown, moist, compact to very dense	223.7	1.4									
				2	14				5.5				
				3	29				18.6				
				4	59				10.2				
				5	61				19.9				
				6	52				8.8				
				7	39				17.4				
		CLAYEY SILT: trace sand, trace gravel, grey, moist, very stiff	218.4	6.7									
				8	19				12.6				
		Terminated at 8.2 m	216.8	8.2									
		Borehole advanced using continuous flight solid stem augering equipment on January 14, 2022 by DrillTech Drilling LTD.											

Checked By: A.Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

LOG OF BOREHOLE No. BH11

Englobe

Project No. 02112512.000

DRAWING No. BH11

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,275.359 E 616,002.160

Date Drilled: 2022-1-21

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

% Strain at Failure



Shear Strength by

Penetrometer Test



0
15
10

GWL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content %		SAMPLES	SPT	Natural Unit Weight kN/m ³	Percent of Fines, %
				40	80	120	160				
	ASPHALT CONCRETE (110 mm)	225.0	0								
	SAND AND GRAVEL (Granular Base/Subbase, 120 mm)	224.9	0.1								
	SILT: some clay, brown, moist, loose to very dense	224.7	0.2								
	Gr: 0%, Sa: 0%, Si: 87.7%, Cl: 12.3%										
			1								
			2								
			3								
			4								
			5								
			6								
			7								
			8								
	Terminated at 8.2 m	216.7	8.2								
	Borehole advanced using continuous flight solid stem augering equipment on January 21, 2022 by DrillTech Drilling LTD.										

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	7.5	none

Checked By: A. Rahman

Logged By: P. Jin

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

LOG OF BOREHOLE No. BH12

Englobe

Project No. 02112512.000

DRAWING No. BH12

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,275.874 E 616,022.481

Date Drilled: 2022-1-21

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content

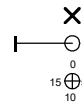
Atterberg Limits

Undrained Triaxial at

% Strain at Failure

Shear Strength by

Penetrometer Test



0
15
10



GWL	SOIL SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value				Natural Moisture Content %		SAMPLE NO.	SPT	Natural Unit Weight kN/m ³	Percent of Fines %
					Shear Strength				Atterberg Limits (% Dry Weight)					
					40	80	120	160	20	40				
					50	100	150	200	kPa					
		ASPHALT CONCRETE (110 mm)	225.0	0.1										
		SAND AND GRAVEL (Granular Base/Subbase, 150 mm)	224.9											
		CLAYEY SILT: trace gravel, brown, moist, very loose to compact	224.8		14					16.6	X	SS1		
				1	6					19.8	X	SS2		
					12					8.6	X	SS3		
		SANDY SILT: brown, moist, loose	222.8	2	25					11.7	X	SS4		
		SILTY SAND: trace clay, brown, moist, compact to dense Gr: 0%, Sa: 68.9%, Si: 23.8%, Cl: 7.3%	222.1	3	46					14.9	X	SS5		
				4	35					12.2	X	SS6		
				5	30					8.5	X	SS7		
				6										
					35					13.6	X	SS8		
		CLAYEY SILT: some sand, trace gravel, grey, moist, very stiff Gr: 1.1%, Sa: 20.4%, Si: 50.4%, Cl: 28.1%	218.3	7										
				8	21					6.7/2.18.8	X	SS9		
		Terminated at 8.2 m	216.8											
		Borehole advanced using continuous flight solid stem augering equipment on January 21, 2022 by DrillTech Drilling LTD.												

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none
Feb 14, 2022	Dry	
Feb 24, 2022	7.6	

LOG OF BOREHOLE No. BH13

Englobe

Project No. 02112512.000

DRAWING No. BH13

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,286.170 E 616,050.535

Date Drilled: 2022-1-21

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

% Strain at Failure






Shear Strength by

Penetrometer Test



GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value				Natural Moisture Content % Atterberg Limits (% Dry Weight)				SAMPLES	SPT No	Natural Unit Weight kN/m³	Percent of Fines %
					Shear Strength kPa											
					40	80	120	160	20	40	60					

		TOPSOIL (200 mm)	225.8	0												
		SAND AND GRAVEL (Granular Base/Subbase, 150 mm)	225.6	0.2	15					25.9				SS1		
		CLAYEY SANDY SILT: trace gravel, brown, moist, firm to hard Gr: 0.3%, Sa: 25.2%, Si: 43.7%, Cl: 30.8%	225.4	1	7					20.0				SS2		
				2	12					12.0				SS3		
				3	21					11.8				SS4		
				4	30					12.3				SS5		
				4	40					13.4				SS6		
		Terminated at 4.4 m	221.4													
		Borehole advanced using continuous flight solid stem augering equipment on January 21, 2022 by DrillTech Drilling LTD.														

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

Checked By: A. Rahman

Logged By: P. Jin

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

LOG OF BOREHOLE No. BH15

Englobe

Project No. 02112512.000

DRAWING No. BH15

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,317.902 E 616,043.569

Date Drilled: 2022-1-21

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

% Strain at Failure



Shear Strength by

Penetrometer Test



GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value				Natural Moisture Content % Atterberg Limits (% Dry Weight)				SAMPLES	SAMPLE NO	Natural Unit Weight kN/m³	Percent of Fines, %
					Shear Strength kPa											
					40	80	120	160	20	40	60					
		TOPSOIL (210 mm)	224.8	0												
		SILTY CLAY: some sand, trace gravel, brown, moist, firm to very stiff Gr: 2.7%, Sa: 18.2%, Si: 37.0%, Cl: 42.1%	224.6	0.2	25					18.2			SS1			
				1	10					11.8			SS2			
				2	17					11.9			SS3			
			222.2	3	17					11.2			SS4			
				4	23					14.2			SS5			
			4.4	4	8					113.523.1			SS6			
		Terminated at 4.4 m	220.4													
		Borehole advanced using continuous flight solid stem augering equipment on January 21, 2022 by DrillTech Drilling LTD.														

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	2.7	none
Feb 14, 2022	2.7	
Feb 24, 2022	1.3	

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

LOG OF BOREHOLE No. BH16

Englobe

Project No. 02112512.000

DRAWING No. BH16

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,334.484 E 616,039.548

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content

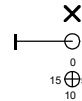
Atterberg Limits



Undrained Triaxial at

% Strain at Failure

Shear Strength by

Penetrometer Test



GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value				Natural Moisture Content % Atterberg Limits (% Dry Weight)				SAMPLES	Sample No	Natural Unit Weight kN/m³	Percent of Fines %
					Shear Strength kPa											
					40	80	120	160	20	40	60					
		TOPSOIL (200 mm)	224.9	0												
		CLAYEY SILT: some sand, brown, moist, compact Gr: 0%, Sa: 10.4%, Si: 65.6%, Cl: 24%	224.7	0.2	15				14.6				SS1			
				1	15				12.2				SS2			
				2	13				12.4				SS3			
				3	23				13.5				SS4			
				4	22				20.4				SS5			
				4	16				20.2				SS6			
		Terminated at 4.4 m	220.5													
		Borehole advanced using continuous flight solid stem augering equipment on January 13, 2022 by DrillTech Drilling LTD.														

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

Appendix C

Table of Analytical Results

Table 201: Petroleum Hydrocarbons (PHCs, F1 to F4) and BTEX Analysis - Soil

Table 202: Metals and Inorganics Analysis - Soil

Table 203: Semi-Volatile Organic Compounds (SVOCs) Analysis - Soil

Table 204: Volatile Organic Compounds (VOCs) Analysis - Soil

Table 205: Organochlorinated Pesticides (OCs) - Soil

Table 206: PCBs Analysis - Soil

Table 207: Modified Synthetic Precipitation Leaching (mSPLP) Analysis - Soil

Table 208: Toxicity Characteristic Leaching Procedure (TCLP) Analysis - Soil

Table 209: Evaluation of Soil Field Duplicate Data - Metals and Inorganics



eNGLOBE

Notes	
RDL	Reportable Detection Limit
NV	No Criteria/RDL Value
NA	Not Applicable
<	Values is less than the RDL
Table 1 SCS RPICC	Table 1, Full Depth Background Site Condition Standards (SCS) , Residential/Parkland/Institutional/Industrial/Commercial/Community (RPICC) Property Use, Soil (other than sediment) Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Table 2.1 SCS RPI	Table 2.1, Full Depth Generic Site Condition Standards (SCS) in a Potable Groundwater Condition, Residential/Parkland/Institutional (RPI) Property Use, Coarse Textured Soil Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Table 2.1 SCS ICC	Table 2.1, Full Depth Generic Site Condition Standards (SCS) in a Potable Groundwater Condition, Industrial/Commercial/Community (ICC) Property Use, Coarse Textured Soil Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Table 3.1 SCS RPI	Table 3.1, Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Groundwater Condition, Residential/Parkland/Institutional (RPI) Property Use, Coarse Textured Soil Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Table 3.1 SCS RPI	Table 3.1, Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Groundwater Condition, Industrial/Commercial/Community (ICC) Property Use, Coarse Textured Soil Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Yellow Highlight	Exceeds Table 1 SCS RPICC
Bold	Exceeds Table 2.1 SCS RPI and Table 2.1 SCS ICC
<u>Underlined</u>	Exceeds Table 3.1 SCS RPI and Table 3.1 SCS ICC

Parameters	Units	RDL	Guidelines					Sample ID																				
								Laboratory ID																				
			Site Condition Standards (SCS)					Sample Depth (metres below ground surface)																				
								Sample Collection Date (m/d/y)																				
			BH 1-1	BH 1-2	BH 2-1	BH 3-1	BH 4-1	BH 5-1	BH 6-1	BH 7-1	BH 8-1	BH 8-2	BH 9-1	BH 9-2	BH 10-1	BH 11-1	DUP-1	BH 12-1	BH 12-2	BH 13-1	BH 15-1	BH 15-2	BH 16-1					
1606024	1606025	1606028	1606034	1606031	1606034	1606037	1606038	1606043	1606044	1606046	1606047	1606060	1606062	1606063	1606066	1606067	1606069	16060841	16060842	16060843								
Table 1 RPIICC	Table 2.1 RPI	Table 2.1 ICC	Table 3.1 RPI	Table 3.1 ICC	@ 0.1-0.7 1/14/2022	@ 0.8-1.4 1/14/2022	@ 0.1-0.7 1/14/2022	@ 0.1-0.7 1/2/2022	@ 0.1-0.7 1/14/2022	@ 0.1-0.7 1/14/2022	@ 0.1-0.7 1/21/2022	@ 0.1-0.7 1/14/2022	@ 0.1-0.7 1/13/2022	@ 0.8-1.4 1/13/2022	@ 0.1-0.7 1/13/2022	@ 0.8-1.4 1/13/2022	@ 0.1-0.7 1/13/2022	@ 0.1-0.7 1/13/2022	Duplication of BH 11-1	@ 0.1-0.7 1/13/2022	@ 0.8-1.4 1/13/2022	@ 0.1-0.7 1/2/2022	@ 0.1-0.7 1/21/2022	@ 0.8-1.4 1/21/2022	@ 0.1-0.7 1/21/2022			
Metals and Inorganics																												
Antimony	ug/g	1	1.3	7.5	40	7.5	40	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Arsenic	ug/g	1	18	18	18	18	18	2	4	2	4	2	3	4	3	3	2	2	3	3	3	4	4	2	2	2	3	
Barium	ug/g	1	220	390	670	390	670	46	65	57	94	29	51	59	63	39	20	21	38	63	53	75	84	65	23	46	54	59
Beryllium	ug/g	1	2.5	4	8	4	8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Boron	ug/g	5	36	120	120	120	120	<5	<5	15	<5	<5	<5	<5	5	5	<5	<5	<5	<5	<5	<5	<5	<5	5	<5	<5	
Boron (Hot Water Soluble)	ug/g	0.5	NV	2	2	1.5	2	<0.5	-	-	-	-	-	-	-	-	<0.5	<0.5	-	-	-	-	<0.5	-	-	<0.5	-	-
Cadmium	ug/g	0.4	1.2	1.2	1.9	1.2	1.9	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	
Chromium	ug/g	1	70	160	160	160	160	20	28	12	25	18	20	27	20	16	11	10	14	21	30	20	27	22	14	16	16	20
Cobalt	ug/g	1	21	22	80	22	80	5	8	2	8	4	6	6	7	7	4	3	6	7	6	7	8	9	3	4	6	5
Copper	ug/g	1	92	140	230	140	230	16	20	5	19	14	16	14	18	16	11	12	15	17	16	17	21	21	5	12	12	14
Cyanide (Free)	ug/g	0.005	0.051	0.051	0.051	0.051	0.051	<0.005	-	-	-	-	-	-	-	-	<0.005	<0.005	-	-	-	-	<0.005	-	-	<0.005	-	-
Chromium VI	ug/g	0.2	0.66	8	8	8	8	<0.20	-	-	-	-	-	-	-	-	<0.20	<0.20	-	-	-	-	<0.20	-	-	0.21	-	-
Lead	ug/g	1	120	120	120	120	120	14	12	8	8	15	14	9	11	9	4	115	6	13	17	21	46	10	6	11	5	13
Mercury	ug/g	0.1	0.27	0.27	0.27	0.27	0.27	<0.1	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	<0.1	-	-	<0.1	-	-
Molybdenum	ug/g	1	2	7	40	6.9	40	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Nickel	ug/g	1	82	100	270	100	270	14	23	5	18	12	15	18	17	16	9	8	14	16	19	16	20	21	8	10	12	13
Selenium	ug/g	0.5	1.5	2.4	5.5	2.4	5.5	<0.5	0.7	<0.5	0.5	<0.5	0.6	<0.5	<0.5	0.6	0.6	<0.5	0.6	0.7	0.6	0.6	0.9	0.9	<0.5	<0.5	<0.5	<0.5
Silver	ug/g	0.2	0.5	20	40	20	40	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	ug/g	1	1	1	3.3	1	3.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Uranium	ug/g	0.5	2.5	23	33	23	33	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	ug/g	2	86	86	86	86	86	20	31	8	35	20	24	29	28	24	18	14	21	27	26	27	33	29	17	21	24	25
Zinc	ug/g	2	290	340	340	340	340	44	62	10	42	44	52	42	48	47	21	56	31	58	56	64	63	47	18	34	26	48
Other Parameters																												
Moisture (%)	%	0.1	NV	NV	NV	NV	NV	-	-	9.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH (pH Units)		2	NV	NV	NV	NV	NV	7.76	-	-	-	-	-	-	-	-	7.69	7.75	-	-	-	-	-	-	-	7.51	-	-
Electrical Conductivity	mS/cm	0.05	0.57	0.7	1.4	0.7	1.4	2.19	3.32	4.18	3.31	3.19	2.03	3.95	6.39	3.38	1.66	3.78	5.88	2.81	7.04	-	4.11	8.5	0.34	0.42	0.42	0.40
Sodium Absorption Ratio (SAR)		0.01	2.4	5	12	5	12	37.8	17.0	81.8	55.8	68.4	30.1	42.6	111	12.2	6.36	79.4	147	40.0	162	-	58.8	128	1.18	1.35	6.11	0.89

Notes		
RDL	Reportable Detection Limit	
NV	teria/RDL Value	
NA	t Applicable	
<c	less than the RDL	
Table 1 SCS RPIICC	Table 1, Full Depth Background Site Condition Standards (SCS) , Residential/Parkland/Institutional/Industrial/Commercial/Community (RPIICC) Property Use, Soil (other than sediment), Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).	
Table 2.1 SCS RPI	Table 2.1, Full Depth Generic Site Condition Standards (SCS) in a Potable Groundwater Condition, Residential/Parkland/Institutional (RPI) Property Use, Coarse Textured Soil, Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).	
Table 2.1 SCS ICC	Table 2.1, Full Depth Generic Site Condition Standards (SCS) in a Potable Groundwater Condition, Industrial/Commercial/Community (ICC) Property Use, Coarse Textured Soil, Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).	
Table 3.1 SCS RPI	Table 3.1, Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Groundwater Condition, Residential/Parkland/Institutional (RPI) Property Use, Coarse Textured Soil, Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).	
Table 3.1 SCS RPI	Table 3.1, Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Groundwater Condition, Industrial/Commercial/Community (ICC) Property Use, Coarse Textured Soil, Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).	
Yellow Highlight	Exceeds Table 1 SCS RPIICC	
Bold	Exceeds Table 2.1 SCS RPI and Table 3.1 SCS RPI	
Underlined	Exceeds Table 2.1 SCS ICC and Table 3.1 SCS ICC	

Table 203
Soil Analytical Results
PAHs

Parameters	Units	RDL	Guidelines					Sample ID								
								Laboratory ID								
			Site Condition Standards (SCS)					Sample Depth (metres below ground surface)								
								Sample Collection Date (m/d/y)								
							BH 1-1	BH 2-1	BH 4-1	BH 6-1	BH 7-1	DUP-2	BH 8-2	BH 9-2	BH 12-1	
							1606024	1606028	1606031	1606837	1606038	1606039	1606044	1606047	1606056	
			Table 1 RPI/ICC	Table 2.1 RPI	Table 2.1 ICC	Table 3.1 RPI	Table 3.1 ICC	@ 0.1-0.7 1/14/2022	@ 0.1-0.7 1/14/2022	@ 0.1-0.7 1/14/2022	@ 0.1-0.7 1/21/2022	@ 0.1-0.7 1/14/2022	Duplication of BH 7-1	@ 0.8-1.4 1/13/2022	@ 0.8-1.4 1/13/2022	@ 0.1-0.7 1/13/2022
Semi-VOCs /PAHs																
Acenaphthene	ug/g	0.05	0.072	2.5	2.5	14	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	ug/g	0.05	0.093	0.09	0.093	0.093	0.093	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	ug/g	0.05	0.16	0.16	0.16	0.16	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	ug/g	0.05	0.36	0.5	0.92	0.5	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	ug/g	0.05	0.3	0.31	0.31	0.57	0.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	ug/g	0.05	0.47	3.2	3.2	5.7	7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	ug/g	0.05	0.68	6.6	13	6.6	13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	ug/g	0.05	0.48	3.1	3.1	5.7	7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	ug/g	0.05	2.8	7	9.4	7	14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	ug/g	0.05	0.1	0.6	0.7	0.57	0.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	ug/g	0.05	0.56	0.7	2.8	0.69	70	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	ug/g	0.05	0.12	7	6.8	6.8	6.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	ug/g	0.05	0.23	0.38	0.76	0.38	0.76	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylnapthalene, 1-	ug/g	0.05	0.59	0.6	0.59	0.92	8.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylnapthalene, 2-	ug/g	0.05	0.59	0.6	0.59	0.92	8.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	ug/g	0.013	0.09	0.2	0.2	0.59	1.8	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013
Phenanthrene	ug/g	0.05	0.69	6	12	6.2	12	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	ug/g	0.05	1	28	28	70	70	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Notes	
RDL	Reportable Detection Limit
NV	No Criteria/RDL Value
NA	Not Applicable
<	Values is less than the RDL
Table 1 SCS RPIICC	Table 1, Full Depth Background Site Condition Standards (SCS) , Residential/Parkland/Insititutional/Industrial/Commercial/Community (RPIICC) Property Use, Soil (other than sediment) Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Table 2.1 SCS RPI	Table 2.1, Full Depth Generic Site Condition Standards (SCS) in a Potable Groundwater Condition, Residential/Parkland/Insititutional (RPI) Property Use, Coarse Textured Soil Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Table 2.1 SCS ICC	Table 2.1, Full Depth Generic Site Condition Standards (SCS) in a Potable Groundwater Condition, Industrial/Commercial/Community (ICC) Property Use, Coarse Textured Soil Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Table 3.1 SCS RPI	Table 3.1, Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Groundwater Condition, Residential/Parkland/Insititutional (RPI) Property Use, Coarse Textured Soil Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Table 3.1 SCS RPI	Table 3.1, Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Groundwater Condition, Industrial/Commercial/Community (ICC) Property Use, Coarse Textured Soil Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Yellow Highlight	Exceeds Table 1 SCS RPIICC
Bold	Exceeds Table 2.1 SCS RPI and Table 2.1 SCS ICC
Underlined	Exceeds Table 3.1 SCSRPI and tabe 3.1 SCS ICC

Table 204
Soil Analytical Results
Volatile Organic Compounds

Parameters	Units	RDL	Guidelines					Sample ID							
								Laboratory ID							
			Site Condition Standards (SCS)					Sample Depth (metres below ground surface)							
								Sample Collection Date (m/d/y)							
Table 1 RPI/ICC	Table 2.1 RPI	Table 2.1 ICC	Table 3.1 RPI	Table 3.1 ICC	BH 1-5	BH 2-6	DUP-4	BH 8-7	BH 9-3	BH 11-7	BH 12-8	BH 16-6			
					@ 3.1-3.7 1/14/2022	@ 3.8-4.4 1/14/2022	Duplication of BH 2-6	@ 4.6-5.2 1/13/2022	@ 1.5-2.1 1/13/2022	@ 4.6-5.2 1/13/2022	@ 6.1-6.7 1/13/2022	@ 3.8-4.4 1/21/2022			
VOCs															
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.05	0.05	0.05	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	ug/g	0.05	0.05	0.11	0.12	0.11	0.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	0.05	0.05	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	ug/g	0.05	0.05	0.05	0.05	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.05	0.05	0.05	0.14	0.57	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethene	ug/g	0.05	0.05	0.05	0.05	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	3.4	6.8	3.4	6.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichloroethane	ug/g	0.05	0.05	0.05	0.05	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichloropropane	ug/g	0.05	0.05	0.05	0.05	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	0.26	0.26	4.8	6.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene, cis + trans	ug/g	0.05	0.05	0.05	0.05	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	0.05	0.05	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.05	0.5	0.5	0.5	1.8	1.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.05	<0.05	<0.50
Bromodichloromethane	ug/g	0.05	0.05	0.05	0.05	5.8	5.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	ug/g	0.05	0.05	0.05	0.05	2.5	2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromomethane	ug/g	0.05	0.05	0.05	0.05	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	0.05	0.05	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chloroform	ug/g	0.05	0.05	0.050	0.05	0.08	0.26	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethene	ug/g	0.05	0.05	0.05	0.05	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	0.05	0.05	5.5	5.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichlorodifluoromethane	ug/g	0.05	0.05	1.5	1.5	1.8	1.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloroethylene, trans-1,2-	ug/g	0.05	0.05	0.05	0.05	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloromethane	ug/g	0.05	0.05	0.1	0.05	0.06	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.05	0.05	0.05	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hexane	ug/g	0.05	0.05	2.5	2.5	2.5	2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl ethyl ketone (MEK)	ug/g	0.5	0.5	0.5	0.5	14	26	0.81	0.72	1.2	1.1	0.87	1.1	1.3	<0.50
Methyl isobutyl ketone (MIBK)	ug/g	0.5	0.5	0.5	0.5	0.89	17	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl tert-butyl ether (MTBE)	ug/g	0.05	0.05	0.05	0.05	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Monochlorobenzene	ug/g	0.05	0.05	0.083	0.083	0.28	0.28	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	0.05	0.05	0.5	6.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	ug/g	0.05	0.05	0.05	0.05	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	ug/g	0.01	0.05	0.05	0.05	0.05	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Trichlorofluoromethane	ug/g	0.05	0.51	0.25	0.25	0.46	0.46	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	0.02	0.02	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Notes															
RDL	Reportable Detection Limit														
NV	No Criteria/RDL Value														
NA	Not Applicable														
<	Values is less than the RDL														
Table 1 SCS RPI/ICC	Table 1, Full Depth Background Site Condition Standards (SCS) , Residential/Parkland/Insitutional/Industrial/Commercial/Community (RPI/ICC) Property Use, Soil (other than sediment) Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).														
Table 2.1 SCS RPI	Table 2.1, Full Depth Generic Site Condition Standards (SCS) in a Potable Groundwater Condition, Residential/Parkland/Insitutional (RPI) Property Use, Coarse Textured Soil Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).														
Table 2.1 SCS ICC	Table 2.1, Full Depth Generic Site Condition Standards (SCS) in a Potable Groundwater Condition, Industrial/Commercial/Community (ICC) Property Use, Coarse Textured Soil Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).														
Table 3.1 SCS RPI	Table 3.1, Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Groundwater Condition, Residential/Parkland/Insitutional (RPI) Property Use, Coarse Textured Soil Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).														
Table 3.1 SCS RPI	Table 3.1, Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Groundwater Condition, Industrial/Commercial/Community (ICC) Property Use, Coarse Textured Soil Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).														
Yellow Highlight	Exceeds Table 1 SCS RPI/ICC														
Bold	Exceeds Table 2.1 SCS RPI and Table 2.1 SCS ICC														
Underlined	Exceeds Table 3.1 SCS RPI														
bordered	Exceeds Table 3.1 SCS ICC														

Table 205
Soil Analytical Results
OCPs

Parameters	Units	RDL	Guidelines					Sample ID Laboratory ID Sample Depth (m bgs) Sample Collection Date (m/d/y)			
			Site Condition Standards (SCS)					BH 5-1	DUP-5	BH 16-1	
								1606034	1606035	1606843	
			Table 1 RPI/ICC	Table 2.1 RPI	Table 2.1 ICC	Table 3.1 RPI	Table 3.1 ICC	@ 0.1-0.7 1/14/2022	Duplication of BH 5-1	@ 0.1-0.7 1/21/2022	
OPCs											
Aldrin	ug/g	0.006	0.05	0.05	0.088	0.05	0.088	<0.006	<0.006	<0.002	
Chlordane	ug/g	0.018	0.05	0.05	0.05	0.05	0.05	<0.018	<0.018	<0.006	
Dieldrin	ug/g	0.006	0.05	0.05	0.088	0.05	0.088	<0.006	<0.006	<0.002	
Endosulfan I + Endosulfan II	ug/g	0.006	0.04	0.04	0.04	0.04	0.04	<0.012	<0.012	<0.004	
Endrin	ug/g	0.006	0.04	0.04	0.04	0.04	0.04	<0.006	<0.006	<0.002	
gamma-BHC	ug/g	0.006	NV	0.01	0.01	0.01	0.01	<0.006	<0.006	<0.002	
Heptachlor	ug/g	0.006	0.05	0.072	0.072	0.072	0.072	<0.006	<0.006	<0.002	
Heptachlor epoxide	ug/g	0.006	0.05	0.05	0.05	0.05	0.05	<0.006	<0.006	<0.002	
Hexachlorobenzene	ug/g	0.006	0.01	0.034	0.034	0.52	0.66	<0.006	<0.006	<0.002	
Hexachlorobutadiene	ug/g	0.006	0.01	0.01	0.01	0.01	0.01	<0.006	<0.006	<0.002	
Hexachloroethane	ug/g	0.006	0.01	0.01	0.01	0.01	0.13	<0.006	<0.006	<0.002	
Methoxychlor	ug/g	0.006	0.05	0.13	0.19	0.13	0.19	<0.006	<0.006	<0.002	
p,p'-DDD	ug/g	0.006	0.05	3.3	4.6	3.3	4.6	<0.006	<0.006	<0.002	
p,p'-DDE	ug/g	0.006	0.05	0.26	0.52	0.26	0.52	<0.006	<0.006	<0.002	
p,p'-DDT	ug/g	0.006	1.4	1.4	1.4	1.4	1.4	<0.006	<0.006	<0.002	

Notes

RDL	Reportable Detection Limit
NV	No Criteria/RDL Value
NA	Not Applicable
<	Values is less than the RDL
Table 1 SCS RPIICC	Table 1, Full Depth Background Site Condition Standards (SCS) , Residential/Parkland/Insitutional/Industrial/Commercial/Community (RPIICC) Property Use, Soil (other than sediment), Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Table 2.1 SCS RPI	Table 2.1, Full Depth Generic Site Condition Standards (SCS) in a Potable Groundwater Condition, Residential/Parkland/Insitutional (RPI) Property Use, Coarse Textured Soil, Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Table 2.1 SCS ICC	Table 2.1, Full Depth Generic Site Condition Standards (SCS) in a Potable Groundwater Condition, Industrial/Commercial/Community (ICC) Property Use, Coarse Textured Soil, Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Table 3.1 SCS RPI	Table 3.1, Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Groundwater Condition, Residential/Parkland/Insitutional (RPI) Property Use, Coarse Textured Soil, Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Table 3.1 SCS RPI	Table 3.1, Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Groundwater Condition, Industrial/Commercial/Community (ICC) Property Use, Coarse Textured Soil, Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Yellow Highlight	Exceeds Table 1 SCS RPIICC
Bold	Exceeds Table 2.1 SCS RPI and Table 3.1 SCS RPI
<u>Underlined</u>	Exceeds Table 2.1 SCS ICC and tabe 3.1 SCS ICC

Table 206
Soil Analytical Results
PCBs

Parameters	Units	RDL	Guidelines					Sample ID Laboratory ID Sample Depth (m bgs) Sample Collection Date (m/d/y)		
			Site Condition Standards (SCS)					BH 3-1	DUP-7	BH 9-2
								1606834	1606835	1606047
			Table 1 RPIICC	Table 2.1 RPI	Table 2.1 ICC	Table 3.1 RPI	Table 3.1 ICC	@ 0.1-0.7 1/21/2022	Duplication of BH 3-2	@ 0.8-1.4 1/13/2022
PCBs										
Polychlorinated Biphenyls	ug/g	0.02	0.3	0.35	0.78	0.35	0.78	<0.02	<0.02	<0.02
Aroclor 1242	ug/g	0.02	NV	NV	NV	NV	NV	<0.02	<0.02	<0.02
Aroclor 1248	ug/g	0.02	NV	NV	NV	NV	NV	<0.02	<0.02	<0.02
Aroclor 1254	ug/g	0.02	NV	NV	NV	NV	NV	<0.02	<0.02	<0.02
Aroclor 1260	ug/g	0.02	NV	NV	NV	NV	NV	<0.02	<0.02	<0.02

Notes

RDL	Reportable Detection Limit
NV	No Criteria/RDL Value
NA	Not Applicable
<'	Values is less than the RDL
Table 1 SCS RPIICC	Table 1, Full Depth Background Site Condition Standards (SCS) , Residential/Parkland/Insitutional/Industrial/Commercial/Community (RPIICC) Property Use, Soil (other than sediment), Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Table 2.1 SCS RPI	Table 2.1, Full Depth Generic Site Condition Standards (SCS) in a Potable Groundwater Condition, Residential/Parkland/Insitutional (RPI) Property Use, Coarse Textured Soil, Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Table 2.1 SCS ICC	Table 2.1, Full Depth Generic Site Condition Standards (SCS) in a Potable Groundwater Condition, Industrial/Commercial/Community (ICC) Property Use, Coarse Textured Soil, Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Table 3.1 SCS RPI	Table 3.1, Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Groundwater Condition, Residential/Parkland/Insitutional (RPI) Property Use, Coarse Textured Soil, Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Table 3.1 SCS RPI	Table 3.1, Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Groundwater Condition, Industrial/Commercial/Community (ICC) Property Use, Coarse Textured Soil, Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).
Yellow Highlight	Exceeds Table 1 SCS RPIICC
Bold	Exceeds Table 2.1 SCS RPI and Table 3.1 SCS RPI
<u>Underlined</u>	Exceeds Table 2.1 SCS ICC and table 3.1 SCS ICC

Table 207
Soil Analytical Results
Modified Synthetic Precipitation Leaching (mSPLP)

Parameters	Units	RDL	Guidelines					Sample ID					
								Laboratory ID					
			Site Condition Standards (SCS)					Sample Collection Date (m/d/y)					
								SPLP					
			Table 1 RPICCO	Table 2.1 RPI	Table 2.1 ICC	Table 3.1 RPI	Table 3.1 IOC	BH 1-1 1606110	BH 2-1 1606049	BH 2-2 1606111	BH 2-3 1606112	BH 10-1 1606113	BH 10-1 1606030
SPLP 1/14/2022	SPLP 1/21/2022	SPLP 1/13/2022	SPLP 1/13/2022	SPLP 1/13/2022	SPLP 1/13/2022	SPLP 1/21/2022							
Physical Parameters													
Moisture (%)	%		NV	NV	NV	NV	7.8	5.4	11.3	14.4	16.8	-	
Metals and Inorganics													
Antimony	ug/L	0.5	NV	6	6	NV	NV	0.5	0.6	<0.5	<0.5	-	
Barium	ug/L	10	NV	1000	1000	4600	4600	20	<10	30	<10	60	
Beryllium	ug/L	2	NV	4	4	11	11	<0.5	<0.5	<2	<2	0.8	
Boron	ug/L	10	NV	5000	5000	NV	NV	40	<10	10	100	-	
Cadmium	ug/L	0.1	NV	NV	NV	NV	NV	<0.1	<0.1			0.1	
Chromium	ug/L	1	NV	50	50	130	130	5	1	<1	1	17	
Cobalt	ug/L	0.2	NV	3.8	3.8	10	10	0.7	0.2	<0.2	0.4	2.2	
Copper	ug/L	1	NV	14	14	14	14	13	2	<1	3	38	
Molybdenum	ug/L	5	23	23	23	NV	1500	<5	<5	<5	<5	-	
Nickel	ug/L	5	NV	78	78	78	78	<5	<5	<5	<5	12	
Selenium	ug/L	1	NV	10	10	10	10	2	<1	<1	<1	6	
Silver	ug/L	0.1	0.3	0.3	0.3	0.3	0.3	<0.1	<0.1	0.1	0.2	<0.1	
Thallium	ug/L	0.1	2	2	2	NV	80	<0.1	<0.1	<0.1	<0.1	0.1	
Uranium	ug/L	1	NV	20	20	66	66	<1	<1	<1	<1	1	
Zinc	ug/L	10	NV	180	180	180	180	10	<10	<10	<10	50	
VOCs													
1,1,1,2-Tetrachloroethane	ug/L	0.5	0.5	NV	NV	NV	NV	<0.5	-	-	<0.5	-	-
1,1,2,2-Tetrachloroethane	ug/L	0.5	0.5	0.5	0.5	NV	NV	<0.5	-	-	<0.5	-	-
1,1,2-Trichloroethane	ug/L	0.4	0.5	NV	NV	NV	NV	<0.4	-	-	<0.4	-	-
1,1-Dichloroethane	ug/L	0.4	0.5	NV	NV	NV	NV	<0.4	-	-	<0.4	-	-
1,1-Dichloroethene	ug/L	0.5	0.5	0.5	0.5	0.5	0.5	<0.5	-	-	<0.5	-	-
1,2-Dichlorobenzene	ug/L	0.4	0.55	0.55	0.55	NV	NV	<0.4	-	-	<0.4	-	-
1,2-Dichloroethane	ug/L	0.2	0.5	0.5	0.5	NV	NV	<0.2	-	-	<0.2	-	-
1,2-Dichloropropane	ug/L	0.5	0.5	0.5	0.5	NV	NV	<0.5	-	-	<0.5	-	-
1,3-Dichloropropene, cis + trans	ug/L	0.3	NV	NV	NV	NV	NV	<0.3	-	-	<0.3	-	-
1,4-Dichlorobenzene	ug/L	0.4	0.5	0.5	0.5	NV	NV	<0.4	-	-	<0.4	-	-
Bromomethane	ug/L	0.5	0.5	0.5	0.5	0.5	0.5	<0.5	-	-	<0.5	-	-
Carbon Tetrachloride	ug/L	0.2	0.2	0.2	0.2	0.2	0.2	<0.2	-	-	<0.2	-	-
Chloroform	ug/L	0.5	1	NV	NV	NV	NV	<0.5	-	-	<0.5	-	-
cis-1,2-Dichloroethene	ug/L	0.4	NV	0.5	0.5	NV	NV	<0.4	-	-	<0.4	-	-
Dichloroethylene, trans-1,2-	ug/L	0.4	NV	0.5	0.5	0.5	0.5	<0.4	-	-	<0.4	-	-
Ethylene Dibromide	ug/L	0.2	0.2	0.2	0.2	0.2	0.2	<0.2	-	-	<0.2	-	-
Tetrachloroethylene	ug/L	0.3	0.5	0.5	0.5	0.5	0.5	<0.3	-	-	<0.3	-	-
Trichloroethylene	ug/L	0.3	0.5	0.5	0.5	0.5	0.5	<0.3	-	-	<0.3	-	-
Semi-VOCs													
2,4 + 2,6-Dinitrotoluene	ug/L	5	5	5	5	NV	NV	-	-	-	<5	-	-
2,4-Dinitrophenol	ug/L	2.5	10	10	10	NV	NV	-	-	-	<2.5	-	-
3,3'-Dichlorobenzidine	ug/L	0.5	0.5	0.5	0.5	NV	NV	-	-	-	<0.5	-	-
4-Chloroaniline	ug/L	0.2	NV	10	10	NV	NV	-	-	-	<0.2	-	-
Bis(2-chloroethyl)ether	ug/L	0.8	5	5	5	NV	NV	-	-	-	<0.8	-	-
Bis(2-chloroisopropyl)ether	ug/L	0.5	4	4	4	NV	NV	-	-	-	<0.5	-	-
Diethyl phthalate	ug/L	0.2	NV	2	2	2	2	-	-	-	0.2	-	-
Dimethyl phthalate	ug/L	0.2	NV	2	2	2	2	-	-	-	<0.2	-	-
OPCs													
Diiodin	ug/L	0.006	0.095	0.97	0.097	0.097	0.097	-	-	-	-	-	<0.006
Endrin	ug/L	0.005	0.061	0.062	0.062	0.062	0.062	-	-	-	-	-	<0.005
Heptachlor	ug/L	0.005	0.01	NV	NV	NV	NV	-	-	-	-	-	<0.005
Heptachlor epoxide	ug/L	0.005	0.01	0.01	0.01	0.01	0.01	-	-	-	-	-	<0.005

Notes													
RDL	Reportable Detection Limit												
NV	No Criteria/RDL Value												
NA	Not Applicable												
<"	Values is less than the RDL												
Table 1 SCS RPIICC	Table 1, Leachate Screening Levels for Excess Soil Reuse Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act. (MOE 2020).												
Table 2.1 SCS RPI	Table 2.1, Leachate Screening Levels for Full Depth Excess Soil in a Potable Ground Water Condition, Residential/Parkland/Institutional (RPI) Property Use, Coarse Textured Soil Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act. (MOE 2020).												
Table 2.1 SCS ICC	Table 2.1, Leachate Screening Levels for Full Depth Excess Soil in a Potable Groundwater Condition, Industrial/Commercial/Community (ICC) Property Use, Coarse Textured Soil Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act. (MOE 2020).												
Table 3.1 SCS RPI	Table 3.1, Leachate Screening Levels for Full Depth Excess Soil in a Non-Potable Groundwater Condition, Residential/Parkland/Institutional (RPI) Property Use, Coarse Textured Soil Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act. (MOE 2020).												
Table 3.1 SCS ICC	Table 3.1, Leachate Screening Levels for Full Depth Excess Soil in a Non-Potable Groundwater Condition, Industrial/Commercial/Community (ICC) Property Use, Coarse Textured Soil Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act. (MOE 2020).												
Yellow Highlight	Exceeds Table 1 SCS RPIICC												
Bold	Exceeds Table 2.1 SCS RPI and Table 2.1 SCS ICC												
Underlined	Exceeds Table 3.1 SCS RPI and Table 3.1 SCS ICC												

Table 208
Soil Analytical Results
Toxicity Characteristic Leaching Procedure (TCLP)

Parameters	Units	RDL	Guidelines							Sample ID				
										Laboratory ID				
			Site Condition Standards (SCS)							Sample Collection Date (m/d/y)				
										TCLP				
										BH 1-1	BH 3-2	BH 8-1	BH 12-1	BH 15-1
Table 1 RPIICC	Table 2.1 RPI	Table 2.1 ICC	Table 3.1 RPI	Table 3.1 ICC	Schedule 4 Leachate Quality Criteria	1606080	1606846	1606081	1606082	1606848				
TCLP 1/14/2022	TCLP 1/21/2022	TCLP 1/13/2022	TCLP 1/13/2022	TCLP 1/21/2022										

Physical Parameters														
Moisture (%)	%	0.1	NV	NV	NV	NV	NV		6.3	19.8	14.6	15	17.5	
Metals and Inorganics														
Arsenic	ug/L	20	NV	NV	NV	NV	NV	2500	<20	<20	<20	<20	<20	
Barium	ug/L	10	NV	1000	1000	4600	4600	100000	610	0.36	230	580	520	
Boron	ug/L	100	NV	5000	5000	NV	NV	500000	<100	<100	<100	<100	<100	
Cadmium	ug/L	8	NV	NV	0.5	NV	0.5	500	<8	<8	<8	<8	<8	
Chromium	ug/L	50	NV	50	50	130	130	5000	<50	<50	<50	<50	<50	
Lead	ug/L	10	NV	NV	NV	NV	NV	5000	10	<10	<10	10	<10	
Mercury	ug/L	1	NV	NV	NV	NV	NV	100	<1	<1	<1	<1	<1	
Selenium	ug/L	20	NV	10	10	10	10	1000	<20	<20	<20	<20	<20	
Silver	ug/L	10	0.3	0.3	0.3	0.3	0.3	5000	<10	<10	<10	<10	<10	
Uranium	ug/L	10	NV	20	20	66	66	10000	<10	<10	<10	<10	<10	
VOCs														
Benzene	ug/L	0.5	NV	NV	NV	NV	NV	500	<0.5	<0.5	<0.5	<0.5	<0.5	
Carbon Tetrachloride	ug/L	0.2	0.2	0.2	0.2	0.2	0.2	500	<0.2	<0.2	<0.2	<0.2	<0.2	
Chlorobenzene	ug/L	0.5	NV	NV	NV	NV	NV	8000	<0.5	<0.5	<0.5	<0.5	<0.5	
Chloroform	ug/L	0.5	1	NV	NV	NV	NV	10000	<0.5	<0.5	0.6	0.6	<0.5	
Dichlorobenzene, 1,2-	ug/L	0.4	NV	NV	NV	NV	NV	20000	<0.4	<0.4	<0.4	<0.4	<0.4	
Dichlorobenzene, 1,4-	ug/L	0.4	NV	NV	NV	NV	NV	500	<0.4	<0.4	<0.4	<0.4	<0.4	
Dichloroethane, 1,2-	ug/L	0.2	NV	NV	NV	NV	NV	500	<0.2	<0.2	<0.2	<0.2	<0.2	
Dichloroethylene, 1,1-	ug/L	0.5	NV	NV	NV	NV	NV	1400	<0.5	<0.5	<0.5	<0.5	<0.5	
Methyl Ethyl Ketone	ug/L	10	NV	NV	NV	NV	NV	200000	<10	<10	<10	<10	<10	
Methylene Chloride	ug/L	4	NV	NV	NV	NV	NV	5000	<4.0	<4.0	<4.0	<4.0	<4.0	
Tetrachloroethylene	ug/L	0.3	0.5	0.5	0.5	0.5	0.5	3000	<0.3	<0.3	<0.3	<0.3	<0.3	
Trichloroethylene	ug/L	0.3	0.5	0.5	0.5	0.5	0.5	5000	<0.3	<0.3	<0.3	<0.3	<0.3	
Vinyl Chloride	ug/L	0.2	NV	NV	NV	NV	NV	200	<0.2	<0.2	<0.2	<0.2	<0.2	
Benzo[a]pyrene	ug/L	0.01	NV	NV	NV	NV	NV	NV	<0.01	<0.01	<0.01	<0.01	<0.01	
Toluene-d8	%	0	NV	NV	NV	NV	NV	NV	112	110	118	130	119	
1,2-dichloroethane-d4	%	0	NV	NV	NV	NV	NV	NV	112	128	128	119	121	
4-bromofluorobenzene	%	0	NV	NV	NV	NV	NV	NV	80	72	87	93	73	
PCBs														
Polychlorinated Biphenyls	ug/L	0.1	NV	NV	NV	NV	NV		<0.1					

Notes	RDL	Reportable Detection Limit
	NV	No Criteria/RDL Value
	NA	Not Applicable
	<	Values is less than the RDL
Table 1 SCS RPIICC	Table 1, Leachate Screening Levels for Excess Soil Reuse, Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).	
Table 2.1 SCS RPI	Table 2.1, Leachate Screening Levels for Full Depth Excess Soil in a Potable Ground Water Condition, Residential/Parkland/Institutional (RPI) Property Use, Coarse Textured Soil Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).	
Table 2.1 SCS ICC	Table 2.1, Leachate Screening Levels for Full Depth Excess Soil in a Potable Groundwater Condition, Industrial/Commercial/Community (ICC) Property Use, Coarse Textured Soil, Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).	
Table 3.1 SCS RPI	Table 3.1, Leachate Screening Levels for Full Depth Excess Soil in a Non-Potable Groundwater Condition, Residential/Parkland/Institutional (RPI) Property Use, Coarse Textured Soil, Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).	
Table 3.1 SCS RPI	Table 3.1, Leachate Screening Levels for Full Depth Excess Soil in a Non-Potable Groundwater Condition, Industrial/Commercial/Community (ICC) Property Use, Coarse Textured Soil, Ontario Ministry of the Environment "Rules For Soil Management And Excess Soil Quality Standards" made under the Environmental Protection Act (MOE 2020).	
Schedule 4	Schedule 4 Leachate Quality Criteria in O. Reg. 558/0	
Result	Exceeds Table 1 SCS RPIICC	
Result	Exceeds Table 2.1 SCS RPI	
Result	Exceeds Table 2.1 SCS ICC	
Result	Exceeds Table 3.1 SCS RPI	
Result	Exceeds Table 3.1 SCS ICC	

Table 209
Evaluation of Soil Field Duplicate Data
Relative Percent Difference (RPD)

Parameters	Units	RDL	RPD Alert Limits (%)	BH 11-1	DUP-1	RPD (%)
				1/13/2022	BH11-1 Duplicate	
Metals				Metals (Dup-1)		
Boron (Hot Water Soluble)	ug/g	0.5	40	-	-	NC
Cadmium	ug/g	0.4	40	<0.4	<0.4	NC
Chromium	ug/g	1	40	30	20	10.0
Cobalt	ug/g	1	40	6	7	3.8
Copper	ug/g	1	40	16	17	1.5
Cyanide (Free)	ug/g	0.005	40	-	-	NC
Chromium VI	ug/g	0.2	40	-	-	NC
Lead	ug/g	1	40	17	21	5.3
Mercury	ug/g	0.1	40	-	-	NC
Molybdenum	ug/g	1	40	<1	<1	NC
Nickel	ug/g	1	40	19	16	4.3
Selenium	ug/g	0.5	40	0.6	0.6	NC
Silver	ug/g	0.2	40	<0.2	<0.2	NC
Thallium	ug/g	1	40	<1	<1	NC
Uranium	ug/g	0.5	40	<0.5	<0.5	NC
Vanadium	ug/g	2	40	26	27	0.9
Zinc	ug/g	2	40	56	64	3.3

Notes

ug/g = micrograms per gram,

NC = not calculated

Appendix D

Laboratory of Certificates of Analysis



eNGLOBE

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
Invoice to: EnGlobe Corp.
PO#:

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644
Temperature (C): 16
Custody Seal:

Page 1 of 56

Dear Nan Du:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Sample Comment Summary

Sample ID: 1606034	BH5-1	OCPs surrogate recovery is unavailable due to matrix interference.
Sample ID: 1606035	Dup-5	OCPs surrogate recovery is unavailable due to matrix interference.

Report Comments:

Addrine Thomas, Inorganics Supervisor

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise stated

Eurofins Environment Testing Canada Inc. is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at <http://www.cala.ca/scopes/2602.pdf>

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline or regulatory limits listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official guideline or regulation as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

O.Reg 153-T1-All Other Soils

Exceedence Summary

Sample I.D.	Analyte	Result	Units	Criteria
Inorganics				
BH10-1	Electrical Conductivity	2.81	mS/cm	STD 0.57
BH10-1	Sodium Adsorption Ratio	40.0		STD 2.4
BH1-1	Electrical Conductivity	2.19	mS/cm	STD 0.57
BH1-1	Sodium Adsorption Ratio	37.8		STD 2.4
BH11-1	Electrical Conductivity	7.04	mS/cm	STD 0.57
BH11-1	Sodium Adsorption Ratio	162		STD 2.4
BH1-2	Electrical Conductivity	3.32	mS/cm	STD 0.57
BH1-2	Sodium Adsorption Ratio	17.0		STD 2.4
BH12-1	Electrical Conductivity	4.11	mS/cm	STD 0.57
BH12-1	Sodium Adsorption Ratio	58.8		STD 2.4
BH12-2	Electrical Conductivity	8.50	mS/cm	STD 0.57
BH12-2	Sodium Adsorption Ratio	126		STD 2.4
BH2-1	Electrical Conductivity	4.18	mS/cm	STD 0.57
BH2-1	Sodium Adsorption Ratio	81.8		STD 2.4
BH4-1	Electrical Conductivity	3.19	mS/cm	STD 0.57
BH4-1	Sodium Adsorption Ratio	68.4		STD 2.4
BH5-1	Electrical Conductivity	2.03	mS/cm	STD 0.57
BH5-1	Sodium Adsorption Ratio	30.1		STD 2.4
BH7-1	Electrical Conductivity	6.39	mS/cm	STD 0.57
BH7-1	Sodium Adsorption Ratio	111		STD 2.4
BH8-1	Electrical Conductivity	3.38	mS/cm	STD 0.57
BH8-1	Sodium Adsorption Ratio	12.2		STD 2.4
BH8-2	Electrical Conductivity	1.66	mS/cm	STD 0.57
BH8-2	Sodium Adsorption Ratio	6.36		STD 2.4
BH9-1	Electrical Conductivity	3.76	mS/cm	STD 0.57
BH9-1	Sodium Adsorption Ratio	79.4		STD 2.4
BH9-2	Electrical Conductivity	5.88	mS/cm	STD 0.57
BH9-2	Sodium Adsorption Ratio	147		STD 2.4
Volatiles				
BH11-7	Methyl Ethyl Ketone	1.1	ug/g	STD 0.5
BH12-8	Methyl Ethyl Ketone	1.3	ug/g	STD 0.5
BH1-5	Methyl Ethyl Ketone	0.81	ug/g	STD 0.5
BH2-6	Methyl Ethyl Ketone	0.72	ug/g	STD 0.5
BH8-7	Methyl Ethyl Ketone	1.1	ug/g	STD 0.5
BH9-3	Methyl Ethyl Ketone	0.87	ug/g	STD 0.5
Dup-4	Methyl Ethyl Ketone	1.2	ug/g	STD 0.5

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Attention: Mr. Nan Du
PO#:
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Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606026	Soil153	1606027	Soil153	1606028	Soil153
PHC's F1	415896	10	ug/g	STD 25	2022-01-14	BH1-3	2022-01-14	BH1-5	2022-01-14	BH2-1
PHC's F1-BTEX	415903	10	ug/g		<10	<10	<10	<10	<10	<10
PHC's F2	415889	2	ug/g	STD 10	<2	<2	<2	<2	<2	<2
	416046	2	ug/g	STD 10						<2
PHC's F2-Naph	416051	2	ug/g							<2
PHC's F3	415889	20	ug/g	STD 240	<20	<20	<20	<20	<20	<20
	416046	20	ug/g	STD 240						20
PHC's F3-PAH	416052	20	ug/g							20
PHC's F4	415889	20	ug/g	STD 120	<20	<20	<20	<20	<20	<20
	416046	20	ug/g	STD 120						<20

Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606029	Soil153	1606030	Soil153	1606032	Soil153
PHC's F1	415896	10	ug/g	STD 25	2022-01-14	BH2-6	2022-01-14	Dup-4	2022-01-14	BH4-2
PHC's F1-BTEX	415903	10	ug/g		<10	<10	<10	<10	<10	<10
PHC's F2	415889	2	ug/g	STD 10	<2	<2	<2	<2	<2	<2
PHC's F3	415889	20	ug/g	STD 240	<20	<20	<20	<20	<20	<20
PHC's F4	415889	20	ug/g	STD 120	<20	<20	<20	<20	<20	<20

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Hydrocarbons

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606036
Soil153
2022-01-14
BH5-3

1606037
Soil153
2022-01-14
BH5-9

Analyte Batch No MRL Units Guideline

PHC's F1	415896	10	ug/g	STD 25	<10	<10
PHC's F1-BTEX	415903	10	ug/g		<10	<10
PHC's F2	415889	2	ug/g	STD 10	<2	<2
PHC's F3	415889	20	ug/g	STD 240	<20	<20
PHC's F4	415889	20	ug/g	STD 120	<20	<20

Hydrocarbons

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606040
Soil153
2022-01-14
BH7-3

1606041
Soil153
2022-01-14
Dup-3

1606042
Soil153
2022-01-14
BH7-6

Analyte Batch No MRL Units Guideline

PHC's F1	415896	10	ug/g	STD 25	<10	<10	<10
PHC's F1-BTEX	415903	10	ug/g		<10	<10	<10
PHC's F2	415889	2	ug/g	STD 10	<2	<2	<2
PHC's F3	415889	20	ug/g	STD 240	<20	<20	<20
PHC's F4	415889	20	ug/g	STD 120	<20	<20	<20

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Hydrocarbons

					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606045 Soil153 2022-01-13 BH8-7	1606048 Soil153 2022-01-13 BH9-3
Analyte	Batch No	MRL	Units	Guideline			
PHC's F1	415896	10	ug/g	STD 25		<10	<10
PHC's F1-BTEX	415903	10	ug/g			<10	<10
PHC's F2	415996	2	ug/g	STD 10		<2	<2
PHC's F3	415996	20	ug/g	STD 240		<20	<20
PHC's F4	415996	20	ug/g	STD 120		<20	<20

Hydrocarbons

					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606049 Soil153 2022-01-13 BH9-9	1606051 Soil153 2022-01-13 BH10-2
Analyte	Batch No	MRL	Units	Guideline			
PHC's F1	415896	10	ug/g	STD 25		<10	<10
PHC's F1-BTEX	415903	10	ug/g			<10	<10
PHC's F2	415959	2	ug/g	STD 10			<2
	416045	2	ug/g	STD 10		2	
PHC's F3	415959	20	ug/g	STD 240			<20
	416045	20	ug/g	STD 240		100	
PHC's F4	415959	20	ug/g	STD 120			<20
	416045	20	ug/g	STD 120		<20	

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Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606054	Soil153	1606055	Soil153	1606057	Soil153
					2022-01-13		2022-01-13		2022-01-13	2022-01-13
					BH11-2		BH11-7		BH12-2	BH12-8
PHC's F1	415896	10	ug/g	STD 25	<10		<10		<10	<10
PHC's F1-BTEX	415903	10	ug/g		<10		<10		<10	<10
PHC's F2	415959	2	ug/g	STD 10	<2		<2		<2	<2
PHC's F3	415959	20	ug/g	STD 240	30		<20		<20	<20
PHC's F4	415959	20	ug/g	STD 120	<20		<20		<20	<20

Metals

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606024	Soil153	1606025	Soil153	1606028	Soil153
					2022-01-14		2022-01-14		2022-01-14	
					BH1-1		BH1-2		BH2-1	
Antimony	415846	1	ug/g	STD 1.3	<1		<1			
	416113	1	ug/g	STD 1.3					<1	
Arsenic	415846	1	ug/g	STD 18	2		4			
	416113	1	ug/g	STD 18					2	
Barium	415846	1	ug/g	STD 220	46		65			
	416113	1	ug/g	STD 220					57	
Beryllium	415846	1	ug/g	STD 2.5	<1		<1			
	416113	1	ug/g	STD 2.5					<1	
Boron (Hot Water Soluble)	415918	0.5	ug/g		<0.5					
Boron (total)	415846	5	ug/g	STD 36	<5		<5			
	416113	5	ug/g	STD 36					15	
Cadmium	415846	0.4	ug/g	STD 1.2	<0.4		<0.4			
	416113	0.4	ug/g	STD 1.2					<0.4	

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Metals

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606024
Soil153
2022-01-14
BH1-1
1606025
Soil153
2022-01-14
BH1-2
1606028
Soil153
2022-01-14
BH2-1

Analyte	Batch No	MRL	Units	Guideline			
Chromium Total	415846	1	ug/g	STD 70	20	28	
	416113	1	ug/g	STD 70			12
Chromium VI	415899	0.20	ug/g	STD 0.66	<0.20		
Cobalt	415846	1	ug/g	STD 21	5	8	
	416113	1	ug/g	STD 21			2
Copper	415846	1	ug/g	STD 92	16	20	
	416113	1	ug/g	STD 92			5
Lead	415846	1	ug/g	STD 120	14	12	
	416113	1	ug/g	STD 120			8
Mercury	415846	0.1	ug/g	STD 0.27	<0.1		
Molybdenum	415846	1	ug/g	STD 2	<1	<1	
	416113	1	ug/g	STD 2			<1
Nickel	415846	1	ug/g	STD 82	14	23	
	416113	1	ug/g	STD 82			5
Selenium	415895	0.5	ug/g	STD 1.5	<0.5	0.7	
	416113	0.5	ug/g	STD 1.5			<0.5
Silver	415846	0.2	ug/g	STD 0.5	<0.2	<0.2	
	416113	0.2	ug/g	STD 0.5			<0.2
Thallium	415846	1	ug/g	STD 1	<1	<1	
	416113	1	ug/g	STD 1			<1
Uranium	415846	0.5	ug/g	STD 2.5	<0.5	<0.5	
	416113	0.5	ug/g	STD 2.5			<0.5
Vanadium	415846	2	ug/g	STD 86	20	31	

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Metals

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606024
Soil153
2022-01-14
BH1-1
1606025
Soil153
2022-01-14
BH1-2
1606028
Soil153
2022-01-14
BH2-1

Analyte Batch No MRL Units Guideline

Vanadium	416113	2	ug/g	STD 86			8
Zinc	415846	2	ug/g	STD 290	44	62	
	416113	2	ug/g	STD 290			10

Metals

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606031
Soil153
2022-01-14
BH4-1

Analyte Batch No MRL Units Guideline

Antimony	415846	1	ug/g	STD 1.3	<1
Arsenic	415846	1	ug/g	STD 18	2
Barium	415846	1	ug/g	STD 220	29
Beryllium	415846	1	ug/g	STD 2.5	<1
Boron (total)	415846	5	ug/g	STD 36	<5
Cadmium	415846	0.4	ug/g	STD 1.2	<0.4
Chromium Total	415846	1	ug/g	STD 70	18
Cobalt	415846	1	ug/g	STD 21	4
Copper	415846	1	ug/g	STD 92	14
Lead	415846	1	ug/g	STD 120	15
Molybdenum	415846	1	ug/g	STD 2	<1
Nickel	415846	1	ug/g	STD 82	12
Selenium	415895	0.5	ug/g	STD 1.5	<0.5
Silver	415846	0.2	ug/g	STD 0.5	<0.2
Thallium	415846	1	ug/g	STD 1	<1
Uranium	415846	0.5	ug/g	STD 2.5	<0.5

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Metals

Lab I.D. 1606031
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-14
Sampling Time
Sample I.D. BH4-1

Analyte Batch No MRL Units Guideline

Vanadium	415846	2	ug/g	STD 86	20
Zinc	415846	2	ug/g	STD 290	44

Metals

Lab I.D. 1606034
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-14
Sampling Time
Sample I.D. BH5-1

Analyte Batch No MRL Units Guideline

Antimony	415846	1	ug/g	STD 1.3	<1	<1
Arsenic	415846	1	ug/g	STD 18	3	3
Barium	415846	1	ug/g	STD 220	51	63
Beryllium	415846	1	ug/g	STD 2.5	<1	<1
Boron (total)	415846	5	ug/g	STD 36	<5	5
Cadmium	415846	0.4	ug/g	STD 1.2	<0.4	<0.4
Chromium Total	415846	1	ug/g	STD 70	20	20
Cobalt	415846	1	ug/g	STD 21	6	7
Copper	415846	1	ug/g	STD 92	16	18
Lead	415846	1	ug/g	STD 120	14	11
Molybdenum	415846	1	ug/g	STD 2	<1	<1
Nickel	415846	1	ug/g	STD 82	15	17
Selenium	415895	0.5	ug/g	STD 1.5	0.6	<0.5
Silver	415846	0.2	ug/g	STD 0.5	<0.2	<0.2
Thallium	415846	1	ug/g	STD 1	<1	<1
Uranium	415846	0.5	ug/g	STD 2.5	<0.5	<0.5
Vanadium	415846	2	ug/g	STD 86	24	28

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Metals

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606034
Soil153
2022-01-14
BH5-1

1606038
Soil153
2022-01-14
BH7-1

Analyte Batch No MRL Units Guideline

Zinc 415846 2 ug/g STD 290

52 48

Metals

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606043
Soil153
2022-01-13
BH8-1

Analyte Batch No MRL Units Guideline

Antimony 415846 1 ug/g STD 1.3

<1

Arsenic 415846 1 ug/g STD 18

3

Barium 415846 1 ug/g STD 220

39

Beryllium 415846 1 ug/g STD 2.5

<1

Boron (total) 415846 5 ug/g STD 36

5

Cadmium 415846 0.4 ug/g STD 1.2

<0.4

Chromium Total 415846 1 ug/g STD 70

16

Cobalt 415846 1 ug/g STD 21

7

Copper 415846 1 ug/g STD 92

16

Lead 415846 1 ug/g STD 120

9

Molybdenum 415846 1 ug/g STD 2

<1

Nickel 415846 1 ug/g STD 82

16

Selenium 415895 0.5 ug/g STD 1.5

0.6

Silver 415846 0.2 ug/g STD 0.5

<0.2

Thallium 415846 1 ug/g STD 1

<1

Uranium 415846 0.5 ug/g STD 2.5

<0.5

Vanadium 415846 2 ug/g STD 86

24

Zinc 415846 2 ug/g STD 290

47

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Metals

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606044 Soil153	1606046 Soil153	1606047 Soil153
2022-01-13	2022-01-13	2022-01-13
BH8-2	BH9-1	BH9-2

Analyte	Batch No	MRL	Units	Guideline
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Antimony	415846	1	ug/g	STD 1.3	<1	<1	<1
Arsenic	415846	1	ug/g	STD 18	2	2	3
Barium	415846	1	ug/g	STD 220	20	21	38
Beryllium	415846	1	ug/g	STD 2.5	<1	<1	<1
Boron (Hot Water Soluble)	415918	0.5	ug/g		<0.5	<0.5	
Boron (total)	415846	5	ug/g	STD 36	<5	<5	<5
Cadmium	415846	0.4	ug/g	STD 1.2	<0.4	<0.4	<0.4
Chromium Total	415846	1	ug/g	STD 70	11	10	14
Chromium VI	415899	0.20	ug/g	STD 0.66	<0.20	<0.20	
Cobalt	415846	1	ug/g	STD 21	4	3	6
Copper	415846	1	ug/g	STD 92	11	12	15
Lead	415846	1	ug/g	STD 120	4	115	6
Mercury	415846	0.1	ug/g	STD 0.27	<0.1	<0.1	
Molybdenum	415846	1	ug/g	STD 2	<1	<1	<1
Nickel	415846	1	ug/g	STD 82	9	8	14
Selenium	415895	0.5	ug/g	STD 1.5	0.6	<0.5	0.6
Silver	415846	0.2	ug/g	STD 0.5	<0.2	<0.2	<0.2
Thallium	415846	1	ug/g	STD 1	<1	<1	<1
Uranium	415846	0.5	ug/g	STD 2.5	<0.5	<0.5	<0.5
Vanadium	415846	2	ug/g	STD 86	18	14	21
Zinc	415846	2	ug/g	STD 290	21	56	31

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Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Metals

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606050	Soil153	1606052	Soil153	1606053	Soil153
					2022-01-13		2022-01-13		2022-01-13	
					BH10-1		BH11-1		Dup-1	
Antimony	415846	1	ug/g	STD 1.3	<1	<1	<1	<1	<1	<1
Arsenic	415846	1	ug/g	STD 18	3	3	3	3	3	3
Barium	415846	1	ug/g	STD 220	63	53	75	63	53	75
Beryllium	415846	1	ug/g	STD 2.5	<1	<1	<1	<1	<1	<1
Boron (total)	415846	5	ug/g	STD 36	<5	<5	<5	<5	<5	<5
Cadmium	415846	0.4	ug/g	STD 1.2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium Total	415846	1	ug/g	STD 70	21	30	20	21	30	20
Cobalt	415846	1	ug/g	STD 21	7	6	7	7	6	7
Copper	415846	1	ug/g	STD 92	17	16	17	17	16	17
Lead	415846	1	ug/g	STD 120	13	17	21	13	17	21
Molybdenum	415846	1	ug/g	STD 2	<1	<1	<1	<1	<1	<1
Nickel	415846	1	ug/g	STD 82	16	19	16	16	19	16
Selenium	415895	0.5	ug/g	STD 1.5	0.7	0.6	0.6	0.7	0.6	0.6
Silver	415846	0.2	ug/g	STD 0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	415846	1	ug/g	STD 1	<1	<1	<1	<1	<1	<1
Uranium	415846	0.5	ug/g	STD 2.5	0.6	<0.5	<0.5	0.6	<0.5	<0.5
Vanadium	415846	2	ug/g	STD 86	27	26	27	27	26	27
Zinc	415846	2	ug/g	STD 290	58	56	64	58	56	64

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MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Metals

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606056
Soil153
2022-01-13
BH12-1
1606057
Soil153
2022-01-13
BH12-2

Analyte	Batch No	MRL	Units	Guideline		
Antimony	415846	1	ug/g	STD 1.3	<1	<1
Arsenic	415846	1	ug/g	STD 18	4	4
Barium	415846	1	ug/g	STD 220	84	65
Beryllium	415846	1	ug/g	STD 2.5	<1	<1
Boron (Hot Water Soluble)	415918	0.5	ug/g		<0.5	
Boron (total)	415846	5	ug/g	STD 36	<5	<5
Cadmium	415846	0.4	ug/g	STD 1.2	<0.4	<0.4
Chromium Total	415846	1	ug/g	STD 70	27	22
Chromium VI	415899	0.20	ug/g	STD 0.66	<0.20	
Cobalt	415846	1	ug/g	STD 21	8	9
Copper	415846	1	ug/g	STD 92	21	21
Lead	415846	1	ug/g	STD 120	46	10
Mercury	415846	0.1	ug/g	STD 0.27	<0.1	
Molybdenum	415846	1	ug/g	STD 2	<1	<1
Nickel	415846	1	ug/g	STD 82	20	21
Selenium	415895	0.5	ug/g	STD 1.5	0.9	0.9
Silver	415846	0.2	ug/g	STD 0.5	<0.2	<0.2
Thallium	415846	1	ug/g	STD 1	<1	<1
Uranium	415846	0.5	ug/g	STD 2.5	<0.5	<0.5
Vanadium	415846	2	ug/g	STD 86	33	29
Zinc	415846	2	ug/g	STD 290	63	47

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COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

OCP/PCB

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606034
Soil153

2022-01-14

BH5-1

1606035
Soil153

2022-01-14

Dup-5

Analyte Batch No MRL Units Guideline

Aldrin	415986	0.006	ug/g	STD 0.05	<0.006	<0.006
Chlordane	415987	0.018	ug/g	STD 0.05	<0.018	<0.018
Chlordane, alpha-	415986	0.006	ug/g		<0.006	<0.006
Chlordane, gamma-	415986	0.006	ug/g		<0.006	<0.006
DDD	415986	0.006	ug/g	STD 0.05	<0.006	<0.006
DDE	415986	0.006	ug/g	STD 0.05	<0.006	<0.006
DDT	415986	0.006	ug/g	STD 1.4	<0.006	<0.006
Dieldrin	415986	0.006	ug/g	STD 0.05	<0.006	<0.006
Endosulfan	415987	0.012	ug/g	STD 0.04	<0.012	<0.012
Endosulfan I	415986	0.006	ug/g		<0.006	<0.006
Endosulfan II	415986	0.006	ug/g		<0.006	<0.006
Endrin	415986	0.006	ug/g	STD 0.04	<0.006	<0.006
Heptachlor	415986	0.006	ug/g	STD 0.05	<0.006	<0.006
Heptachlor Epoxide	415986	0.006	ug/g	STD 0.05	<0.006	<0.006
Hexachlorobenzene	415987	0.006	ug/g	STD 0.01	<0.006	<0.006
Hexachlorobutadiene	415987	0.006	ug/g	STD 0.01	<0.006	<0.006
Hexachlorocyclohexane Gamma-	415986	0.006	ug/g	STD 0.01	<0.006	<0.006
Hexachloroethane	415987	0.006	ug/g	STD 0.01	<0.006	<0.006
Methoxychlor	415986	0.006	ug/g	STD 0.05	<0.006	<0.006

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Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PAH

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606024
Soil153
2022-01-14
BH1-1

1606028
Soil153
2022-01-14
BH2-1

Analyte	Batch No	MRL	Units	Guideline		
1+2-methylnaphthalene	415964	0.05	ug/g		<0.05	<0.05
Acenaphthene	415963	0.05	ug/g	STD 0.072	<0.05	<0.05
Acenaphthylene	415963	0.05	ug/g	STD 0.093	<0.05	<0.05
Anthracene	415963	0.05	ug/g	STD 0.16	<0.05	<0.05
Benz[a]anthracene	415963	0.05	ug/g	STD 0.36	<0.05	<0.05
Benzo[a]pyrene	415963	0.05	ug/g	STD 0.3	<0.05	<0.05
Benzo[b]fluoranthene	415963	0.05	ug/g	STD 0.47	<0.05	<0.05
Benzo[ghi]perylene	415963	0.05	ug/g	STD 0.68	<0.05	<0.05
Benzo[k]fluoranthene	415963	0.05	ug/g	STD 0.48	<0.05	<0.05
Chrysene	415963	0.05	ug/g	STD 2.8	<0.05	<0.05
Dibenz[a h]anthracene	415963	0.05	ug/g	STD 0.1	<0.05	<0.05
Fluoranthene	415963	0.05	ug/g	STD 0.56	<0.05	<0.05
Fluorene	415963	0.05	ug/g	STD 0.12	<0.05	<0.05
Indeno[1 2 3-cd]pyrene	415963	0.05	ug/g	STD 0.23	<0.05	<0.05
Methylnaphthalene, 1-	415963	0.05	ug/g	STD 0.59	<0.05	<0.05
Methylnaphthalene, 2-	415963	0.05	ug/g	STD 0.59	<0.05	<0.05
Naphthalene	415963	0.013	ug/g	STD 0.09	<0.013	<0.013
Phenanthrene	415963	0.05	ug/g	STD 0.69	<0.05	0.05
Pyrene	415963	0.05	ug/g	STD 1	<0.05	<0.05

Results relate only to the parameters tested on the samples submitted.
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MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
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Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PAH

Lab I.D. 1606031
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-14
Sampling Time
Sample I.D. BH4-1

Analyte	Batch No	MRL	Units	Guideline	
1+2-methylnaphthalene	415964	0.05	ug/g		<0.05
Acenaphthene	415963	0.05	ug/g	STD 0.072	<0.05
Acenaphthylene	415963	0.05	ug/g	STD 0.093	<0.05
Anthracene	415963	0.05	ug/g	STD 0.16	<0.05
Benz[a]anthracene	415963	0.05	ug/g	STD 0.36	<0.05
Benzo[a]pyrene	415963	0.05	ug/g	STD 0.3	<0.05
Benzo[b]fluoranthene	415963	0.05	ug/g	STD 0.47	<0.05
Benzo[ghi]perylene	415963	0.05	ug/g	STD 0.68	<0.05
Benzo[k]fluoranthene	415963	0.05	ug/g	STD 0.48	<0.05
Chrysene	415963	0.05	ug/g	STD 2.8	<0.05
Dibenz[a h]anthracene	415963	0.05	ug/g	STD 0.1	<0.05
Fluoranthene	415963	0.05	ug/g	STD 0.56	<0.05
Fluorene	415963	0.05	ug/g	STD 0.12	<0.05
Indeno[1 2 3-cd]pyrene	415963	0.05	ug/g	STD 0.23	<0.05
Methylnaphthalene, 1-	415963	0.05	ug/g	STD 0.59	<0.05
Methylnaphthalene, 2-	415963	0.05	ug/g	STD 0.59	<0.05
Naphthalene	415963	0.013	ug/g	STD 0.09	<0.013
Phenanthrene	415963	0.05	ug/g	STD 0.69	<0.05
Pyrene	415963	0.05	ug/g	STD 1	<0.05

Results relate only to the parameters tested on the samples submitted.
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Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PAH

Lab I.D. 1606038
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-14
Sampling Time
Sample I.D. BH7-1

Analyte	Batch No	MRL	Units	Guideline	
1+2-methylnaphthalene	415964	0.05	ug/g		<0.05
Acenaphthene	415963	0.05	ug/g	STD 0.072	<0.05
Acenaphthylene	415963	0.05	ug/g	STD 0.093	<0.05
Anthracene	415963	0.05	ug/g	STD 0.16	<0.05
Benz[a]anthracene	415963	0.05	ug/g	STD 0.36	<0.05
Benzo[a]pyrene	415963	0.05	ug/g	STD 0.3	<0.05
Benzo[b]fluoranthene	415963	0.05	ug/g	STD 0.47	<0.05
Benzo[ghi]perylene	415963	0.05	ug/g	STD 0.68	<0.05
Benzo[k]fluoranthene	415963	0.05	ug/g	STD 0.48	<0.05
Chrysene	415963	0.05	ug/g	STD 2.8	<0.05
Dibenz[a h]anthracene	415963	0.05	ug/g	STD 0.1	<0.05
Fluoranthene	415963	0.05	ug/g	STD 0.56	<0.05
Fluorene	415963	0.05	ug/g	STD 0.12	<0.05
Indeno[1 2 3-cd]pyrene	415963	0.05	ug/g	STD 0.23	<0.05
Methylnaphthalene, 1-	415963	0.05	ug/g	STD 0.59	<0.05
Methylnaphthalene, 2-	415963	0.05	ug/g	STD 0.59	<0.05
Naphthalene	415963	0.013	ug/g	STD 0.09	<0.013
Phenanthrene	415963	0.05	ug/g	STD 0.69	<0.05
Pyrene	415963	0.05	ug/g	STD 1	<0.05

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Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PAH

Lab I.D. 1606039
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-14
Sampling Time
Sample I.D. Dup-2

Analyte	Batch No	MRL	Units	Guideline	
1+2-methylnaphthalene	415964	0.05	ug/g		<0.05
Acenaphthene	415963	0.05	ug/g	STD 0.072	<0.05
Acenaphthylene	415963	0.05	ug/g	STD 0.093	<0.05
Anthracene	415963	0.05	ug/g	STD 0.16	<0.05
Benz[a]anthracene	415963	0.05	ug/g	STD 0.36	<0.05
Benzo[a]pyrene	415963	0.05	ug/g	STD 0.3	<0.05
Benzo[b]fluoranthene	415963	0.05	ug/g	STD 0.47	<0.05
Benzo[ghi]perylene	415963	0.05	ug/g	STD 0.68	<0.05
Benzo[k]fluoranthene	415963	0.05	ug/g	STD 0.48	<0.05
Chrysene	415963	0.05	ug/g	STD 2.8	<0.05
Dibenz[a h]anthracene	415963	0.05	ug/g	STD 0.1	<0.05
Fluoranthene	415963	0.05	ug/g	STD 0.56	<0.05
Fluorene	415963	0.05	ug/g	STD 0.12	<0.05
Indeno[1 2 3-cd]pyrene	415963	0.05	ug/g	STD 0.23	<0.05
Methylnaphthalene, 1-	415963	0.05	ug/g	STD 0.59	<0.05
Methylnaphthalene, 2-	415963	0.05	ug/g	STD 0.59	<0.05
Naphthalene	415963	0.013	ug/g	STD 0.09	<0.013
Phenanthrene	415963	0.05	ug/g	STD 0.69	<0.05
Pyrene	415963	0.05	ug/g	STD 1	<0.05

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COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PAH

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606044
Soil153
2022-01-13
BH8-2

1606047
Soil153
2022-01-13
BH9-2

Analyte	Batch No	MRL	Units	Guideline		
1+2-methylnaphthalene	415964	0.05	ug/g		<0.05	<0.05
Acenaphthene	415963	0.05	ug/g	STD 0.072	<0.05	<0.05
Acenaphthylene	415963	0.05	ug/g	STD 0.093	<0.05	<0.05
Anthracene	415963	0.05	ug/g	STD 0.16	<0.05	<0.05
Benz[a]anthracene	415963	0.05	ug/g	STD 0.36	<0.05	<0.05
Benzo[a]pyrene	415963	0.05	ug/g	STD 0.3	<0.05	<0.05
Benzo[b]fluoranthene	415963	0.05	ug/g	STD 0.47	<0.05	<0.05
Benzo[ghi]perylene	415963	0.05	ug/g	STD 0.68	<0.05	<0.05
Benzo[k]fluoranthene	415963	0.05	ug/g	STD 0.48	<0.05	<0.05
Chrysene	415963	0.05	ug/g	STD 2.8	<0.05	<0.05
Dibenz[a h]anthracene	415963	0.05	ug/g	STD 0.1	<0.05	<0.05
Fluoranthene	415963	0.05	ug/g	STD 0.56	<0.05	<0.05
Fluorene	415963	0.05	ug/g	STD 0.12	<0.05	<0.05
Indeno[1 2 3-cd]pyrene	415963	0.05	ug/g	STD 0.23	<0.05	<0.05
Methylnaphthalene, 1-	415963	0.05	ug/g	STD 0.59	<0.05	<0.05
Methylnaphthalene, 2-	415963	0.05	ug/g	STD 0.59	<0.05	<0.05
Naphthalene	415963	0.013	ug/g	STD 0.09	<0.013	<0.013
Phenanthrene	415963	0.05	ug/g	STD 0.69	<0.05	<0.05
Pyrene	415963	0.05	ug/g	STD 1	<0.05	<0.05

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Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PAH

Lab I.D. 1606056
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-13
Sampling Time
Sample I.D. BH12-1

Analyte	Batch No	MRL	Units	Guideline	
1+2-methylnaphthalene	415964	0.05	ug/g		<0.05
Acenaphthene	415963	0.05	ug/g	STD 0.072	<0.05
Acenaphthylene	415963	0.05	ug/g	STD 0.093	<0.05
Anthracene	415963	0.05	ug/g	STD 0.16	<0.05
Benz[a]anthracene	415963	0.05	ug/g	STD 0.36	<0.05
Benzo[a]pyrene	415963	0.05	ug/g	STD 0.3	<0.05
Benzo[b]fluoranthene	415963	0.05	ug/g	STD 0.47	<0.05
Benzo[ghi]perylene	415963	0.05	ug/g	STD 0.68	<0.05
Benzo[k]fluoranthene	415963	0.05	ug/g	STD 0.48	<0.05
Chrysene	415963	0.05	ug/g	STD 2.8	<0.05
Dibenz[a h]anthracene	415963	0.05	ug/g	STD 0.1	<0.05
Fluoranthene	415963	0.05	ug/g	STD 0.56	<0.05
Fluorene	415963	0.05	ug/g	STD 0.12	<0.05
Indeno[1 2 3-cd]pyrene	415963	0.05	ug/g	STD 0.23	<0.05
Methylnaphthalene, 1-	415963	0.05	ug/g	STD 0.59	<0.05
Methylnaphthalene, 2-	415963	0.05	ug/g	STD 0.59	<0.05
Naphthalene	415963	0.013	ug/g	STD 0.09	<0.013
Phenanthrene	415963	0.05	ug/g	STD 0.69	<0.05
Pyrene	415963	0.05	ug/g	STD 1	<0.05

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Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606026 Soil153	1606027 Soil153	1606028 Soil153
2022-01-14	2022-01-14	2022-01-14
BH1-3	BH1-5	BH2-1

Analyte	Batch No	MRL	Units	Guideline
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Acetone	415831	0.50	ug/g	STD 0.5		<0.50	
Benzene	415831	0.0068	ug/g	STD 0.02	<0.0068	<0.0068	<0.0068
Bromodichloromethane	415831	0.05	ug/g	STD 0.05		<0.05	
Bromoform	415831	0.05	ug/g	STD 0.05		<0.05	
Bromomethane	415831	0.05	ug/g	STD 0.05		<0.05	
Carbon Tetrachloride	415831	0.05	ug/g	STD 0.05		<0.05	
Chlorobenzene	415831	0.05	ug/g	STD 0.05		<0.05	
Chloroform	415831	0.05	ug/g	STD 0.05		<0.05	
Dibromochloromethane	415831	0.05	ug/g	STD 0.05		<0.05	
Dichlorobenzene, 1,2-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichlorobenzene, 1,3-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichlorobenzene, 1,4-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichlorodifluoromethane	415831	0.05	ug/g	STD 0.05		<0.05	
Dichloroethane, 1,1-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichloroethane, 1,2-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichloroethylene, 1,1-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichloroethylene, 1,2-cis-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichloroethylene, 1,2-trans-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichloropropane, 1,2-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichloropropene,1,3-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichloropropene,1,3-cis-	415831	0.05	ug/g			<0.05	
Dichloropropene,1,3-trans-	415831	0.05	ug/g			<0.05	
Ethylbenzene	415831	0.018	ug/g	STD 0.05	<0.018	<0.018	<0.018

Results relate only to the parameters tested on the samples submitted.
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MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606026 Soil153	1606027 Soil153	1606028 Soil153
2022-01-14	2022-01-14	2022-01-14
BH1-3	BH1-5	BH2-1

Analyte	Batch No	MRL	Units	Guideline
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Ethylene dibromide	415831	0.05	ug/g	STD 0.05		<0.05	
Hexane (n)	415831	0.05	ug/g	STD 0.05		<0.05	
Methyl Ethyl Ketone	415831	0.50	ug/g	STD 0.5		0.81*	
Methyl Isobutyl Ketone	415831	0.50	ug/g	STD 0.5		<0.50	
Methyl tert-Butyl Ether (MTBE)	415831	0.05	ug/g	STD 0.05		<0.05	
Methylene Chloride	415831	0.05	ug/g	STD 0.05		<0.05	
Styrene	415831	0.05	ug/g	STD 0.05		<0.05	
Tetrachloroethane, 1,1,1,2-	415831	0.05	ug/g	STD 0.05		<0.05	
Tetrachloroethane, 1,1,2,2-	415831	0.05	ug/g	STD 0.05		<0.05	
Tetrachloroethylene	415831	0.05	ug/g	STD 0.05		<0.05	
Toluene	415831	0.08	ug/g	STD 0.2	<0.08	<0.08	<0.08
Trichloroethane, 1,1,1-	415831	0.05	ug/g	STD 0.05		<0.05	
Trichloroethane, 1,1,2-	415831	0.05	ug/g	STD 0.05		<0.05	
Trichloroethylene	415831	0.01	ug/g	STD 0.05		<0.01	
Trichlorofluoromethane	415831	0.05	ug/g	STD 0.25		<0.05	
Vinyl Chloride	415831	0.02	ug/g	STD 0.02		<0.02	
Xylene Mixture	415902	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05
Xylene, m/p-	415831	0.05	ug/g		<0.05	<0.05	<0.05
Xylene, o-	415831	0.05	ug/g		<0.05	<0.05	<0.05

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
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M9W 5W8
Attention: Mr. Nan Du
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Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606029 Soil153	1606030 Soil153	1606032 Soil153	1606033 Soil153
2022-01-14	2022-01-14	2022-01-14	2022-01-14
BH2-6	Dup-4	BH4-2	BH4-9

Analyte Batch No MRL Units Guideline

Acetone	415831	0.50	ug/g	STD 0.5	<0.50	<0.50		
Benzene	415831	0.0068	ug/g	STD 0.02	<0.0068	<0.0068	<0.0068	<0.0068
Bromodichloromethane	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Bromoform	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Bromomethane	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Carbon Tetrachloride	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Chlorobenzene	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Chloroform	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dibromochloromethane	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichlorobenzene, 1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichlorobenzene, 1,3-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichlorobenzene, 1,4-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichlorodifluoromethane	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichloroethane, 1,1-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichloroethane, 1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichloroethylene, 1,1-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichloroethylene, 1,2-cis-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichloroethylene, 1,2-trans-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichloropropane, 1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichloropropene, 1,3-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichloropropene, 1,3-cis-	415831	0.05	ug/g		<0.05	<0.05		
Dichloropropene, 1,3-trans-	415831	0.05	ug/g		<0.05	<0.05		
Ethylbenzene	415831	0.018	ug/g	STD 0.05	<0.018	<0.018	<0.018	<0.018

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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Report Number: 1970181
Date Submitted: 2022-01-17
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Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606029 Soil153	1606030 Soil153	1606032 Soil153	1606033 Soil153
2022-01-14	2022-01-14	2022-01-14	2022-01-14
BH2-6	Dup-4	BH4-2	BH4-9

Analyte	Batch No	MRL	Units	Guideline
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Ethylene dibromide	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Hexane (n)	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Methyl Ethyl Ketone	415831	0.50	ug/g	STD 0.5	0.72*	1.2*		
Methyl Isobutyl Ketone	415831	0.50	ug/g	STD 0.5	<0.50	<0.50		
Methyl tert-Butyl Ether (MTBE)	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Methylene Chloride	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Styrene	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Tetrachloroethane, 1,1,1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Tetrachloroethane, 1,1,2,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Tetrachloroethylene	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Toluene	415831	0.08	ug/g	STD 0.2	<0.08	<0.08	<0.08	<0.08
Trichloroethane, 1,1,1-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Trichloroethane, 1,1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Trichloroethylene	415831	0.01	ug/g	STD 0.05	<0.01	<0.01		
Trichlorofluoromethane	415831	0.05	ug/g	STD 0.25	<0.05	<0.05		
Vinyl Chloride	415831	0.02	ug/g	STD 0.02	<0.02	<0.02		
Xylene Mixture	415902	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05
Xylene, m/p-	415831	0.05	ug/g		<0.05	<0.05	<0.05	<0.05
Xylene, o-	415831	0.05	ug/g		<0.05	<0.05	<0.05	<0.05

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
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Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	1606036
					Sample Matrix	Soil153
					Sample Type	1606037
					Sample Date	Soil153
					Sampling Time	2022-01-14
					Sample I.D.	2022-01-14
						BH5-3
						BH5-9
Benzene	415831	0.0068	ug/g	STD 0.02	<0.0068	<0.0068
Ethylbenzene	415831	0.018	ug/g	STD 0.05	<0.018	<0.018
Toluene	415831	0.08	ug/g	STD 0.2	<0.08	<0.08
Xylene Mixture	415902	0.05	ug/g	STD 0.05	<0.05	<0.05
Xylene, m/p-	415831	0.05	ug/g		<0.05	<0.05
Xylene, o-	415831	0.05	ug/g		<0.05	<0.05

Volatiles

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	1606040	1606041	1606042
					Sample Matrix	Soil153	Soil153	Soil153
					Sample Type	2022-01-14	2022-01-14	2022-01-14
					Sample Date	2022-01-14	2022-01-14	2022-01-14
					Sampling Time	BH7-3	Dup-3	BH7-6
					Sample I.D.			
Benzene	415831	0.0068	ug/g	STD 0.02	<0.0068	<0.0068	<0.0068	<0.0068
Ethylbenzene	415831	0.018	ug/g	STD 0.05	<0.018	<0.018	<0.018	<0.018
Toluene	415831	0.08	ug/g	STD 0.2	<0.08	<0.08	<0.08	<0.08
Xylene Mixture	415902	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05
Xylene, m/p-	415831	0.05	ug/g		<0.05	<0.05	<0.05	<0.05
Xylene, o-	415831	0.05	ug/g		<0.05	<0.05	<0.05	<0.05

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Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational
Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim
Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial
Water Quality Guideline, IPWQO = Interim Provincial Water Quality
Objective, TDR = Typical Desired Range

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
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Attention: Mr. Nan Du
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Invoice to: EnGlobe Corp.

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Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606045
Soil153

2022-01-13

BH8-7

1606048
Soil153

2022-01-13

BH9-3

Analyte Batch No MRL Units Guideline

Acetone	415831	0.50	ug/g	STD 0.5	<0.50	<0.50
Benzene	415831	0.0068	ug/g	STD 0.02	<0.0068	<0.0068
Bromodichloromethane	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Bromoform	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Bromomethane	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Carbon Tetrachloride	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Chlorobenzene	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Chloroform	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dibromochloromethane	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichlorobenzene, 1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichlorobenzene, 1,3-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichlorobenzene, 1,4-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichlorodifluoromethane	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichloroethane, 1,1-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichloroethane, 1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichloroethylene, 1,1-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichloroethylene, 1,2-cis-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichloroethylene, 1,2-trans-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichloropropane, 1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichloropropene, 1,3-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichloropropene, 1,3-cis-	415831	0.05	ug/g		<0.05	<0.05
Dichloropropene, 1,3-trans-	415831	0.05	ug/g		<0.05	<0.05
Ethylbenzene	415831	0.018	ug/g	STD 0.05	<0.018	<0.018

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Methods references and/or additional QA/QC information available on request.

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Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Lab I.D.	1606045	1606048
Sample Matrix	Soil153	Soil153
Sample Type		
Sample Date	2022-01-13	2022-01-13
Sampling Time		
Sample I.D.	BH8-7	BH9-3

Analyte	Batch No	MRL	Units	Guideline		
Ethylene dibromide	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Hexane (n)	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Methyl Ethyl Ketone	415831	0.50	ug/g	STD 0.5	1.1*	0.87*
Methyl Isobutyl Ketone	415831	0.50	ug/g	STD 0.5	<0.50	<0.50
Methyl tert-Butyl Ether (MTBE)	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Methylene Chloride	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Styrene	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Tetrachloroethane, 1,1,1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Tetrachloroethane, 1,1,2,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Tetrachloroethylene	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Toluene	415831	0.08	ug/g	STD 0.2	<0.08	<0.08
Trichloroethane, 1,1,1-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Trichloroethane, 1,1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Trichloroethylene	415831	0.01	ug/g	STD 0.05	<0.01	<0.01
Trichlorofluoromethane	415831	0.05	ug/g	STD 0.25	<0.05	<0.05
Vinyl Chloride	415831	0.02	ug/g	STD 0.02	<0.02	<0.02
Xylene Mixture	415902	0.05	ug/g	STD 0.05	<0.05	<0.05
Xylene, m/p-	415831	0.05	ug/g		<0.05	<0.05
Xylene, o-	415831	0.05	ug/g		<0.05	<0.05

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: EnGlobe Corp. (Toronto)
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Report Number: 1970181
Date Submitted: 2022-01-17
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Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606049	Soil153		2022-01-13		BH9-9
Benzene	415831	0.0068	ug/g	STD 0.02	1606051	Soil153		2022-01-13		BH10-2
Ethylbenzene	415831	0.018	ug/g	STD 0.05						
Toluene	415831	0.08	ug/g	STD 0.2						
Xylene Mixture	415902	0.05	ug/g	STD 0.05						
Xylene, m/p-	415831	0.05	ug/g							
Xylene, o-	415831	0.05	ug/g							

Volatiles

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606054	Soil153		2022-01-13		BH11-2
Acetone	415831	0.50	ug/g	STD 0.5	1606055	Soil153		2022-01-13		BH11-7
Benzene	415831	0.0068	ug/g	STD 0.02	1606057	Soil153		2022-01-13		BH12-2
Bromodichloromethane	415831	0.05	ug/g	STD 0.05	1606058	Soil153		2022-01-13		BH12-8
Bromoform	415831	0.05	ug/g	STD 0.05						
Bromomethane	415831	0.05	ug/g	STD 0.05						
Carbon Tetrachloride	415831	0.05	ug/g	STD 0.05						
Chlorobenzene	415831	0.05	ug/g	STD 0.05						
Chloroform	415831	0.05	ug/g	STD 0.05						
Dibromochloromethane	415831	0.05	ug/g	STD 0.05						
Dichlorobenzene, 1,2-	415831	0.05	ug/g	STD 0.05						
Dichlorobenzene, 1,3-	415831	0.05	ug/g	STD 0.05						
Dichlorobenzene, 1,4-	415831	0.05	ug/g	STD 0.05						
Dichlorodifluoromethane	415831	0.05	ug/g	STD 0.05						

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Environment Testing

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606054 Soil153	1606055 Soil153	1606057 Soil153	1606058 Soil153
2022-01-13	2022-01-13	2022-01-13	2022-01-13
BH11-2	BH11-7	BH12-2	BH12-8

Analyte	Batch No	MRL	Units	Guideline
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Dichloroethane, 1,1-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Dichloroethane, 1,2-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Dichloroethylene, 1,1-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Dichloroethylene, 1,2-cis-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Dichloroethylene, 1,2-trans-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Dichloropropane, 1,2-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Dichloropropene,1,3-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Dichloropropene,1,3-cis-	415831	0.05	ug/g			<0.05		<0.05
Dichloropropene,1,3-trans-	415831	0.05	ug/g			<0.05		<0.05
Ethylbenzene	415831	0.018	ug/g	STD 0.05	<0.018	<0.018	<0.018	<0.018
Ethylene dibromide	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Hexane (n)	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Methyl Ethyl Ketone	415831	0.50	ug/g	STD 0.5		1.1*		1.3*
Methyl Isobutyl Ketone	415831	0.50	ug/g	STD 0.5		<0.50		<0.50
Methyl tert-Butyl Ether (MTBE)	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Methylene Chloride	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Styrene	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Tetrachloroethane, 1,1,1,2-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Tetrachloroethane, 1,1,2,2-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Tetrachloroethylene	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Toluene	415831	0.08	ug/g	STD 0.2	<0.08	<0.08	<0.08	<0.08
Trichloroethane, 1,1,1,-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Trichloroethane, 1,1,2,-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05

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Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606054 Soil153	1606055 Soil153	1606057 Soil153	1606058 Soil153
						2022-01-13	2022-01-13	2022-01-13	2022-01-13
						BH11-2	BH11-7	BH12-2	BH12-8
Analyte	Batch No	MRL	Units	Guideline					
Trichloroethylene	415831	0.01	ug/g	STD 0.05			<0.01		<0.01
Trichlorofluoromethane	415831	0.05	ug/g	STD 0.25			<0.05		<0.05
Vinyl Chloride	415831	0.02	ug/g	STD 0.02			<0.02		<0.02
Xylene Mixture	415902	0.05	ug/g	STD 0.05		<0.05	<0.05	<0.05	<0.05
Xylene, m/p-	415831	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
Xylene, o-	415831	0.05	ug/g			<0.05	<0.05	<0.05	<0.05

Inorganics

					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606024 Soil153	1606025 Soil153	1606028 Soil153
						2022-01-14	2022-01-14	2022-01-14
						BH1-1	BH1-2	BH2-1
Analyte	Batch No	MRL	Units	Guideline				
Cyanide (CN-)	415841	0.005	ug/g	STD 0.051		<0.005		
Electrical Conductivity	415909	0.05	mS/cm	STD 0.57		2.19*	3.32*	4.18*
pH - CaCl2	415894	2.00				7.76		
Sodium Adsorption Ratio	415914	0.01		STD 2.4		37.8*	17.0*	81.8*

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Inorganics

Lab I.D. 1606031
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-14
Sampling Time
Sample I.D. BH4-1

Analyte Batch No MRL Units Guideline

Electrical Conductivity	415909	0.05	mS/cm	STD 0.57	3.19*
Sodium Adsorption Ratio	415914	0.01		STD 2.4	68.4*

Inorganics

Lab I.D. 1606034
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-14
Sampling Time
Sample I.D. BH5-1

Analyte Batch No MRL Units Guideline

Electrical Conductivity	415909	0.05	mS/cm	STD 0.57	6.39*
	416102	0.05	mS/cm	STD 0.57	2.03*
Sodium Adsorption Ratio	415914	0.01		STD 2.4	111*
	416111	0.01		STD 2.4	30.1*

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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Inorganics

Lab I.D. 1606043
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-13
Sampling Time
Sample I.D. BH8-1

Analyte Batch No MRL Units Guideline

Electrical Conductivity	415909	0.05	mS/cm	STD 0.57	3.38*
Sodium Adsorption Ratio	415914	0.01		STD 2.4	12.2*

Inorganics

Lab I.D. 1606044 1606046 1606047
Sample Matrix Soil153 Soil153 Soil153
Sample Type
Sample Date 2022-01-13 2022-01-13 2022-01-13
Sampling Time
Sample I.D. BH8-2 BH9-1 BH9-2

Analyte Batch No MRL Units Guideline

Cyanide (CN-)	415841	0.005	ug/g	STD 0.051	<0.005	<0.005	
Electrical Conductivity	415909	0.05	mS/cm	STD 0.57	1.66*	3.76*	5.88*
pH - CaCl2	415894	2.00			7.69	7.75	
Sodium Adsorption Ratio	415914	0.01		STD 2.4	6.36*	79.4*	147*

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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Inorganics

Lab I.D.	1606050	1606052
Sample Matrix	Soil153	Soil153
Sample Type		
Sample Date	2022-01-13	2022-01-13
Sampling Time		
Sample I.D.	BH10-1	BH11-1

Analyte	Batch No	MRL	Units	Guideline
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Electrical Conductivity	415909	0.05	mS/cm	STD 0.57	2.81*	7.04*
Sodium Adsorption Ratio	415914	0.01		STD 2.4	40.0*	162*

Inorganics

Lab I.D.	1606056	1606057
Sample Matrix	Soil153	Soil153
Sample Type		
Sample Date	2022-01-13	2022-01-13
Sampling Time		
Sample I.D.	BH12-1	BH12-2

Analyte	Batch No	MRL	Units	Guideline
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Cyanide (CN-)	415841	0.005	ug/g	STD 0.051	<0.005	
Electrical Conductivity	415909	0.05	mS/cm	STD 0.57	4.11*	8.50*
pH - CaCl2	415894	2.00			7.68	
Sodium Adsorption Ratio	415914	0.01		STD 2.4	58.8*	126*

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Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Moisture

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop					1606026	1606027	1606028
Moisture				Lab I.D.	Soil153	Soil153	Soil153
				Sample Matrix			
				Sample Type			
				Sample Date	2022-01-14	2022-01-14	2022-01-14
				Sampling Time			
			Sample I.D.	BH1-3	BH1-5	BH2-1	
Analyte	Batch No	MRL	Units	Guideline			
Moisture-Humidite	415889	0.1	%		14.4	14.2	
	416046	0.1	%				9.9

Moisture

<u>Moisture</u>					Lab I.D.	1606029	1606030	1606032	1606033
					Sample Matrix	Soil153	Soil153	Soil153	Soil153
					Sample Type				
					Sample Date	2022-01-14	2022-01-14	2022-01-14	2022-01-14
					Sample I.D.	BH2-6	Dup-4	BH4-2	BH4-9
Analyte	Batch No	MRL	Units	Guideline					
Moisture-Humidite	415889	0.1	%		16.2	15.8	11.5	16.3	

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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Moisture

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606036
Soil153
2022-01-14
BH5-3

1606037
Soil153
2022-01-14
BH5-9

Analyte Batch No MRL Units Guideline

Moisture-Humidite	415889	0.1	%		14.6	13.8
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Moisture

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606040 Soil153 2022-01-14 BH7-3	1606041 Soil153 2022-01-14 Dup-3	1606042 Soil153 2022-01-14 BH7-6
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Analyte Batch No MRL Units Guideline

Moisture-Humidite	415889	0.1	%		12.4	12.8	15.5
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Moisture

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606045
Soil153
2022-01-13
2022-01-13
BH8-7
BH9-3

1606048
Soil153
2022-01-13
2022-01-13
BH9-3

Analyte Batch No MRL Units Guideline

Moisture-Humidite	415996	0.1	%		14.0	9.7
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Moisture

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606049
Soil153
2022-01-13
2022-01-13
BH9-9
BH10-2

1606051
Soil153
2022-01-13
2022-01-13
BH10-2

Analyte Batch No MRL Units Guideline

Moisture-Humidite	415959	0.1	%			17.3
	416045	0.1	%		16.1	

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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Moisture

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606054 Soil153	1606055 Soil153	1606057 Soil153	1606058 Soil153
2022-01-13	2022-01-13	2022-01-13	2022-01-13
BH11-2	BH11-7	BH12-2	BH12-8

Analyte	Batch No	MRL	Units	Guideline
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Moisture-Humidite	415959	0.1	%	14.1	11.8	15.9	9.7
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PCBs

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606047 Soil153
2022-01-13
BH9-2

Analyte	Batch No	MRL	Units	Guideline
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Aroclor 1242	416122	0.02	ug/g	<0.02
Aroclor 1248	416122	0.02	ug/g	<0.02
Aroclor 1254	416122	0.02	ug/g	<0.02
Aroclor 1260	416122	0.02	ug/g	<0.02
Polychlorinated Biphenyls	416122	0.02	ug/g	STD 0.3

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COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PCB Surrogate

Lab I.D.	1606034	1606035
Sample Matrix	Soil153	Soil153
Sample Type		
Sample Date	2022-01-14	2022-01-14
Sampling Time		
Sample I.D.	BH5-1	Dup-5

Analyte	Batch No	MRL	Units	Guideline
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Decachlorobiphenyl	416010	0	%	N/A	N/A
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PCB Surrogate

Lab I.D.	1606047
Sample Matrix	Soil153
Sample Type	
Sample Date	2022-01-13
Sampling Time	
Sample I.D.	BH9-2

Analyte	Batch No	MRL	Units	Guideline
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Decachlorobiphenyl	416124	0	%	84
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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PHC Surrogate

<u>PHC Surrogate</u>					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606026 Soil153 2022-01-14 BH1-3	1606027 Soil153 2022-01-14 BH1-5	1606028 Soil153 2022-01-14 BH2-1
Analyte	Batch No	MRL	Units	Guideline				
Alpha-androstrane	415889	0	%		82	61		
	416046	0	%					83

PHC Surrogate

<u>PHC Surrogate</u>					Lab I.D.	1606029	1606030	1606032	1606033
					Sample Matrix	Soil153	Soil153	Soil153	Soil153
					Sample Type				
					Sample Date	2022-01-14	2022-01-14	2022-01-14	2022-01-14
					Sampling Time				
					Sample I.D.	BH2-6	Dup-4	BH4-2	BH4-9
Analyte	Batch No	MRL	Units	Guideline					
Alpha-androstrane	415889	0	%		89	73	68	99	

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PHC Surrogate

					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	
					1606036 Soil153	1606037 Soil153
					2022-01-14	2022-01-14
					BH5-3	BH5-9
Analyte	Batch No	MRL	Units	Guideline		
Alpha-androstrane	415889	0	%		71	67

PHC Surrogate

					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.		
					1606040 Soil153	1606041 Soil153	1606042 Soil153
					2022-01-14	2022-01-14	2022-01-14
					BH7-3	Dup-3	BH7-6
Analyte	Batch No	MRL	Units	Guideline			
Alpha-androstrane	415889	0	%		91	81	81

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1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PHC Surrogate

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606045
Soil153
2022-01-13
BH8-7

1606048
Soil153
2022-01-13
BH9-3

Analyte Batch No MRL Units Guideline

Alpha-androstrane	415996	0	%		87	80
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PHC Surrogate

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606049
Soil153
2022-01-13
BH9-9

1606051
Soil153
2022-01-13
BH10-2

Analyte Batch No MRL Units Guideline

Alpha-androstrane	415959	0	%			81
	416045	0	%		78	

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PHC Surrogate

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606054	Soil153	1606055	Soil153	1606057	Soil153
					2022-01-13		2022-01-13		2022-01-13	2022-01-13
					BH11-2		BH11-7		BH12-2	BH12-8
Alpha-androstrane	415959	0	%		79		64		77	74

VOCs Surrogates

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606026	Soil153	1606027	Soil153	1606028	Soil153
					2022-01-14		2022-01-14		2022-01-14	
					BH1-3		BH1-5		BH2-1	
1,2-dichloroethane-d4	415831	0	%				113			
4-bromofluorobenzene	415831	0	%				76			
Toluene-d8	415831	0	%		100		117		104	

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VOCs Surrogates

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606029	Soil153	1606030	Soil153	1606032	Soil153
1,2-dichloroethane-d4	415831	0	%		2022-01-14		2022-01-14		2022-01-14	2022-01-14
4-bromofluorobenzene	415831	0	%		BH2-6		Dup-4		BH4-2	BH4-9
Toluene-d8	415831	0	%		111		111		104	99

VOCs Surrogates

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606036	Soil153	1606037	Soil153		
Toluene-d8	415831	0	%		2022-01-14		2022-01-14			
					BH5-3		BH5-9			
					102		104			

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VOCs Surrogates

<u>Surrogates</u>					Lab I.D.	1606040	1606041	1606042
Analyte	Batch No	MRL	Units	Guideline	Sample Matrix	Soil153	Soil153	Soil153
					Sample Type			
					Sample Date	2022-01-14	2022-01-14	2022-01-14
					Sampling Time			
					Sample I.D.	BH7-3	Dup-3	BH7-6
Toluene-d8	415831	0	%		103	99	105	

VOCs Surrogates

<u>Surrogates</u>					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606045 Soil153 2022-01-13 BH8-7	1606048 Soil153 2022-01-13 BH9-3
Analyte	Batch No	MRL	Units	Guideline			
dichloroethane-d4	415831	0	%		123	110	
omofluorobenzene	415831	0	%		91	79	
Toluene-d8	415831	0	%		126	123	

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VOCs Surrogates

<u>Surrogates</u>					Lab I.D.	1606049	1606051
Analyte	Batch No	MRL	Units	Guideline	Sample Matrix	Soil153	Soil153
					Sample Type		
					Sample Date	2022-01-13	2022-01-13
					Sampling Time		
					Sample I.D.	BH9-9	BH10-2
Toluene-d8	415831	0	%			107	103

VOCs Surrogates

<u>Surrogates</u>					Lab I.D.	1606054	1606055	1606057	1606058
					Sample Matrix	Soil153	Soil153	Soil153	Soil153
					Sample Type				
					Sample Date	2022-01-13	2022-01-13	2022-01-13	2022-01-13
					Sampling Time				
					Sample I.D.	BH11-2	BH11-7	BH12-2	BH12-8
Analyte	Batch No	MRL	Units	Guideline					
1,2-dichloroethane-d4	415831	0	%				125		125
4-bromofluorobenzene	415831	0	%				79		77
Toluene-d8	415831	0	%			104	117	104	122

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Quality Assurance Summary

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415831	Tetrachloroethane, 1,1,1,2-	<0.05 ug/g	89	60-130	90	50-140	0	0-50
415831	Trichloroethane, 1,1,1-	<0.05 ug/g	93	60-130	98	50-140	0	0-50
415831	Tetrachloroethane, 1,1,2,2-	<0.05 ug/g	97	60-130	91	50-140	0	0-30
415831	Trichloroethane, 1,1,2-	<0.05 ug/g	94	60-130	90	50-140	0	0-50
415831	Dichloroethane, 1,1-	<0.05 ug/g	95	60-130	101	50-140	0	0-50
415831	Dichloroethylene, 1,1-	<0.05 ug/g	96	60-130	101	50-140	0	0-50
415831	Dichlorobenzene, 1,2-	<0.05 ug/g	90	60-130	93	50-140	0	0-50
415831	Dichloroethane, 1,2-	<0.05 ug/g	98	60-130	95	50-140	0	0-50
415831	Dichloropropane, 1,2-	<0.05 ug/g	92	60-130	95	50-140	0	0-50
415831	Dichlorobenzene, 1,3-	<0.05 ug/g	89	60-130	94	50-140	0	0-50
415831	Dichloropropene, 1,3-	<0.05 ug/g						
415831	Dichlorobenzene, 1,4-	<0.05 ug/g	90	60-130	95	50-140	0	0-50
415831	Acetone	<0.50 ug/g	104	60-130	108	50-140	0	0-50
415831	Benzene	<0.0068	94	60-130	100	50-140	0	0-50
415831	Bromodichloromethane	<0.05 ug/g	92	60-130	92	50-140	0	0-50
415831	Bromoform	<0.05 ug/g	88	60-130	80	50-140	0	0-50
415831	Bromomethane	<0.05 ug/g	109	60-130	99	50-140	0	0-50
415831	Dichloroethylene, 1,2-cis-	<0.05 ug/g	93	60-130	98	50-140	0	0-50
415831	Dichloropropene, 1,3-cis-	<0.05 ug/g	84	60-130	89	50-140	0	0-50
415831	Carbon Tetrachloride	<0.05 ug/g	91	60-130	94	50-140	0	0-50
415831	Chloroform	<0.05 ug/g	94	60-130	97	50-140	0	0-50
415831	Dibromochloromethane	<0.05 ug/g	90	60-130	86	50-140	0	0-50
415831	Dichlorodifluoromethane	<0.05 ug/g	108	60-130	113	50-140	0	0-50
415831	Methylene Chloride	<0.05 ug/g	112	60-130	117	50-140	0	0-50
415831	Ethylbenzene	<0.018 ug/g	95	60-130	101	50-140	0	0-50
415831	Ethylene dibromide	<0.05 ug/g	90	60-130	86	50-140	0	0-50
415831	Hexane (n)	<0.05 ug/g	101	60-130	103	50-140	0	0-50
415831	Xylene, m/p-	<0.05 ug/g	98	60-130	105	50-140	0	0-50
415831	Methyl Ethyl Ketone	<0.50 ug/g	82	60-130	118	50-140	0	0-50
415831	Methyl Isobutyl Ketone	<0.50 ug/g	84	60-130	90	50-140	0	0-50
415831	Methyl tert-Butyl Ether (MTBE)	<0.05 ug/g	96	60-130	95	50-140	0	0-50
415831	Chlorobenzene	<0.05 ug/g	91	60-130	95	50-140	0	0-50

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Quality Assurance Summary

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415831	Xylene, o-	<0.05 ug/g	92	60-130	98	50-140	0	0-50
415831	Styrene	<0.05 ug/g	90	60-130	93	50-140	0	0-50
415831	Dichloroethylene, 1,2-trans-	<0.05 ug/g	95	60-130	102	50-140	0	0-50
415831	Dichloropropene, 1,3-trans-	<0.05 ug/g	87	60-130	84	50-140	0	0-50
415831	Tetrachloroethylene	<0.05 ug/g	85	60-130	90	50-140	0	0-50
415831	Toluene	<0.08 ug/g	94	60-130	100	50-140	0	0-50
415831	Trichloroethylene	<0.01 ug/g	89	60-130	96	50-140	0	0-50
415831	Trichlorofluoromethane	<0.05 ug/g	96	60-130	90	50-140	0	0-50
415831	Vinyl Chloride	<0.02 ug/g	96	60-130	110	50-140	0	0-50
415841	Cyanide (CN-)	<0.005 ug/g	103	75-125	106	70-130	0	0-20
415846	Silver	<0.2 ug/g	95	70-130	97	70-130	0	0-20
415846	Arsenic	<1 ug/g	93	70-130	98	70-130	0	0-20
415846	Boron (total)	<5 ug/g	102	70-130	83	70-130	0	0-20
415846	Barium	<1 ug/g	92	70-130		70-130	15	0-20
415846	Beryllium	<1 ug/g	103	70-130	95	70-130	0	0-20
415846	Cadmium	<0.4 ug/g	101	70-130	102	70-130	0	0-20
415846	Cobalt	<1 ug/g	99	70-130	100	70-130	1	0-20
415846	Chromium Total	<1 ug/g	99	70-130	133	70-130	4	0-20
415846	Copper	<1 ug/g	105	70-130	106	70-130	2	0-20
415846	Mercury	<0.1 ug/g	100	70-130	82	70-130	0	0-20
415846	Molybdenum	<1 ug/g	94	70-130	95	70-130	0	0-20
415846	Nickel	<1 ug/g	103	70-130	111	70-130	1	0-20
415846	Lead	<1 ug/g	95	70-130	88	70-130	5	0-20
415846	Antimony	<1 ug/g	75	70-130	95	70-130	0	0-20
415846	Thallium	<1 ug/g	93	70-130	85	70-130	0	0-20
415846	Uranium	<0.5 ug/g	99	70-130	96	70-130	0	0-20
415846	Vanadium	<2 ug/g	97	70-130	142	70-130	1	0-20
415846	Zinc	<2 ug/g	107	70-130	120	70-130	2	0-20
415889	PHC's F2	<2 ug/g	96	80-120	108	60-140		0-30
415889	PHC's F3	<20 ug/g	96	80-120	108	60-140		0-30
415889	PHC's F4	<20 ug/g	96	80-120	108	60-140		0-30
415889	Moisture-Humidite	<0.1 %	100	80-120				
415894	pH - CaCl2	6.30	100	90-110			0	

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Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
415895	Selenium	<0.5 ug/g	112	70-130	117	70-130	0	0-20
415896	PHC's F1	<10 ug/g	100	80-120	104	60-140	0	0-30
415899	Chromium VI	<0.20 ug/g	104	80-120	92	70-130	0	0-35
415902	Xylene Mixture							
415903	PHC's F1-BTEX							
415909	Electrical Conductivity	<0.05	97	90-110			4	0-10
415914	Sodium Adsorption Ratio	<0.01					1	
415918	Boron (Hot Water Soluble)	<0.5 ug/g	96	70-130	95	75-125	0	0-30
415959	PHC's F2	<2 ug/g	94	80-120	98	60-140	0	0-30
415959	PHC's F3	<20 ug/g	92	80-120	98	60-140	0	0-30
415959	PHC's F4	<20 ug/g	92	80-120	98	60-140	0	0-30
415959	Moisture-Humidite	<0.1 %	100	80-120			1	
415963	Methylnaphthalene, 1-	<0.05 ug/g	105	50-140	79	50-140	0	0-40
415963	Methylnaphthalene, 2-	<0.05 ug/g	115	50-140	80	50-140	0	0-40
415963	Acenaphthene	<0.05 ug/g	106	50-140	82	50-140	0	0-40
415963	Acenaphthylene	0.07 ug/g	101	50-140	84	50-140	0	0-40
415963	Anthracene	<0.05 ug/g	111	50-140	86	50-140	0	0-40
415963	Benz[a]anthracene	<0.05 ug/g	118	50-140	89	50-140	0	0-40
415963	Benzo[a]pyrene	<0.05 ug/g	102	50-140	88	50-140	0	0-40
415963	Benzo[b]fluoranthene	<0.05 ug/g	116	50-140	93	50-140	0	0-40
415963	Benzo[ghi]perylene	<0.05 ug/g	90	50-140	85	50-140	0	0-40
415963	Benzo[k]fluoranthene	<0.05 ug/g	106	50-140	78		0	0-40
415963	Chrysene	<0.05 ug/g	119	50-140	88	50-140	0	0-40
415963	Dibenz[a h]anthracene	<0.05 ug/g	86	50-140	90	50-140	0	0-40
415963	Fluoranthene	<0.05 ug/g	118	50-140	102	50-140	0	0-40
415963	Fluorene	<0.05 ug/g	110	50-140	81	50-140	0	0-40
415963	Indeno[1 2 3-cd]pyrene	<0.05 ug/g	85	50-140	83	50-140	0	0-40
415963	Naphthalene	0.020 ug/g	90	50-140	68	50-140	0	0-40
415963	Phenanthrene	<0.05 ug/g	112	50-140	92	50-140	0	0-40
415963	Pyrene	<0.05 ug/g	118	50-140	103	50-140	0	0-40
415964	1+2-methylnaphthalene							
415986	Chlordane, alpha-	<0.006 ug/g	64	50-140		50-140		0-30
415986	Aldrin	<0.006 ug/g	63	50-140		50-140		0-30

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415986	Dieldrin	<0.006 ug/g	63	50-140		50-140		0-30
415986	Endosulfan I	<0.006 ug/g	64	50-140		50-140		0-30
415986	Endosulfan II	<0.006 ug/g	64	50-140		50-140		0-30
415986	Endrin	<0.006 ug/g	64	50-140		50-140		0-30
415986	Hexachlorocyclohexane Gamma-	<0.006 ug/g	62	50-140		50-140		0-30
415986	Chlordane, gamma-	<0.006 ug/g	65	50-140		50-140		0-30
415986	Heptachlor	<0.006 ug/g	63	50-140		50-140		0-30
415986	Heptachlor Epoxide	<0.006 ug/g	65	50-140		50-140		0-30
415986	Methoxychlor	<0.006 ug/g	68	50-140		50-140		0-30
415986	DDD	<0.006 ug/g	64	50-140		50-140		0-30
415986	DDE	<0.006 ug/g	66	50-140		50-140		0-30
415986	DDT	<0.006 ug/g	65	50-140		50-140		0-30
415987	Chlordane	<0.018 ug/g						
415987	Endosulfan	<0.012 ug/g						
415987	Hexachlorobenzene	<0.006 ug/g	102	50-140		50-140		0-30
415987	Hexachlorobutadiene	<0.006 ug/g	95	50-140		50-140		0-30
415987	Hexachloroethane	<0.006 ug/g	93	50-140		50-140		0-30
415996	PHC's F2	<2 ug/g	87	80-120	74	60-140	0	0-30
415996	PHC's F3	<20 ug/g	88	80-120	74	60-140	0	0-30
415996	PHC's F4	<20 ug/g	88	80-120	74	60-140	0	0-30
415996	Moisture-Humidite	<0.1 %	100	80-120			11	
416045	PHC's F2	<2 ug/g	109	80-120	106	60-140	0	0-30
416045	PHC's F3	<20 ug/g	108	80-120	106	60-140	0	0-30
416045	PHC's F4	<20 ug/g	108	80-120	106	60-140	0	0-30
416045	Moisture-Humidite	<0.1 %	100	80-120			2	
416046	PHC's F2	<2 ug/g	101	80-120	84	60-140	0	0-30
416046	PHC's F3	<20 ug/g	100	80-120	84	60-140	0	0-30
416046	PHC's F4	<20 ug/g	100	80-120	84	60-140	0	0-30
416046	Moisture-Humidite	<0.1 %	100	80-120			7	
416051	PHC's F2-Napth							
416052	PHC's F3-PAH							
416102	Electrical Conductivity	<0.05	98	90-110			0	0-10
416111	Sodium Adsorption Ratio	<0.01					1	

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Attention: Mr. Nan Du
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Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
416113	Silver	<0.2 ug/g	106	70-130	111	70-130	0	0-20
416113	Arsenic	<1 ug/g	100	70-130	113	70-130	0	0-20
416113	Boron (total)	<5 ug/g	99	70-130	150	70-130	0	0-20
416113	Barium	<1 ug/g	99	70-130	146	70-130	9	0-20
416113	Beryllium	<1 ug/g	102	70-130	99	70-130	0	0-20
416113	Cadmium	<0.4 ug/g	108	70-130	112	70-130	0	0-20
416113	Cobalt	<1 ug/g	101	70-130	111	70-130	0	0-20
416113	Chromium Total	<1 ug/g	103	70-130	175	70-130	15	0-20
416113	Copper	<1 ug/g	99	70-130	102	70-130	7	0-20
416113	Molybdenum	<1 ug/g	97	70-130	109	70-130	0	0-20
416113	Nickel	<1 ug/g	99	70-130	108	70-130	12	0-20
416113	Lead	<1 ug/g	98	70-130	103	70-130	0	0-20
416113	Antimony	<1 ug/g	84	70-130	118	70-130	0	0-20
416113	Selenium	<0.5 ug/g	106	70-130	105	70-130	0	0-20
416113	Thallium	<1 ug/g	98	70-130	99	70-130	0	0-20
416113	Uranium	<0.5 ug/g	102	70-130	111	70-130	0	0-20
416113	Vanadium	<2 ug/g	101	70-130	159	70-130	10	0-20
416113	Zinc	<2 ug/g	103	70-130	107	70-130	12	0-20
416122	Aroclor 1242	<0.02 ug/g	86	60-140	72	60-140	0	0-40
416122	Aroclor 1248	<0.02 ug/g	86	60-140	72	60-140	0	0-40
416122	Aroclor 1254	<0.02 ug/g	86	60-140	72	60-140	0	0-40
416122	Aroclor 1260	<0.02 ug/g	86	60-140	72	60-140	0	0-40
416122	Polychlorinated Biphenyls	<0.02 ug/g	86	60-140	72	60-140	0	0-40

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Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
415831	Tetrachloroethane, 1,1,1,2-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Trichloroethane, 1,1,1-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Tetrachloroethane, 1,1,2,2-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Trichloroethane, 1,1,2-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichloroethane, 1,1-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichloroethylene, 1,1-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichlorobenzene, 1,2-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichloroethane, 1,2-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichloropropane, 1,2-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichlorobenzene, 1,3-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichloropropene, 1,3-	GC-MS	2022-01-21	2022-01-21	YH	V 8260B
415831	Dichlorobenzene, 1,4-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Acetone	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Benzene	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Bromodichloromethane	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Bromoform	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Bromomethane	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichloroethylene, 1,2-cis-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichloropropene, 1,3-cis-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Carbon Tetrachloride	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Chloroform	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dibromochloromethane	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichlorodifluoromethane	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Methylene Chloride	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Ethylbenzene	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Ethylene dibromide	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Hexane (n)	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Xylene, m/p-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Methyl Ethyl Ketone	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Methyl Isobutyl Ketone	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Methyl tert-Butyl Ether (MTBE)	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Chlorobenzene	GC-MS	2022-01-20	2022-01-21	YH	V 8260B

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Test Summary

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415831	Xylene, o-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Styrene	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichloroethylene, 1,2-trans-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichloropropene, 1,3-trans-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Tetrachloroethylene	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Toluene	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Trichloroethylene	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Trichlorofluoromethane	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Vinyl Chloride	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415841	Cyanide (CN-)	Skalar CN Analyzer	2022-01-21	2022-01-21	Z_S	MOECC E3015
415846	Silver	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Arsenic	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Boron (total)	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Barium	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Beryllium	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Cadmium	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Cobalt	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Chromium Total	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Copper	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Mercury	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Molybdenum	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Nickel	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Lead	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Antimony	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Thallium	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Uranium	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Vanadium	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Zinc	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415889	PHC's F2	GC/FID	2022-01-20	2022-01-24	R_G	CCME
415889	PHC's F3	GC/FID	2022-01-20	2022-01-24	R_G	CCME
415889	PHC's F4	GC/FID	2022-01-20	2022-01-24	R_G	CCME
415889	Moisture-Humidite	Oven	2022-01-20	2022-01-24	R_G	ASTM 2216
415894	pH - CaCl2	pH Meter	2022-01-24	2022-01-24	MW	Ag Soil

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COC #: 883644

Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
415895	Selenium	ICAPQ-MS	2022-01-24	2022-01-24	AaN	EPA 200.8/6020
415896	PHC's F1	GC/FID	2022-01-24	2022-01-24	YH	CCME
415899	Chromium VI	FAA	2022-01-21	2022-01-24	MW	M US EPA 3060A
415902	Xylene Mixture	GC-MS	2022-01-24	2022-01-24	YH	V 8260B
415903	PHC's F1-BTEX	GC/FID	2022-01-24	2022-01-24	YH	CCME
415909	Electrical Conductivity	Electrical Conductivity Meter	2022-01-24	2022-01-24	Z_S	Cond-Soil
415914	Sodium Adsorption Ratio	iCAP OES	2022-01-24	2022-01-24	Z_S	Ag Soil
415918	Boron (Hot Water Soluble)	iCAP OES	2022-01-24	2022-01-24	Z_S	MOECC E3470
415959	PHC's F2	GC/FID	2022-01-24	2022-01-25	R_G	CCME
415959	PHC's F3	GC/FID	2022-01-24	2022-01-25	R_G	CCME
415959	PHC's F4	GC/FID	2022-01-24	2022-01-25	R_G	CCME
415959	Moisture-Humidity	Oven	2022-01-24	2022-01-25	R_G	ASTM 2216
415963	Methylnaphthalene, 1-	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Methylnaphthalene, 2-	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Acenaphthene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Acenaphthylene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Anthracene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Benz[a]anthracene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Benzo[a]pyrene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Benzo[b]fluoranthene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Benzo[ghi]perylene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Benzo[k]fluoranthene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Chrysene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Dibenz[a,h]anthracene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Fluoranthene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Fluorene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Indeno[1,2,3-cd]pyrene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Naphthalene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Phenanthrene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Pyrene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415964	1+2-methylnaphthalene	GC-MS	2022-01-25	2022-01-25	C_M	P 8270
415986	Chlordane, alpha-	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	Aldrin	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B

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415986	Dieldrin	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	Endosulfan I	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	Endosulfan II	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	Endrin	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	Hexachlorocyclohexane Gamma-	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	Chlordane, gamma-	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	Heptachlor	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	Heptachlor Epoxide	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	Methoxychlor	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	DDD	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	DDE	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	DDT	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415987	Chlordane	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415987	Endosulfan	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415987	Hexachlorobenzene	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415987	Hexachlorobutadiene	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415987	Hexachloroethane	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415996	PHC's F2	GC/FID	2022-01-24	2022-01-25	R_G	CCME
415996	PHC's F3	GC/FID	2022-01-24	2022-01-25	R_G	CCME
415996	PHC's F4	GC/FID	2022-01-24	2022-01-25	R_G	CCME
415996	Moisture-Humidite	Oven	2022-01-24	2022-01-25	R_G	ASTM 2216
416045	PHC's F2	GC/FID	2022-01-24	2022-01-26	R_G	CCME
416045	PHC's F3	GC/FID	2022-01-24	2022-01-26	R_G	CCME
416045	PHC's F4	GC/FID	2022-01-24	2022-01-26	R_G	CCME
416045	Moisture-Humidite	Oven	2022-01-24	2022-01-26	R_G	ASTM 2216
416046	PHC's F2	GC/FID	2022-01-24	2022-01-26	R_G	CCME
416046	PHC's F3	GC/FID	2022-01-24	2022-01-26	R_G	CCME
416046	PHC's F4	GC/FID	2022-01-24	2022-01-26	R_G	CCME
416046	Moisture-Humidite	Oven	2022-01-24	2022-01-26	R_G	ASTM 2216
416051	PHC's F2-Napth	GC/FID	2022-01-26	2022-01-26	R_G	CCME
416052	PHC's F3-PAH	GC/FID	2022-01-26	2022-01-26	R_G	CCME
416102	Electrical Conductivity	Electrical Conductivity Meter	2022-01-26	2022-01-26	Z_S	Cond-Soil
416111	Sodium Adsorption Ratio	iCAP OES	2022-01-26	2022-01-26	Z_S	Ag Soil

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416113	Silver	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Arsenic	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Boron (total)	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Barium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Beryllium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Cadmium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Cobalt	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Chromium Total	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Copper	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Molybdenum	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Nickel	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Lead	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Antimony	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Selenium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Thallium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Uranium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Vanadium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Zinc	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416122	Aroclor 1242	GC/ECD	2022-01-24	2022-01-25	QL	EPA 8081B/8082A
416122	Aroclor 1248	GC/ECD	2022-01-24	2022-01-25	QL	EPA 8081B/8082A
416122	Aroclor 1254	GC/ECD	2022-01-24	2022-01-25	QL	EPA 8081B/8082A
416122	Aroclor 1260	GC/ECD	2022-01-24	2022-01-25	QL	EPA 8081B/8082A
416122	Polychlorinated Biphenyls	GC/ECD	2022-01-24	2022-01-25	QL	EPA 8081B/8082A

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Environment Testing

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

CWS for Petroleum Hydrocarbons in Soil - Tier 1

Notes:

1. The laboratory method complies with CCME Tier 1 reference method for PHC in soil. It is validated for laboratory use.
2. Where the F1 fraction (C6 to C10) and BTEX are both measured, F1-BTEX is reported.
3. Where the F2 fraction (C10 to C16) and naphthalene are both measured, F2-naphthalene is reported.
4. Where the F3 fraction (C16 to C34) and PAHs* are both measured, F3-PAH is reported.
5. F4G is analyzed if the chromatogram does not descend to baseline before C50. Where F4 (C34 to C50) and F4G are both reported, the higher result is compared to the standard.
6. Unless otherwise stated in the sample comments, the following criteria have been met where applicable:
 - nC6 and nC10 response factors within 30% of response factor for toluene;
 - nC10, nC16, and nC34 response factors within 10% of each other;
 - C50 response factors within 70% of nC10 + nC16 + nC34 average; and,
 - Linearity is within 15%.
7. Unless otherwise stated in the sample comments, sampling requirements and analytical holding times have been met.
8. Gravimetric heavy hydrocarbons (F4G) cannot be added to the C6 and C50 hydrocarbons.
9. *PAHs = phenanthrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene and pyrene.

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
Invoice to: EnGlobe Corp.
PO#:

Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363
Temperature (C): 2
Custody Seal:

Page 1 of 27

Dear Nan Du:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Sample Comment Summary

Sample ID: 1606843 BH16-1 OCPs surrogate recovery is unavailable due to matrix interference.
--

Report Comments:

Long Qu, Organics Supervisor

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise stated

Eurofins Environment Testing Canada Inc. is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at <http://www.cala.ca/scopes/2602.pdf>

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline or regulatory limits listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official guideline or regulation as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

O.Reg 153-T1-All Other Soils

Exceedence Summary

Sample I.D.	Analyte	Result	Units	Criteria
Inorganics				
BH15-2	Sodium Adsorption Ratio	6.11		STD 2.4
BH3-1	Electrical Conductivity	3.31	mS/cm	STD 0.57
BH3-1	Sodium Adsorption Ratio	55.8		STD 2.4
BH6-1	Electrical Conductivity	3.95	mS/cm	STD 0.57
BH6-1	Sodium Adsorption Ratio	42.6		STD 2.4

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Client: EnGlobe Corp. (Toronto)
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Attention: Mr. Nan Du
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Invoice to: EnGlobe Corp.

Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Hydrocarbons

Lab I.D. 1606836
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH3-5

1606838
Soil153
2022-01-21
BH6-9

Analyte Batch No MRL Units Guideline

PHC's F1	416120	10	ug/g	STD 25	<10	<10
PHC's F1-BTEX	416121	10	ug/g		<10	<10
PHC's F2	416160	2	ug/g	STD 10	3	7
PHC's F3	416160	20	ug/g	STD 240	<20	60
PHC's F4	416160	20	ug/g	STD 120	<20	<20

Hydrocarbons

Lab I.D. 1606840
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH13-6

Analyte Batch No MRL Units Guideline

PHC's F1	416120	10	ug/g	STD 25	<10
PHC's F1-BTEX	416121	10	ug/g		<10
PHC's F2	416160	2	ug/g	STD 10	4
PHC's F3	416160	20	ug/g	STD 240	<20
PHC's F4	416160	20	ug/g	STD 120	<20

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
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Attention: Mr. Nan Du
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Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	1606844
					Sample Matrix	Soil153
					Sample Type	1606845
					Sample Date	Soil153
					Sampling Time	2022-01-21
					Sample I.D.	2022-01-21
						BH16-2
						BH16-6
PHC's F1	416120	10	ug/g	STD 25	<10	<10
PHC's F1-BTEX	416121	10	ug/g		<10	<10
PHC's F2	416160	2	ug/g	STD 10	5	7
PHC's F3	416160	20	ug/g	STD 240	<20	30
PHC's F4	416160	20	ug/g	STD 120	<20	<20

Metals

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	1606834
					Sample Matrix	Soil153
					Sample Type	1606837
					Sample Date	Soil153
					Sampling Time	2022-01-21
					Sample I.D.	2022-01-21
						BH3-1
						BH6-1
Antimony	416113	1	ug/g	STD 1.3	<1	<1
Arsenic	416113	1	ug/g	STD 18	4	4
Barium	416113	1	ug/g	STD 220	94	59
Beryllium	416113	1	ug/g	STD 2.5	<1	<1
Boron (total)	416113	5	ug/g	STD 36	<5	<5
Cadmium	416113	0.4	ug/g	STD 1.2	<0.4	<0.4
Chromium Total	416113	1	ug/g	STD 70	25	27
Cobalt	416113	1	ug/g	STD 21	8	6
Copper	416113	1	ug/g	STD 92	19	14
Lead	416113	1	ug/g	STD 120	8	9
Molybdenum	416113	1	ug/g	STD 2	<1	<1
Nickel	416113	1	ug/g	STD 82	18	18
Selenium	416113	0.5	ug/g	STD 1.5	0.5	<0.5

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Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial
Water Quality Guideline, IPWQO = Interim Provincial Water Quality
Objective, TDR = Typical Desired Range

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Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Metals

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop					1606834 Soil153 2022-01-21 BH3-1	1606837 Soil153 2022-01-21 BH6-1	
<u>Metals</u>	Analyte	Batch No	MRL	Units			Guideline
	Silver	416113	0.2	ug/g	STD 0.5	<0.2	<0.2
	Thallium	416113	1	ug/g	STD 1	<1	<1
	Uranium	416113	0.5	ug/g	STD 2.5	<0.5	<0.5
	Vanadium	416113	2	ug/g	STD 86	35	29
	Zinc	416113	2	ug/g	STD 290	42	42

Metals

<u>Metals</u>					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606839 Soil153 2022-01-21 BH13-1	1606841 Soil153 2022-01-21 BH15-1	1606842 Soil153 2022-01-21 BH15-2	1606843 Soil153 2022-01-21 BH16-1
Analyte	Batch No	MRL	Units	Guideline					
Antimony	416113	1	ug/g	STD 1.3	<1	<1	<1	<1	
Arsenic	416113	1	ug/g	STD 18	2	2	2	3	
Barium	416113	1	ug/g	STD 220	23	46	54	59	
Beryllium	416113	1	ug/g	STD 2.5	<1	<1	<1	<1	
Boron (Hot Water Soluble)	416128	0.5	ug/g			<0.5			
Boron (total)	416113	5	ug/g	STD 36	<5	<5	5	<5	
Cadmium	416113	0.4	ug/g	STD 1.2	<0.4	<0.4	<0.4	<0.4	
Chromium Total	416113	1	ug/g	STD 70	14	16	16	20	
Chromium VI	416275	0.20	ug/g	STD 0.66		0.21			
Cobalt	416113	1	ug/g	STD 21	3	4	6	5	
Copper	416113	1	ug/g	STD 92	5	12	12	14	
Lead	416113	1	ug/g	STD 120	6	11	5	13	
Mercury	416113	0.1	ug/g	STD 0.27		<0.1			
Molybdenum	416113	1	ug/g	STD 2	<1	<1	<1	<1	

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
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M9W 5W8
Attention: Mr. Nan Du
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Invoice to: EnGlobe Corp.

Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Metals

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606839	Soil153	1606841	1606842	1606843	1606843
					2022-01-21		2022-01-21	2022-01-21	2022-01-21	
					BH13-1		BH15-1	BH15-2	BH16-1	
Nickel	416113	1	ug/g	STD 82	8		10	12	13	
Selenium	416113	0.5	ug/g	STD 1.5	<0.5		<0.5	<0.5	<0.5	
Silver	416113	0.2	ug/g	STD 0.5	<0.2		<0.2	<0.2	<0.2	
Thallium	416113	1	ug/g	STD 1	<1		<1	<1	<1	
Uranium	416113	0.5	ug/g	STD 2.5	<0.5		<0.5	<0.5	<0.5	
Vanadium	416113	2	ug/g	STD 86	17		21	24	25	
Zinc	416113	2	ug/g	STD 290	18		34	26	48	

OCP/PCB

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606843	Soil153	1606843	1606843	1606843	1606843
					2022-01-21		2022-01-21	2022-01-21	2022-01-21	
					BH16-1		BH16-1	BH16-1	BH16-1	
Aldrin	416232	0.002	ug/g	STD 0.05	<0.002					
Chlordane	416232	0.006	ug/g	STD 0.05	<0.006					
Chlordane, alpha-	416232	0.002	ug/g		<0.002					
Chlordane, gamma-	416232	0.002	ug/g		<0.002					
DDD	416232	0.002	ug/g	STD 0.05	<0.002					
DDE	416232	0.002	ug/g	STD 0.05	<0.002					
DDT	416232	0.002	ug/g	STD 1.4	<0.002					
Dieldrin	416232	0.002	ug/g	STD 0.05	<0.002					
Endosulfan	416232	0.004	ug/g	STD 0.04	<0.004					
Endosulfan I	416232	0.002	ug/g		<0.002					
Endosulfan II	416232	0.002	ug/g		<0.002					
Endrin	416232	0.002	ug/g	STD 0.04	<0.002					

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

OCP/PCB

Lab I.D. 1606843
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH16-1

Analyte	Batch No	MRL	Units	Guideline	
Heptachlor	416232	0.002	ug/g	STD 0.05	<0.002
Heptachlor Epoxide	416232	0.002	ug/g	STD 0.05	<0.002
Hexachlorobenzene	416232	0.002	ug/g	STD 0.01	<0.002
Hexachlorobutadiene	416232	0.002	ug/g	STD 0.01	<0.002
Hexachlorocyclohexane Gamma-	416232	0.002	ug/g	STD 0.01	<0.002
Hexachloroethane	416232	0.002	ug/g	STD 0.01	<0.002
Methoxychlor	416232	0.002	ug/g	STD 0.05	<0.002

PAH

Lab I.D. 1606837
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH6-1

Analyte	Batch No	MRL	Units	Guideline	
1+2-methylnaphthalene	416170	0.05	ug/g		<0.05
Acenaphthene	415963	0.05	ug/g	STD 0.072	<0.05
Acenaphthylene	415963	0.05	ug/g	STD 0.093	<0.05
Anthracene	415963	0.05	ug/g	STD 0.16	<0.05
Benz[a]anthracene	415963	0.05	ug/g	STD 0.36	<0.05
Benzo[a]pyrene	415963	0.05	ug/g	STD 0.3	<0.05
Benzo[b]fluoranthene	415963	0.05	ug/g	STD 0.47	<0.05
Benzo[ghi]perylene	415963	0.05	ug/g	STD 0.68	<0.05
Benzo[k]fluoranthene	415963	0.05	ug/g	STD 0.48	<0.05
Chrysene	415963	0.05	ug/g	STD 2.8	<0.05
Dibenz[a h]anthracene	415963	0.05	ug/g	STD 0.1	<0.05
Fluoranthene	415963	0.05	ug/g	STD 0.56	<0.05

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Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial
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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PAH

Lab I.D. 1606837
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH6-1

Analyte Batch No MRL Units Guideline

Fluorene	415963	0.05	ug/g	STD 0.12	<0.05
Indeno[1 2 3-cd]pyrene	415963	0.05	ug/g	STD 0.23	<0.05
Methlynaphthalene, 1-	415963	0.05	ug/g	STD 0.59	<0.05
Methlynaphthalene, 2-	415963	0.05	ug/g	STD 0.59	<0.05
Naphthalene	415963	0.013	ug/g	STD 0.09	<0.013
Phenanthrene	415963	0.05	ug/g	STD 0.69	<0.05
Pyrene	415963	0.05	ug/g	STD 1	<0.05

Volatiles

Lab I.D. 1606836
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH3-5

Analyte Batch No MRL Units Guideline

Benzene	416116	0.0068	ug/g	STD 0.02	<0.0068	<0.0068
Ethylbenzene	416116	0.018	ug/g	STD 0.05	<0.018	<0.018
Toluene	416116	0.08	ug/g	STD 0.2	<0.08	<0.08
Xylene Mixture	416119	0.05	ug/g	STD 0.05	<0.05	<0.05
Xylene, m/p-	416116	0.05	ug/g		<0.05	<0.05
Xylene, o-	416116	0.05	ug/g		<0.05	<0.05

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COC #: 885363

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Lab I.D. 1606840
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH13-6

Analyte	Batch No	MRL	Units	Guideline	
Benzene	416116	0.0068	ug/g	STD 0.02	<0.0068
Ethylbenzene	416116	0.018	ug/g	STD 0.05	<0.018
Toluene	416116	0.08	ug/g	STD 0.2	<0.08
Xylene Mixture	416119	0.05	ug/g	STD 0.05	<0.05
Xylene, m/p-	416116	0.05	ug/g		<0.05
Xylene, o-	416116	0.05	ug/g		<0.05

Volatiles

Lab I.D. 1606844
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH16-2

Analyte	Batch No	MRL	Units	Guideline	1606845 Soil153 2022-01-21 BH16-6	1606845 Soil153 2022-01-21 BH16-6
Acetone	416116	0.50	ug/g	STD 0.5		<0.50
Benzene	416116	0.0068	ug/g	STD 0.02	<0.0068	<0.0068
Bromodichloromethane	416116	0.05	ug/g	STD 0.05		<0.05
Bromoform	416116	0.05	ug/g	STD 0.05		<0.05
Bromomethane	416116	0.05	ug/g	STD 0.05		<0.05
Carbon Tetrachloride	416116	0.05	ug/g	STD 0.05		<0.05
Chlorobenzene	416116	0.05	ug/g	STD 0.05		<0.05
Chloroform	416116	0.05	ug/g	STD 0.05		<0.05
Dibromochloromethane	416116	0.05	ug/g	STD 0.05		<0.05
Dichlorobenzene, 1,2-	416116	0.05	ug/g	STD 0.05		<0.05
Dichlorobenzene, 1,3-	416116	0.05	ug/g	STD 0.05		<0.05
Dichlorobenzene, 1,4-	416116	0.05	ug/g	STD 0.05		<0.05
Dichlorodifluoromethane	416116	0.05	ug/g	STD 0.05		<0.05

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Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial
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Attention: Mr. Nan Du
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Invoice to: EnGlobe Corp.

Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Lab I.D. 1606844
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH16-2

1606845
Soil153
2022-01-21
BH16-6

Analyte	Batch No	MRL	Units	Guideline		
Dichloroethane, 1,1-	416116	0.05	ug/g	STD 0.05		<0.05
Dichloroethane, 1,2-	416116	0.05	ug/g	STD 0.05		<0.05
Dichloroethylene, 1,1-	416116	0.05	ug/g	STD 0.05		<0.05
Dichloroethylene, 1,2-cis-	416116	0.05	ug/g	STD 0.05		<0.05
Dichloroethylene, 1,2-trans-	416116	0.05	ug/g	STD 0.05		<0.05
Dichloropropane, 1,2-	416116	0.05	ug/g	STD 0.05		<0.05
Dichloropropene,1,3-	416116	0.05	ug/g	STD 0.05		<0.05
Dichloropropene,1,3-cis-	416116	0.05	ug/g			<0.05
Dichloropropene,1,3-trans-	416116	0.05	ug/g			<0.05
Ethylbenzene	416116	0.018	ug/g	STD 0.05	<0.018	<0.018
Ethylene dibromide	416116	0.05	ug/g	STD 0.05		<0.05
Hexane (n)	416116	0.05	ug/g	STD 0.05		<0.05
Methyl Ethyl Ketone	416116	0.50	ug/g	STD 0.5		<0.50
Methyl Isobutyl Ketone	416116	0.50	ug/g	STD 0.5		<0.50
Methyl tert-Butyl Ether (MTBE)	416116	0.05	ug/g	STD 0.05		<0.05
Methylene Chloride	416116	0.05	ug/g	STD 0.05		<0.05
Styrene	416116	0.05	ug/g	STD 0.05		<0.05
Tetrachloroethane, 1,1,1,2-	416116	0.05	ug/g	STD 0.05		<0.05
Tetrachloroethane, 1,1,2,2-	416116	0.05	ug/g	STD 0.05		<0.05
Tetrachloroethylene	416116	0.05	ug/g	STD 0.05		<0.05
Toluene	416116	0.08	ug/g	STD 0.2	<0.08	<0.08
Trichloroethane, 1,1,1-	416116	0.05	ug/g	STD 0.05		<0.05
Trichloroethane, 1,1,2-	416116	0.05	ug/g	STD 0.05		<0.05

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MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606844
Soil153
2022-01-21
BH16-2

1606845
Soil153
2022-01-21
BH16-6

Analyte Batch No MRL Units Guideline

Trichloroethylene	416116	0.01	ug/g	STD 0.05		<0.01
Trichlorofluoromethane	416116	0.05	ug/g	STD 0.25		<0.05
Vinyl Chloride	416116	0.02	ug/g	STD 0.02		<0.02
Xylene Mixture	416119	0.05	ug/g	STD 0.05	<0.05	<0.05
Xylene, m/p-	416116	0.05	ug/g		<0.05	<0.05
Xylene, o-	416116	0.05	ug/g		<0.05	<0.05

Inorganics

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606834
Soil153
2022-01-21
BH3-1

1606836
Soil153
2022-01-21
BH3-5

1606837
Soil153
2022-01-21
BH6-1

Analyte Batch No MRL Units Guideline

Electrical Conductivity	416272	0.05	mS/cm	STD 0.57	3.31*		3.95*
pH - CaCl2	416090	2.00				7.52	
Sodium Adsorption Ratio	416286	0.01		STD 2.4	55.8*		42.6*

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Environment Testing

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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Inorganics

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606839	Soil153	1606840	1606841	1606842	1606843
					Soil153		Soil153	Soil153	Soil153	Soil153
					2022-01-21		2022-01-21	2022-01-21	2022-01-21	2022-01-21
					BH13-1		BH13-6	BH15-1	BH15-2	BH16-1
Cyanide (CN-)	416131	0.005	ug/g	STD 0.051				<0.005		
Electrical Conductivity	416272	0.05	mS/cm	STD 0.57	0.34			0.42	0.42	0.40
pH - CaCl2	416090	2.00					7.57	7.51		
Sodium Adsorption Ratio	416286	0.01		STD 2.4	1.18			1.35	6.11*	0.89

Moisture

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606836	Soil153	1606838	Soil153		
					2022-01-21		2022-01-21			
					BH3-5		BH6-9			
Moisture-Humidite	416160	0.1	%		5.0		12.2			

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Moisture

Lab I.D. 1606840
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH13-6

Analyte Batch No MRL Units Guideline

Moisture-Humidite	416160	0.1	%		4.6
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Moisture

Lab I.D. 1606844	1606845
Sample Matrix Soil153	Soil153
Sample Type	
Sample Date 2022-01-21	2022-01-21
Sampling Time	
Sample I.D. BH16-2	BH16-6

Analyte Batch No MRL Units Guideline

Moisture-Humidite	416160	0.1	%		13.9	9.1
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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PCBs

					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606834 Soil153 2022-01-21 BH3-1	1606835 Soil153 2022-01-21 Dup-7
Analyte	Batch No	MRL	Units	Guideline			
Aroclor 1242	416206	0.02	ug/g			<0.02	<0.02
Aroclor 1248	416206	0.02	ug/g			<0.02	<0.02
Aroclor 1254	416206	0.02	ug/g			<0.02	<0.02
Aroclor 1260	416206	0.02	ug/g			<0.02	<0.02
Polychlorinated Biphenyls	416206	0.02	ug/g	STD 0.3		<0.02	<0.02

PCB Surrogate

					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606834 Soil153 2022-01-21 BH3-1	1606835 Soil153 2022-01-21 Dup-7
Analyte	Batch No	MRL	Units	Guideline			
Decachlorobiphenyl	416211	0	%			61	50

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PCB Surrogate

Lab I.D. 1606843
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH16-1

Analyte **Batch No** **MRL** **Units** **Guideline**

Decachlorobiphenyl	416232	0	%		N/A
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PHC Surrogate

Lab I.D.	1606836	1606838
Sample Matrix	Soil153	Soil153
Sample Type		
Sample Date	2022-01-21	2022-01-21
Sampling Time		
Sample I.D.	BH3-5	BH6-9

Analyte **Batch No** **MRL** **Units** **Guideline**

Alpha-androstrane	416160	0	%		64	91
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COC #: 885363

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PHC Surrogate

Lab I.D. 1606840
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH13-6

Analyte Batch No MRL Units Guideline

Alpha-androstrane	416160	0	%	67
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PHC Surrogate

Lab I.D. 1606844	1606845
Sample Matrix Soil153	Soil153
Sample Type	
Sample Date 2022-01-21	2022-01-21
Sampling Time	
Sample I.D. BH16-2	BH16-6

Analyte Batch No MRL Units Guideline

Alpha-androstrane	416160	0	%	77	98
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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

VOCs Surrogates

Lab I.D.	1606836	1606838
Sample Matrix	Soil153	Soil153
Sample Type		
Sample Date	2022-01-21	2022-01-21
Sampling Time		
Sample I.D.	BH3-5	BH6-9

Analyte	Batch No	MRL	Units	Guideline
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Toluene-d8	416116	0	%	99	98
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VOCs Surrogates

Lab I.D.	1606840
Sample Matrix	Soil153
Sample Type	
Sample Date	2022-01-21
Sampling Time	
Sample I.D.	BH13-6

Analyte	Batch No	MRL	Units	Guideline
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Toluene-d8	416116	0	%	98
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VOCs Surrogates

Lab I.D.	1606844	1606845
Sample Matrix	Soil153	Soil153
Sample Type		
Sample Date	2022-01-21	2022-01-21
Sampling Time		
Sample I.D.	BH16-2	BH16-6

Analyte	Batch No	MRL	Units	Guideline
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1,2-dichloroethane-d4	416116	0	%		127
4-bromofluorobenzene	416116	0	%		81
Toluene-d8	416116	0	%	103	116

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Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
415963	Methlynaphthalene, 1-	<0.05 ug/g	105	50-140	79	50-140	0	0-40
415963	Methlynaphthalene, 2-	<0.05 ug/g	115	50-140	80	50-140	0	0-40
415963	Acenaphthene	<0.05 ug/g	106	50-140	82	50-140	0	0-40
415963	Acenaphthylene	0.07 ug/g	101	50-140	84	50-140	0	0-40
415963	Anthracene	<0.05 ug/g	111	50-140	86	50-140	0	0-40
415963	Benz[a]anthracene	<0.05 ug/g	118	50-140	89	50-140	0	0-40
415963	Benzo[a]pyrene	<0.05 ug/g	102	50-140	88	50-140	0	0-40
415963	Benzo[b]fluoranthene	<0.05 ug/g	116	50-140	93	50-140	0	0-40
415963	Benzo[ghi]perylene	<0.05 ug/g	90	50-140	85	50-140	0	0-40
415963	Benzo[k]fluoranthene	<0.05 ug/g	106	50-140	78		0	0-40
415963	Chrysene	<0.05 ug/g	119	50-140	88	50-140	0	0-40
415963	Dibenz[a h]anthracene	<0.05 ug/g	86	50-140	90	50-140	0	0-40
415963	Fluoranthene	<0.05 ug/g	118	50-140	102	50-140	0	0-40
415963	Fluorene	<0.05 ug/g	110	50-140	81	50-140	0	0-40
415963	Indeno[1 2 3-cd]pyrene	<0.05 ug/g	85	50-140	83	50-140	0	0-40
415963	Naphthalene	0.020 ug/g	90	50-140	68	50-140	0	0-40
415963	Phenanthrene	<0.05 ug/g	112	50-140	92	50-140	0	0-40
415963	Pyrene	<0.05 ug/g	118	50-140	103	50-140	0	0-40
416090	pH - CaCl2	5.93	100	90-110			0	
416113	Silver	<0.2 ug/g	106	70-130	107	70-130	0	0-20
416113	Arsenic	<1 ug/g	100	70-130	101	70-130	0	0-20
416113	Boron (total)	<5 ug/g	99	70-130	109	70-130	0	0-20
416113	Barium	<1 ug/g	99	70-130	351	70-130	9	0-20
416113	Beryllium	<1 ug/g	102	70-130	90	70-130	0	0-20
416113	Cadmium	<0.4 ug/g	108	70-130	111	70-130	0	0-20
416113	Cobalt	<1 ug/g	101	70-130	104	70-130	0	0-20
416113	Chromium Total	<1 ug/g	103	70-130	195	70-130	15	0-20
416113	Copper	<1 ug/g	99	70-130	111	70-130	7	0-20
416113	Mercury	<0.1 ug/g	90	70-130	84	70-130	0	0-20
416113	Molybdenum	<1 ug/g	97	70-130	97	70-130	0	0-20
416113	Nickel	<1 ug/g	99	70-130	124	70-130	12	0-20
416113	Lead	<1 ug/g	98	70-130	91	70-130	0	0-20

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Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
416113	Antimony	<1 ug/g	84	70-130	88	70-130	0	0-20
416113	Selenium	<0.5 ug/g	106	70-130	104	70-130	0	0-20
416113	Thallium	<1 ug/g	98	70-130	89	70-130	0	0-20
416113	Uranium	<0.5 ug/g	102	70-130	99	70-130	0	0-20
416113	Vanadium	<2 ug/g	101	70-130	181	70-130	10	0-20
416113	Zinc	<2 ug/g	103	70-130	152	70-130	12	0-20
416116	Tetrachloroethane, 1,1,1,2-	<0.05 ug/g	89	60-130	90	50-140	0	0-50
416116	Trichloroethane, 1,1,1-	<0.05 ug/g	93	60-130	98	50-140	0	0-50
416116	Tetrachloroethane, 1,1,2,2-	<0.05 ug/g	97	60-130	91	50-140	0	0-30
416116	Trichloroethane, 1,1,2-	<0.05 ug/g	94	60-130	90	50-140	0	0-50
416116	Dichloroethane, 1,1-	<0.05 ug/g	95	60-130	101	50-140	0	0-50
416116	Dichloroethylene, 1,1-	<0.05 ug/g	96	60-130	101	50-140	0	0-50
416116	Dichlorobenzene, 1,2-	<0.05 ug/g	90	60-130	93	50-140	0	0-50
416116	Dichloroethane, 1,2-	<0.05 ug/g	98	60-130	95	50-140	0	0-50
416116	Dichloropropane, 1,2-	<0.05 ug/g	92	60-130	95	50-140	0	0-50
416116	Dichlorobenzene, 1,3-	<0.05 ug/g	89	60-130	94	50-140	0	0-50
416116	Dichloropropene, 1,3-	<0.05 ug/g						
416116	Dichlorobenzene, 1,4-	<0.05 ug/g	90	60-130	95	50-140	0	0-50
416116	Acetone	<0.50 ug/g	104	60-130	108	50-140	0	0-50
416116	Benzene	<0.0068	94	60-130	100	50-140	0	0-50
416116	Bromodichloromethane	<0.05 ug/g	92	60-130	92	50-140	0	0-50
416116	Bromoform	<0.05 ug/g	88	60-130	80	50-140	0	0-50
416116	Bromomethane	<0.05 ug/g	109	60-130	99	50-140	0	0-50
416116	Dichloroethylene, 1,2-cis-	<0.05 ug/g	93	60-130	98	50-140	0	0-50
416116	Dichloropropene, 1,3-cis-	<0.05 ug/g	84	60-130	89	50-140	0	0-50
416116	Carbon Tetrachloride	<0.05 ug/g	91	60-130	94	50-140	0	0-50
416116	Chloroform	<0.05 ug/g	94	60-130	97	50-140	0	0-50
416116	Dibromochloromethane	<0.05 ug/g	90	60-130	86	50-140	0	0-50
416116	Dichlorodifluoromethane	<0.05 ug/g	108	60-130	113	50-140	0	0-50
416116	Methylene Chloride	<0.05 ug/g	112	60-130	117	50-140	0	0-50
416116	Ethylbenzene	<0.018 ug/g	95	60-130	101	50-140	0	0-50
416116	Ethylene dibromide	<0.05 ug/g	90	60-130	86	50-140	0	0-50
416116	Hexane (n)	<0.05 ug/g	101	60-130	103	50-140	0	0-50

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Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
416116	Xylene, m/p-	<0.05 ug/g	98	60-130	105	50-140	0	0-50
416116	Methyl Ethyl Ketone	<0.50 ug/g	82	60-130	118	50-140	0	0-50
416116	Methyl Isobutyl Ketone	<0.50 ug/g	84	60-130	90	50-140	0	0-50
416116	Methyl tert-Butyl Ether (MTBE)	<0.05 ug/g	96	60-130	95	50-140	0	0-50
416116	Chlorobenzene	<0.05 ug/g	91	60-130	95	50-140	0	0-50
416116	Xylene, o-	<0.05 ug/g	92	60-130	98	50-140	0	0-50
416116	Styrene	<0.05 ug/g	90	60-130	93	50-140	0	0-50
416116	Dichloroethylene, 1,2-trans-	<0.05 ug/g	95	60-130	102	50-140	0	0-50
416116	Dichloropropene, 1,3-trans-	<0.05 ug/g	87	60-130	84	50-140	0	0-50
416116	Tetrachloroethylene	<0.05 ug/g	85	60-130	90	50-140	0	0-50
416116	Toluene	<0.08 ug/g	94	60-130	100	50-140	0	0-50
416116	Trichloroethylene	<0.01 ug/g	89	60-130	96	50-140	0	0-50
416116	Trichlorofluoromethane	<0.05 ug/g	96	60-130	90	50-140	0	0-50
416116	Vinyl Chloride	<0.02 ug/g	96	60-130	110	50-140	0	0-50
416119	Xylene Mixture							
416120	PHC's F1	<10 ug/g	100	80-120	104	60-140	0	0-30
416121	PHC's F1-BTEX							
416128	Boron (Hot Water Soluble)	<0.5 ug/g	85	70-130	96	75-125	0	0-30
416131	Cyanide (CN-)	<0.005 ug/g	110	75-125	103	70-130	0	0-20
416160	PHC's F2	<2 ug/g	112	80-120	75	60-140	0	0-30
416160	PHC's F3	<20 ug/g	112	80-120	75	60-140	0	0-30
416160	PHC's F4	<20 ug/g	112	80-120	75	60-140	0	0-30
416160	Moisture-Humidite	<0.1 %	100	80-120			7	
416170	1+2-methylnaphthalene							
416206	Aroclor 1242	<0.02 ug/g	86	60-140	72	60-140	0	0-40
416206	Aroclor 1248	<0.02 ug/g	86	60-140	72	60-140	0	0-40
416206	Aroclor 1254	<0.02 ug/g	86	60-140	72	60-140	0	0-40
416206	Aroclor 1260	<0.02 ug/g	86	60-140	72	60-140	0	0-40
416206	Polychlorinated Biphenyls	<0.02 ug/g	86	60-140	72	60-140	0	0-40
416232	Chlordane, alpha-	<0.002 ug/g	64	50-140		50-140		0-40
416232	Aldrin	<0.002 ug/g	63	50-140		50-140		0-40
416232	Chlordane	<0.006 ug/g						
416232	Dieldrin	<0.002 ug/g	63	50-140		50-140		0-40

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Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
416232	Endosulfan	<0.004 ug/g						
416232	Endosulfan I	<0.002 ug/g	64	50-140		50-140		0-40
416232	Endosulfan II	<0.002 ug/g	64	50-140		50-140		0-40
416232	Endrin	<0.002 ug/g	64	50-140		50-140		0-40
416232	Hexachlorocyclohexane Gamma-	<0.002 ug/g	62	50-140		50-140		0-40
416232	Chlordane, gamma-	<0.002 ug/g	65	50-140		50-140		0-40
416232	Heptachlor	<0.002 ug/g	63	50-140		50-140		0-40
416232	Heptachlor Epoxide	<0.002 ug/g	65	50-140		50-140		0-40
416232	Hexachlorobenzene	<0.002 ug/g	102	50-140		50-140		0-40
416232	Hexachlorobutadiene	<0.002 ug/g	95					
416232	Hexachloroethane	<0.002 ug/g	93					
416232	Methoxychlor	<0.002 ug/g	68	50-140		50-140		0-40
416232	DDD	<0.002 ug/g	64	50-140		50-140		0-40
416232	DDE	<0.002 ug/g	66	50-140		50-140		0-40
416232	DDT	<0.002 ug/g	65	50-140		50-140		0-40
416272	Electrical Conductivity	<0.05	99	90-110			1	0-10
416275	Chromium VI	<0.20 ug/g	102	80-120	88	70-130	0	0-35
416286	Sodium Adsorption Ratio	<0.01					2	

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Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
415963	Methlynaphthalene, 1-	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Methlynaphthalene, 2-	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Acenaphthene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Acenaphthylene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Anthracene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Benz[a]anthracene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Benzo[a]pyrene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Benzo[b]fluoranthene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Benzo[ghi]perylene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Benzo[k]fluoranthene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Chrysene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Dibenz[a h]anthracene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Fluoranthene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Fluorene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Indeno[1 2 3-cd]pyrene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Naphthalene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Phenanthrene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Pyrene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
416090	pH - CaCl2	pH Meter	2022-01-26	2022-01-26	IP	Ag Soil
416113	Silver	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Arsenic	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Boron (total)	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Barium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Beryllium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Cadmium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Cobalt	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Chromium Total	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Copper	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Mercury	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Molybdenum	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Nickel	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Lead	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020

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M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
416113	Antimony	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Selenium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Thallium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Uranium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Vanadium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Zinc	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416116	Tetrachloroethane, 1,1,1,2-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Trichloroethane, 1,1,1-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Tetrachloroethane, 1,1,2,2-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Trichloroethane, 1,1,2-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichloroethane, 1,1-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichloroethylene, 1,1-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichlorobenzene, 1,2-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichloroethane, 1,2-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichloropropane, 1,2-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichlorobenzene, 1,3-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichloropropene, 1,3-	GC-MS	2022-01-26	2022-01-26	YH	V 8260B
416116	Dichlorobenzene, 1,4-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Acetone	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Benzene	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Bromodichloromethane	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Bromoform	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Bromomethane	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichloroethylene, 1,2-cis-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichloropropene, 1,3-cis-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Carbon Tetrachloride	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Chloroform	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dibromochloromethane	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichlorodifluoromethane	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Methylene Chloride	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Ethylbenzene	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Ethylene dibromide	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Hexane (n)	GC-MS	2022-01-25	2022-01-26	YH	V 8260B

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1821 Albion Road, Unit 7
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M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
416116	Xylene, m/p-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Methyl Ethyl Ketone	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Methyl Isobutyl Ketone	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Methyl tert-Butyl Ether (MTBE)	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Chlorobenzene	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Xylene, o-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Styrene	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichloroethylene, 1,2-trans-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichloropropene, 1,3-trans-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Tetrachloroethylene	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Toluene	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Trichloroethylene	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Trichlorofluoromethane	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Vinyl Chloride	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416119	Xylene Mixture	GC-MS	2022-01-26	2022-01-26	YH	V 8260B
416120	PHC's F1	GC/FID	2022-01-26	2022-01-26	YH	CCME
416121	PHC's F1-BTEX	GC/FID	2022-01-26	2022-01-26	YH	CCME
416128	Boron (Hot Water Soluble)	iCAP OES	2022-01-26	2022-01-26	Z_S	MOECC E3470
416131	Cyanide (CN-)	Skalar CN Analyzer	2022-01-26	2022-01-26	Z_S	MOECC E3015
416160	PHC's F2	GC/FID	2022-01-24	2022-01-27	R_G	CCME
416160	PHC's F3	GC/FID	2022-01-24	2022-01-27	R_G	CCME
416160	PHC's F4	GC/FID	2022-01-24	2022-01-27	R_G	CCME
416160	Moisture-Humidity	Oven	2022-01-24	2022-01-27	R_G	ASTM 2216
416170	1+2-methylnaphthalene	GC-MS	2022-01-27	2022-01-27	C_M	P 8270
416206	Aroclor 1242	GC/ECD	2022-01-25	2022-01-26	QL	EPA 8081B/8082A
416206	Aroclor 1248	GC/ECD	2022-01-25	2022-01-26	QL	EPA 8081B/8082A
416206	Aroclor 1254	GC/ECD	2022-01-25	2022-01-26	QL	EPA 8081B/8082A
416206	Aroclor 1260	GC/ECD	2022-01-25	2022-01-26	QL	EPA 8081B/8082A
416206	Polychlorinated Biphenyls	GC/ECD	2022-01-25	2022-01-26	QL	EPA 8081B/8082A
416232	Chlordane, alpha-	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Aldrin	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Chlordane	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Dieldrin	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A

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Project: 02112512.000
COC #: 885363

Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
416232	Endosulfan	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Endosulfan I	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Endosulfan II	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Endrin	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Hexachlorocyclohexane Gamma-	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Chlordane, gamma-	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Heptachlor	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Heptachlor Epoxide	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Hexachlorobenzene	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Hexachlorobutadiene	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Hexachloroethane	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Methoxychlor	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	DDD	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	DDE	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	DDT	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416272	Electrical Conductivity	Electrical Conductivity Meter	2022-01-28	2022-01-28	Z_S	Cond-Soil
416275	Chromium VI	FAA	2022-01-28	2022-01-28	MW	M US EPA 3060A
416286	Sodium Adsorption Ratio	iCAP OES	2022-01-28	2022-01-28	Z_S	Ag Soil

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Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

CWS for Petroleum Hydrocarbons in Soil - Tier 1

Notes:

1. The laboratory method complies with CCME Tier 1 reference method for PHC in soil. It is validated for laboratory use.
2. Where the F1 fraction (C6 to C10) and BTEX are both measured, F1-BTEX is reported.
3. Where the F2 fraction (C10 to C16) and naphthalene are both measured, F2-naphthalene is reported.
4. Where the F3 fraction (C16 to C34) and PAHs* are both measured, F3-PAH is reported.
5. F4G is analyzed if the chromatogram does not descend to baseline before C50. Where F4 (C34 to C50) and F4G are both reported, the higher result is compared to the standard.
6. Unless otherwise stated in the sample comments, the following criteria have been met where applicable:
 - nC6 and nC10 response factors within 30% of response factor for toluene;
 - nC10, nC16, and nC34 response factors within 10% of each other;
 - C50 response factors within 70% of nC10 + nC16 + nC34 average; and,
 - Linearity is within 15%.
7. Unless otherwise stated in the sample comments, sampling requirements and analytical holding times have been met.
8. Gravimetric heavy hydrocarbons (F4G) cannot be added to the C6 and C50 hydrocarbons.
9. *PAHs = phenanthrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene and pyrene.

Certificate of Analysis

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970194
Date Submitted: 2022-01-17
Date Reported: 2022-01-27
Project: 02112512.000
COC #: 883644

Page 1 of 7

Dear Nan Du:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL:

Addrine Thomas, Inorganics Supervisor

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise indicated.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at: <http://www.cala.ca/scopes/2602.pdf>.

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Certificate of Analysis

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970194
Date Submitted: 2022-01-17
Date Reported: 2022-01-27
Project: 02112512.000
COC #: 883644

					1606080 R347 2022-01-14 BH1-1	1606081 R347 2022-01-13 BH8-1	1606082 R347 2022-01-13 BH12-1
Group	Analyte	MRL	Units	Guideline			
Leachate	REG 558 Leach				Y	y	y
	Zero Headspace Extraction				y	y	y
Mercury	Hg	0.001	mg/L	LQC 0.1	<0.001	<0.001	<0.001
Metals	Ag	0.01	mg/L	LQC 5	<0.01	<0.01	<0.01
	As	0.02	mg/L	LQC 2.5	<0.02	<0.02	<0.02
	B	0.1	mg/L	LQC 500.0	<0.1	<0.1	<0.1
	Ba	0.01	mg/L	LQC 100.0	0.61	0.23	0.58
	Cd	0.008	mg/L	LQC 0.5	<0.008	<0.008	<0.008
	Cr	0.05	mg/L	LQC 5.0	<0.05	<0.05	<0.05
	Pb	0.01	mg/L	LQC 5.0	0.01	<0.01	0.01
	Se	0.02	mg/L	LQC 1.0	<0.02	<0.02	<0.02
	U	0.01	mg/L	LQC 10.0	<0.01	<0.01	<0.01
Moisture	Moisture-Humidite	0.1	%		6.3	14.6	15.0
Others	Ignitability				neg	neg	neg
PAH	Benzo(a)pyrene	0.01	ug/L	LQC 1.0	<0.01	<0.01	<0.01
VOCs Surrogates	1,2-dichloroethane-d4	0	%		112	128	119
	4-bromofluorobenzene	0	%		80	87	93
	Toluene-d8	0	%		112	118	130
Volatiles	1,1-dichloroethylene	0.5	ug/L	LQC 1400	<0.5	<0.5	<0.5
	1,2-dichlorobenzene	0.4	ug/L	LQC 20000	<0.4	<0.4	<0.4
	1,2-dichloroethane	0.2	ug/L	LQC 500	<0.2	<0.2	<0.2
	1,4-dichlorobenzene	0.4	ug/L	LQC 500	<0.4	<0.4	<0.4
	Benzene	0.5	ug/L	LQC 500	<0.5	<0.5	<0.5
	Carbon Tetrachloride	0.2	ug/L	LQC 500	<0.2	<0.2	<0.2
	Chloroform	0.5	ug/L	LQC 10000	<0.5	0.6	0.6

Guideline = REG 558

* = Guideline Exceedence

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					1606080 R347 2022-01-14 BH1-1	1606081 R347 2022-01-13 BH8-1	1606082 R347 2022-01-13 BH12-1
Group	Analyte	MRL	Units	Guideline			
Volatiles	Dichloromethane	4.0	ug/L	LQC 5000	<4.0	<4.0	<4.0
	Methyl Ethyl Ketone (MEK)	10	ug/L	LQC 200000	<10	<10	<10
	Monochlorobenzene	0.5	ug/L	LQC 8000	<0.5	<0.5	<0.5
	Tetrachloroethylene	0.3	ug/L	LQC 3000	<0.3	<0.3	<0.3
	Trichloroethylene	0.3	ug/L	LQC 5000	<0.3	<0.3	<0.3
	Vinyl Chloride	0.2	ug/L	LQC 200	<0.2	<0.2	<0.2

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 415344 Analysis/Extraction Date 2022-01-27 Analyst C M Method P 8270			
Benzo[a]pyrene	<0.01 ug/L	95	50-140
Run No 415813 Analysis/Extraction Date 2022-01-21 Analyst AsA Method SW1030			
Ignitability			
Run No 415970 Analysis/Extraction Date 2022-01-25 Analyst AsA Method EPA 1311/O. Reg 347			
REG 558 Leach			
Zero Headspace Extraction			
Run No 415973 Analysis/Extraction Date 2022-01-24 Analyst AsA Method ASTM 2216			
Moisture-Humidite			80-120
Run No 416042 Analysis/Extraction Date 2022-01-26 Analyst AA Method EPA 1311/O. Reg 347			
REG 558 Leach			
Run No 416104 Analysis/Extraction Date 2022-01-25 Analyst YH Method EPA 8260			
Dichloroethylene, 1,1-	<0.5 ug/L	93	60-130

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Dichlorobenzene, 1,2-	<0.4 ug/L	82	60-130
Dichloroethane, 1,2-	<0.2 ug/L	97	60-130
Dichlorobenzene, 1,4-	<0.4 ug/L	85	60-130
Benzene	<0.5 ug/L	88	60-130
Carbon Tetrachloride	<0.2 ug/L	90	60-130
Chloroform	<0.5 ug/L	90	60-130
Methylene Chloride	<4.0 ug/L	117	60-130
Methyl Ethyl Ketone	<10 ug/L	100	60-130
Chlorobenzene	<0.5 ug/L	99	60-130
Tetrachloroethylene	<0.3 ug/L	81	60-130
Trichloroethylene	<0.3 ug/L	88	60-130
Vinyl Chloride	<0.2 ug/L	89	60-130
Run No 416136 Analysis/Extraction Date 2022-01-26 Analyst AaN Method M SM3112B-3500B			
Mercury	<0.001 mg/L	119	76-123
Run No 416142 Analysis/Extraction Date 2022-01-26 Analyst AaN Method EPA 200.8			
Silver	<0.01 mg/L	100	70-130

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Arsenic	<0.02 mg/L	98	70-130
Boron (total)	<0.1 mg/L	77	70-130
Barium	<0.01 mg/L	95	70-130
Cadmium	<0.008 mg/L	104	70-130
Chromium Total	<0.05 mg/L	100	70-130
Lead	<0.01 mg/L	94	70-130
Selenium	<0.02 mg/L	107	70-130
Uranium	<0.01 mg/L	94	70-130
Run No 416195 Analysis/Extraction Date 2022-01-27 Analyst SD Method EPA 200.8			
Silver	<0.01 mg/L	110	70-130
Arsenic	<0.02 mg/L	106	70-130
Boron (total)	<0.1 mg/L	88	70-130
Barium	<0.01 mg/L	107	70-130
Cadmium	<0.008 mg/L	112	70-130
Chromium Total	<0.05 mg/L	110	70-130
Lead	<0.01 mg/L	103	70-130
Selenium	<0.02 mg/L	105	70-130

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Uranium	<0.01 mg/L	97	70-130

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Attention: Mr. Nan Du
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Report Number: 1970204
Date Submitted: 2022-01-17
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 883644

Page 1 of 7

Dear Nan Du:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL: _____

Addrine Thomas, Inorganics Supervisor

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					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1606110 SPLP 2022-01-14 BH1-1	1606111 SPLP 2022-01-13 BH8-2	1606112 SPLP 2022-01-13 BH9-3	1606113 SPLP 2022-01-13 BH10-1
Group	Analyte	MRL	Units	Guideline					
Metals	Ag	0.0001	mg/L	STD 0.3		0.0003	0.0001	0.0002	0.0004
	B	0.01	mg/L			0.04	0.01	0.01	0.07
	Ba	0.01	mg/L			0.07	0.03	<0.01	0.25
	Be	0.002	mg/L			<0.002	<0.002	<0.002	<0.002
	Co	0.0002	mg/L			0.0026	<0.0002	0.0004	0.0099
	Cr	0.001	mg/L			0.017	<0.001	0.001	0.050
	Cu	0.001	mg/L			0.020	<0.001	0.003	0.059
	Mo	0.005	mg/L	STD 23		<0.005	<0.005	<0.005	<0.005
	Ni	0.005	mg/L			0.009	<0.005	<0.005	0.038
	Sb	0.0005	mg/L			0.0007	<0.0005	<0.0005	<0.0005
	Se	0.001	mg/L			0.003	<0.001	<0.001	0.010
	Tl	0.0001	mg/L	STD 2		0.0001	<0.0001	<0.0001	0.0004
	U	0.001	mg/L			<0.001	<0.001	<0.001	0.002
	Zn	0.01	mg/L			0.03	<0.01	<0.01	0.10
Moisture	Moisture-Humidite	0.1	%			6.6	11.3	14.4	17.4
Semi-Volatiles	2,4 & 2,6 Dinitrotoluene	5	ug/L	STD 5				<5	
	2,4-dinitrophenol	2.5	ug/L	STD 10				<2.5	
	2,4-dinitrotoluene	0.3	ug/L					<0.3	
	2,6-dinitrotoluene	0.3	ug/L					<0.3	
	3,3'-dichlorobenzidene	0.5	ug/L	STD 0.5				<0.5	
	Bis(2-chloroethyl)ether	0.8	ug/L	STD 5				<0.8	
	Bis(2-chloroisopropyl)ether	0.5	ug/L	STD 4				<0.5	
	Diethyl Phthalate	0.2	ug/L	STD 2				0.2	
	Dimethyl Phthalate	0.2	ug/L	STD 2				<0.2	
	p-Chloroaniline	0.2	ug/L	STD 10				<0.2	

Guideline = Excess Soil-Leach T1-Res/Park/Inst & In

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					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1606110 SPLP 2022-01-14 BH1-1	1606111 SPLP 2022-01-13 BH8-2	1606112 SPLP 2022-01-13 BH9-3	1606113 SPLP 2022-01-13 BH10-1
Group	Analyte	MRL	Units	Guideline					
SPLP	SPLP Extraction				y	y	y	y	
	Zero Headspace Extraction				y		y		
VOCs Surrogates	1,2-dichloroethane-d4	0	%		126		114		
	4-bromofluorobenzene	0	%		81		81		
	Toluene-d8	0	%		124		126		
Volatiles	1,1,1,2-tetrachloroethane	0.5	ug/L	STD 0.5	<0.5		<0.5		
	1,1,2,2-tetrachloroethane	0.5	ug/L	STD 0.5	<0.5		<0.5		
	1,1,2-trichloroethane	0.4	ug/L	STD 0.5	<0.4		<0.4		
	1,1-dichloroethane	0.4	ug/L	STD 0.5	<0.4		<0.4		
	1,1-dichloroethylene	0.5	ug/L	STD 0.5	<0.5		<0.5		
	1,2-dichlorobenzene	0.4	ug/L	STD 0.55	<0.4		<0.4		
	1,2-dichloroethane	0.2	ug/L	STD 0.5	<0.2		<0.2		
	1,2-dichloropropane	0.5	ug/L	STD 0.5	<0.5		<0.5		
	1,3-Dichloropropylene (cis+trans)	0.3	ug/L	STD 0.5	<0.3		<0.3		
	1,4-dichlorobenzene	0.4	ug/L	STD 0.5	<0.4		<0.4		
	Bromomethane	0.5	ug/L	STD 0.5	<0.5		<0.5		
	c-1,2-Dichloroethylene	0.4	ug/L	STD 0.5	<0.4		<0.4		
	c-1,3-Dichloropropylene	0.2	ug/L		<0.2		<0.2		
	Carbon Tetrachloride	0.2	ug/L	STD 0.2	<0.2		<0.2		
	Chloroform	0.5	ug/L	STD 1	<0.5		<0.5		
	Ethylene Dibromide	0.2	ug/L	STD 0.2	<0.2		<0.2		
	t-1,2-Dichloroethylene	0.4	ug/L	STD 0.5	<0.4		<0.4		
	t-1,3-Dichloropropylene	0.2	ug/L		<0.2		<0.2		
	Tetrachloroethylene	0.3	ug/L	STD 0.5	<0.3		<0.3		
	Trichloroethylene	0.3	ug/L	STD 0.5	<0.3		<0.3		

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 208523 Analysis/Extraction Date 2022-01-28 Analyst C M Method B 625/P 8270			
2,4 & 2,6 Dinitrotoluene			
Run No 415525 Analysis/Extraction Date 2022-01-28 Analyst C M Method B 625/P 8270			
Dinitrophenol, 2,4-	<2.5 ug/L	59	20-150
Run No 415526 Analysis/Extraction Date 2022-01-28 Analyst C M Method B 625/P 8270			
Dinitrotoluene, 2,4-	<0.3 ug/L		20-140
Dinitrotoluene, 2,6-	<0.3 ug/L		20-140
Dichlorobenzidine, 3,3'-	<0.5 ug/L		20-140
Bis(2-chloroethyl)ether	<0.8 ug/L		20-140
Bis(2-chloroisopropyl)ether	<0.5 ug/L		20-140
Diethyl Phthalate	<0.2 ug/L		20-140
Dimethylphthalate	<0.2 ug/L		20-140
Chloroaniline p-	<0.2 ug/L		20-140
Run No 415971 Analysis/Extraction Date 2022-01-25 Analyst AsA Method mSPLP E9003/EPA 1312			
SPLP Extraction			

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Analyte	Blank	QC % Rec	QC Limits
Zero Headspace Extraction			
Run No 415973 Analysis/Extraction Date 2022-01-24 Analyst AsA Method ASTM 2216			
Moisture-Humidite			80-120
Run No 416023 Analysis/Extraction Date 2022-01-25 Analyst YH Method EPA 8260			
Tetrachloroethane, 1,1,1,2-	<0.5 ug/L	86	60-130
Tetrachloroethane, 1,1,2,2-	<0.5 ug/L	100	60-130
Trichloroethane, 1,1,2-	<0.4 ug/L	105	60-130
Dichloroethane, 1,1-	<0.4 ug/L	91	60-130
Dichloroethylene, 1,1-	<0.5 ug/L	93	60-130
Dichlorobenzene, 1,2-	<0.4 ug/L	82	60-130
Dichloroethane, 1,2-	<0.2 ug/L	97	60-130
Dichloropropane, 1,2-	<0.5 ug/L	88	60-130
Dichloropropene, 1,3-	<0.3 ug/L		
Dichlorobenzene, 1,4-	<0.4 ug/L	85	60-130
Bromomethane	<0.5 ug/L	91	60-130
Dichloroethylene, 1,2-cis-	<0.4 ug/L	87	60-130

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Dichloropropene, 1,3-cis-	<0.2 ug/L	81	60-130
Carbon Tetrachloride	<0.2 ug/L	90	60-130
Chloroform	<0.5 ug/L	90	60-130
Ethylene dibromide	<0.2 ug/L	100	60-130
Dichloroethylene, 1,2-trans-	<0.4 ug/L	85	60-130
Dichloropropene, 1,3-trans-	<0.2 ug/L	84	60-130
Tetrachloroethylene	<0.3 ug/L	81	60-130
Trichloroethylene	<0.3 ug/L	88	60-130
Run No 416058 Analysis/Extraction Date 2022-01-25 Analyst SD Method EPA 200.8			
Silver	<0.0001 mg/L	107	80-120
Boron (total)	<0.01 mg/L	118	80-120
Barium	<0.01 mg/L	109	80-120
Cobalt	<0.0002 mg/L	118	80-120
Chromium Total	<0.001 mg/L	119	80-120
Copper	<0.001 mg/L	116	80-120
Molybdenum	<0.005 mg/L	110	80-120
Nickel	<0.005 mg/L	112	80-120

Guideline = Excess Soil-Leach T1-Res/Park/Inst & In

*** = Guideline Exceedence**

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MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Certificate of Analysis

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970204
Date Submitted: 2022-01-17
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 883644

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Antimony	<0.0005 mg/L	94	80-120
Selenium	<0.001 mg/L	107	80-120
Thallium	<0.0001 mg/L	110	80-120
Uranium	<0.001 mg/L	108	80-120
Zinc	<0.01 mg/L	112	80-120
Run No 416128 Analysis/Extraction Date 2022-01-26 Analyst Z S Method M SM3120B-3500C			
Beryllium	<0.002 mg/L	97	89-111

Guideline = Excess Soil-Leach T1-Res/Park/Inst & In

*** = Guideline Exceedence**

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Certificate of Analysis

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970463
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

Page 1 of 4

Dear Nan Du:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL:

Long Qu, Organics Supervisor

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise indicated.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at: <http://www.cala.ca/scopes/2602.pdf>.

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Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is accredited by the Ontario Ministry of Agriculture, Food, and Rural Affairs for specific tests in agricultural soils.

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Certificate of Analysis

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970463
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1606849 SPLP 2022-01-21 BH3-1	1606850 SPLP 2022-01-21 BH16-1
Group	Analyte	MRL	Units	Guideline			
Metals	Ag	0.0001	mg/L	STD 0.3		<0.0001	
	B	0.01	mg/L			0.07	
	Ba	0.01	mg/L			0.22	
	Be	0.002	mg/L			<0.002	
	Co	0.0002	mg/L			0.0106	
	Cr	0.001	mg/L			0.060	
	Cu	0.001	mg/L			0.067	
	Mo	0.005	mg/L	STD 23		<0.005	
	Ni	0.005	mg/L			0.046	
	Sb	0.0005	mg/L			<0.0005	
	Se	0.001	mg/L			0.016	
	Tl	0.0001	mg/L	STD 2		0.0003	
	U	0.001	mg/L			0.002	
	Zn	0.01	mg/L			0.11	
Moisture	Moisture-Humidite	0.1	%			17.5	
OCP/PCB	Dieldrin	0.006	ug/L	STD 0.095			<0.006
	Endrin	0.006	ug/L	STD 0.061			<0.006
	Heptachlor	0.006	ug/L	STD 0.01			<0.006
	Heptachlor epoxide	0.006	ug/L	STD 0.01			<0.006
SPLP	SPLP Extraction					y	y

Guideline = Excess Soil-Leach T1-Res/Park/Inst & In

*** = Guideline Exceedence**

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Certificate of Analysis

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970463
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 416166 Analysis/Extraction Date 2022-01-27 Analyst AsA Method mSPLP E9003/EPA 1312			
SPLP Extraction			
Run No 416167 Analysis/Extraction Date 2022-01-26 Analyst AsA Method ASTM 2216			
Moisture-Humidite			80-120
Run No 416234 Analysis/Extraction Date 2022-01-28 Analyst QL Method EPA 8081B			
Dieldrin	<0.006 ug/L	63	50-140
Endrin	<0.006 ug/L	64	50-140
Heptachlor	<0.006 ug/L	63	50-140
Heptachlor Epoxide	<0.006 ug/L	65	50-140
Run No 416245 Analysis/Extraction Date 2022-01-28 Analyst SD Method EPA 200.8			
Silver	<0.0001 mg/L	113	80-120
Boron (total)	<0.01 mg/L	111	80-120
Barium	<0.01 mg/L	97	80-120
Cobalt	<0.0002 mg/L	107	80-120
Chromium Total	<0.001 mg/L	118	80-120

Guideline = Excess Soil-Leach T1-Res/Park/Inst & In

*** = Guideline Exceedence**

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Certificate of Analysis

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970463
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Copper	<0.001 mg/L	116	80-120
Molybdenum	<0.005 mg/L	101	80-120
Nickel	<0.005 mg/L	119	80-120
Antimony	<0.0005 mg/L	96	80-120
Selenium	<0.001 mg/L	100	80-120
Thallium	<0.0001 mg/L	102	80-120
Uranium	<0.001 mg/L	101	80-120
Zinc	<0.01 mg/L	106	80-120
Run No 416287 Analysis/Extraction Date 2022-01-28 Analyst Z S Method M SM3120B-3500C			
Beryllium	<0.002 mg/L	109	89-111

Guideline = Excess Soil-Leach T1-Res/Park/Inst & In

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970462
Date Submitted: 2022-01-21
Date Reported: 2022-01-31
Project: 02112512.000
COC #: 885363

Page 1 of 8

Dear Nan Du:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL:

Addrine Thomas, Inorganics Supervisor

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise indicated.

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970462
Date Submitted: 2022-01-21
Date Reported: 2022-01-31
Project: 02112512.000
COC #: 885363

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1606846 R347 2022-01-21 BH3-2	1606848 R347 2022-01-21 BH15-1
Group	Analyte	MRL	Units	Guideline			
Leachate	REG 558 Leach				Y	y	
	Zero Headspace Extraction				Y	y	
Mercury	Hg	0.001	mg/L	LQC 0.1	<0.001	<0.001	
Metals	Ag	0.01	mg/L	LQC 5	<0.01	<0.01	
	As	0.02	mg/L	LQC 2.5	<0.02	<0.02	
	B	0.1	mg/L	LQC 500.0	<0.1	<0.1	
	Ba	0.01	mg/L	LQC 100.0	0.36	0.52	
	Cd	0.008	mg/L	LQC 0.5	<0.008	<0.008	
	Cr	0.05	mg/L	LQC 5.0	<0.05	<0.05	
	Pb	0.01	mg/L	LQC 5.0	<0.01	<0.01	
	Se	0.02	mg/L	LQC 1.0	<0.02	<0.02	
	U	0.01	mg/L	LQC 10.0	<0.01	<0.01	
Moisture	Moisture-Humidite	0.1	%		19.8	17.5	
Others	Ignitability				neg	neg	
PAH	Benzo(a)pyrene	0.01	ug/L	LQC 1.0	<0.01	<0.01	
PCBs	Polychlorinated Biphenyls (PCBs)	0.1	ug/L	LQC 300	<0.1		
VOCs Surrogates	1,2-dichloroethane-d4	0	%		128	121	
	4-bromofluorobenzene	0	%		72	73	
	Toluene-d8	0	%		110	119	
Volatiles	1,1-dichloroethylene	0.5	ug/L	LQC 1400	<0.5	<0.5	
	1,2-dichlorobenzene	0.4	ug/L	LQC 20000	<0.4	<0.4	
	1,2-dichloroethane	0.2	ug/L	LQC 500	<0.2	<0.2	
	1,4-dichlorobenzene	0.4	ug/L	LQC 500	<0.4	<0.4	
	Benzene	0.5	ug/L	LQC 500	<0.5	<0.5	
	Carbon Tetrachloride	0.2	ug/L	LQC 500	<0.2	<0.2	

Guideline = REG 558

*** = Guideline Exceedence**

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Certificate of Analysis

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970462
Date Submitted: 2022-01-21
Date Reported: 2022-01-31
Project: 02112512.000
COC #: 885363

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1606846 R347 2022-01-21 BH3-2	1606848 R347 2022-01-21 BH15-1
Group	Analyte	MRL	Units	Guideline			
Volatiles	Chloroform	0.5	ug/L	LQC 10000	<0.5	<0.5	
	Dichloromethane	4.0	ug/L	LQC 5000	<4.0	<4.0	
	Methyl Ethyl Ketone (MEK)	10	ug/L	LQC 200000	<10	<10	
	Monochlorobenzene	0.5	ug/L	LQC 8000	<0.5	<0.5	
	Tetrachloroethylene	0.3	ug/L	LQC 3000	<0.3	<0.3	
	Trichloroethylene	0.3	ug/L	LQC 5000	<0.3	<0.3	
	Vinyl Chloride	0.2	ug/L	LQC 200	<0.2	<0.2	

Guideline = REG 558

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Certificate of Analysis

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970462
Date Submitted: 2022-01-21
Date Reported: 2022-01-31
Project: 02112512.000
COC #: 885363

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 415344 Analysis/Extraction Date 2022-01-27 Analyst C M Method P 8270			
Benzo[a]pyrene	<0.01 ug/L	95	50-140
Run No 416042 Analysis/Extraction Date 2022-01-26 Analyst AA Method EPA 1311/O. Reg 347			
REG 558 Leach			
Zero Headspace Extraction			
Run No 416043 Analysis/Extraction Date 2022-01-25 Analyst AA Method ASTM 2216			
Moisture-Humidite			80-120
Run No 416157 Analysis/Extraction Date 2022-01-27 Analyst YH Method EPA 8260			
Dichloroethylene, 1,1-	<0.5 ug/L	93	60-130
Dichlorobenzene, 1,2-	<0.4 ug/L	82	60-130
Dichloroethane, 1,2-	<0.2 ug/L	97	60-130
Dichlorobenzene, 1,4-	<0.4 ug/L	85	60-130
Benzene	<0.5 ug/L	88	60-130
Carbon Tetrachloride	<0.2 ug/L	90	60-130
Chloroform	<0.5 ug/L	90	60-130

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970462
Date Submitted: 2022-01-21
Date Reported: 2022-01-31
Project: 02112512.000
COC #: 885363

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Methylene Chloride	<4.0 ug/L	117	60-130
Methyl Ethyl Ketone	<10 ug/L	100	60-130
Chlorobenzene	<0.5 ug/L	99	60-130
Tetrachloroethylene	<0.3 ug/L	81	60-130
Trichloroethylene	<0.3 ug/L	88	60-130
Vinyl Chloride	<0.2 ug/L	89	60-130
Run No 416165 Analysis/Extraction Date 2022-01-27 Analyst AsA Method EPA 1311/O. Reg 347			
REG 558 Leach			
Zero Headspace Extraction			
Run No 416167 Analysis/Extraction Date 2022-01-26 Analyst AsA Method ASTM 2216			
Moisture-Humidite			80-120
Run No 416195 Analysis/Extraction Date 2022-01-27 Analyst SD Method EPA 200.8			
Silver	<0.01 mg/L	110	70-130
Arsenic	<0.02 mg/L	106	70-130
Boron (total)	<0.1 mg/L	88	70-130
Barium	<0.01 mg/L	107	70-130

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Certificate of Analysis

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970462
Date Submitted: 2022-01-21
Date Reported: 2022-01-31
Project: 02112512.000
COC #: 885363

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Cadmium	<0.008 mg/L	112	70-130
Chromium Total	<0.05 mg/L	110	70-130
Lead	<0.01 mg/L	103	70-130
Selenium	<0.02 mg/L	105	70-130
Uranium	<0.01 mg/L	97	70-130
Run No 416196 Analysis/Extraction Date 2022-01-27 Analyst AaN Method M SM3112B-3500B			
Mercury	<0.001 mg/L	111	76-123
Run No 416233 Analysis/Extraction Date 2022-01-28 Analyst QL Method EPA 8081B			
Polychlorinated Biphenyls	<0.1 ug/L		60-140
Run No 416246 Analysis/Extraction Date 2022-01-28 Analyst AsA Method SW1030			
Ignitability			
Run No 416266 Analysis/Extraction Date 2022-01-28 Analyst SD Method EPA 200.8			
Silver	<0.01 mg/L	90	70-130
Arsenic	<0.02 mg/L	90	70-130
Boron (total)	<0.1 mg/L	92	70-130

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Certificate of Analysis

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970462
Date Submitted: 2022-01-21
Date Reported: 2022-01-31
Project: 02112512.000
COC #: 885363

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Barium	<0.01 mg/L	86	70-130
Cadmium	<0.008 mg/L	94	70-130
Chromium Total	<0.05 mg/L	93	70-130
Lead	<0.01 mg/L	81	70-130
Selenium	<0.02 mg/L	86	70-130
Uranium	<0.01 mg/L	70	70-130
Run No 416318 Analysis/Extraction Date 2022-01-28 Analyst YH Method EPA 8260			
Dichloroethylene, 1,1-	<0.5 ug/L	93	60-130
Dichlorobenzene, 1,2-	<0.4 ug/L	82	60-130
Dichloroethane, 1,2-	<0.2 ug/L	97	60-130
Dichlorobenzene, 1,4-	<0.4 ug/L	85	60-130
Benzene	<0.5 ug/L	88	60-130
Carbon Tetrachloride	<0.2 ug/L	90	60-130
Chloroform	<0.5 ug/L	90	60-130
Methylene Chloride	<4.0 ug/L	117	60-130
Methyl Ethyl Ketone	<10 ug/L	100	60-130
Chlorobenzene	<0.5 ug/L	99	60-130

Guideline = REG 558

*** = Guideline Exceedence**

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Certificate of Analysis

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970462
Date Submitted: 2022-01-21
Date Reported: 2022-01-31
Project: 02112512.000
COC #: 885363

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Tetrachloroethylene	<0.3 ug/L	81	60-130
Trichloroethylene	<0.3 ug/L	88	60-130
Vinyl Chloride	<0.2 ug/L	89	60-130

Guideline = REG 558*** = Guideline Exceedence**

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Atiqur Rahman
Invoice to: EnGlobe Corp.
PO#:

Report Number: 1974901
Date Submitted: 2022-04-08
Date Reported: 2022-04-12
Project: 02112512.000
COC #: 887789
Temperature (C): 22
Custody Seal:

Page 1 of 7

Dear Atiqur Rahman:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

Rebecca Koshy, Project Manager

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise stated

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Client: EnGlobe Corp. (Toronto)
 1821 Albion Road, Unit 7
 Toronto, ON
 M9W 5W8
 Attention: Mr. Atiqur Rahman
 PO#:
 Invoice to: EnGlobe Corp.

Report Number: 1974901
 Date Submitted: 2022-04-08
 Date Reported: 2022-04-12
 Project: 02112512.000
 COC #: 887789

Excess Soil-Leach T2.1-Res/Park/Inst

Exceedence Summary

Sample I.D.	Analyte	Result	Units	Criteria
Metals				
BH10-SS1	Copper	38	ug/L	STD 14

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
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Guideline = Excess Soil-Leach T2.1-Res/Park/Inst

Metals

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1618732 SPLP	1618733 SPLP	1618734 SPLP
2022-04-08	2022-04-08	2022-04-08
BH1-SS1	BH10-SS1	BH3-SS1

Analyte	Batch No	MRL	Units	Guideline			
Antimony	419971	0.5	ug/L	STD 6	0.5	0.6	<0.5
Barium	419971	10	ug/L	STD 1000	20	60	<10
Beryllium	419971	0.5	ug/L	STD 4	<0.5	0.8	<0.5
Boron (total)	419971	10	ug/L	STD 5000	40	100	<10
Cadmium	419971	0.1	ug/L		<0.1	0.1	<0.1
Chromium Total	419971	1	ug/L	STD 50	5	17	1
Cobalt	419971	0.2	ug/L	STD 3.8	0.7	2.2	0.2
Copper	419971	1	ug/L	STD 14	13	38*	2
Molybdenum	419971	5	ug/L	STD 23	<5	<5	<5
Nickel	419971	5	ug/L	STD 78	<5	12	<5
Selenium	419971	1	ug/L	STD 10	2	6	<1
Silver	419971	0.1	ug/L	STD 0.3	<0.1	<0.1	<0.1
Thallium	419971	0.1	ug/L	STD 2	<0.1	0.1	<0.1
Uranium	419971	1	ug/L	STD 20	<1	1	<1
Zinc	419971	10	ug/L	STD 180	10	50	<10

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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SPLP

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1618732 SPLP	1618733 SPLP	1618734 SPLP
2022-04-08	2022-04-08	2022-04-08
BH1-SS1	BH10-SS1	BH3-SS1

Analyte	Batch No	MRL	Units	Guideline
SPLP Extraction	419906			

					y	y	y
--	--	--	--	--	---	---	---

Moisture

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1618732 SPLP	1618733 SPLP	1618734 SPLP
2022-04-08	2022-04-08	2022-04-08
BH1-SS1	BH10-SS1	BH3-SS1

Analyte	Batch No	MRL	Units	Guideline
Moisture-Humidite	419903	0.1	%	

					7.8	16.8	5.4
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Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
419903	Moisture-Humidite			80-120				
419906	SPLP Extraction							
419971	Silver	<0.1 ug/L	108	80-120	112	70-130	0	0-20
419971	Boron (total)	<10 ug/L	109	80-120	105	80-120	0	0-20
419971	Barium	<10 ug/L	104	80-120	88	70-130	0	0-20
419971	Beryllium	<0.5 ug/L	102	80-120	116	70-130	0	0-20
419971	Cadmium	<0.1 ug/L	104	80-120	117	70-130	0	0-20
419971	Cobalt	<0.2 ug/L	106	80-120	110	70-130	0	0-20
419971	Chromium Total	<1 ug/L	119	80-120	113	70-130	0	0-20
419971	Copper	<1 ug/L	112	80-120		70-130	1	0-20
419971	Molybdenum	<5 ug/L	103	80-120	107	70-130	0	0-20
419971	Nickel	<5 ug/L	111	80-120	111	70-130	0	0-20
419971	Antimony	<0.5 ug/L	92	80-120	90	70-130	0	0-20
419971	Selenium	<1 ug/L	100	80-120	127	70-130	0	0-20
419971	Thallium	<0.1 ug/L	104	80-120	104	70-130	0	0-20
419971	Uranium	<1 ug/L	102	80-120	106	70-130	0	0-20
419971	Zinc	<10 ug/L	108	80-120	71	70-130	0	0-20

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Project: 02112512.000
COC #: 887789

Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
419903	Moisture-Humidite	Oven	2022-04-09	2022-04-09	NF	ASTM 2216
419906	SPLP Extraction		2022-04-11	2022-04-12	MW	mSPLP E9003/EPA 1312
419971	Silver	ICAPQ-MS	2022-04-12	2022-04-12	SD	EPA 200.8
419971	Boron (total)	ICAPQ-MS	2022-04-12	2022-04-12	SD	EPA 200.8
419971	Barium	ICAPQ-MS	2022-04-12	2022-04-12	SD	EPA 200.8
419971	Beryllium	ICAPQ-MS	2022-04-12	2022-04-12	SD	EPA 200.8
419971	Cadmium	ICAPQ-MS	2022-04-12	2022-04-12	SD	EPA 200.8
419971	Cobalt	ICAPQ-MS	2022-04-12	2022-04-12	SD	EPA 200.8
419971	Chromium Total	ICAPQ-MS	2022-04-12	2022-04-12	SD	EPA 200.8
419971	Copper	ICAPQ-MS	2022-04-12	2022-04-12	SD	EPA 200.8
419971	Molybdenum	ICAPQ-MS	2022-04-12	2022-04-12	SD	EPA 200.8
419971	Nickel	ICAPQ-MS	2022-04-12	2022-04-12	SD	EPA 200.8
419971	Antimony	ICAPQ-MS	2022-04-12	2022-04-12	SD	EPA 200.8
419971	Selenium	ICAPQ-MS	2022-04-12	2022-04-12	SD	EPA 200.8
419971	Thallium	ICAPQ-MS	2022-04-12	2022-04-12	SD	EPA 200.8
419971	Uranium	ICAPQ-MS	2022-04-12	2022-04-12	SD	EPA 200.8
419971	Zinc	ICAPQ-MS	2022-04-12	2022-04-12	SD	EPA 200.8

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Environment Testing

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Date Reported: 2022-04-12
Project: 02112512.000
COC #: 887789

CWS for Petroleum Hydrocarbons in Soil - Tier 1**Notes:**

1. The laboratory method complies with CCME Tier 1 reference method for PHC in soil. It is validated for laboratory use.
2. Where the F1 fraction (C6 to C10) and BTEX are both measured, F1-BTEX is reported.
3. Where the F2 fraction (C10 to C16) and naphthalene are both measured, F2-naphthalene is reported.
4. Where the F3 fraction (C16 to C34) and PAHs* are both measured, F3-PAH is reported.
5. F4G is analyzed if the chromatogram does not descend to baseline before C50. Where F4 (C34 to C50) and F4G are both reported, the higher result is compared to the standard.
6. Unless otherwise stated in the sample comments, the following criteria have been met where applicable:
 - nC6 and nC10 response factors within 30% of response factor for toluene;
 - nC10, nC16, and nC34 response factors within 10% of each other;
 - C50 response factors within 70% of nC10 + nC16 + nC34 average; and,
 - Linearity is within 15%.
7. Unless otherwise stated in the sample comments, sampling requirements and analytical holding times have been met.
8. Gravimetric heavy hydrocarbons (F4G) cannot be added to the C6 and C50 hydrocarbons.
9. *PAHs = phenanthrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene and pyrene.

CLIENT INFORMATION				INVOICE INFORMATION (SAME AS CLIENT INFORMATION: YES <input type="checkbox"/> NO <input type="checkbox"/>)																				
Company: Englobe				Company: Englobe				Fax:																
Contact: FENG LZ				Contact: Atiqur Rahman				Email: #1: Atiqur.Rahman@englobecorp.com																
Address: 3397 American Drive, Mississauga, ON				Address: 1821 Albion Road, Toronto				Email: #2: Nan.Du@englobecorp.com																
Telephone: 877-300-4800		Cell: 437-991-6210		Telephone: 674-203-3219				PO #:																
Email: #1: FENG.LZ@Englobecorp.com				<div style="text-align: center; background-color: #4a7ebb; color: white; padding: 5px;">REGULATION/GUIDELINE REQUIRED</div> <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <input type="checkbox"/> Sanitary Sewer, City: _____ <input type="checkbox"/> Storm Sewer, City: _____ <input type="checkbox"/> ODWSOG (Use DW CoC if analyzing drinking water) <input type="checkbox"/> PWQO <input checked="" type="checkbox"/> O.Reg 347 <input checked="" type="checkbox"/> Other: 153/04 and 406/19 </div> <div style="width: 35%;"> <input checked="" type="checkbox"/> O. Reg 153 <small>The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04. Analysis of full parameter list only</small> <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <input type="checkbox"/> Yes <input type="checkbox"/> No </div> <div> <table border="1" style="font-size: 8px;"> <tr> <th>Table #</th> <th>Coarse</th> <th>Fine</th> <th>Surface</th> </tr> <tr> <td>1~3</td> <td></td> <td></td> <td></td> </tr> </table> </div> </div> </div> </div>												Table #	Coarse	Fine	Surface	1~3				
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1~3																								
Email: #2: Nan. Du @ Englobe corp. com																								
Project: 02112512-000		Quote #:																						
TURN-AROUND TIME (Business Days)																								
<input type="checkbox"/> 1 Day* (100%) <input type="checkbox"/> 2 Day** (50%) <input type="checkbox"/> 3-5 Days (25%) <input checked="" type="checkbox"/> 5-7 Days (Standard)																								
Please contact Lab in advance to determine rush availability. *For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%. **For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.																								
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Sample Details																								
Sample ID		Date/Time Collected		Sample Matrix		# of Containers		Field Filtered -->										RN# (Lab Use Only)						
								O.Reg.153 parameters																
								PHC F1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganics	Metals only	FC&SAR	PH&SieveT&M	mSPLP-Metals	mSPLP-VOCs	mSPLP-SVOCs	TCLP	OCPs			
BH1-1		Jan.14.2022		S	3						✓		✓				✓	✓		✓				1606024
BH1-2				1										✓	✓									25
BH1-3				3		✓	✓																	26
BH1-5				3		✓	✓	✓																27
BH2-1				4		✓	✓			✓					✓									28
BH2-6				3		✓	✓	✓																29
Dup-4				3		✓	✓	✓																30
BH4-1				1						✓			✓	✓										31
BH4-2				3		✓	✓																	32
BH4-9				3		✓	✓																	33
PRINT				SIGN				DATE/TIME				TEMP (°C)		COMMENTS: TCLP: Metals, VOCs, benzo(a)pyrene Ignitability. CUSTODY SEAL: <input type="checkbox"/> YES <input type="checkbox"/> NO Ice packs submit <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										
Sampled By: FENG LZ				[Signature]				Jan.14.2022/20:00				15.5												
Relinquished By:				[Signature]				1/17/22 2:20 pm																
Received By: [Signature]																								

CLIENT INFORMATION				INVOICE INFORMATION (SAME AS CLIENT INFORMATION: YES <input type="checkbox"/> NO <input 4"="" type="checkbox/>)</th> </tr> </thead> <tbody> <tr> <td colspan="/> Company: Englobe <td colspan="8">Company:</td> <td colspan="8">Fax:</td>																Company:								Fax:							
Contact: FEAGLZ				Contact:								Email: #1:																							
Address: 3397 American pr.				Address:								Email: #2:																							
Telephone:		Cell: 437-991-6210		Telephone:								PO #:																							
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				Field Filtered -->																															
				O.Reg.153 parameters																															
Sample ID		Date/Time Collected		Sample Matrix	# of Containers	PHC F1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganic	Metals only	EC & SAR	PHC & Inerts	MSLCP-metals	MSLCP-VOCs	MSLCP-Silica	TCLP	OCPs		RNH (Lab Use Only)														
B45-1	Jan. 14, 2022	S	1										✓								1606034														
Dup-5			1																✓		35														
B45-3			3	✓	✓																36														
B45-9			3	✓	✓																37														
B47-1			1					✓				✓	✓								38														
Dup-2			1					✓													39														
B47-3			3	✓	✓																40														
Dup-3			3	✓	✓																41														
B47-6			3	✓	✓																42														
PRINT				SIGN				DATE/TIME				TEMP (°C)				COMMENTS: CUSTODY SEAL: <input type="checkbox"/> YES <input type="checkbox"/> NO Ice packs submit <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																			
Sampled By: FEAGLZ								Jan 14, 2022 / 20-20																											
Relinquished By: Malissa								1/17/22 2:20 pm				15-5																							
Received By:																																			

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Address:				Address:		Email: #2:																													
Telephone:		Cell:		Telephone:		PO #:																													
Email: #1:				REGULATION/GUIDELINE REQUIRED																															
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Project:		Quote #:		<input type="checkbox"/> Sanitary Sewer, City: _____ <input type="checkbox"/> Storm Sewer, City: _____ <input type="checkbox"/> ODWSOG (Use DW CoC if analyzing drinking water) <input type="checkbox"/> PWQO <input checked="" type="checkbox"/> O.Reg 347 <input type="checkbox"/> Other: _____																															
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Please contact Lab in advance to determine rush availability. *For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%. **For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.				<input checked="" type="checkbox"/> O. Reg 406 Excess Soils Table # 123-1 Full depth/Strat/Ceiling/mSLP Leachate Type: Com-Ind / Res-Park / Agri / All Other Category: Surface / Subsurface																															
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				Field Filtered -->																															
Sample ID		Date/Time Collected		Sample Matrix		# of Containers		O.Reg.153 parameters																											
								PHC F1 - F4		BTEX		VOCs		PAHs		PCBs		Metals + Inorganic		Metals only		FC & SAR		MSLP-Metals		MSLP-VOCs		MSLP-SVOCs		TCLP		DCPs			
BH 8-1		Jan-13, 2022		S		2																✓		✓										1606043	
BH 8-2				1		4								✓				✓						✓								44			
BH 8-7				1		3		✓		✓		✓																				45			
BH 9-1				1		1										✓																46			
BH 9-2				2		2						✓		✓				✓		✓		✓										47			
BH 9-3				48		48		✓		✓		✓										✓		✓		✓						48			
BH 9-9				3		3		✓		✓																						49			
BH 10-1				2		2												✓		✓		✓										50			
BH 10-2				3		3		✓		✓																						51			
PRINT				SIGN				DATE/TIME				TEMP (°C)				COMMENTS:																			
Sampled By: FENGLZ				[Signature]				Jan 14, 2022 / 20:00				15.5				CUSTODY SEAL: <input type="checkbox"/> YES <input type="checkbox"/> NO Ice packs submit <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																			
Relinquished By: Malissa				[Signature]				1/12/22 22:30pm																											
Received By:																																			

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Contact: FENG L2				Contact:						Email: #1:																	
Address:				Address:						Email: #2:																	
Telephone:		Cell:		Telephone:						PO #:																	
Email: #1:				<div style="text-align: center; background-color: #4a7ebb; color: white; padding: 5px;">REGULATION/GUIDELINE REQUIRED</div> <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <input type="checkbox"/> Sanitary Sewer, City: _____ <input type="checkbox"/> Storm Sewer, City: _____ <input type="checkbox"/> ODWSOG (Use DW CoC if analyzing drinking water) <input type="checkbox"/> PWQO <input checked="" type="checkbox"/> O.Reg 347 <input type="checkbox"/> Other: _____ </div> <div style="width: 35%;"> <input checked="" type="checkbox"/> O. Reg 153 <small>The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04. Analysis of full parameter list only</small> Yes <input type="checkbox"/> No <input type="checkbox"/> </div> </div> <div style="margin-top: 10px;"> <input checked="" type="checkbox"/> O. Reg 406 Excess Soils <small>Table # 1-3-1 Full Depth/Strat/Sealing/mSPLP Leachate</small> Type: Corn-Ind / Res-Park / Agri / All Other Category: Surface / Subsurface </div>																							
Email: #2:																											
Project:		Quote #:																									
TURN-AROUND TIME (Business Days)																											
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				Field Filtered -->		O.Reg.153 parameters																					
				Sample Matrix	# of Containers	PHC F1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganic	Metals only	TC SAR	mSPLP-metals	mSPLP-VOCs		mSPLP-SVOCs	TCLP	OCPS								
Sample ID	Date/Time Collected																										
BH11-1	Jan. 13, 2022	S	1							✓	✓						1606052										
Dup-1			1							✓							53										
BH11-2			3	✓	✓												54										
BH11-7			3	✓	✓	✓											55										
BH12-1			2				✓		✓					✓			56										
BH12-2			3	✓	✓					✓	✓						57										
BH12-8			3	✓	✓	✓											58										
PRINT		SIGN		DATE/TIME				TEMP (°C)		COMMENTS:																	
Sampled By: FENG L2		[Signature]		Jan. 14, 2022/2022																							
Relinquished By: Malina		[Signature]		1/17/22 2:29 pm				15.5																			
Received By:										CUSTODY SEAL: <input type="checkbox"/> YES <input type="checkbox"/> NO Ice packs submit <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																	

CLIENT INFORMATION				INVOICE INFORMATION (SAME AS CLIENT INFORMATION: YES <input type="checkbox"/> NO <input 4"="" type="checkbox/>)</th> </tr> </thead> <tbody> <tr> <td colspan="/> Company: Englobe <td colspan="2">Company:</td> <td colspan="2">Fax:</td>				Company:		Fax:												
Contact: FENG LZ				Contact:		Email: #1:																
Address: 3397 American Drive				Address:		Email: #2:																
Telephone: 437-991-6210		Cell:		Telephone:		PO #:																
Email: #1: FENG.Li@Englobecorp.com				REGULATION/GUIDELINE REQUIRED																		
Email: #2: Nan.Du@Englobecorp.com																						
Project: 02112512.000		Quote #: 191077		<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> Sanitary Sewer, City: _____ <input type="checkbox"/> Storm Sewer, City: _____ <input type="checkbox"/> ODWSOG (Use DW CoC if analyzing drinking water) <input type="checkbox"/> PWQO <input checked="" type="checkbox"/> O.Reg 347 <input type="checkbox"/> Other: _____ </div> <div style="width: 50%;"> <input checked="" type="checkbox"/> O. Reg 153 <small>The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04. Analysis of full parameter list only</small> Yes <input type="checkbox"/> No <input type="checkbox"/> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> <input checked="" type="checkbox"/> O. Reg 406 Excess Soils <small>Table # 1-3.1 Full depth/Strat/Ceiling/m/PLP Leachate</small> Type: Com/ind/Res-Park/Agri/All Other Category: Surface/Subsurface </div> <div style="width: 50%;"> <small>Table # 1-3.1</small> Type: Com/ind/Res-Park/Agri/All Other Category: Surface/Subsurface </div> </div>																		
TURN-AROUND TIME (Business Days)																						
<input type="checkbox"/> 1 Day* (100%) <input type="checkbox"/> 2 Day** (50%) <input type="checkbox"/> 3-5 Days (25%) <input checked="" type="checkbox"/> 5-7 Days (Standard)																						
<small>Please contact Lab in advance to determine rush availability. *For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%. **For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.</small>																						
<small>The optimal temperature conditions during transport should be less than 10°C. Sample(s) cannot be frozen, unless otherwise indicated or agreed upon with the Laboratory. Note that this COC is not to be used for drinking water samples. The COC must be complete upon submission of the samples, there will be a \$25 surcharge if required information is missing (required fields are shaded in grey).</small>																						
Sample ID		Date/Time Collected		Sample Details										RN# (Lab Use Only)								
				O.Reg.153 parameters																		
				Field Filtered -->	Sample Matrix	# of Containers	PHC F1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganic	Metals only	EC & SAR	msp-p-metals	msp-p-vocs	msp-p-svocs	TCLP	PH			
BH3-1	Jan-21-2022	S	2								✓	✓	✓	✓	✓							1606834
BH3-2			1								✓							✓				35
Dup-7			1								✓											35
BH3-5			3	✓	✓													✓	✓			36
BH6-1			2						✓			✓	✓					✓				37
BH6-9			3	✓	✓																	38
BH13-1			1									✓	✓									39
BH13-6			3	✓	✓													✓	✓			40
BH15-1			2								✓							✓				41
BH15-2			1									✓	✓									42
PRINT				SIGN				DATE/TIME		TEMP (°C)		COMMENTS: Run out of jars/vials. Call lab confirm to use other jars/vials. CUSTODY SEAL: <input type="checkbox"/> YES <input type="checkbox"/> NO Ice packs submit <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										
Sampled By: FENG LZ				[Signature]				Jan-21-2022/17:00														
Relinquished By:																						
Received By: Victor Gallant								01/21/22 5:08pm		1.5°C												

CLIENT INFORMATION

INVOICE INFORMATION (SAME AS CLIENT INFORMATION: YES ☐ NO ☐)

Company: Englobe
 Contact: FENG L2
 Address: 3387 American Drive
 Telephone: 437-891-6210
 Email: #1: FENG.LI@englobecorp.com
 Email: #2: Nan.du@englobecorp.com
 Project: 02112512.000

Company:
 Contact:
 Address:
 Telephone:
 Fax:
 Email: #1:
 Email: #2:
 PO #:

TURN-AROUND TIME (Business Days)

☐ 1 Day* (100%) ☐ 2 Day** (50%) ☐ 3-5 Days (25%) ☒ 5-7 Days (Standard)

Please contact Lab in advance to determine rush availability.

*For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%.

**For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.

REGULATION/GUIDELINE REQUIRED

☐ Sanitary Sewer, City:
☐ Storm Sewer, City:
☐ ODWSOG (Use DW CoC if analyzing drinking water)
☐ PWQO
☒ O.Reg 347
☐ Other:

☒ O. Reg 153

The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04. Analysis of full parameter list only
 Yes ☐ No ☐

Table # 1-3
 Coarse / Fine / Surface / Subsurface
 Type: Com Ind / Res Park / Agri / GW / All Other / Sediment

☒ O. Reg 406 Excess Soils

Table # 1-3-1
 Full depth / Strat / Chilling / mSPP Leachate
 Type: Com Ind / Res Park / Agri / All Other
 Category: Surface / Subsurface

The optimal temperature conditions during transport should be less than 10°C. Sample(s) cannot be frozen, unless otherwise indicated or agreed upon with the Laboratory. Note that this COC is not to be used for drinking water samples. The COC must be complete upon submission of the samples, there will be a \$25 surcharge if required information is missing (required fields are shaded in grey).

Sample Details

Field Filtered →

O.Reg.153 parameters

Sample Matrix	# of Containers	PHCF1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganic	Metals only	TEC & SAR	mspup-metals	mspup-VOCs	mspup-SVOCs	TECP	mspup-OCs	OCs
BH16-1	3								✓	✓				✓	✓
BH16-2	3	✓	✓												
BH16-6	3	✓	✓	✓											

RN#
 (Lab Use Only)

1606843
 44
 45

PRINT

SIGN

DATE/TIME

TEMP (°C)

COMMENTS:

Sampled By:

FENG L2

ufin

Jan-21-2022/17:00

Relinquished By:

Victor Gallant

N.B.

01/21/22 5:08pm 1.5°C

Received By:

CUSTODY SEAL:

☐ YES ☐ NO

Ice packs submit

☒ Yes ☐ No

CLIENT INFORMATION						INVOICE INFORMATION (SAME AS CLIENT INFORMATION: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>)																															
Company:		Englobe Corp.				Company:																															
Contact:		Atiqur Rahman				Contact:																															
Address:		1821 Albion Road, Unit 7, Toronto, Ontario M9W 5W8				Address:																															
Telephone:		647.203.3219		Fax:		Telephone:					Fax:																										
Email:		#1: Atiqur.Rahman@englobecorp.com				Email:		#1:																													
Email:		#2: feng.li@englobecorp.com;nan.du@englobecorp.com				Email:		#2:																													
Project:		02112512.000				PO #:					Quote #:																										
REGULATION/GUIDELINE REQUIRED						TURN-AROUND TIME																															
<input type="checkbox"/> Sanitary Sewer, City: _____		<input type="checkbox"/> ODWSOG		<input type="checkbox"/> Storm Sewer, City: _____		<input type="checkbox"/> PWQO		<input type="checkbox"/> 1 Day* (100%)		<input type="checkbox"/> 2 Day** (50%)		<input type="checkbox"/> 3-5 Days (25%)		<input checked="" type="checkbox"/> 5-7 Days (Standard)																							
<input type="checkbox"/> O. Reg 153, Table: _____, Type: _____		<input type="checkbox"/> O. Reg 347/558		<input type="checkbox"/> Excess Soil, Table: _____, Type: _____		<input checked="" type="checkbox"/>		Please contact the laboratory in advance to determine rush availability. Surcharges may apply to rush service. *If the results are reported the day after the rush due date, the following surcharges will apply: before 12:00 - 100%, after 12:00 - 50%. **If the results are reported the day after the rush due date, the following surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.																													
The optimal temperature conditions during transport should be less than 10°C. Sample(s) cannot be frozen, unless otherwise indicated or agreed upon with the Laboratory. Note that this COC is not to be used for drinking water samples. The COC must be complete upon submission of the samples, there will be a \$25 surcharge if required information is missing (required fields are shaded in grey).						Sample Details		Sample Analysis Required							Field Parameters		RN# (Lab Use Only)																				
						Field Filtered -->																															
Sample ID		Date/Time Collected		Sample Matrix		Resample? Y = Yes N = No		# of Containers		Metals and Inorganics		Metals (ex. Hg, B, CrVI)		BTEX		VOC		PHC F1-F4		PAH		mSPLP(metals)		TCLP(metals and inorganics)		OCPs		PCB		SVOC							
BH1-SS1		April 8,2022						1J														✓														1618732	
BH2-SS1		April 8,2022						1J														✓														33	
BH3-SS1		April 8,2022						1J														✓														34	

SOIL INFILTRATION TEST RESULT

The in-situ infiltration testing near Borehole BH15 at 1.0 m depth was completed on April 11, 2022 on the underlying silty clay. The soil description is based on visual inspection of the soils encountered at the time of excavation and will be confirmed by laboratory tests.

Infiltration rates were determined using the One-Head Analysis as described in the Soil Moisture Equipment Corp. 2800K1 Operating Instructions (Dec. 2012). This method is expressed by the following equation:

$$K_{fs} = \frac{C_1 Q_1}{2\pi(H_1)^2 + \pi a^2 C_1 + 2\pi \left(\frac{H_1}{\alpha^*}\right)}$$

Where:

K_{fs} = Field saturated hydraulic conductivity (entrapped air present) (cm/sec)

C_1 = Shape factor

Q_1 = Discharge from combined reservoir (cm³/min)

H_1 = Well height (cm)

a = Well radius (cm)

α^* = Soil texture (cm⁻¹)

Field saturated hydraulic conductivities have been indirectly measured using the Guelph Permeameter. One (1) test was completed at the site allowing for pre-soaking of the initially unsaturated soils encountered. This hydraulic conductivity is measured when ponded water is allowed to infiltrate into an initially unsaturated soil.

The estimated infiltration rate is based on recommendations found in the “Low Impact Development Stormwater Management Planning and Design Guide, Appendix C”, published by the Toronto and Region (TRCA) and the Credit Valley (CVC) Conservation Authority, and the assumed relationship between hydraulic conductivity and infiltration rate. It should be noted that hydraulic conductivity and infiltration rate are two different concepts and that conversion from one parameter to another must account for the hydraulic gradient and consequently cannot be done through unit conversion. A factor of safety of 2.5 was applied to the approximate infiltration rate to account for soil variability, gradual accumulation of fine soil sediments during the lifespan of the facility, and compaction during construction. The field measured hydraulic conductivities and estimated factored infiltration rates assuming a favourable hydraulic gradient of 1 is presented in Table 1 below.

Table 1 Summary of Infiltration Rate Calculations

BOREHOLE NO.	APPROXIMATE TEST DEPTHS (mbgs)	SOIL TYPE	FIELD SATURATED K-VALUE (Cm/sec)	FACTORED INFILTRATION RATE (mm/hr)
BH15	1.0	Silty clay some sand	7.27E-05	17



FORMATION THERMAL CONDUCTIVITY
TEST & DATA ANALYSIS

TEST LOCATION **A01583 Weston Road**
Woodbridge, ON

TEST DATE **August 23-25, 2022**

ANALYSIS FOR **Aecon Geoexchange Solutions Inc.**
20 Carlson Ct, Suite 800
Toronto, ON M9W 7K6

TEST PERFORMED BY **Aecon Geoexchange Solutions Inc.**

EXECUTIVE SUMMARY

A formation thermal conductivity test was performed on the geothermal test bore at the A01583 Weston Road site at 941 Weston Road in Woodbridge, Ontario. The vertical bore was completed on August 17, 2022 by Aecon Geoexchange Solutions. Geothermal Resource Technologies' (GRTI) test unit was attached to the vertical bore on the afternoon of August 23, 2022.

This report provides an overview of the test procedures and analysis process, along with plots of the loop temperature and input heat rate data. The collected data was analyzed using the "line source" method and the following average formation thermal conductivity was determined.

Formation Thermal Conductivity = 1.28 Btu/hr-ft-°F (2.22 W/m-K)

Due to the necessity of a thermal diffusivity value in the design calculation process, an estimate of the average thermal diffusivity was made for the encountered formation.

Formation Thermal Diffusivity $\approx 0.99 \text{ ft}^2/\text{day}$ ($0.0107 \text{ cm}^2/\text{s}$)

Bore thermal resistance calculations were made on the test data using the method outlined in the Gehlin Doctoral Thesis¹. Since the average value listed below was empirically determined from the test data it may not directly correlate with values found in loopfield design programs.

Bore Thermal Resistance = 0.141 hr-ft-°F/Btu (0.081 m-k/W)

The undisturbed formation temperature for the tested bore was established from the initial loop temperature data collected at startup.

Undisturbed Formation Temperature $\approx 50.5\text{-}51.9^\circ\text{F}$ ($10.3\text{-}11.1^\circ\text{C}$)

The formation thermal properties determined by this test do not directly translate into a loop length requirement (i.e. feet of bore per ton) with many others, are inputs to commercially available loop-field design software to determine the required loop length. Additional questions concerning the use of these results are discussed in the frequently asked question (FAQ) section at www.grti.com.

¹ Signhild Gehlin. "Thermal Response Test - Method Development and Evaluation," (Doctoral Thesis, Lulea University of Technology, 2002).

TEST PROCEDURES

The American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) has published recommended procedures for performing formation thermal conductivity tests in the ASHRAE HVAC Applications Handbook, Geothermal Energy Chapter. The International Ground Source Heat Pump Association (IGSHPA) also lists test procedures in their Design and Installation Standards. GRTI's test procedures meet or exceed those recommended by ASHRAE and IGSHPA, with the specific procedures described below:

Grouting Procedure for Test Loops – To ensure against bridging and voids, it is recommended that the bore annulus is uniformly grouted from the bottom to the top via tremie pipe.

Time Between Loop Installation and Testing – A minimum delay of five days between loop installation and test startup is recommended for bores that are air drilled, and a minimum waiting period of two days for mud rotary drilling.

Undisturbed Formation Temperature Measurement – The undisturbed formation temperature should be determined by recording the loop temperature as the water returns from the u-bend at test startup.

Required Test Duration – A minimum test duration of 36 hours is recommended, with a preference toward 48 hours.

Data Acquisition Frequency - Test data is recorded at five minute intervals.

Equipment Calibration/Accuracy – Transducers and datalogger are calibrated per manufacturer recommendations. Manufacturer stated accuracy of power transducers is less than $\pm 2\%$. Temperature sensor accuracy is periodically checked via ice water bath.

Power Quality – The standard deviation of the power should be less than or equal to 1.5% of the average power, with maximum power variation of less than or equal to 10% of the average power.

Input Heat Rate – The heat flux rate should be 51 Btu/hr (15 W) to 85 Btu/hr (25 W) per foot of installed bore depth to best simulate the expected peak loads on the u-bend.

Insulation – GRTI's equipment has 1 inch of foam insulation on the FTC unit and 1/2 inch of insulation on the hose kit connection. An additional 2 inches of insulation is provided for both the FTC unit and loop connections by insulating blankets.

Retesting in the Event of Failure – In the event that a test fails prematurely, a retest may not be performed until the bore temperature is within 0.5°F of the original undisturbed formation temperature or until a period of 14 days has elapsed.

DATA ANALYSIS

Geothermal Resource Technologies, Inc. (GRTI) uses the "line source" method of data analysis to determine the thermal conductivity of the formation. The line source method assumes an infinitely thin line source of heat in a continuous medium. A plot of the late-time temperature rise of the line source temperature versus the natural log of elapsed time will follow a linear trend. The linear slope is inversely proportional to the thermal conductivity of the medium. Applying the line source method to a u-bend grouted in a borehole, the test must be run long enough to allow the finite dimensions of the u-bend pipes and the grout to become insignificant. Experience has shown that approximately ten hours is required to allow the error of early test times and the effects of finite borehole dimensions to become insignificant.

In the analysis of the data from the formation thermal conductivity test, the average temperature of the water entering and exiting the u-bend heat exchanger was plotted versus the natural log of elapsed testing time. Using the Method of Least Squares, linear coefficients were calculated that produce a line that fit the data. This procedure was repeated for various time intervals to ensure that variations in the power or other effects did not produce inaccurate results.

Bore thermal resistance was determined using the formula outlined in Gehlin's Doctoral Thesis². A serial development was used to approximate the exponential integral. The calculated bore resistance applies only to the test conditions, a bore in an operating loopfield could have a significantly different resistance due to changes in the loop fluid temperature, flow rate and presence of antifreeze.

The calculated results are based on test bore information submitted by the driller/testing agency. GRTI is not responsible for inaccuracies in the results due to erroneous bore information. All data analysis is performed by personnel that have an engineering degree from an accredited university with a background in heat transfer and experience with line source theory. The test results apply specifically to the tested bore. Additional bores at the site may have significantly different results depending upon variations in geology and hydrology.

Through the analysis process, the collected raw data is converted to spreadsheet format (Microsoft Excel®) for final analysis. If desired, please contact GRTI and a copy of the data will be made available in either a hard copy or electronic format.

CONTACT: Galen Streich
Regional Managing Engineer
Elkton, SD
866-991-4784
gstreich@grti.com

²Gehlin, 12-13

TEST BORE DETAILS**(AS PROVIDED BY AECON GEODEXCHANGE SOLUTIONS INC.)**

Site Name..... A01583 Weston Road
 Location..... Woodbridge, ON
 Driller..... Aecon Geoeexchange Solutions
 Installed Date..... August 17, 2022
 Borehole Diameter..... 4 1/2 inches (114 mm)
 Casing..... Temporary 5 1/2 inch (140 mm) casing to
 308 ft (93.9 m)
 U-Bend Size..... 1 1/4 inch (32 mm) HDPE
 U-Bend Depth Below Grade..... 600 ft (182.9 m)
 Grout Type..... GeoPro TG Lite/PowerTEC 1.0 Btu/hr-ft-°F
 Grout Mixture..... 900 lb (408 kg) TG Lite, 216 lb (100 kg)
 PowerTEC, 315 gal (1192 L) water
 Grouted Portion..... Entire bore

DRILL LOG

FORMATION DESCRIPTION	DEPTH (FT)	DEPTH (M)
Top soil	0'-20'	0-6.1 m
Sand	20'-160'	6.1-48.8 m
Watery sand	160'-180'	48.8-54.9 m
Broken rock/shale/some sand	180'-308'	54.9-93.9 m
Shale	308'-600'	93.9-182.9 m

Note: Approximately 5-10 gpm water produced while drilling.

THERMAL CONDUCTIVITY TEST DATA

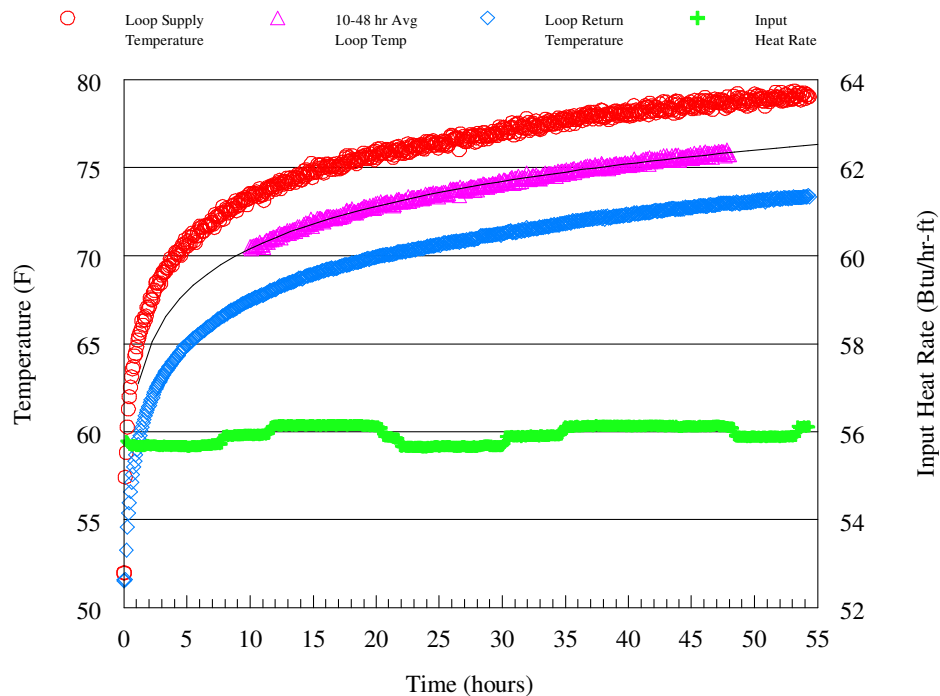


FIG. 1: TEMPERATURE & HEAT RATE DATA VS TIME

Figure 1 above shows the loop temperature and heat input rate data versus the elapsed time of the test. The temperature of the fluid supplied to and returning from the U-bend are plotted on the left axis, while the amount of heat supplied to the fluid is plotted on the right axis on a per foot of bore basis. In the test statistics below, calculations on the power data were performed over the analysis time period listed in the Line Source Data Analysis section.

SUMMARY TEST STATISTICS

Test Date	August 23-25, 2022
Undisturbed Formation Temperature	50.5-51.9°F (10.3-11.1°C)
Duration	54.3 hr
Average Voltage	244.1 V
Average Heat Input Rate	33,591 Btu/hr (9,845 W)
Avg Heat Input Rate per Foot of Bore	56.0 Btu/hr-ft (16.4 W/ft)
Circulator Flow Rate	11.5 gpm (43.4 L/min)
Standard Deviation of Power	0.34%
Maximum Variation in Power	0.61%

LINE SOURCE DATA ANALYSIS

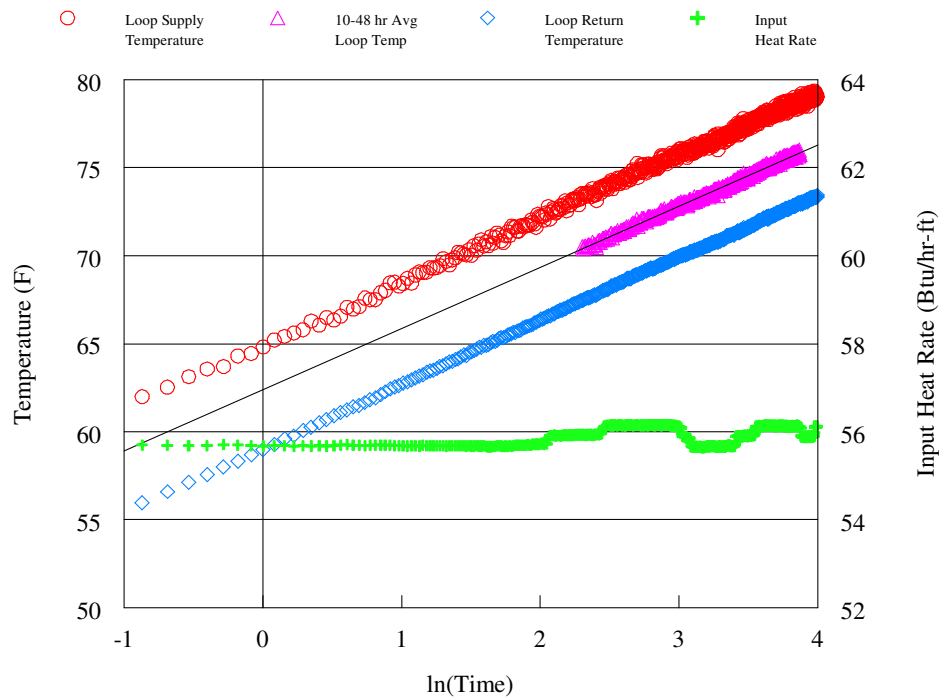


FIG. 2: TEMPERATURE & HEAT RATE VS NATURAL LOG OF TIME

The loop temperature and input heat rate data versus the natural log of elapsed time are shown above in Figure 2. The temperature versus time data was analyzed using the line source method (see page 3) in conformity with ASHRAE and IGSHPA guidelines. A linear curve fit was applied to the average of the supply and return loop temperature data between 10 and 48.0 hours. The slope of the curve fit was found to be 3.48. The resulting thermal conductivity was found to be **1.28 Btu/hr-ft-°F (2.22 W/m-K)**.

■

THERMAL DIFFUSIVITY

The reported drilling log for this test borehole indicated that the formation consisted of top soil, sand, clay, and shale. An average heat capacity value for shale was calculated from specific heat and density values listed by Kavanaugh and Rafferty³. A weighted average of heat capacity values based on the indicated formation was used to determine an average heat capacity of 31.0 Btu/ft³-°F for the formation. A diffusivity value was then found using the calculated formation thermal conductivity and the estimated heat capacity. The thermal diffusivity for this formation was estimated to be **0.99 ft²/day (0.0107 cm²/s)**.

³Stephen P. Kavanaugh and Kevin Rafferty, Geothermal Heating and Cooling: Design of Ground-Source Heat Pump Systems (Atlanta: ASHRAE, 2014), 75.

BORE THERMAL RESISTANCE

Resistance to heat transfer from a geothermal bore can be viewed as consisting of two components, bore resistance and ground resistance. This relationship is diagrammed in Figure 3, where t_f is the loop fluid temperature, t_b is the bore wall temperature and t_g is the ground temperature. The ground resistance is dependent upon the formation thermal conductivity and diffusivity. Factors that affect bore thermal resistance include the resistance of the pipe material, diameter of the heat exchanger, position of the heat exchanger in the bore, bore diameter, casing length and type, and thermal conductivity of the grout/backfill in the bore annulus. A detailed examination of bore resistance is discussed by Kavanaugh and Rafferty⁴.

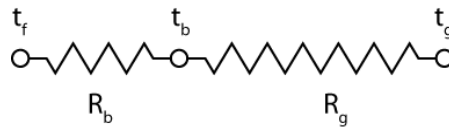


FIG. 3: RESISTANCE DIAGRAM FOR A GEOTHERMAL BORE

Bore thermal resistance calculations were made on the test data according to the formula below as outlined in the Gehlin Doctoral Thesis⁵. The calculated formation thermal conductivity and thermal diffusivity from the Line Source Analysis were used in the formula. The average undisturbed formation temperature of 51.2°F (10.7°C) was used as the undisturbed temperature, and the average bore thermal resistance from 10-48.0 hours was found to be **0.141 hr-ft-°F/Btu (0.081 m-K/W)**.

The calculated bore resistances apply only to the test conditions, and a bore in an operating loopfield could have a significantly different resistance due to changes in the loop fluid temperature, flow rate, and presence of antifreeze. Additional information on bore resistance may be found in the study by Oklahoma State University and Oklahoma Gas & Electric where various vertical bore heat exchanger configurations were tested⁶.

$$R_b = \frac{H}{Q} * \left\{ T(t) - T_g - \frac{Q}{4\pi\lambda_g H} * \left[Ei \left(\frac{r_b^2}{4\alpha_g t} \right) \right] \right\}$$

Where:	R_b	Borehole thermal resistance (hr-ft-°F/Btu)
	H	Active U-bend depth (ft)
	Q	Average heat injected (Btu/hr)
	$T(t)$	Temperature dependent on time t (°F)
	T_g	Undisturbed ground temperature
	λ_g	Formation thermal conductivity (Btu/hr-ft-°F)
	r_b	Average borehole radius (in)
	α_g	Formation thermal diffusivity (ft ² /hr)

⁴Kavanaugh and Rafferty, 58-67.

⁵Gehlin, 12-13.

⁶Beier, R. and Ewbank, G. (2012, August). *In-Situ Test Thermal Response Tests Interpretations, OG&E Ground Source Heat Exchange Study*. Retrieved from <https://igshpa.org/research/>

CERTIFICATE OF CALIBRATION

GRTI maintains calibration of the datalogger, current transducer and voltage transducer on a regular schedule. The components are calibrated by the manufacturer using recognized national or international measurement standards such as those maintained by the National Institute of Standards and Technology (NIST).

FTC Unit 215

DA Unit 51

PRIMARY EQUIPMENT		
COMPONENT	CALIBRATION DATE	CALIBRATION DUE DATE
Datalogger	10/29/2021	10/29/2024
Current Transducer	11/11/2021	11/11/2024
Voltage Transducer	11/11/2021	11/11/2024

GRTI periodically verifies the combined temperature sensor/datalogger accuracy via a water bath. Temperature readings are simultaneously taken with a digital thermometer that has been calibrated using instruments traceable to NIST.

DATE	3/8/2022	11/11/2021	3/8/2022	
THERMOCOUPLE 1 (°F)	32.2 32.2 32.2	32.2 32.2 32.2	32.2 32.2 32.2	
THERMOCOUPLE 2 (°F)	32.1 32.0 32.0	32.2 32.2 32.2	32.1 32.0 32.0	
THERMOCOUPLE 3 (°F)	32.1 32.0 32.1	32.3 32.3 32.2	32.1 32.0 32.1	
THERMOCOUPLE 4 (°F)	32.1 32.1 32.1	32.2 32.2 32.2	32.1 32.1 32.1	
DIGITAL THERMOMETER (°F)	32.2 32.1 32.1	32.3 32.3 32.3	32.2 32.1 32.1	

ENVIRONMENTAL IMPACT STUDY

VAUGHAN FIRE STATION 7-12 CITY OF VAUGHAN

prepared for:

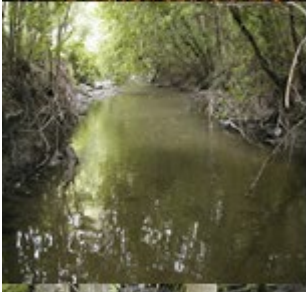


prepared by:



APRIL 2022

LGL FILE TA9196



ENVIRONMENTAL IMPACT STUDY

VAUGHAN FIRE STATION 7-12 CITY OF VAUGHAN

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APRIL 2022
LGL Project # TA9196

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1.0 INTRODUCTION



LGL Limited was retained by the City of Vaughan to complete an Environmental Impact Study (EIS) for the proposed Fire Station 7-12 located at 9541 Weston Road in the City of Vaughan, Ontario. The property is located adjacent to the Vellore Tract Woodlot, a Core Feature (significant woodland) identified in Schedule 2 – Natural Heritage Network to Vaughan's Official Plan.

The Vellore Tract Woodlot, located adjacent to the property, triggers the requirement to prepare an EIS in accordance with Section 2.1 of the Provincial Policy Statement (MMAH 2020) and Policy 3.9.2 of the Vaughan Official Plan (Vaughan 2010). The scoped EIS will meet the requirements of the Environmental Management Guideline (Vaughan 2013) with modifications to address a reduced scope of investigation. A key plan showing the location of the property is presented in **Figure 1**.

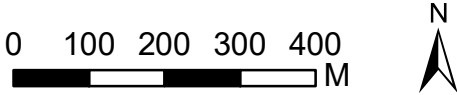
The City of Vaughan proposes to develop a fire station on the property. The fire station will include a central building, parking lot and walkways. The Vellore Tract Woodlot is located on adjacent lands south and east of the property; however, the tree canopy extends onto the property along the south and east property lines. The dripline of the Woodlot was staked on December 15, 2021 with City of Vaughan environmental and forestry staff in attendance (see **Appendix A**). The dripline extends onto the property and the proposed fire station and parking lot encroaches into the 10 m vegetation protection zone typically maintained from the dripline in accordance with City of Vaughan policies.



LEGEND

-  Subject Property
-  Waterbody

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9541 Weston Road
KEY MAP



Project: TA9196	Figure: 1
Date: February 22, 2022	Prepared By: AM
Scale: 1:10,000	Verified By: JB

2.0 EXISTING REGULATORY POLICIES

This section outlines the various policies, plans, and legislation related to natural heritage and land use applicable to the properties.

2.1 Species at Risk Act

The federal *Species at Risk Act* (SARA) outlines the responsibilities of agencies in the listing of species at risk, the preparation of recovery strategies and action plans for endangered, threatened and extirpated species, the preparation of management plans for special concern species, and the protection of critical habitat. The Act prohibits:

- kill, harm, harass, capture or take of an individual of a species listed under Schedule 1 of SARA as endangered, threatened or extirpated;
- possess, collect, buy, sell or trade an individual of a species listed under Schedule 1 of SARA as endangered, threatened or extirpated; or,
- damage or destroy the residence of one or more individuals of a species listed under Schedule 1 of SARA as endangered, threatened or extirpated, if a recovery strategy has recommended the reintroduction of that extirpated species.

These prohibitions apply to all federal lands (where present). On private land, these prohibitions apply to all aquatic species listed in Schedule 1 as endangered, threatened or extirpated, as well as migratory birds protected under the *Migratory Birds Convention Act*.

2.2 Migratory Birds Convention Act

The *Migratory Birds Convention Act* is administered by the Canadian Wildlife Service of Environment Canada. The *Migratory Birds Convention Act* enables regulations that require authorization for designs which cause permanent destruction/disturbance of migratory bird habitat and authorization for killing/removing migratory bird fledglings, eggs, nests, or for other harmful activity to migratory birds to enable bridge construction/demolition, construction access and construction work areas. The property falls within Environment Canada's Nesting Zone C2 (Nesting Period: end of March – end of August).

2.3 Endangered Species Act

The Ontario *Endangered Species Act* (ESA 2007) outlines the conservation, protection, restoration, and propagation of species of fauna and flora of the Province of Ontario that are threatened with extinction. The ESA (2007) outlines the responsibilities of the Committee on the Status of Species at Risk in Ontario (COSSARO) in the listing of species at risk, the preparation of recovery strategies for endangered or threatened species, and the preparation of management plans for special concern species. The

Species at Risk in Ontario List (O. Reg. 230/08) under the ESA lists the species and their status.

Section 9 of the ESA prohibits similar activities as the *Species at Risk Act* (SARA), such as prohibitions on the kill, harm, harass, capture or take of a living species at risk, or to possess, transport, collect, buy, sell, lease, trade a species at risk (living or dead). Section 10 of the ESA prohibits the damage or destruction of habitat of endangered, threatened, or extirpated species. Permits may be issued under Section 17 (2) of the ESA should a project result in a contravention of Section 9 and/or 10 of the ESA. As part of the permit process, an “overall benefit” to the impacted species must be included in the compensation package. It should be noted that the ESA was previously administered by the MNRF but is now under the jurisdiction of the Ministry of Environment, Conservation and Parks (MECP).

2.4 Ontario Regulation 166/06: Toronto and Region Conservation Authority: Development, Interference with Wetlands and Alterations to Shorelines and Watercourses

Ontario Regulation 166/06 regulates work taking place within valley and stream corridors, wetlands and associated areas of interference. Consequently, any works undertaken within the regulation limit will require a permit from the Toronto and Region Conservation Authority. The property does not fall within a regulated area; therefore, *Ontario Regulation 166/06* does not apply.

2.5 Provincial Policy Statement

The Provincial Policy Statement (PPS) (Ministry of Municipal Affairs and Housing, 2020) is issued under Section 3 of the *Planning Act*. The PPS provides for development that protects resources of provincial interest, public health and safety, and the quality of the natural and built environment. All planning decisions under the York Region Official Plan and City of Vaughan Official Plan shall conform to provincial plans and be consistent with the PPS. Section 2.1 contains policies on protecting natural heritage features. The PPS states that the diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of a natural heritage system should be maintained, restored or, where possible, improved, which includes improving connectivity of natural features in an area, recognizing linkages between and among natural heritage features, surface water features and ground water features (subsection 2.1.2).

There are two categories of natural heritage features and areas specified in the PPS for protection. Areas where no development or site alternation is permitted, including:

- provincially significant wetlands (PSW) (in Ecoregions 5E, 6E and 7E); and,

- provincially significant coastal wetlands (subsection 2.1.4).

The second category of natural heritage areas specified in the PPS are areas where development and site alteration may be permitted if it can be demonstrated that no negative impacts will occur on the natural features or their ecological functions. These areas include:

- significant woodlands;
- significant valleylands;
- significant wildlife habitat;
- significant Areas of Natural and Scientific Interest (ANSIs); and,
- coastal wetlands (subsection 2.15).

Subsections 2.1.6 and 2.1.7 indicate that fish habitat and habitat of endangered and threatened species shall not be permitted except in accordance with provincial and federal requirements.

Development and site alteration on adjacent lands to natural heritage features noted above (subsections 2.1.4, 2.1.5 and 2.1.6) shall not be permitted unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions (subsection 2.1.8). Given that the Vellore Tract Woodlot is identified as a “significant woodland” by the City of Vaughan, the Natural Heritage policies contained in the PPS apply.

2.6 York Region Official Plan

York Region Council adopted the current York Region Official Plan 2010 in 2009 (YROP). The York Region Official Plan Office Consolidation 2019 includes decisions and amendments made up to April 2019. The purpose of the YROP is to guide economic, environmental, and community building decisions to manage growth. Chapter 2.0 Sustainable Natural Environment contains policies that are intended to protect key natural heritage features and key hydrological features, and the adjacent lands necessary to maintain these features in a linked system. Map 1 – Urban Structure (**Figure 2**) and Map 2- Regional Greenlands System (**Figure 3**) identify the property and adjacent lands as ‘Urban Area.’

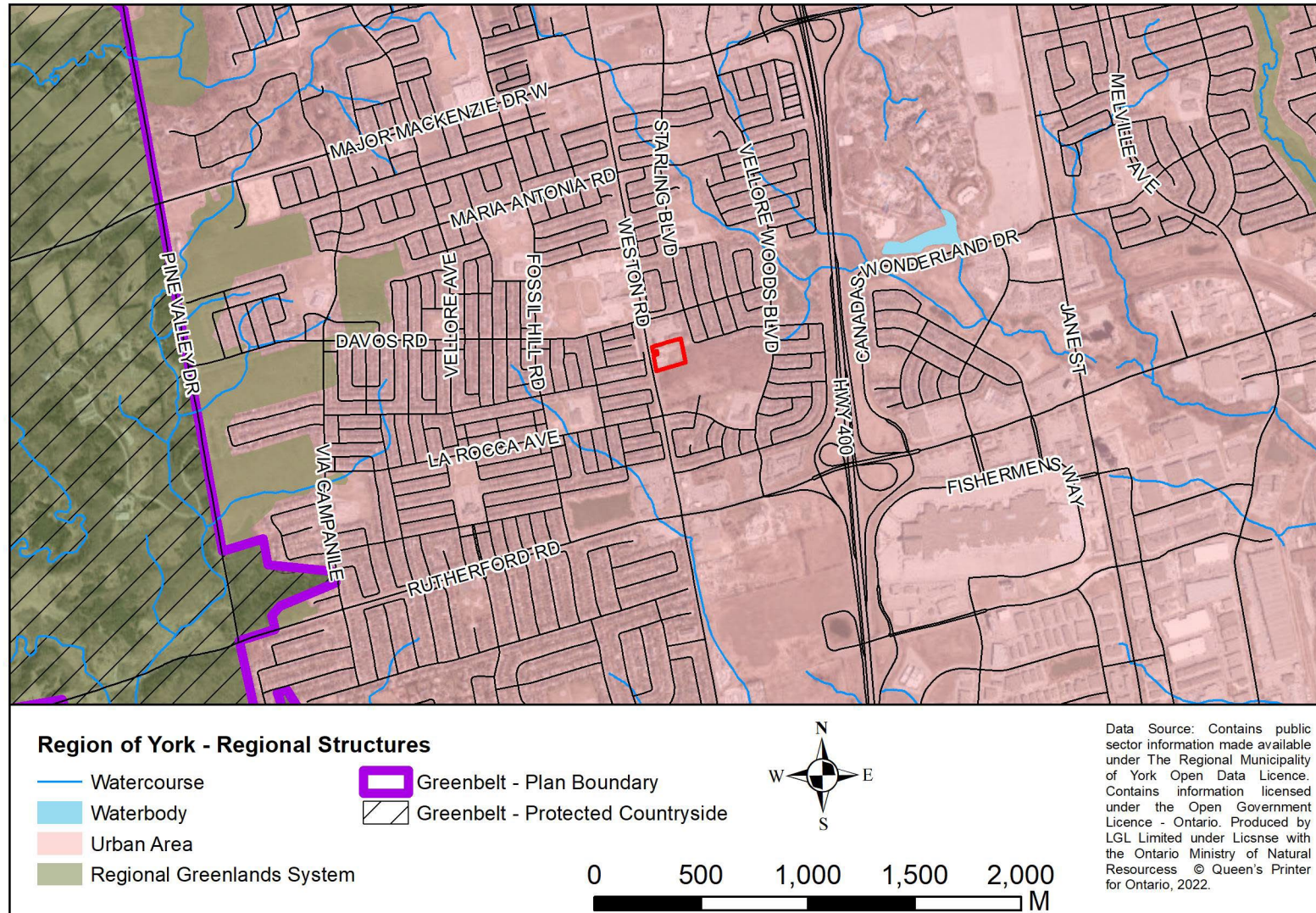


FIGURE 2. YORK REGION OFFICIAL PLAN MAP 1 – URBAN STRUCTURE

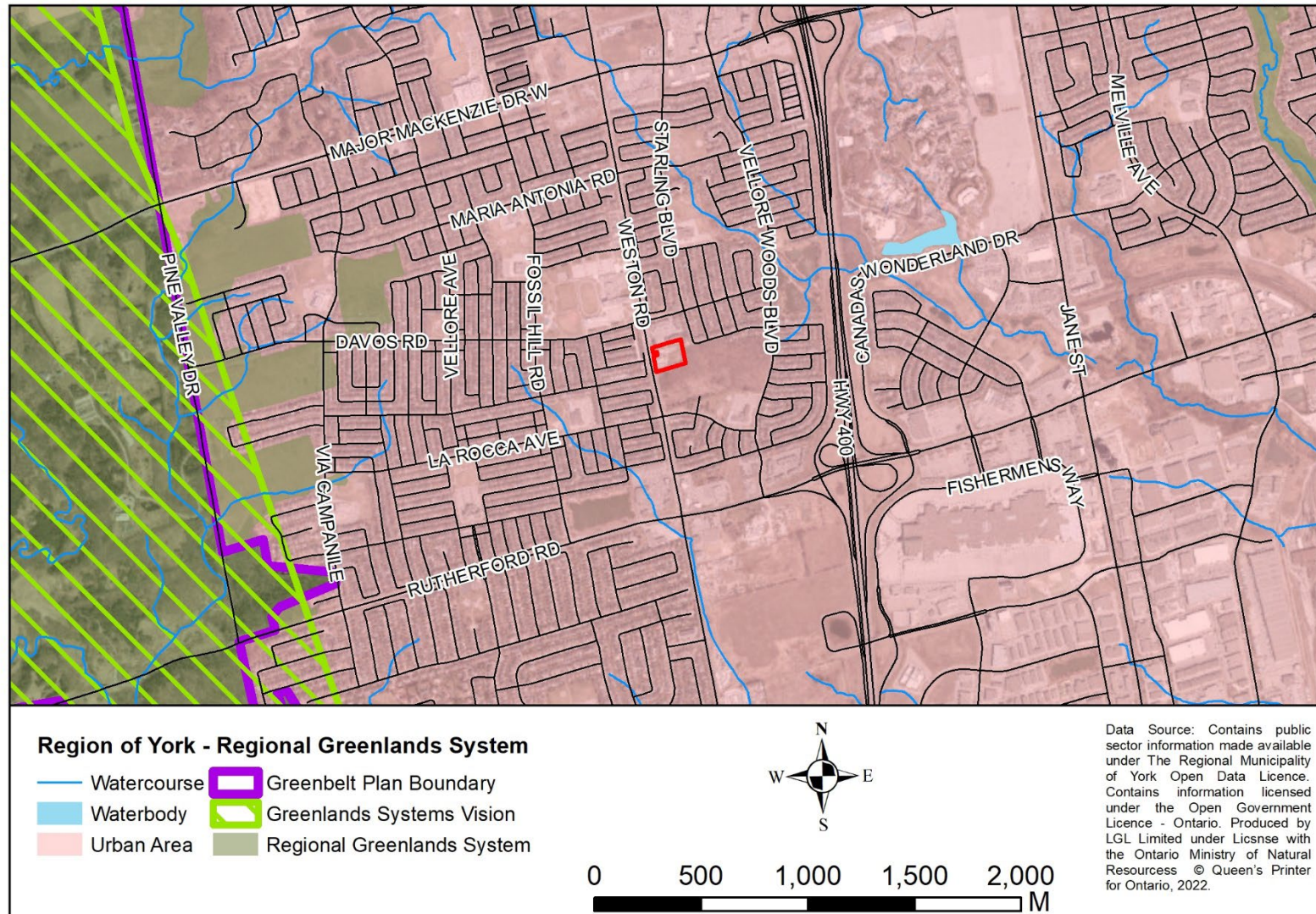


FIGURE 3. YORK REGION OFFICIAL PLAN – MAP 2 – REGIONAL GREENLANDS SYSTEM

2.7 City of Vaughan Official Plan

The City of Vaughan Council adopted the City of Vaughan: Official Plan 2010 (VOP), Volume 1 on September 7, 2010. The purpose of the VOP is to manage and direct changes on the spatial, economic and natural environment within the municipality. The subject property is designated as 'Community Areas' in Schedule 1 – Urban Structure to the VOP (**Figure 4**), while the Vellore Track Woodlot is designated as 'Natural Areas and Countryside.' Schedule 2 - Natural Heritage Network of the VOP identifies Vellore Track Woodlot as a 'Core Features' designation (**Figure 5**). The Natural Heritage Network represents an interconnected system of natural features and the functions they perform. Natural features such as wetlands, woodlands and the extensive valley and stream corridors are identified as 'Core Features' that provide critical ecosystem functions and are to be protected and enhanced with minimum vegetation protection zones to be applied (outlined in Policy 3.2.3.4). Within the VOP, Policy 3.2.3.7 states that new development and/or site alteration within 'Core Features' designations will be prohibited except for the following circumstances:

- natural area management for the purposes of maintaining and enhancing the functions associated with Core Features;
- flood or erosion control projects, where such projects are necessary and deemed in the public interest after all alternatives have been considered, and where such projects will not result in a negative impact on the Core Features and will not have a negative impact on the ecosystem function;
- transportation, infrastructure and utilities, where such projects are necessary and deemed in the public interest after all alternatives have been considered, and where such projects will minimize negative impacts on the Core Features and measures shall be identified to maintain habitat area and enhance overall ecosystem function; and, Chapter 3 Environment 55; and,
- low-intensity and passive recreational activities where such activities will not result in a negative impact on the Core Features and will not have a negative impact on the ecosystem function.

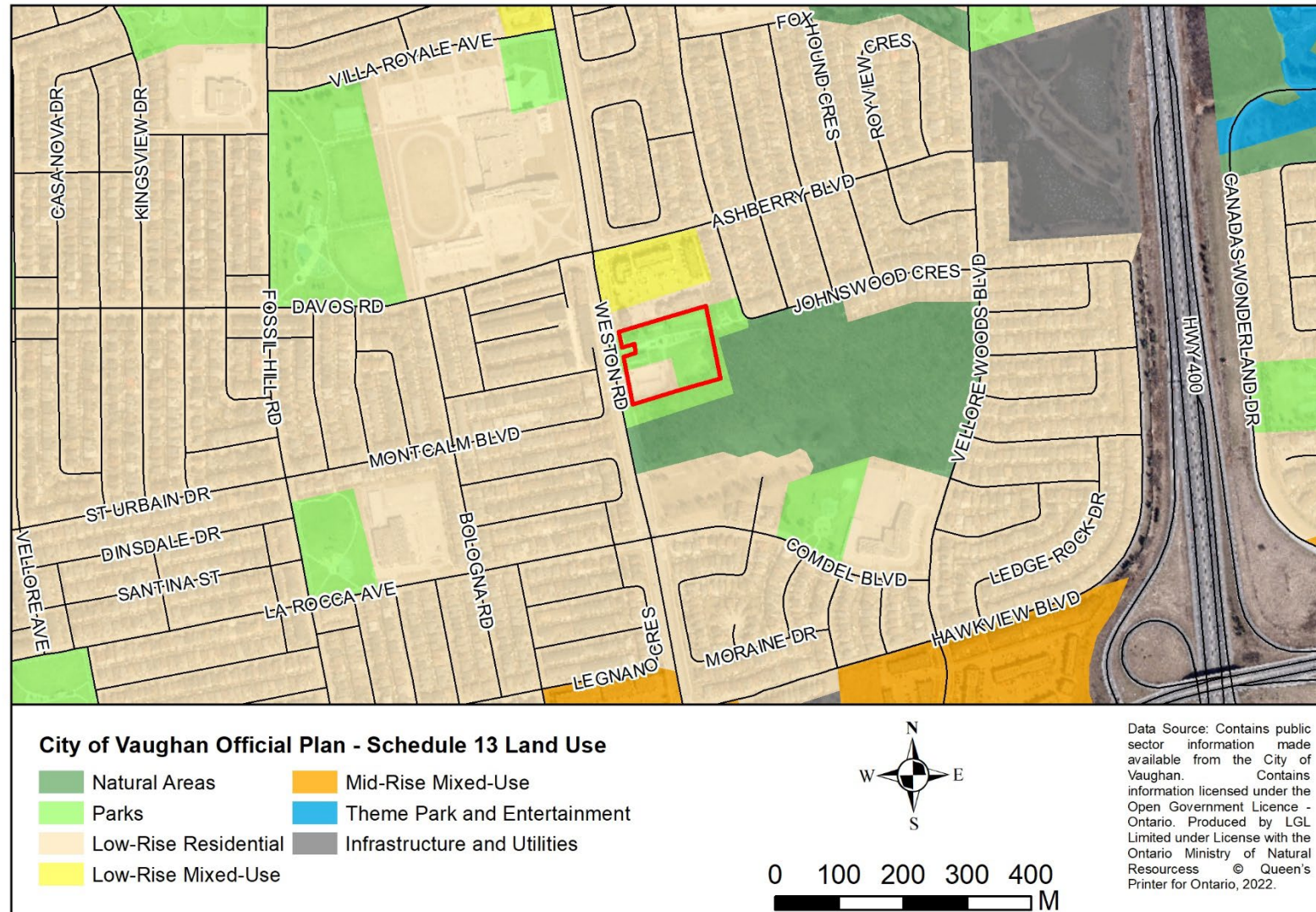


FIGURE 4. VAUGHAN OFFICIAL PLAN SCHEDULE 1 – URBAN STRUCTURE

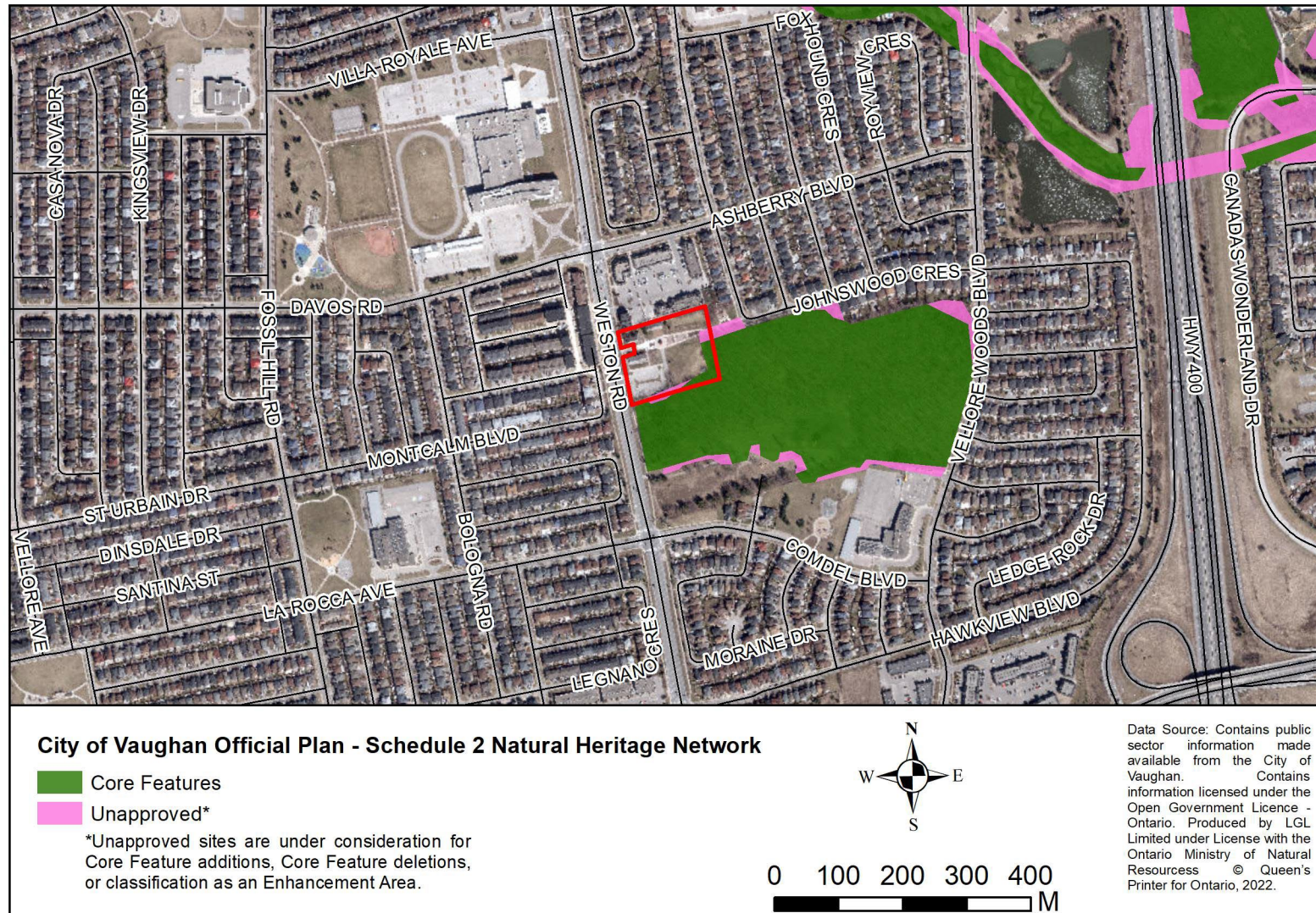


FIGURE 5. VAUGHAN OFFICIAL PLAN SCHEDULE 2 - NATURAL HERITAGE NETWORK (VOP)

2.8 Vaughan OPA 600 and Block 32 West Vellore Woods Community Plan

The property is zoned 'Commercial' (C3) in Vaughan OPA 600. The Vellore Tract Woodlot is zoned 'Open Space' (OS2) and 'Agricultural' (A) in OPA 600. The Block 32 West Vellore Woods Community Plan identifies the property as 'Neighbourhood Park' (NP) and the Vellore Tract Woodlot as 'Tableland Woodlot'. The Vellore Woods Community Plan describes the Vellore Tract Woodlot as follows:

"An approximate 15 ha woodlot identified by the Ministry of Natural Resources as an Area of Natural and Scientific Interest (ANSI) known as the Vellore Tract that contains a mixture of climax upland and lowland forest areas containing two regionally rare plant species. Up until 1993 this woodlot had been used for the past 30 to 40 years as a research/ education facility by the University of Toronto and was managed by the Ministry of Natural Resources. The woodlot contains mature sugar maples and beech trees over 20 metres in height and between 70 to 90 years of age. The MESP notes that these trees are in excellent condition and have been well managed. Two Regionally rare plant species are present in the woodlot. This woodlot was identified in OPA 400 as a "Tableland Woodlot" to be protected and retained."

3.0 EXISTING CONDITIONS

Existing conditions on and adjacent to the property were identified through review of background information and a site visit conducted on February 15, 2022.

3.1 Physiography and Geology

The study area is located within the bevelled till plain of the Peel Plain physiographic region. The Peel Plain is characterized by level to gently rolling topography, with a consistent, gradual slope toward Lake Ontario. The underlying bedrock of the Peel Plain is Ordovician in age, comprising grey and black shale with some interbedded limestone of the Georgian Bay Formation. Surficial geology comprises glaciolacustrine deposits of young tills, including clayey silt till and sandy silt till. The property is flat.

3.2 Fish and Fish Habitat

No fish or fish habitat is located on or within 120 m adjacent to the property.

3.3 Vegetation and Vegetation Communities

The geographical extent, composition, structure and function of vegetation communities were identified through air photo interpretation and a field investigation. Air photos were interpreted to determine the limits and characteristics of vegetation communities within the property and adjacent woodlot followed up with a field investigation conducted on February 15, 2022. The investigation was carried out to ground truth the limit of the edge of the adjacent woodlot, and to conduct botanical surveys, to the extent possible.

3.3.1 Vegetation Communities

The vegetation communities were classified according to the Ecological Land Classification for Southern Ontario: First Approximation and Its Application (ELC, Lee et al., 1998). A plant list and a description of the general structure of vegetation communities were obtained during field investigations. Plant species status was reviewed for Ontario (Oldham 2009), for York Region (Varga *et al.* 2000), and the Toronto and Region Conservation Authority or TRCA (2020). Vascular plant nomenclature follows Newmaster et al. (1998) with a few exceptions that have been updated to Newmaster et al. (2005).

Manicured (M) areas dominate the property. Manicured is not identified by the ELC. This area includes mown lawns and planted trees. These trees included silver and sugar maples (*Acer saccharinum* and *A. saccharum* ssp. *saccharum*), honey locust (*Gleditsia triacanthos*), Kentucky coffee-tree (*Gymnocladus dioica*) and European beech (*Fagus sylvatica*). Ground flora could not be identified as the area was snow covered. Given the extent of planted trees and manicured lawn this area is considered to be of low quality.

One ELC community type, a Dry-Fresh Sugar Maple Deciduous Forest (FOD5) was identified on adjacent lands. This community was reviewed along its northwest corner in detail up to approximately 6 m from the property edge. A pedestrian survey approximately 40 m to 50 m beyond this edge was also conducted. Species included sugar maple, basswood (*Tilia americana*), black walnut (*Juglans nigra*), American beech (*Fagus grandifolia*) and swamp white oak (*Quercus bicolor*). Given the time of year of the survey, the ground was covered with snow and only a few species were observed within the ground flora including Canada goldenrod (*Solidago canadensis*), smooth brome (*Bromus inermis*), and garlic mustard (*Alliaria petiolata*).

Further to the east the vegetation community changes with a higher presence of silver maple and American beech, and there appears to be intermittent low points or slough-like depressions where water likely collects for prolonged periods in the spring, which would attribute to the increased presence of mesic species. This habitat transition was observed approximately 80 m to 100 m east of the western forest edge.

Overall, the naturalized forested area supports a higher proportion of native plant species and is of moderate to high quality. The western limit of the deciduous forest and manicured areas are delineated in **Figure 6** and further described in **Table 1**.

3.3.2 Flora

QPlant identification was limited because the survey was undertaken in the winter with snow covered conditions. A total of 39 plant species were recorded within the property and the adjacent forest community, with two plants only identified to genus. Of the remaining 37 species identified, 21 (57%) species are native to Ontario and 16 (43%) plant species are considered introduced and non-native to Ontario. A complete species list is presented in **Appendix B**. Definitions of the acronyms and species ranks used in **Appendix B** are described in **Appendix C**.

3.3.3 Species at Risk

Two plant species that are regulated under the ESA (2007) or the Canada Species at Risk Act (SARA) were encountered during LGL's botanical investigation, including Kentucky coffee-tree (regulated as 'Threatened' under the Ontario ESA and Canada SARA) and butternut (*Juglans cinerea*) (regulated as 'Endangered' by both the Ontario ESA and Canada SARA).

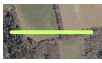
A review of the MNR Natural Heritage Information Centre (2020) indicates an elemental occurrence of black ash (*Fraxinus nigra*) (listed as 'Threatened' under SARA) within a 1 km square occupied by the property. This species at risk was not identified within the immediate adjacent forested area that was surveyed.



LEGEND



Subject Property



Vegetation Community Boundary

FOD5

Dry-Fresh Sugar Maple Deciduous Forest Ecosite

H

Hedgerow

M

Manicured

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**9541 Weston Road
EXISTING
CONDITIONS**



Project: TA9196

Figure: 6

Date: April 6, 2022

Prepared By: AM

Scale: 1:800

Verified By: NF

TABLE 1. SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Comments
Natural/Semi-Natural			
FOD	Deciduous Forest		
FOD5	Dry-Fresh Sugar Maple Deciduous Forest	<p>Canopy: includes sugar maple (<i>Acer saccharum</i> ssp. <i>saccharum</i>), basswood (<i>Tilia americana</i>), black walnut (<i>Juglans nigra</i>), and ironwood (<i>Ostrya virginiana</i>).</p> <p>Understorey: includes sugar maple, tartarian honeysuckle (<i>Lonicera tatarica</i>), common buckthorn (<i>Rhamnus cathartica</i>) and ash (<i>Fraxinus</i> sp.).</p> <p>Ground Cover: includes Canada goldenrod (<i>Solidago canadensis</i>) and garlic mustard (<i>Alliaria petiolata</i>).</p>	<ul style="list-style-type: none"> • Tree cover > 60 % (FO). • Deciduous trees > 75 % of canopy cover (D). • Sugar maple with associates (5).
Other*			
Manicured (M)	Manicured	<p>Areas where large expanses of grass/shrubs/ trees are maintained and/or planted.</p> <p>Planted trees/shrubs: sugar maple, silver maple (<i>Acer saccharinum</i>), basswood, small leaf linden (<i>Tilia cordata</i>), white spruce (<i>Picea glauca</i>), Kentucky coffee-tree (<i>Gymnocladus dioica</i>), honey locust (<i>Gleditsia triacanthos</i>), Norway maple (<i>Acer platanoides</i>) and maiden-hair tree (<i>Ginkgo biloba</i>).</p>	

* Not identified by ELC.

Regionally Rare Plant Species

Four regionally rare plant species were documented during field investigations. White spruce (*Picea glauca*) and butternut are both TRCA species of concern ranked as L3 (TRCA, 2020). Within York Region black walnut (*Juglans nigra*) and Virginia stickweed (*Hackelia virginiana*) are identified as rare (Varga *et al.* 2000). A description of provincial species ranks is provided in **Appendix C**.

3.4 Wildlife and Wildlife Habitat

Field investigations were conducted with the purpose of documenting wildlife and wildlife habitat and to characterize the nature, extent, and significance of wildlife usage within the study area. Field investigations were conducted on February 15, 2022

Secondary source data from the MNR (NHIC/LIO), Toronto and Region Conservation Authority and Regional Municipality of York – open data, was reviewed to screen for wildlife, wildlife habitat and records of species at risk found within the study area.

3.4.1 Survey Results

Wildlife habitat within the study area was composed of a highly disturbed setting, limited mainly to an urbanized environment with manicured grass and scattered ornamental trees. The manicured grass community found within the study area was found to contain scattered trees and is expected to provide limited function as habitat for anthropogenic-tolerant wildlife species. No aquatic habitat types were identified within the lands examined. Based on the habitat types present, species which occupy woodland edges and anthropogenic communities are expected to be occupy the property. Adjacent to the study area (east and south), a deciduous forest community was present. Unevaluated wetlands were identified within the central portion of this forest community, according to the Ministry of Natural Resources and Forestry (LIO) layers.

Given a general lack of natural heritage features and the highly disturbed nature of the lands examined, specialized wildlife habitats were not identified within the study area. A screening of potential Significant Wildlife Habitat is discussed in **Section 3.4.3**.

3.4.2 Species at Risk

Endangered and threatened species are identified by the MNRF using procedures established by the Committee on the Status of Species at Risk in Ontario (COSSARO). Species designated as 'Endangered' or 'Threatened' and their habitats are protected under the *Endangered Species Act*, 2007. In order to address the most current species at risk (SAR) requirements, LGL completed a SAR habitat screening, whereby available data for the area was screened for SAR occurrences.

The MNRF 'Make a Map' (MNRF 2022) online utility has identified a single species at risk as previously recorded within the vicinity of the study area. In addition, based on a review of available habitats identified during LGL's field surveys (conducted February 2022) four species at risk bats, Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), Eastern Small-Footed Bat (*Myotis leibii*), and Tri-coloured Bat (*Perimyotis subflavus*) have the potential to be present within the vicinity of the study area.

Each of the five species identified above, their respective legal status, biological requirements, habitat suitability of the study area, survey requirement and likelihood of presence within the study area are discussed below.

Midland Painted Turtle

As noted above, MNRF 'Make a Map' (MNRF 2022) online utility has a record of Midland Painted Turtle (*Chrysemys picta marginata*) near the study area. Midland Painted Turtle is listed as Special Concern (Schedule 1) under the federal Species at

Risk Act (SARA); however, this species has no status under the Ontario ESA. Midland Painted Turtle are typically described as residents of aquatic habitats, such as ponds, marshes, lakes and slow-moving creeks. The species is often observed basking on logs, rocks and other features. Field investigations conducted by LGL (February 2022) noted that no habitats which would be considered suitable to support this species was identified within the study area. Additionally, the fragmented nature of the study area, because of extensive anthropogenic development/roads, also limit the suitability of the habitats found within the study area. No targeted survey or permitting requirement is anticipated to address potential impacts to this species.

Bats

There are currently four bat species regulated as 'Endangered' under the Ontario ESA, including: eastern small-footed myotis (*Myotis leibii*); little brown myotis (*Myotis lucifugus*); northern myotis (*Myotis septentrionalis*); and, tri-colored bat (*Perimyotis subflavus*). The ESA affords protection for both individuals of these species (subsection 9(1)) and their habitat (subsection 10(1)). Given that species-specific habitat regulations have not yet been developed for SAR bats, habitat is protected according to the general definition provided in the ESA. Specifically, according to section 2(1), the Act protects "an area, on which the species depends, directly or indirectly, to carry on its life processes, including processes such as reproduction, rearing, hibernation, migration or feeding." A general description of the habitat requirements of each of the four bat species is provided below.

Little brown myotis and northern myotis will use cavities in the trees or exfoliating bark, while tri-coloured bat roosts in clumps of leaves in the foliage. Little brown myotis will frequently use buildings and the other three endangered bat species will use buildings, but far less frequently. Eastern small-footed myotis is a saxicolous (rock-loving) species and will frequently roost in rock piles, talus, or cracks and crevices in rock outcrops. Woodland communities found adjacent to the study area may support habitat which is suitable to support bat species; however, within the study area no habitat which could support these species was identified.

3.4.3 Significant Wildlife Habitat, Ecoregion 6E

Significant Wildlife Habitat (SWH) has been identified as a natural heritage area for the purposes of Section 2.1 of the PPS. The PPS 2020 defines wildlife habitat as: "Areas where plants, animals, and other organisms live, and find adequate amounts of food, water, shelter, and space needed to sustain their populations. Specific wildlife habitats of concern may include areas where species concentrate at a vulnerable point in their annual or life cycle; and areas which are important to migratory or non-migratory species."

Wildlife habitat is considered significant by the province where it is:

“Ecologically important in terms of features, functions, representation, or amount, and contributing to the quality and diversity of an identifiable geographic area or Natural Heritage System. Criteria for determining significance may be recommended by the Province, but municipal approaches that achieve the same objective may also be used.”

SWH Criteria Schedules for Ecoregion 6E (MNR 2015) was referenced to identify SWH. Data for ELC and wildlife as presented was compiled and assessed according to the criteria outlined in MNR's Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNR 2015). A summary of SWH screening criteria and analysis, based on natural heritage features found within the study area is presented in **Appendix D**. The geographic location of the study area, lack of natural heritage features, and highly urbanized nature of lands examined suggest that no candidate SWH is present. As a result, no targeted surveys to assess SWH criteria are anticipated to be required.

4.0 DESIGNATED NATURAL AREAS

Designated natural areas include areas that have been identified for protection by the Ontario MNRF, TRCA, the Region of York, and the City of Vaughan.

4.1 Provincially Significant Wetlands (PSWs)

There are no Provincially Significant Wetlands (PSWs) or unevaluated wetlands located on or within 120 m of the property.

4.2 Areas of Natural and Scientific Interest (ANSIs)

While the Block 32 West Vellore Woods Community Plan identifies the Vellore Tract Woodlot as an Area of Natural and Scientific Interest (ANSIs); no information to support this designation was available.

4.3 Environmentally Significant Areas (ESAs)

There are no Environmentally Significant Areas (ESAs) located on within 120 m of the property.

4.4 Ontario Regulation 166/06: Toronto and Region Conservation Authority: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses

Toronto and Region Conservation Authority (TRCA) administers *Ontario Regulation 166/06* under Section 28 of the *Conservation Authorities Act* known as Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation. *Ontario Regulation 166/06* regulates work taking place within valley and stream corridors, wetlands, and associated areas of interference. Consequently, any works undertaken within the regulation limit will require a permit from the TRCA. There are no regulated areas on or within 120 m of the property.





5.0 PROPOSED DEVELOPMENT

The fire station includes an administrative building, attached multi-vehicle garage, driveways, parking and landscaping. The fire station will be connected to municipal services. The proposed development is presented in **Figure 7**.

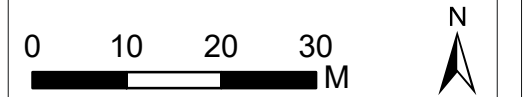
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LEGEND

-  Subject Property
-  Construction Limits
-  Proposed Site Plan
-  Vegetation Community Boundary
- FOD5** Dry-Fresh Sugar Maple Deciduous Forest Ecosite
- H** Hedgerow
- M** Manicured

Data Source: LGL Limited Field Survey, contains public sector information made available under The Regional Municipality of York Open Data Licence. Contains information licensed under the Open Government Licence - Ontario. Produced by LGL Limited under License with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2022.



9541 Weston Road PROPOSED DESIGN



Project: TA9196	Figure: 7
Date: April 6, 2022	Prepared By: AM
Scale: 1:800	Verified By: GK

6.0 IMPACT ASSESSMENT AND MITIGATION

6.1 Potential Impacts to Soils

Grading and excavation will be required on the property to construct buildings, parking lots, driveways and walkways. These activities will disturb soils which may be transported beyond the work zone, resulting in impacts to vegetation located adjacent to the property.

An Erosion and Sediment Control (ESC) Plan shall be developed and implemented to minimize the risk of sedimentation during all phases of the project. Erosion and sediment control measures should be maintained, monitored, and repaired until all disturbed ground has been permanently stabilized. Erosion and sediment control measures should be implemented in accordance with OPSS 805 – Temporary Erosion and Sediment Control Measures and the Erosion and Sediment Control Guide for Urban Construction (TRCA 2019). As a minimum, silt fence shall be installed around the perimeter of the work area to prevent the migration of sediments off site. The incorporation of Low Impact Design (LID) to manage stormwater runoff and protect water quality during and post-construction should be implemented.

6.2 Fish and Fish Habitat

There is no fish or fish habitat located on or adjacent to the property; therefore, no impacts to fish or fish habitat will occur.

6.3 Vegetation and Vegetation Communities

6.3.1 Woodlot Impacts and Mitigation

As previously noted, a Dry-Fresh Sugar Maple Deciduous Forest (FOD5) was identified on adjacent lands. No direct removal of any part of the forest is expected due to the proposed redevelopment. However, the forest dripline, which was staked on December 15, 2021 by City of Vaughan and LGL staff, extends over onto the property along the eastern and south-eastern property boundaries as presented in **Figure 6**. The forest community is identified as a Core Feature on Schedule 2, Natural Heritage Network in the City of Vaughan Official Plan (December 2020). As such, it requires a 10 m vegetation protection zone from development is prescribed by the City of Vaughan. Natural heritage attributes and functions of this forest feature are important as this community is of moderate to high sensitivity, covers an area of approximately 9.5 ha, likely supports a range of native plant species including species at risk and regionally rare species, and likely provides habitat for a range of wildlife, within an otherwise urban area.

With the proposed redevelopment, a 10 m setback can be accommodated along the northeast corner of the woodlot but is not possible along the northern boundary of the

narrower portion of forest that extends out to Weston Road, adjacent to the existing parking lot. Within this forest area the habitat was observed to be in a somewhat disturbed state with gaps in the canopy, localized dead fall and snags observed as occasional to abundant, some planted amenity trees were observed along the edge, dumped garbage was observed, and there appears to be an increased presence of invasive species with shrubs that included Tartarian honeysuckle (*Lonicera tatarica*) and common buckthorn (*Rhamnus cathartica*), and ground flora that included Canada goldenrod (*Solidago canadensis*), smooth brome (*Bromus inermis*) and garlic mustard (*Alliaria petiolata*). This is different from the condition of the larger portion of forest habitat further to the east which was typically observed to be in good condition with less invasive shrub species, what appeared to also be less invasive ground flora, and less overall disturbances. Thus, a reduced setback of 6 m along the northern forest edge that is adjacent to the existing paved parking lot within the property, is not expected to cause additional negative impacts. To provide protection and compensation given the reduced setback of 6 m, supplemental planting of the forest edge by planting within a portion of the vegetation protection zone within the property, is recommended.

Several Kentucky coffee-trees were identified as planted amenity trees within the manicured areas on the subject property. The locations of these trees are presented in the Arborist Report (LGL 2022) provided under separate cover. Kentucky coffee-tree is regulated as 'Threatened' under the Ontario ESA. Management Biologists with the Ministry of the Environment, Conservation and Parks (MECP) have advised that streetscape Kentucky coffee-trees are likely cultivars and, as such, do not require Ontario ESA authorization.

A total of four butternut trees were identified within the adjacent deciduous forest. Two of these are located along the forest edge of which one is dead, another butternut is located approximately 11.5 m from the property boundary and another is approximately 65 m from the property boundary. Butternut is regulated as 'Endangered' under the Ontario ESA. Based on the proposed development, no removal of these four butternut trees is anticipated. However, work will occur within the 50 m habitat protection zone of two of the live butternut trees. An in-season Butternut Health Assessment (BHA) conducted during leaf-on, typically between late May and August 31, should be carried out well prior to any proposed construction. The BHA will be conducted for any butternut trees within 50 m of the proposed limit of disturbance. This assessment should be conducted by an MNRF designated Butternut Health Assessor. Once the BHA has been undertaken it will be submitted to the MECP for a 30 day review period, with subsequent work which may include a Notice to Impact Butternuts to be completed by the proponent, and any necessary steps for protection, mitigation or permitting under the Ontario ESA, as required.

Where butternut trees are identified to be retained, fencing will be needed to delineate where encroachment must not occur. Any works undertaken associated with the proposed redevelopment must be undertaken in accordance with mitigation or overall benefit requirements under the ESA, to be determined following an in-season BHA.

Regionally Rare Plant Species

Four regionally rare plant species documented included white spruce and butternut which are both TRCA species of concern ranked as L3 (TRCA, 2020), and black walnut and Virginia stickweed which are identified as rare in York Region (Varga *et al.* 2000). White spruce was identified only as planted within the manicured area of the property. Butternut, black walnut and Virginia stickweed were all identified within the Dry-Fresh Sugar Maple Deciduous Forest (FOD5) on the adjacent property where no direct impacts (i.e., removals) are expected. Butternut protection and efforts under the ESA associated with any retainable or archiveable butternut trees are outline above.

6.4 Wildlife and Wildlife Habitat

Impacts based on the proposed works will occur within habitat types that consist of highly disturbed, low quality wildlife habitat. Impacts to specialized wildlife habitats or other significant natural heritage features are not expected. More naturalized wildlife habitats associated with deciduous forest community found east/south of the study area will not be impacted. Displacement of species at risk habitat is not anticipated. The proposed activities at this site should occur outside of the breeding bird window to minimize disturbance to birds and other wildlife species utilizing habitats within the study area.

6.4.1 Potential Impacts to Migratory Birds

Bird species listed under the *Migratory Birds Convention Act* (MBCA) are expected to nest within the study area. The MBCA prohibits the killing, capturing, injuring, taking or disturbing of migratory birds (including eggs) or the damaging, destroying, removing or disturbing of nests. Mitigation efforts to protect migratory bird species protected under the MBCA are outlined below in **Section 7.3**.

6.4.2 Displacement of Rare, Threatened or Endangered Wildlife or Significant Wildlife Habitat

Background data indicate that five species at risk have been previously identified/have the potential to be present within the vicinity of the study area. However, no species at risk or habitat considered suitable to support them was identified during field investigations. The likelihood of the project having a negative effect on species at risk is considered extremely low. Because of the unlikelihood of adverse effects on species at risk, no targeted surveys or permitting requirement under the ESA is anticipated.

6.4.3 Potential Impacts to Significant Wildlife Habitat

No significant wildlife habitat(s) were identified within the study area during field investigations or a review of secondary data sources.

6.5 Designated Natural Areas

The Vellore Tract Woodlot is located adjacent to the property. Impacts to this deciduous forest are addressed under Section 6.3, Vegetation and Vegetation Communities.

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7.0 MITIGATION MEASURES

7.1 Fish and Fish Habitat

The Erosion and Sediment Control measures identified in Section 6.1 will ensure that no sediment is allowed to migrate beyond the work area. As a result, no further mitigation measures are recommended to protect fish and fish habitat.

7.2 Vegetation and Vegetation Communities

Sediment and erosion control fencing will be established along the perimeter of the disturbance limits and should be treated as tree protection fencing to delineate a tree protection zone.

The following shall not occur within the tree protection zone:

- Heavy machinery shall not to be operated within the TPZ (including overhead swinging of machine arms);
- Construction materials, equipment, soil, construction waste or debris shall not to be stored within the TPZ or dripline of the trees identified for protection;
- There shall be no movement or parking of vehicles, placement of equipment or pedestrian traffic within the TPZ; and,
- Disposal of any liquids shall not occur within the TPZ.

7.2.1 Forest Edge Management

Plantings within a portion of the vegetation protection zone within the property are recommended to compensate for a decreased setback to 6 m along a portion of the forest edge. The following recommendations should be incorporated into planting plan(s) to be prepared by a qualified landscape architect and installed by a qualified restoration specialist. Edge management/supplemental planting recommendations are in accordance with the TRCA Forest Edge Management Plan Guidelines (TRCA 2004), to the extent possible. This guideline is typically used when tree clearing occurs creating a new forest edge resulting with direct loss of habitat, changes in microclimates, increased susceptibility to windthrow, reduced species richness, etc. However, direct removal of habitat is not expected.

It is recommended that supplemental tree plantings within 3 m to 5 m of the vegetation protection zone closest to the existing forest edge be installed. Plantings should include a high density of shrubs which, over time, can mitigate inadvertent encroachment, minimize establishment of invasive species, increase structural diversity along the forest edge, and increase diversity of both plants and wildlife. Plantings should consist of suitable native and/or non-invasive trees and shrubs with species that are able to

tolerate some shade. A range of suitable species that are native and/or non-invasive is presented in **Table 2** and includes species present in the adjacent forest. Substrates should be conducive to receive plantings. Where there is manicured lawn within the planting area it should be tilled to disrupt competition with grass root mats to promote successful establishment and growth of planted stock. As soon as planting is completed, the area should be seeded with a native seed mix (see **Table 2**).

TABLE 2. RECOMMENDED PLANT SPECIES FOR EDGE MANAGEMENT/COMPENSATION

Scientific Name	Common Name	SRank	GRank
TREE AND SHRUB SPECIES			
<i>Picea glauca</i>	white spruce	S5	G5
<i>Pinus strobus</i>	white pine	S5	G5
<i>Populus tremuloides</i>	trembling aspen	S5	G5
<i>Populus grandidentata</i>	large-tooth aspen	S5	G5
<i>Populus balsamifera</i> ssp. <i>balsamifera</i>	Balsam poplar	S5	G5
<i>Tilia americana</i>	basswood	S5	G5
<i>Acer saccharinum</i>	sugar maple	S5	G5
<i>Quercus rubra</i>	red oak	S5	G5
<i>Amelanchier laevis</i>	smooth serviceberry	S5	G5
<i>Viburnum lentago</i>	nannyberry	S5	G5
<i>Prunus virginiana</i>	choke cherry	S5	G5
<i>Corylus cornuta</i>	beaked hazelnut	S5	G5
<i>Aronia melanocarpa</i>	black chokecherry	S5	G5
<i>Cornus sericea</i>	red-osier dogwood	S5	G5
<i>Cornus alternifolia</i>	alternate-leaved dogwood	S5	G5
<i>Sambucus canadensis</i>	common elderberry	S5	G5
GROUND FLORA			
<i>Elymus virginicus</i>	Virginia wild-rye	S5	G5
<i>Oenothera biennis</i>	common evening-primrose	S5	G5
<i>Rudbeckia hirta</i>	brown-eyed Susan	S5	G5
<i>Poa palustris</i>	fowl bluegrass	S5	G5
<i>Symphyotrichum novae-angliae</i>	New England aster	S5	G5
<i>Symphyotrichum lateriflorum</i>	Calico aster	S5	G5
<i>Symphyotrichum cordifolium</i>	heart-leaved aster	S5	G5
<i>Carex pensylvanica</i>	Pennsylvania sedge	S5	G5?
<i>Solidago nemoralis</i> ssp. <i>nemoralis</i>	gray goldenrod	S5	G5T?

It is recommended that deciduous tree seedling stock be 1 to 2 year old bare-root stock (~30 cm in height) and that coniferous tree stock be 2+1 to 2+2 bare-root stock (2 years grown in a bed + 1 to 2 years transplanted, >25 cm in height). Shrub seedling stock can be bareroot, 1 or 2 years (>18"). Species used will be dependent on availability at the time of planting. Plantings should be placed in an irregular pattern to provide a more naturalized appearance and include groupings of three shrubs of the same species intermittently installed among planted trees. Below are some recommendations for the installation of woody plantings.

- Tree stock should be planted 2.4 m to 3.0 m on centre using a variety of species from the list provided above.
- Shrub stock should be planted 0.5 to 1 m on centre for shrub stock, planted in clusters of three of the same species intermittently among the planted trees and close to the existing forest edge.
- If the planting area is manicured lawn, it should be tilled to disrupt competition with grass root mats to promote successful establishment and growth of planted stock and seeded with a high density of a native seed mix.
- Planting stock should be obtained from a reputable plant supplier.
- Where stock availability is a constraint at the time of planting, alternate species used shall be native to Ontario and non-invasive.
- Planting should be undertaken in the spring or fall when temperatures are lower and there is increased chance of precipitation.
- Watering should occur at the time of installation with additional watering during the first growing season as required when rainfall isn't regular (i.e., ≥ 20 days).
- Native and/or non-invasive plant materials should be listed on planting plans and include species, quantity, stock form (i.e., potted, live stakes, burlapped, whips, etc.), and note details of any native seed mix proposed.
- Stock received should be of good quality acceptable for installation.
- Landscape plan(s) should be prepared by a qualified professional.
- Installation of plantings should be carried out by a knowledgeable, experienced professional.

Over time supplemental plantings will provide increased protection of the existing forest edges within increased buffering, increased canopy cover, and will increase infiltration, provide increased habitat for wildlife, and are expected to improve the ecological function of the woodlot edge.

As per TRCA (July 2004), the following mitigation measures to protect existing tree resources along forest edges includes the following.

- Tree protection fencing should be installed beyond the forest edge dripline prior to construction to delineate the area beyond which no impacts should occur.
- The location of tree protection fencing should be illustrated on plans and typical details included.
- Grading associated with the proposed redevelopment should be designed to meet existing grades a minimum of 3 m away from the tree dripline in order to mitigate suffocation of tree roots.

- Drainage patterns adjacent to the forest should be maintained to avoid a change in soil moisture resulting from the concentration/redirection of flows.
- If during construction pruning of tree roots, etc., is required to mitigate impacts to tree health, such work is to be conducted by a **qualified Arborist**.
- Construction materials, equipment, soil, construction waste or debris, parking of vehicles, etc., shall not be placed or stored within the vegetation protection zone, within the staked dripline or immediately adjacent to trees identified for protection.
- Should any additional, incidental or accidental tree injuries occur during construction, a **qualified Arborist** shall be consulted to determine whether additional mitigation measures should be employed.

These efforts will help to ensure that impacts to the retained forest habitat including the root zone of associated edge trees are minimized and that the condition and character of these trees will not change, either in the short-term or long-term period.

Following site preparation and planting, monitoring and maintenance of newly planted stock for two to three years following planting is important and strongly recommended.

7.3 Wildlife and Wildlife Habitat

Several migratory bird species are anticipated to utilize the habitat adjacent to the property. While migratory insectivorous and non-game birds are protected year-round, migratory game birds are only protected from March 10 to September 1. The study area lands fall within Environment Canada's Nesting Zone C2 (Nesting Period: end of March – end of August). Consequently, to comply with the requirements of the MBCA, it is recommended that disturbance, clearing or disruption of vegetation where birds may be nesting should be completed outside the window of April 1 to August 31 to avoid the breeding bird season for the majority of the bird species protected under the act. In the event that these activities must be undertaken from April 1 to August 31, a nest screening survey will be conducted by a qualified avian biologist. If an active nest is located, a mitigation plan shall be developed and provided to Environment Canada – Ontario Region for review prior to implementation.

8.0 CONCLUSION

The proposed development will be located on a property that is previously disturbed by urban development and is characterized as manicured lawn. There are no natural heritage features or areas located on the property; therefore, there will be no loss of natural heritage features.

The Vellore Tract Woodlot is located adjacent to the property and a minimum setback of 6 m will be implemented between proposed development and the woodlot edge. A restoration plan has been developed to enhance the setback from the woodlot to avoid potential woodlot edge effects.

Silt fence will be installed around the perimeter of the work zone to prevent the migration of sediment off site. This silt fence will serve a dual purpose as tree protection barrier. As a result, the proposed Vaughan Fire Station 7-12 will have no significant impacts on natural heritage features or their ecological functions located on or adjacent to the property.

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APPENDICES

APPENDIX A
NATURAL FEATURE STAKING

APPENDIX B
VASCULAR PLANT LIST

Appendix B. Vascular Plant List

Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	York (Varga)	M	H	FOD5
GINKGOACEAE	GINKGO FAMILY									
* <i>Ginkgo biloba</i>	maiden-hair tree							X		
PINACEAE	PINE FAMILY									
* <i>Larix decidua</i>	European larch	G?	SE2			L+	X			X
<i>Picea glauca</i>	white spruce	G5	S5			L3	X	X		
* <i>Picea pungens</i>	Colorado spruce	G5	SE1			L+		X		
<i>Pinus strobus</i>	eastern white pine	G5	S5			L4	X	X		X
PLATANACEAE	PLANE-TREE FAMILY									
* <i>Platanus X acerifolia</i>	London plane-tree	GU	SE1					X		
ULMACEAE	ELM FAMILY									
<i>Ulmus</i> sp.	elm							X		
<i>Ulmus americana</i>	white elm	G5?	S5			L5	X			X
JUGLANDACEAE	WALNUT FAMILY									
<i>Carya cordiformis</i>	bitternut hickory	G5	S5			L4	X			X
<i>Juglans nigra</i>	black walnut	G5	S4			L5	R			X
<i>Juglans cinerea</i>	butternut	G3G4	S3?	END	END	L3	X			X
FAGACEAE	BEECH FAMILY									
* <i>Fagus sylvatica</i>	European beech							X		
<i>Quercus bicolor</i>	swamp white oak	G5	S4							X
<i>Quercus macrocarpa</i>	bur oak	G5	S5			L4	X			X
<i>Quercus rubra</i>	red oak	G5	S5			L4	X	X		
<i>Fagus grandifolia</i>	American beech	G5	S5			L4	X			X
BETULACEAE	BIRCH FAMILY									
<i>Carpinus caroliniana</i> ssp. <i>virginiana</i>	blue beech	G5T	S5			L4	X			X
<i>Ostrya virginiana</i>	ironwood	G5	S5			L5	X		X	X
TILIACEAE	LINDEN FAMILY									
* <i>Tilia cordata</i>	small leaf linden	G?	SE1			L+		X		
<i>Tilia americana</i>	basswood	G5	S5			L5	X	X	X	X
BRASSICACEAE	MUSTARD FAMILY									
* <i>Alliaria petiolata</i>	garlic mustard	G5	SE5			L+	X			X
ROSACEAE	ROSE FAMILY									
* <i>Pyrus communis</i>	common pear	G5	SE4			L+	X	X		
* <i>Prunus avium</i>	sweet cherry	G?	SE4			L+	X			X
* <i>Malus baccata</i>	Siberian crabapple	G?	SE1			L+		X		
FABACEAE	PEA FAMILY									
<i>Gymnocladus dioica</i>	Kentucky coffee-tree	G5	S2	THR	THR	L+		X		

Appendix B. Vascular Plant List

Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	York (Varga)	M	H	FOD5
<i>Gleditsia triacanthos</i>	honey locust	G5	S2			L+	X	X		
RHAMNACEAE	BUCKTHORN FAMILY									
* <i>Rhamnus cathartica</i>	common buckthorn	G?	SE5			L+	X			X
VITACEAE	GRAPE FAMILY									
<i>Vitis riparia</i>	riverbank grape	G5	S5			L5	X			X
ACERACEAE	MAPLE FAMILY									
<i>Acer negundo</i>	Manitoba maple	G5	S5			L+?	X	X		X
* <i>Acer platanoides</i>	Norway maple	G?	SE5			L+	X	X		X
<i>Acer saccharinum</i>	silver maple	G5	S5			L4	X	X		
<i>Acer saccharum</i> ssp. <i>saccharum</i>	sugar maple	G5T?	S5			L5	X	X	X	X
BORAGINACEAE	BORAGE FAMILY									
<i>Hackelia virginiana</i>	Virginia stickweed	G5	S5			L5	R5			X
OLEACEAE	OLIVE FAMILY									
<i>Fraxinus</i> sp.	ash									X
CAPRIFOLIACEAE	HONEYSUCKLE FAMILY									
* <i>Lonicera tatarica</i>	tartarian honeysuckle	G?	SE5			L+	X			X
ASTERACEAE	ASTER FAMILY									
<i>Solidago canadensis</i>	Canada goldenrod	G5	S5			L5	X			X
* <i>Arctium minus</i> ssp. <i>minus</i>	common burdock	G?T?	SE5			L+	X			X
POACEAE	GRASS FAMILY									
* <i>Bromus inermis</i> ssp. <i>inermis</i>	awnless brome	G4G5T?	SE5			L+	X			X
* <i>Lolium perenne</i>	English rye grass	G?	SE4			L+	X			X

APPENDIX C
SPECIES RANK DEFINITIONS AND ACRONYMS

Appendix C. Species Rank

G-Rank Global Rank

Global ranks are assigned by a consensus of the network of Conservation Data Centres, scientific experts, and the Nature Conservancy to designate a rarity rank based on the range-wide status of a species, subspecies or variety.

The most important factors considered in assigning global ranks are the total number of known, extant sites world-wide, and the degree to which they are potentially or actively threatened with destruction. Other criteria the number of known populations considered to be securely protected, the size of the various populations, and the ability of the taxon to persist at its known sites. The taxonomic distinctness of each taxon has also been considered. Hybrids, introduced species, and taxonomically dubious species, subspecies and varieties have not been included.

- G1 Extremely rare; usually 5 or fewer occurrences in the overall range or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.
- G2 Very rare; usually between 5 and 20 occurrences in the overall range or with many individuals in fewer occurrences; or because of some factor(s) making it vulnerable to extinction.
- G3 Rare to uncommon; usually between 20 and 100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.
- G4 Common; usually more than 100 occurrences; usually not susceptible to immediate threats.
- G5 Very common; demonstrably secure under present conditions.
- GH Historic, no records in the past 20 years.
- GU Status uncertain, often because of low search effort or cryptic nature of the species; more data needed.
- GX Globally extinct. No recent records despite specific searches.
- ? Denotes inexact numeric rank (i.e. G4?).
- G" " A "G" (or "T") followed by a blank space means that the NHIC has not yet obtained the Global Rank from The Nature Conservancy.
- G? Unranked, or, if following a ranking, rank tentatively assigned (e.g. G3?).
- Denotes that the taxonomic status of the species, subspecies, or variety is
- Q questionable.
- T Denotes that the rank applies to a subspecies or variety.

SRANK Provincial Rank

Provincial (or Sub-national) ranks are used by the Ontario Ministry of Natural Resources Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario. By comparing the global and provincial ranks, the status, rarity, and the urgency of conservation needs can be ascertained. The NHIC evaluates provincial ranks on a continual basis and produces updated lists at least annually.

- S1 **Critically Imperiled** in Ontario because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation.

- S2 **Imperiled** in Ontario because of rarity due to very restricted range, very few populations (often 20 or fewer occurrences) steep declines or other factors making it very vulnerable to extirpation.
- S3 **Vulnerable** in Ontario due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
- S4 **Apparently Secure**—Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- S5 **Secure**—Common, widespread, and abundant in Ontario.
- SX **Presumed Extirpated** – Species or community is believed to be extirpated from Ontario.
- SH **Possibly Extirpated** – Species or community occurred historically in Ontario and there is some possibility that it may be rediscovered.
- SNR **Unranked**—Conservation status in Ontario not yet assessed
- SU **Unrankable**—Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
- SNA **Not Applicable** —A conservation status rank is not applicable because the species is not a suitable target for conservation activities.
- S#S# **Range Rank** —A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).

COSEWIC (Committee on the Status of Endangered Wildlife in Canada):		OMNR (Ontario Ministry of Natural Resources):	
END	Endangered	END	Endangered
THR	Threatened	THR	Threatened
SC	Special Concern	SC	Special Concern
Local Status: Durham (Varga <i>et al.</i> 2000)		Legal Status:	
U	Uncommon	SARA	<i>Species at Risk Act</i> – Schedules (1), (2), (3)
R1-R10	Rarity Status (1-10 denotes number of stations at which a locally rare species is found) (Varga <i>et al.</i> 2000)	ESA	<i>Endangered Species Act</i>
Toronto Region Conservation Authority			
L1-L3	Species of Concern (see below)		

RANK	LEVEL OF CONSERVATION CONCERN OF FLORA AND FAUNA IN TRCA REGION (TRCA 2020)
L5	Able to withstand high levels of disturbance; generally secure throughout the jurisdiction, including the urban matrix. May be of very localized concern in highly degraded areas.
L4	Able to withstand some disturbance; generally secure in rural matrix; of concern in urban matrix.
L3	Able to withstand minor disturbance; generally secure in natural matrix; considered to be of regional concern.
L2	Unable to withstand disturbance; some criteria are very limiting factors; generally occur in high-quality natural areas, in natural matrix; probably rare in the TRCA jurisdiction; of concern regionally.
L1	Unable to withstand disturbance; many criteria are limiting factors; generally occur in high-quality natural areas in natural matrix; almost certainly rare in the TRCA jurisdiction; of concern regionally.
LX	Extirpated from our region with remote chance of rediscovery. Presumably highly sensitive.
LH	Hybrid between two native species. Usually not scored unless highly stable and behaves like a species (e.g. <i>Equisetum x nelsonii</i>)
L+	Exotic. Not native to TRCA jurisdiction. Includes hybrids between a native species and an exotic
L+?	Origin uncertain or disputed, i.e. may or may not be native.

APPENDIX D

SIGNIFICANT WILDLIFE HABITAT ASSESSMENT

SCHEDULE 3:

ECOREGION 6E CRITERIA

SCHEDULE 3: ECOREGION 6E CRITERIA

This Schedule is designed to provide the recommended criteria for identifying Candidate Significant Wildlife Habitat within ecoregion 6E. Tables 1.1 through 1.4 within the Schedules provide guidance for Candidate SWH designation for the four categories of SWH outlined in the Significant Wildlife Habitat Technical Guide and its Appendices cxlviii, cxlix for ecoregion 6E. Table 1.5 contains and provides descriptions for exceptions to Eco-regional candidate SWH which will be identified at an ecodistrict scale. Exceptions occur when criteria for a specific habitat is different within an ecodistrict compared to the remainder of an ecoregion or if a habitat only occurs within a restricted area of the ecoregion.

The Schedules, including description of wildlife habitat, wildlife species, and the criteria provided for determining Candidate SWH, are based on science and expert knowledge. The information within these Schedules will require periodic updating to keep pace with changes to wildlife species status in Species at Risk schedules, or as new scientific information pertaining to wildlife habitats becomes available. Therefore, MNR will occasionally need to review and update these schedules and provide addenda. A reference document for all SWH found after the schedules, includes citations for all ecoregional schedules. Each citation used to assist with the criteria for SWH will be indicated by a roman numeric symbol. Where no reference exists, MNR expert opinion is used for determination of criteria, this symbol “Í” represents when MNR expert opinion is utilized.

3.1 Seasonal Concentration Areas

Seasonal Concentration Areas are areas where wildlife species occur in aggregations at certain times of the year, on an annual or predictable basis. Such areas are sometimes highly concentrated with members of a given species, or several species, within relatively small areas. In spring and autumn, migratory wildlife species will concentrate where they can rest and feed. Other wildlife species require habitats where they can survive winter. Examples of Seasonal Concentration Areas include deer wintering areas, breeding bird colonies, and hibernation sites for reptiles or bats (OMNR 2000a), amphibians, and some mammals. Table 1.1 outlines which Seasonal Concentration Areas constitute Candidate SWH.

Table 1.1 Seasonal Concentration Areas for Wildlife Species.

Wildlife Habitat	Wildlife Species	CANDIDATE SWH*		CONFIRMED SWH	LGL Discussion/ Analysis	SWH
		ELC Ecosite Codes	Habitat Characteristics and Information Sources	Defining Criteria		
Waterfowl Stopover and Staging Areas (Terrestrial) Rationale: Habitat important to migrating waterfowl.	American Black Duck Northern Pintail Gadwall Blue-winged Teal American Green-winged Teal American Wigeon Northern Shoveler Tundra Swan	CUM1 CUT1 Plus evidence of annual spring flooding from melt water or run-off within these Ecosites. Fields with waste grain in the Long Point, Rondeau, Lk. St. Clair, Grand Bend and Pt. Pelee areas may be important to Tundra Swans.	Fields with sheet water or fields utilized by Tundra Swans during Spring (March to May). <ul style="list-style-type: none">Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl.Anecdotal information from the landowner, adjacent landowners, or local naturalist clubs may be good information in determining occurrence.ESA Reports prepared by Conservation AuthoritiesSites documented through waterfowl planning processes (e.g., EHJV implementation plan)local naturalist clubsDucks Unlimited CanadaLong Point Bird Observatory	Studies carried out and verified presence of an annual concentration of any listed species: <ul style="list-style-type: none">Aggregation of 100Í or more of any one of the listed species is required.Annual use of habitat is documented from information sources or field studies (annual can be based on study or determined anecdotally).Agricultural fields with waste grains are commonly used by waterfowl; these are not considered SWH, except when used by Tundra Swans during the spring migration and staging period.SWHDSS cxlix Index #7 provides development effects and mitigation measures.	ELC Ecosites identified do not meet criteria. No sheet water was observed on the field, and none was noted in incidental observations. None of the wildlife species identified were observed on the property. No aggregations of waterfowl in terrestrial habitat were noted at any time nor were criteria threshold numbers over 100 or more individuals of the species listed documented on the terrestrial habitat.	No candidate SWH identified.
Waterfowl Stopover and Staging Areas (Aquatic) Rationale:	American Green-winged Teal American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Blue-winged Teal	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD3	<ul style="list-style-type: none">Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as SWH, but a reservoir managed as large wetland or pond/lake does.	Studies carried out and verified presence of: <ul style="list-style-type: none">Habitat used annually during spring, fall, or both seasons of any listed species.Annual use of habitat is documented from information	ELC Ecosites identified do not meet criteria. No suitable vegetation features were found within the study area and no notable aggregations of species as per the criteria were observed within the study area.	No candidate SWH identified.

Wildlife Habitat	Wildlife Species	CANDIDATE SWH*		CONFIRMED SWH	LGL Discussion/ Analysis	SWH
		ELC Ecosite Codes	Habitat Characteristics and Information Sources	Defining Criteria		
Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the ecodistrict.	Wood Duck Hooded Merganser Common Merganser Red-breasted Merganser Lesser Scaup Greater Scaup Ring-necked duck Common Goldeneye Bufflehead Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Canvasback Redhead Ruddy Duck Brant White-winged Scoter Black Scoter Tundra Swans		<ul style="list-style-type: none"> These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water). Canadian Wildlife Service staff know the larger, most significant sites. Check website: http://wildspace.ec.gc.ca Naturalist clubs often are aware of staging/stopover areas. OMNR Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging. Sites documented through waterfowl planning processes (e.g., EHJV implementation plan) Ducks Unlimited Canada 	<p>sources or field studies (annual can be based on study or determined anecdotally).</p> <ul style="list-style-type: none"> Aggregations of 100¹ or more of any one of listed species and 2-3 birds/ha for 7-20 days¹. SWHDSS cxlix Index #7 provides development effects and mitigation measures. 		
Colonial Nesting Bird Habitat Rationale: Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow populations in Ontario are declining cxcix.	Bank Swallow Cliff Swallow	Eroding banks, sandy hills, pits, steep slopes, rock faces or piles within these ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	<ul style="list-style-type: none"> Any exposed soil banks, undisturbed or naturally eroding for 10 years or more. Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, or soil or aggregate stockpiles. Does not include an active Mineral Aggregate Operation. ESA Reports prepared by Conservation Authorities Ontario Breeding Bird Atlas local Naturalist clubs 	<p>Studies confirming:</p> <ul style="list-style-type: none"> Presence of 1 or more nesting sites with 8 or more Cliff Swallow pairs or 100 ¹ Bank Swallow pairs during the spring breeding season. Anecdotal information from the landowner or adjacent landowners may be good information for determining occurrence. SWHDSS cxlix Index #4 provides development effects and mitigation measures. 	<ul style="list-style-type: none"> No exposed soil along the banks of any watercourse feature within the study area. Suitable habitat does not exist within the study area and no species listed were confirmed during site surveys. 	No candidate SWH identified.
Shorebird Migratory Stopover Area Rationale: High-quality shorebird	Wilson's Snipe Greater Yellowlegs Lesser Yellowlegs Marbled Godwit Hudsonian Godwit Black-bellied Plover Am. Golden Plover	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	<ul style="list-style-type: none"> Shorelines of lakes, rivers and wetlands, including beach areas, bars, and seasonally flooded shoreline, usually muddy and unvegetated. Great Lakes coastal shorelines are extremely important for migratory 	<p>Studies confirming:</p> <ul style="list-style-type: none"> Presence of 3 or more of listed species and > 1000 Shorebird Use Days¹ during spring or fall migration period (Shorebird Use Days are the accumulated number of shorebirds counted per day over 	<ul style="list-style-type: none"> No un-vegetated or muddy shoreline within the study area. None of the species listed were confirmed within the study area. 	No candidate SWH identified.

Wildlife Habitat	Wildlife Species	CANDIDATE SWH*		CONFIRMED SWH	LGL Discussion/ Analysis	SWH
		ELC Ecosite Codes	Habitat Characteristics and Information Sources	Defining Criteria		
stopover habitat is extremely rare and typically has a long history of use.	Semipalmated Plover Solitary Sandpiper Spotted Sandpiper Pectoral Sandpiper White-rumped Sandpiper Baird's Sandpiper Western Sandpiper Buff-breasted Sandpiper Least Sandpiper Purple Sandpiper Semipalmated Sandpiper Long-billed Dowitcher Short-billed Dowitcher Wilson's Phalarope Red Phalarope Red-necked Phalarope Whimbrel Ruddy Turnstone Killdeer Red Knot Sanderling Dunlin		shorebirds from May to mid-June and July to October. <ul style="list-style-type: none"> Western Hemisphere Shorebird Reserve Network. Canadian Wildlife Service (CWS) Ont. Shorebird Survey Bird Studies Canada local birders and naturalist clubs 	the course of the fall or spring migration period). <ul style="list-style-type: none"> Whimbrel stop briefly (<24hrs) during spring migration; any site with >100 Whimbrel¹ used for 3 years or more would be considered significant. SWHDSS cxlix Index #8 provides development effects and mitigation measures. 		
Songbird Migratory Stopover Areas Rationale: Sites with a high diversity of species as well as high numbers are most significant.	All migratory songbirds. Canadian Wildlife Service Ontario website: http://www.on.ec.gc.ca/wildlife_e.html	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	<ul style="list-style-type: none"> Woodlots located within 5km of Lake Erie/Lake Ontario. Woodlots directly on the shore of Lake Erie/Lake Ontario that are associated with peninsula or are adjacent to islands are potentially important migratory habitats. cxlviii Bird Studies Canada Ontario Nature Ontario Important Bird Areas (IBA) Program local birders and naturalist club 	<ul style="list-style-type: none"> Woodlots need to be >5 ha¹ in size and within 5 km iv, v, vi, vii, viii, ix, x, xi, xii, xiii, xiv, xv of Lake Erie. Studies confirm: Use of the woodlot by 35¹ migratory bird species. This number of migrant bird species in a woodlot would be considered above average. Studies should be completed during spring (Apr./May) and fall (Aug/Oct) migration, using standardized assessment techniques; observation records and/or mist netting (permits required) are good methods to determine use of the area. SWHDSS cxlix Index #9 provides development effects and mitigation measures. 	<ul style="list-style-type: none"> ELC Ecosites identified do not meet criteria. Forest communities within the study area are not within 5 km of Lake Erie/Lake Ontario. 	No candidate SWH identified.
Raptor Wintering Area Rationale:	Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel	Combination of ELC Community Series; need to have present one Community	The habitat provides a combination of fields and woodlands that provide roosting, foraging, and resting habitats for wintering raptors.	<ul style="list-style-type: none"> Raptor Wintering sites need to be > 20ha cxlvii, cxlix with a combination of forest and upland xvi, xvii, xviii, xix, xx, xxi, 	<ul style="list-style-type: none"> ELC Ecosites identified do not meet criteria. Natural vegetation communities do not meet the size criteria. 	No candidate SWH identified.

Wildlife Habitat	Wildlife Species	CANDIDATE SWH*		CONFIRMED SWH	LGL Discussion/ Analysis	SWH
		ELC Ecosite Codes	Habitat Characteristics and Information Sources	Defining Criteria		
Sites used by multiple species, a high number of individuals, and used annually are most significant.	Snowy Owl <u>Special Concern</u> Short-eared Owl Bald Eagle	Series from each landclass: Forest FOC FOD FOM <u>Upland</u> CUM CUT CUS CUW	<ul style="list-style-type: none"> OMNR ecologist or biologist may be aware of locations of wintering raptors. In addition, these staff may know local naturalists that may be aware of the locations of raptor wintering habitats. Bird Studies Canada ESA reports and other studies prepared by Conservation Authorities 	<p>Studies confirm the use of these habitats by:</p> <ul style="list-style-type: none"> 1 or more Short-eared Owls or; 2 or more of listed spp and 10 or more individuals^Í. To be significant a site must be used annually for a minimum of 20 days by the above number of birds^Í. SWHDSS cxlix Index #10 provides development effects and mitigation measures. 	<ul style="list-style-type: none"> Study area surrounded by residential properties, and major thorough fares. 	
Bat Hibernacula Rationale: Bat hibernacula are extremely rare in all Ontario landscapes.	Big Brown Bat Tri-coloured Bat	Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 Maternal Colonies are not found in caves and mines in Ontario xxii. Maternal colonies can be found in tree cavities, vegetation and often buildings xxii, xxv, xxvi, xxvii, xxxi (buildings are not to be considered SWH)	<ul style="list-style-type: none"> Hibernacula may be found in caves, mine shafts underground Karsts. Active mine sites should not be considered as SWH The locations and site characteristics of bat hibernacula are relatively poorly known. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> OMNR for possible locations and contact information for local experts Natural Heritage Information Centre (NHIC) Bat Hibernaculum Ministry of Northern Development and Mines for location of (active or abandoned) mine shafts. clubs that explore caves (e.g., Sierra Club) University Biology Departments with bat experts 	<ul style="list-style-type: none"> All sites with confirmed hibernating bats are SWH[Ⓔ] The area includes 200m radius around the entrance of the hibernaculum ^{cxlviii, ccvii}, [Ⓔ] for most development types and 1000m for wind farms ^{ccv}. Studies are to be conducted during peak swarming period (Aug.- Sept) Suveys should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects” ^{ccv}. SWH MIST^{cxlix} Index #1 provides development effects and mitigation measures 	<ul style="list-style-type: none"> No caves, mine shafts or underground karsts which could support hibernacula were identified within he study area. 	No candidate SWH identified on site.
Bat Maternity Colonies Rationale: Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.	Big Brown Bat Silver-haired Bat	Maternity colonies considered SWH are found in Forested Ecosites. All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM	<ul style="list-style-type: none"> Maternity colonies can be found in tree cavities, vegetation and often in buildings^{xxii, xxv, xxvi, xvii, xxxi} (buildings are not considered to be SWH). Maternity roosts are not found in caves and mines in Ontario^{xxii}. Maternity colonies located in Mature deciduous or mixed forest stands^{ccix, ccx, ccv} with >10/ha large diameter (>25cm dbh) wildlife trees^{ccvii} 	<ul style="list-style-type: none"> Maternity Colonies with confirmed use by; <ul style="list-style-type: none"> >10 Big Brown Bats[Ⓔ] >5 Adult Female Silver- haired Bats[Ⓔ] The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies[Ⓔ]. Evaluation methods for maternity 	<ul style="list-style-type: none"> No Ecosites/ELC communities which meet identified criteria are present within the study area. 	No candidate SWH identified on site.

Wildlife Habitat	Wildlife Species	CANDIDATE SWH*		CONFIRMED SWH	LGL Discussion/ Analysis	SWH
		ELC Ecosite Codes	Habitat Characteristics and Information Sources	Defining Criteria		
			<ul style="list-style-type: none"> Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3 ccxiv or class 1 or 2 ccxii . Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred^{ccx, lxiv} <u>Information Sources</u> <ul style="list-style-type: none"> OMNRF for possible locations and contact for local experts University Biology Departments with bat experts. 	<p>colonies should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects”^{ccv} .</p> <ul style="list-style-type: none"> SWH MiST^{cxlix} Index #12 provides development effects and mitigation measures 		
Turtle Wintering Areas Rationale: Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	Midland Painted Turtle Special Concern: Northern Map Turtle Snapping Turtle	Snapping and Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA: ELC Community Series; FEO and BOO Northern Map Turtle; Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.	<ul style="list-style-type: none"> For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen^{cix, cx, cxi, cxii} Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH. <u>Information Sources</u> <ul style="list-style-type: none"> EIS studies carried out by Conservation Authorities. OMNRF Ecologist or Biologist Field Naturalist clubs Natural Heritage Information Center (NHIC) 	<ul style="list-style-type: none"> Presence of 5 over-wintering Midland Painted Turtles is significant[Ⓔ]. One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant[Ⓔ]. The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH. Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sept. – Oct.) or spring (Mar. – May) cvii. Congregation of turtles is more common where wintering areas are limited and therefore significant cix, cx, cxi, cxii. SWHMiST^{cxlix} Index #28 provides development effects and mitigation measures for turtle wintering habitat. 	<ul style="list-style-type: none"> No suitable wintering habitat observed within the stud area. 	No candidate SWH identified.
Reptile Hibernaculum Rationale: Generally	Snakes: Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake	For all snakes, habitat may be found in any ecosite other than very wet ones.	<ul style="list-style-type: none"> For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The 	Studies confirming: <ul style="list-style-type: none"> Presence of snake hibernacula used by a minimum of five individuals of a snake sp. <u>or</u>; individuals of two or more snake 	<ul style="list-style-type: none"> No Talus, Rock Barren, Crevice, Cave, or Alvar sites identified on the property. 	No candidate SWH identified.

Wildlife Habitat	Wildlife Species	CANDIDATE SWH*		CONFIRMED SWH	LGL Discussion/ Analysis	SWH
		ELC Ecosite Codes	Habitat Characteristics and Information Sources	Defining Criteria		
sites are the only known sites in the area. Sites with the highest number of individuals are most significant	Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake Special Concern: Eastern Ribbonsnake	Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats. Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator.	existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. <ul style="list-style-type: none"> Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line^{xliv, l, li, lii, cxii}. Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures cciii. <u>Information Sources</u> <ul style="list-style-type: none"> In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g. old dug wells). Reports and other information available from Conservation Authorities. Field Naturalists clubs University herpetologists Natural Heritage Information Center (NHIC) OMNRF ecologist or biologist may be aware of locations of wintering skinks 	spp. Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (egg. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct)Ⓔ <ul style="list-style-type: none"> <u>Note:</u> If there are Special Concern Species present, then site is SWH <u>Note:</u> Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population (i.e. strong hibernation site fidelity). Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30 m radius area is the SWHⒺ SWHMiSTcxlix Index #13 provides development effects and mitigation measures for snake hibernacula. Presence of any active hibernaculum for skink is significant. SWHMiSTcxlix Index #37 provides development effects and mitigation measures for five-lined skink wintering habitat. 	<ul style="list-style-type: none"> None of the wildlife species identified were observed or anticipated to be present on the property. 	
Colonial Bird Nesting Sites (Tree/Shrubs) <u>Rationale:</u>	Great Blue Heron Black-crowned Night-Heron Great Egret Green Heron	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1	<ul style="list-style-type: none"> Nests in live or dead standing trees in wetlands, lakes, islands, and on peninsulas. Most nests in trees are 11- 15 m from ground, near the top of the tree 	Studies confirming: <ul style="list-style-type: none"> Presence of 1 or more active nests of any of the listed species I. Studies would be done during April/June when actively nesting. 	<ul style="list-style-type: none"> ELC Ecosites identified do not meet criteria. None of the wildlife species identified were observed on the property. No nests or suitable nesting habitat was identified. 	No candidate SWH identified.

Wildlife Habitat	Wildlife Species	CANDIDATE SWH*		CONFIRMED SWH	LGL Discussion/ Analysis	SWH
		ELC Ecosite Codes	Habitat Characteristics and Information Sources	Defining Criteria		
Colonies important to local bird population; typically, sites are only known colony in area.			<ul style="list-style-type: none"> Ontario Breeding Bird Atlas, colonial nest records Ontario Nest Records Scheme (Royal Ontario Museum) Ontario Heronry Inventory 1991 available from Bird Studies Canada Sometimes aerial photographs can help identify large heronries. ESA reports and other studies prepared by Conservation Authorities OMNR District Offices local naturalist clubs 	<ul style="list-style-type: none"> SWHDSS cxlix Index #5 provides development effects and mitigation measures. 		
Colonial-Nesting Bird Breeding Habitat (Ground) Rationale: Colonies important to local bird population; typically, sites are only known colony in area.	Herring Gull Great Black-backed Gull Common Tern Caspian Tern Little Gull	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1:50,000 NTS map).	<ul style="list-style-type: none"> Nesting colonies are on islands or peninsulas associated with open water Ontario Breeding Bird Atlas, colonial nest records Ontario Nest Record Scheme (Royal Ontario Museum) Canadian Wildlife Service ESA reports and other studies prepared by Conservation Authorities <ul style="list-style-type: none"> OMNR District Offices local naturalist clubs 	Studies confirming: <ul style="list-style-type: none"> Presence of > 100 nests Herring Gulls, and > 75 nests Caspian or Common Terns^{cxlix}. Any nesting colony of 1 or more Little Gull or Great Black-backed Gull is to be considered significant.^I Studies would be done during May/June when actively nesting. SWHDSS cxlix Index #6 provides development effects and mitigation measures 	<ul style="list-style-type: none"> Habitat types identified do not meet criteria. None of the wildlife species identified were observed on the property. No nests or suitable nesting habitat was identified. 	No candidate SWH identified.
Butterfly Migratory Route/Stopover Areas Rationale: Butterfly stopover areas are extremely rare habitats and are biologically important for Butterfly species that migrate south for the winter.	Painted lady White Admiral <u>Special Concern</u> Monarch Butterfly	Combination of ELC Community Series; need to have present one Community Series from each landclass: <u>Field</u> CUM CUT CUS <u>Forest</u> FOC FOD FOM CUP Anecdotally, a candidate sight for butterfly stopover will have a history of	<ul style="list-style-type: none"> Butterfly stopover areas are rare habitats located within 5 km of Lake Erie (OMNR 2000b). The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south. xxxii, xxxiii, xxxiv, xxxv, xxxvi. Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes xxxvii, xxxviii, xxxix, xl, xli. OMNR for list of local butterfly experts Agriculture Canada in Ottawa may have list of butterfly experts. 	<ul style="list-style-type: none"> A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present, and will be located within 5 km of Lake Erie. cxlix Studies will confirm the presence of Monarch Use Days (MUD) during fall migration (Aug/Oct) xliii. MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/dayxxxvii, significant variation can occur between years and multiple years of sampling should occur xl, xlii. MUD of >5000 or >3000 with the presence of Painted Ladies or White 	<ul style="list-style-type: none"> ELC Ecosites identified do not meet criteria. Vegetation communities present on site however are less than the minimum ha and not within 5 km of Lake Ontario. 	No candidate SWH identified.

Wildlife Habitat	Wildlife Species	CANDIDATE SWH*		CONFIRMED SWH	LGL Discussion/ Analysis	SWH
		ELC Ecosite Codes	Habitat Characteristics and Information Sources	Defining Criteria		
		butterflies being observed.	<ul style="list-style-type: none"> Other sources of information would include naturalist clubs, the Toronto Entomologists Association, and Conservation Authorities. 	<p>Admiral's is to be considered significant.^I</p> <ul style="list-style-type: none"> SWHDSS cxlix Index #16 provides development effects and mitigation measures. 		
<p>Deer Winter Congregation Areas</p> <p><u>Rationale:</u> Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions cxlviii.</p>	White-tailed Deer	<p>All Forested Ecosites with these ELC Community Series: FOC FOM FOD SWC SWM SWD</p> <p>Conifer plantations much smaller than 50 ha may also be used.</p>	<ul style="list-style-type: none"> Woodlots will typically be >100 ha in size[Ⓔ]. Woodlots <100ha may be considered as significant based on MNRF studies or assessment. Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands cxlviii. If deer are constrained by snow depth refer to the Deer Yarding Area habitat within Table 1.1 of this Schedule. Large woodlots > 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha ccxxiv. Woodlots with high densities of deer due to artificial feeding are not significant[Ⓔ]. <p>Information Sources</p> <ul style="list-style-type: none"> MNRF District Offices. <p>LIO/NRVIS</p>	<p>Studies confirm:</p> <ul style="list-style-type: none"> Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF^{cxlviii}. Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF[Ⓔ] Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques^{ccxxiv}, ground or road surveys. or a pellet count deer density survey^{ccxxv}. If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. SWHMiST^{cxlix} Index #2 provides development effects and mitigation measures. 	<ul style="list-style-type: none"> No available layers from LIO indicated the presence of this SWH type. Woodlots and vegetation communities within the study area do not meet the minimum size/ELC Ecosites criteria. 	No candidate SWH identified.

3.2 Rare Vegetation Communities or Specialized Habitat for Wildlife

3.2.1 Rare Vegetation Communities

The majority of Rare Vegetation Communities are protected within the Greenbelt planning area through the protection of Key Natural Heritage Features. For example, sand barrens, tallgrass prairie, alvars, and savannahs are all identified as Key Natural Heritage Features by the Greenbelt Plan. However, outside of the Natural Heritage System of the Protected Countryside landuse designation, the PPS is the relevant policy document and many rare vegetation habitats are candidate SWH, including: sand barrens, tallgrass prairies, alvars, and savannahs. Woodlands not protected as Significant Woodlands have the potential to be a Rare Vegetation Community, and therefore Candidate SWH. Table 1.2.1 contains a listing of Rare Vegetation Communities that are considered SWH for the Greenbelt planning area and where the PPS policy is the direction to be followed.

Table 1.2.1 Rare Vegetation Communities.

Rare Vegetation Community	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	CONFIRMED SWH and Defining Criteria	LGL Discussion/ Analysis	SWH
Cliff and Talus Slopes Rationale: Cliffs and Talus Slopes are extremely rare habitats in Ontario.	CLO1 CLS1 CLS2 CLT1 CLT2 TAO1 TAO2 TAS1 TAS2 TAT1 TAT2	A Cliff is vertical to near vertical bedrock >3m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris.	<ul style="list-style-type: none">• Most cliff and talus slopes occur along the Niagara Escarpment.• The Niagara Escarpment Commission has detailed information on location of these habitats.• Natural Heritage Information Centre.• Conservation Authorities.	<ul style="list-style-type: none">• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes lxxviii• SWHDSS (OMNR 2000c) Index #21 provides development effects and mitigation measures.• 	<ul style="list-style-type: none">• No ELC Ecosites described of this type documented.	None identified
Sand Barren Rationale: Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry.	SBO1 SBS1 SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%.	Sand Barrens typically are exposed sand habitats, generally sparsely vegetated and caused by lack of moisture, periodic fires, and erosion. They have little or no soil, and the underlying rock protrudes through the surface. Usually located within other types of natural habitat, such as forest or savanna.	<ul style="list-style-type: none">• Sand Barrens support rare species such as provincially Endangered Forked Three-awned Grass and American Badger lxxxv, lxxxvi. By extension, sand barren sites that could support These rare species (close proximity to other populations), historically or currently should be considered for higher priority conservation.• Natural Heritage Information Centre• OMNR Ecologists• District SAR Biologists• local Naturalist clubs• Conservation Authorities	<ul style="list-style-type: none">• No minimum size to site.• Confirm any ELC Vegetation Type for Sand Barrens lxxviii• Site must not be dominated by exotic or introduced species• SWHDSS cxlix Index #20 provides development effects and mitigation measures.• 	<ul style="list-style-type: none">• No ELC Ecosites described of this type documented.	None identified
Alvar Rationale: Alvars are extremely rare habitats in Ontario.	ALO1 ALS1 ALT1	An alvar will be level unfractured or partially fractured limestone, a patchy mosaic of bare rock pavement, or shallow substrate over limestone bedrock. The site will vary between being seasonally dry or inundated with water. Vegetation cover varies from	<ul style="list-style-type: none">• In Ontario, alvars occur in a series of clusters just south of the contact line with the granitic uplands of the Canadian Shield and in a few small isolated areas to the south.	<ul style="list-style-type: none">• Site to be > 0.5 ha in size lxxv.• Confirm any ELC Vegetation Type for Alvars lxxviii• Site must not be dominated by exotic or introduced species. The alvar must be in excellent condition and fit in with	<ul style="list-style-type: none">• No ELC Ecosites described of this type documented.	None identified

Rare Vegetation Community	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	CONFIRMED SWH and Defining Criteria	LGL Discussion/ Analysis	SWH
		<p>patchy and barren with a less than 60% tree cover^{lxxviii}.</p> <p>Alvar is particularly rare in ecoregion 6E where the only known sites are found in the western islands Lake Erie.^{cxix}</p>	<ul style="list-style-type: none"> Alvars of Ontario (2000), Federation of Ontario Naturalists. Natural Heritage Information Centre. OMNR Ecologists. Local Naturalist clubs Conservation Authorities. 	<p>surrounding landscape with few conflicting landuses ^{lxxv}.</p> <ul style="list-style-type: none"> Three or more of the Alvar indicator species ^{lxxv} listed in ^{cxlix} Appendix N should be present. SWHDSS ^{cxlix} Index #17 provides development effects and mitigation measures. 		
Old-Growth Forest Rationale: Old Growth forest stands are rare in S. Ontario.	Forest Community Series: FOD FOC FOM	<p>Old-growth forests tend to be relatively undisturbed, structurally complex, and contain a wide variety of trees and shrubs in various age classes. These habitats usually support a high diversity of wildlife species.</p>	<ul style="list-style-type: none"> OMNR Ecologists and Foresters Conservation Authorities 	<ul style="list-style-type: none"> No minimum size to site^Í Determine ELC Vegetation Type for forest stand ^{lxxviii} If dominant trees species of ELC Vegetation Type are >100 years old, then stand is Significant Wildlife Habitat.^Í Human activity within the stand must be minimal, old growth characteristics require a relatively undisturbed forest stand. SWHDSS ^{cxlix} Index #23 provides development effects and mitigation measures. 	<ul style="list-style-type: none"> No forest habitat was noted with trees of age class to meet criteria. 	None identified
Savannah Rationale: Savannahs are extremely rare habitats in Ontario.	TPS1 TPS2 25%<tree cover<35% ^{lxxviii} TPW1 TPW2 35%<tree cover<60% ^{lxxviii}	<p>A savannah is a tallgrass prairie habitat that has tree cover between 25-60%.</p> <p>Tallgrass Prairie (TGP) and savannah were historically common in the near-shore areas of the Great Lakes.</p> <p>In ecoregion 6E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario). ^{cc}</p>	<ul style="list-style-type: none"> Natural Heritage Information Centre OMNR Ecologists local Naturalist clubs Conservation Authorities 	<ul style="list-style-type: none"> No minimum size to site^Í. Site must be restored or a natural site, remnant sites such as railway right of ways not to be considered significant. Confirm any ELC Vegetation Type for Savannahs ^{lxxviii} Site must not be dominated by exotic or introduced species. One or more of the Savannah indicator species listed in ^{lxxv} Appendix N should be present^Í. SWHDSS ^{cxlix} Index #18 provides development effects and mitigation measures. 	<ul style="list-style-type: none"> No ELC Ecosites described of this type documented. 	None identified
Tallgrass Prairie Rationale: Tallgrass Prairies are extremely rare habitats in Ontario.	TPO1 TPO2	<p>A tallgrass prairie has ground cover dominated by prairie grasses, an open tall grass prairie habitat will have less than 25% tree cover.</p> <p>Tallgrass Prairie (TGP) and savannah were historically common in the near-shore areas of the Great Lakes</p>	<ul style="list-style-type: none"> Natural Heritage Information Centre. OMNR Ecologists. District SAR Biologists Stewardship Councils specializing in TGP (e.g., Brant, Lambton Counties Local Naturalist clubs 	<ul style="list-style-type: none"> No minimum size to site^Í. Site must be restored or a natural site, remnant sites such as railway right of ways not to be considered significant. Confirm any ELC Vegetation Type for Tall Grass Prairies ^{lxxviii} 	<ul style="list-style-type: none"> No ELC Ecosites described of this type documented. 	None identified

Rare Vegetation Community	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	CONFIRMED SWH and Defining Criteria	LGL Discussion/ Analysis	SWH
		In ecoregion 6E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario). ^{cc}	<ul style="list-style-type: none"> Conservation Authorities. 	<ul style="list-style-type: none"> Site must not be dominated by exotic or introduced species. One or more of the tall grass prairie indicator species listed in lxxv Appendix N should be present. SWHDSS cxlix Index #19 provides development effects and mitigation measures.. 		
Other Rare Vegetation Communities Rationale: Plant communities that often contain rare species which depend on the habitat for survival.	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTGcxlvi. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	<p>ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M cxlvi</p> <p>The OMNRF/NHIC will have up to date listing for rare vegetation communities.</p> <p>Information Sources</p> <ul style="list-style-type: none"> Natural Heritage Information Center (NHIC) has location information available on their website OMNRF Districts Feld Naturalist clubs. Conservation Authorities. 	<p>Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTGcxlvi.</p> <ul style="list-style-type: none"> Area of the ELC Vegetation Type polygon is the SWH. SWHMiST cxlix Index #37 provides development effects and mitigation measures. 	<ul style="list-style-type: none"> No MNRF significant community or species. 	None identified

3.2.2 Specialized Habitat for Wildlife

Some wildlife species require large areas of suitable habitat for their long-term survival. Many wildlife species require substantial areas of suitable habitat for successful breeding. Their populations decline when habitat becomes fragmented and reduced in size (OMNR 2000a). The largest and least fragmented habitats within a planning area will support the most significant populations of wildlife. Specialized habitat for wildlife is a community- or diversity-based category, therefore the more wildlife species a habitat contains the more significant the habitat becomes to the planning area. The specialized habitats for wildlife that are Candidate SWH are outlined in Table 1.2.2.

Table 1.2.2 Specialized Habitats of Wildlife considered Candidate SWH.

Specialized Wildlife Habitat	Wildlife Species	ELC Ecosite Codes	Habitat Characteristics and Information Sources	CONFIRMED SWH and Defining Criteria	LGL Discussion/ Analysis	SWH
Waterfowl Nesting Area Rationale: Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4 Note: includes adjacency to Provincially Significant Wetlands	<ul style="list-style-type: none">A waterfowl nesting area extends 120 m cxlix from a wetland (> 0.5 ha) or a cluster of 3 or more small (<0.5 ha) wetlands within 150 m of each other where waterfowl nesting is known to occur cxlix Í.Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests.Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites.Ducks Unlimited staff may know the locations of particularly productive nesting sites.OMNR Wetland Evaluations for indication of significant waterfowl nesting habitat.ESA reports prepared by Conservation Authorities.	Studies confirmed: <ul style="list-style-type: none">Presence of 3 or more nesting pairs for listed species except MallardÍ, or;Presence of 10 or more nesting pairs for listed species including MallardÍ.Nesting studies should be completed during the spring breeding season (April-June).A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH; this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to nest successfully.SWHDSS cxlix Index #25 provides development effects and mitigation measures.	<ul style="list-style-type: none">ELC Ecosites identified do not meet criteria.None of the wildlife species listed were observed on the property.	No candidate SWH identified.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat Rationale: Nest sites are fairly uncommon in Ecoregion 6E and are used by these species. Many suitable nesting locations may be lost due to increasing shoreline development	Osprey Species Concern Bald Eagle	Forest Communities Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. <ul style="list-style-type: none">Osprey nests are usually at the top of trees whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree’s canopy.Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms). Information Sources <ul style="list-style-type: none">Natural Heritage Information Centre (NHIC) compiles all known nesting sites for Bald Eagles in Ontario.	Studies confirm the use of these nest by:: <ul style="list-style-type: none">One or more active Osprey or Bald Eagle nests in an area^{cxlviii}.Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH.For Osprey, the active nest and a 300 m radius around the nest or contiguous woodland stand is the SWH^{ccvii}, maintaining undisturbed shorelines with large trees	<ul style="list-style-type: none">ELC Ecosites identified do not meet criteria.No existence of an existing or previous nests for Bald Eagle were observed within the study area. Study area surrounded by residential properties, and major thorough fares. Super canopy trees not present.	No significant SWH identified.

Specialized Wildlife Habitat	Wildlife Species	ELC Ecosite Codes	Habitat Characteristics and Information Sources	CONFIRMED SWH and Defining Criteria	LGL Discussion/ Analysis	SWH
pressures and scarcity of habitat.			<ul style="list-style-type: none"> MNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat. Nature Counts, Ontario Nest Records Scheme data. OMNRF Districts. Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented. Reports and other information available from Conservation Authorities. Field Naturalist clubs. 	<p>within this area is important ^{cxlvii}.</p> <ul style="list-style-type: none"> For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. ^{cvi, ccvii} Area of the habitat from 400-800 m is dependent on site lines from the nest to the development and inclusion of perching and foraging habitat ^{cvi} To be significant a site must be used annually. When found inactive, the site must be known to be inactive for ≥3 years or suspected of not being used for >5 years before being considered not significant. ^{ccvii} Observational studies to determine nest site use, perching sites and foraging areas need to be done from early March to August Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” ^{ccxii} SWHDSS ^{cxlix} Index #26 provides development effects and mitigation measures 		
<p>WOODLAND RAPTOR NESTING HABITAT</p> <p><u>Rationale:</u> Nest sites for these species are rarely identified, these habitats are often used annually by these species.</p>	<p>Broad-winged Hawk N. Goshawk Cooper’s Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl</p>	<p>May be found in all forested ELC Ecosites.</p> <p>May also be found in SWC SWM SWD CUP3</p>	<p>All natural or conifer plantation woodland/forest stands >30 ha with >4ha of interior habitat ^{lxxxviii, lxxxix, xc, xci, xciii, xciv, xcv, xcvi, cxxxiii} Interior habitat determined with a 200m buffer ^{cxlviii}</p> <ul style="list-style-type: none"> Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands. In undisturbed sites, nests may be used again, or a new nest will be in close proximity to old nest 	<p>Studies confirm;</p> <ul style="list-style-type: none"> Presence of 1 or more active nests from species list is considered significant. Red-shouldered Hawk and Northern Goshawk - A 400m radius around the nest or 28 ha area of habitat is the SWH ^{ccvii}. (the 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest) Broad-winged Hawk and Coopers Hawk, - A 100, radius around the nest is the SWH ^{ccvii} 	<ul style="list-style-type: none"> ELC Ecosites identified do not meet criteria. No evidence of an active nest or the presence of any species listed were identified during the field inventory. Forested communities within the study do not meet the size criteria nor do they contain interior habitat. 	No significant SWH identified.

Specialized Wildlife Habitat	Wildlife Species	ELC Ecosite Codes	Habitat Characteristics and Information Sources	CONFIRMED SWH and Defining Criteria	LGL Discussion/ Analysis	SWH
			<u>Information Sources</u> <ul style="list-style-type: none"> • OMNRF Districts. • Check the Ontario Breeding Bird Atlas • Rare Breeding Birds Atlas or Rare Breeding Birds in Ontario for species documented • Check data from Birds Studies Canada • ESA reports and other studies prepared by Conservation Authorities 	<ul style="list-style-type: none"> • Sharp-Shinned Hawk – A 50m radius around the nest is the SWH^{ccvii} • Conduct field investigations from March to the end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area. • SWHDSS cxlix Index #27 provides development effects and mitigation measures. 		
TURTLE NESTING HABITAT AND TURTLE OVER-WINTERING AREAS <u>Rationale:</u> These habitats are rare and when identified will often be the only breeding or hibernating site for local populations of turtles.	Midland Painted Turtle <u>Special Concern Species</u> Northern Map Turtle Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m) ^{cxivii} or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1	<ul style="list-style-type: none"> • Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. • For an area to function as a turtle-nesting area, it must provide sand and/or gravel that turtles are able to dig in and are located in open sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. • Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used. • Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen. cix, cx, cxi, cxviii <u>Information Sources</u> <ul style="list-style-type: none"> • Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels). • Check the Ontario Herpetofaunal Summary records for uncommon turtles; location information may help to find potential nesting habitat for them. 	Studies confirm: <ul style="list-style-type: none"> • Presence of 5 or more nesting Midland Painted Turtles • One or more Northern Map Turtle or snapping Turtle nesting is SWH • The area of collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependent on slope, riparian vegetation and adjacent land use is SWH.^{cxlviii} • Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat. • Field investigations should be conducted in prime nesting season (May-July). Observational studies observing the turtles nesting is a recommended method. • SWHDSS cxlix Index #28 provides development effects and mitigation measures for turtle nesting habitat. 	<ul style="list-style-type: none"> • ELC Ecosites identified do not meet criteria. • Midland Painted Turtle and Snapping Turtle were not observed/expected within the study area. 	No significant SWH identified.

Specialized Wildlife Habitat	Wildlife Species	ELC Ecosite Codes	Habitat Characteristics and Information Sources	CONFIRMED SWH and Defining Criteria	LGL Discussion/ Analysis	SWH
			<ul style="list-style-type: none"> Natural Heritage Information Centre (NHIC) ESA reports and other studies prepared by Conservation Authorities local Naturalist groups 			
Seeps and Springs Rationale: Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	Wild Turkey Ruffed Grouse White-tailed Deer	Seeps/Springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	Any predominantly forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system cxvii, cxlix. Important feeding and drinking areas; will typically support a variety of plant and animal species, especially in the winter cxix, cxx, cxxi, cxxii, cxxiii, cxxiv. <u>Information Sources</u> <ul style="list-style-type: none"> topographical map thermography Hydrological surveys conducted by Conservation Authorities and Ministry of Environment local naturalists and landowners Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped.. 	Studies confirm: <ul style="list-style-type: none"> Presence of a site with >2 or more seeps/springs confirmed by studies should be considered SWH. The area of a ELC forest ecosite or an ecoelement within ecosite contain the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and ground water condition need to be considred in delineation the habitat cxlviii SWHDSS cxlix Index #30 provides development effects and mitigation measures 	<ul style="list-style-type: none"> No seeps were observed within the study area during the field investigations. 	No significant SWH identified.
Amphibian Breeding Habitat (Woodland). Rationale: These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to	<ul style="list-style-type: none"> Presence of a wetland, pond or woodland pool (including vernal pools) >500m2 (about 25m diameter) ccvii within or adjacent (within 120m) to a woodland (no minimum size).clxxxii, lxiii, lxv, lxvi, lxvii, lxviii, lxix, lxx Some small wetlands may not be mapped and may be important breeding pools for amphibians. Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat cxlviii <u>Information Sources</u> <ul style="list-style-type: none"> Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records Local landowners may also provide assistance as they may hear spring- time choruses of 	Studies confirm; <ul style="list-style-type: none"> Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) lxxi or 2 or more of the listed frog species with Call Level Codes of 3Ⓔ. A combination of observational study and call count surveys cviii will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands. 	<ul style="list-style-type: none"> No Ecosites/ELC communities which meet identified criteria are present within the study area. 	No significant SWH identified.

Specialized Wildlife Habitat	Wildlife Species	ELC Ecosite Codes	Habitat Characteristics and Information Sources	CONFIRMED SWH and Defining Criteria	LGL Discussion/ Analysis	SWH
		migrating amphibians	<p>amphibians on their property.</p> <ul style="list-style-type: none"> • OMNRF District. • OMNRF wetland evaluations • Field Naturalist clubs • Canadian Wildlife Service Amphibian Road Call Survey <p>Ontario Vernal Pool Association: http://www.ontariovernalpools.org</p>	<ul style="list-style-type: none"> • The habitat is the wetland area plus a 230m radius of woodland arealxiii, lxv, lxvi, lxvii, lxviii, lxix, lxx, lxxi . If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat. <p>SWHMiST cxlix Index #14 provides development effects and mitigation measures.</p>		
<p>Amphibian Breeding Habitat (Wetlands)</p> <p>Rationale: Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.</p>	<p>Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog</p>	<p>ELC Community Classes SW, MA, FE, BO, OA and SA.</p> <p>Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands.</p>	<ul style="list-style-type: none"> • Wetlands>500m2 (about 25m diameter) ccvii), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats clxxxii. <ul style="list-style-type: none"> • Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. • Bullfrogs require permanent water bodies with abundant emergent vegetation. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • Ontario Herpetofaunal Summary Atlas (or other similar atlases) • Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count. • OMNRF Districts and wetland evaluations <p>Reports and other information available from Conservation Authorities</p>	<p>Studies confirm:</p> <ul style="list-style-type: none"> • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) lxxi or 2 or more of the listed frog/toad species with Call Level Codes of 3(€). or; Wetland with confirmed breeding Bullfrogs are significant €. • The ELC ecosite wetland area and the shoreline are the SWH. • A combination of observational study and call count surveys cviii will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands. • If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then 	<ul style="list-style-type: none"> • No Ecosites/ELC communities which meet identified criteria are present within the study area. 	No significant SWH identified.

Specialized Wildlife Habitat	Wildlife Species	ELC Ecosite Codes	Habitat Characteristics and Information Sources	CONFIRMED SWH and Defining Criteria	LGL Discussion/ Analysis	SWH
				<p>Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule.</p> <p>SWHMiST cxlix Index #15 provides development effects and mitigation measures.</p>		
<p>Woodland Area-Sensitive Bird Breeding Habitat</p> <p>Rationale: Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.</p>	<p>Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren</p> <p>Special Concern: Cerulean Warbler Canada Warbler</p>	<p>All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p>	<ul style="list-style-type: none"> Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha. cv, cxxxi, cxxxii, cxxxiii, cxxxiv, cxxxv, cxxxvi, cxxxvii, cxxxviii, cxxxix, cxl, cxli, cxlii, cxliii, cxliv, cxlv, cxlvi, cl, cli, clii, cliii, cliv, clv, clvi, clvii, clviii, clix, clxiv Interior forest habitat is at least 200 m from forest edge habitat. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Local bird clubs. Canadian Wildlife Service (CWS) for the location of forest bird monitoring. Bird Studies Canada conducted a 3- year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to determine what forests were of greatest value to interior species Reports and other information available from Conservation Authorities. 	<p>Studies confirm:</p> <ul style="list-style-type: none"> Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. (E) Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH.(E) Conduct field investigations in spring and early summer when birds are singing and defending their territories. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”ccxi <p>SWHMiST cxlix Index #34 provides development effects and mitigation measures.</p>	<ul style="list-style-type: none"> No Ecosites/ELC communities which meet identified criteria are present within the study area. None of the species listed in the species list were identified within the study area. 	No significant SWH identified.

3.3 Habitat for Species of Conservation Concern (not including Endangered or Threatened Species)

Habitats of Species of Conservation Concern for the purposes of this Technical Paper include wildlife species that are listed as Special Concern or rare, that are declining, or are featured species. Habitats of Species of Conservation Concern do not include habitats of Endangered or Threatened species, as their habitats are a separate Key Natural Heritage Feature, as outlined in the Greenbelt Plan and the PPS. Table 1.3 assists with the identification of Candidate SWH for Species of Conservation Concern.

Table 1.3 Habitats of Species of Conservation Concern considered Candidate SWH.

Wildlife	Species	ELC Ecosite		Habitat Description , Defining Criteria and Information Sources	CONFIRMED SWH	LGL Discussion/Analysis	SWH
Marsh Bird Breeding Habitat Rationale: Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Green Heron Special Concern: Black Tern Yellow Rail	MAM1 MAM3 MAM5 SAS1 SAF1 BOO1	MAM2 MAM4 MAM6 SAM1 FEO1	<ul style="list-style-type: none">Nesting occurs in wetlands.All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present ^{cxixiv}.For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water. <u>Information Sources</u> <ul style="list-style-type: none">OMNRF District and wetland evaluations.Field Naturalist clubsNatural Heritage Information Center (NHIC) Records.Reports and other information available from Conservation Authorities.Ontario Breeding Bird Atlas.	Studies confirm: <ul style="list-style-type: none">Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or 4 nesting pairs for any other listed; or breeding by any combination of 5 or more of the listed species. ^I<u>Note:</u> any wetland with breeding Black Terns or Yellow Rail is to be considered SWH. ^IBreeding surveys should be done in May/June when these species are actively nesting in wetland habitats.SWHDSS ^{cxlix} Index #35 provides development effects and mitigation measures	<ul style="list-style-type: none">No Ecosites/ELC communities which meet identified criteria are present within the study area.None of the species listed in the species list were identified/expected within the study area.	No significant SWH identified.
Open Country Bird Breeding Habitat Rationale: This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based	Vesper Sparrow Northern Harrier Savannah Sparrow Special Concern Short-eared Owl	CUM1 CUM2		<ul style="list-style-type: none">Large grassland areas (includes natural and cultural fields and meadows) >30 ha ^{clx}, ^{clxi}, ^{clxii}, ^{clxiii}, ^{clxiv}, ^{clxv}, ^{clxvi}, ^{clxvii}, ^{clxviii}, ^{clxix}.Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years) ^E.Grassland sites considered significant should have a history of longevity, either abandoned	Field Studies confirm: <ul style="list-style-type: none">Presence of nesting or breeding of 2 or more of the listed species. ^EA field with 1 or more breeding Short-eared Owls is to be considered SWH.The area of SWH is the contiguous ELC ecosite field areas.Conduct field investigations of the most likely areas in spring and early summer when birds are singing and	<ul style="list-style-type: none">No Ecosites/ELC communities which meet identified criteria are present within the study area.	No significant SWH identified.

on CWS (2004) trend records.			<p>fields, mature hayfields and pasturelands that are at least 5 years or older.</p> <ul style="list-style-type: none"> The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species. Information Sources Agricultural land classification maps, Ministry of Agriculture. Local bird clubs. Ontario Breeding Bird Atlas Reports and other information available from Conservation Authorities. 	<p>defending their territories.</p> <ul style="list-style-type: none"> Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” ccxi <p>SWHMiST cxlix Index #32 provides development effects and mitigation measures</p>		
<p>Shrub/Early Successional Bird Breeding Habitat;</p> <p>Rationale: This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on cxci trend records.</p>	<p><u>Indicator Spp:</u> Brown Thrasher Clay-coloured Sparrow</p> <p><u>Common Spp.</u> Field Sparrow Black-billed Cuckoo E. Towhee Willow Flycatcher Blue-winged Warbler</p> <p>Special Concern: Yellow-breasted Chat Golden-winged Warbler</p>	CUT1 CUS1	<ul style="list-style-type: none"> Large older field areas succeeding to shrub and thicket habitats. Larger shrub thicket habitats (>10ha) are most likely to support and sustain a diversity of these species. clxxiii, Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. Use agricultural land classification maps and recent aerial photographs to determine the locations of potential shrub and thicket habitats. Ask local birders for location of shrub and thicket habitats that support abundant and species-rich populations of area-sensitive species. ESA reports and other studies prepared by Conservation Authorities 	<p>Shrubland or Successional fields 10 ha or larger in size, not class 1 or 2 agricultural lands, not being actively used for farming (i.e., no row-cropping in the last 5 years).Í</p> <p>Studies confirm:</p> <ul style="list-style-type: none"> Presence of nesting or breeding of 2 or more indicator or special concern species and at least 1 of the common species.Í A field with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat. Í Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories <p>SWHDSS cxlix Index #33 provides development effects and mitigation measures.</p>	<ul style="list-style-type: none"> No Ecosites/ELC communities which meet identified criteria are present within the study area. 	No significant SWH identified.
<p>Terrestrial Crayfish;</p> <p>Rationale: Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare. ccii</p>	<p>Chimney or Digger Crayfish; {<u>Fallicambarus fodiens</u>}</p> <p>Devil Crawfish or Meadow Crayfish; {<u>Cambarus Diogenes</u>}</p>	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6	<p>Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish.</p> <ul style="list-style-type: none"> Constructs burrows in marshes, mudflats, meadows, the ground can’t be too moist. Can often be found far from water. Both species are a semi- 	<p>Studies Confirm:</p> <ul style="list-style-type: none"> Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites cci Area of ELC ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the 	<ul style="list-style-type: none"> No Ecosites/ELC communities which meet identified criteria are present within the study area. 	No significant SWH identified.

			<p>terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed.</p> <p>Information Sources</p> <p>Information sources from “Conservation Status of</p> <ul style="list-style-type: none"> Freshwater Crayfishes” by Dr. Premek Hamr for the WWF and CNF March 1998 	<p>SWH.</p> <p>Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult cci</p> <p>SWHMiST cxlix Index #36 provides development effects and mitigation measures.</p>		
<p>Special Concern and S1-S3 Species and Communities</p> <p>Rationale:</p> <p>Special Concern and rare specie occurrences are significant due to their status or due to the relative number of occurrences within Ontario.</p>	<p>All Special Concern and rare (S1-S3, SH) plant and animal species or communities. Lists of these species and communities are tracked by the Natural Heritage Information Centre.</p>	<p>All plant and animal species or community element occurrences (EO).</p>	<ul style="list-style-type: none"> Natural Heritage Information Centre will have the special concern and rare (S1-S3, SH) species lists and element occurrences for these species. NHIC Website: http://nhic.mnr.gov.on.ca/nhic 	<p>Studies Confirm:</p> <ul style="list-style-type: none"> When an element occurrence is identified for a Special Concern or rare species then mapping of the habitat on the site needs to be completed to ELC Vegetation Type lxxviii I. Assessment/Inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the wildlife species is present or easily identifiable. Habitat form and function needs to be assessed from the assessment of vegetation types and an area of significant habitat that will protect the rare or special concern specie identified. SWHDSS cxlix Index #37 provides development effects and mitigation measures 	<ul style="list-style-type: none"> Vegetation communities present however species identified in the list of species were not observed within the study area. 	<p>No significant SWH identified.</p>

3.4 Animal Movement Corridors

Animal Movement Corridors are elongated areas used by wildlife to move from one habitat to another. They are important to ensure genetic flow within and between populations, to allow seasonal migration of animals (e.g., deer moving from summer to winter range), and to allow animals to move throughout their home range from feeding areas to cover areas. Animal movement corridors function at different scales, often related to the size and home range of the animal. For example, short, narrow areas of natural habitat may function as corridors between amphibian breeding areas and their summer range, while wider, longer corridors are needed to allow deer to travel from their winter habitat to their summer habitat.

Identifying the most important corridors that provide connectivity across the landscape is challenging because of a lack of specific information on animal movements. There is also some uncertainty about the optimum width and mortality risks of corridors. Furthermore, a corridor may be beneficial for some species but detrimental to others. For example, narrow linear corridors may allow increased access for racoons, cats, and other predators associated with edges. Also, narrow corridors dominated by edge habitat may encourage invasion by weedy generalist plants and opportunistic species of birds and mammals. Corridors often consist of naturally vegetated areas that run through more open or developed landscapes. However, sparsely vegetated areas can also function as corridors. For example, many species move freely through agricultural land to reach natural areas. Despite the difficulty of identifying exact movement corridors for all species, these landscape features are important to the long-term viability of certain wildlife populations.

Animal Movement Corridors, should only be identified as Candidate SWH where:

1. A Confirmed or Candidate SWH has been identified by MNR or the planning authority based on documented evidence of a wildlife species identified within this Technical Paper using a distinct passageway or relying on well defined natural features for movements between habitats required by the species to complete its life cycle.

Table 1.4.1 Animal Movement Corridors considered Candidate Significant Wildlife Habitat.

Habitat	SPECIES	ELC Eco-sites	HABITAT - FUNCTION/Form and INFORMATION SOURCES	CONFIRMED SWH	LGL Description
Amphibian Movement Corridors Rationale: Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Chorus Frog Wood Frog	<ul style="list-style-type: none">• habitat not ELC specific• Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1.	<p>Movement corridors between breeding habitat and summer habitat: clxxiv, clxxv, clxxvi, clxxvii, clxxviii, clxxix, clxxx, clxxxi.</p> <p>Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (Amphibian Breeding Habitat –Wetland) of this Schedule (E).</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none">• MNRF District Office.• Natural Heritage Information Center (NHIC).• Reports and other information available from Conservation Authorities.• Field Naturalist Clubs.	<ul style="list-style-type: none">• Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites.• Corridors should consist of native vegetation, with several layers of vegetation. Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significantclxix• Corridors should have at least 15m of vegetation on both sides of waterwayclxix or be up to 200m wideclxix of woodland habitat and with gaps <20mclxix .• Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitatclxix.• SWHMiST clxix Index #40 provides development effects and mitigation measures	Amphibian habitat identified within the study area is not expected to meet the criteria for SWH based on number of species and calling levels. No significant SWH identified.

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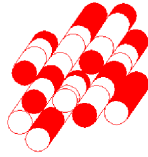
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Terraprobe

*Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing*

**HYDROGEOLOGICAL ASSESSMENT
9541 WESTON ROAD (FIRE STATION NUMBER 7-12)
CITY OF VAUGHAN, ONTARIO**

Prepared For: City of Vaughan
2141 Major Mackenzie Drive
Vaughan, Ontario
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EXECUTIVE SUMMARY

Terraprobe Inc. (Terraprobe) was retained by the City of Vaughan to conduct a hydrogeological assessment for the proposed development of 9541 Weston Road (Fire Station No. 7-12) in the City of Vaughan, Ontario (the 'Site'). This report is prepared to estimate the potential short-term construction dewatering and long-term foundation drainage requirements associated with the proposed development. Terraprobe was provided with subsurface information. The provided information, along with a fieldwork completed by Terraprobe are considered to estimate a short-term dewatering and long-term foundation drainage flow rates, and provide comments on discharge options. Additionally, a pre- and post-development water balance was completed for the Site.

It is understood that the City of Vaughan is developing a new Fire Station Number 7-12 located at 9541 Weston Road, Vaughan. The Site is bounded by institutional building to the north, Weston Road to the west, a wooded lot to the south and the east. The Site is currently consisting of Vellore Hall Park buildings, local access roads, at-grade parking lot and landscaped/green areas. The current conditions of the Site are presented in **Table I**.

Table I: Existing Conditions

Municipal Address	Above Grade Levels	Below Grade Levels
9541 Weston Road, Vaughan	1	Not Available

The proposed development will include construction of a two-storey slab-on-grade fire station (City of Vaughan Fire Station No. 7-12) building with associated at grade parking lots. The Site Plan prepared by Thomasbrown Architects dated November 24, 2021 (drawing numbers CR 1.1) was reviewed for the current assessment. The preliminary Finished Floor Elevation (FFE) is proposed at El. 225.75 metres above sea level (masl) as per the email received on March 17, 2022.

As per Englobe's geotechnical investigation report dated March 30, 2022, base of the excavation is considered as 225.25 masl and the base of footing was considered at El. 222.75 masl (including 0.5 m of granular material beneath the footing). A summary of the proposed development is presented in **Table II**.

Table II: Proposed Development

Proposed Development	Above Grade Levels	Underground Levels	Approximate Deepest FFE (masl)	Approximate Base of Excavation for construction of the Slab (masl)	Approximate Base of Deepest Footing (masl)	The Highest Shallow Groundwater Level (masl)
Fire Station Number 7-12	2	Slab-on-grade	225.75	225.25	222.75	221.59

The Subsoil profile and groundwater conditions and requirements for the Site are summarized in **Table III and Table IV**:

Table III: Summary of Subsoil Profile

Stratum/Formation	Bottom Depth Range (mbgs)	Bottom Elevation Range (masl)	Hydraulic Conductivity (m/s)
Surface Layers (Topsoil/Asphalt)	0.2-0.4	225.3-224.6	Not Applicable
Clayey Silt/Silty Clay	2.2 to 4.4	222.8 to 220.4	$1.44 \times 10^{-7*}$
Sandy Silt/Silt	0.6 to 8.2	224.4 to 216.7	$4.23 \times 10^{-7**}$
Silty Sand	4.4 to 8.2	220.9 to 216.9	$7.23 \times 10^{-7**}$
Clayey Silt	8.2	216.9 to 216.7	$1.44 \times 10^{-7*}$

* Indicates conductivity was estimated using in-situ hydraulic conductivity test

** Indicates conductivity was estimated using grain size analysis

Table IV: Summary of Groundwater Conditions

Groundwater Conditions	
The Stabilized Shallow Groundwater Elevation Considered for the dewatering flow rate estimation	221.59 masl
Conceptual Zone of Influence (ZOI)	0 m (The proposed base of the footing for construction of the slab-on-grade building will be developed above groundwater level)

Groundwater quality was assessed in comparison with the Regional Municipality of York Sewer By-Law with the results summarized in **Table V**.

Table V: Summary of Groundwater Quality Assessment

	Regional Municipality of York Storm Sewer Limits	Regional Municipality of York Sanitary Sewer Limits
Untreated Groundwater (Sample ID – BH15D)	Exceeds	Meets
Treatment Required Prior to Discharge	Yes	No

The geodetic elevation of the foundation footing is higher than the highest groundwater level. As such, groundwater seepage is not anticipated for short-term dewatering. However, there will be stormwater from precipitation for short-term construction.

Since a slab-on-grade building is proposed above groundwater level, and construction of a drainage system is not proposed by Englobe geotechnical team, there will be no long-term foundation drainage needs. The findings are summarized in **Table VI**.

Table VI: Summary of Shot-Term Dewatering and Long-Term Foundation Drainage Calculations

Groundwater Quantity: Short-Term (Construction)						
Description	Groundwater Seepage (Safety Factor of 1.5)		25 mm Design Rainfall Event		Total Estimated Flow Rate	
	L/day	L/min	L/day	L/min	L/day	L/min
Fire Station Number 7-12	0	0	18,000	12.5	18,000*	12.5

Groundwater Quantity: Long-Term Foundation Drainage						
Description	Groundwater Seepage (Safety Factor of 1.5)		Infiltration 25 mm Design Rainfall Event		Total Estimated Flow Rate	
	L/day	L/min	L/day	L/min	L/day	L/min
Fire Station Number 7-12	0	0	0	0	0	0

*Collecting perched water is anticipated. The potential quantity is not included.

Potential permit requirements for discharging short-term dewatering effluent which expected from precipitation and perched water are summarized in **Table VII**.

Table VII: Summary of Permits Required for Shot-Term Dewatering

Regulatory Requirements	
Environmental Activity and Sector Registry (EASR) Posting for Short-Term Discharge	Not Required
Short-Term Permit to Take Water (PTTW)	Not Required
Long-Term Permit to Take Water (PTTW)	Not Required
Short-Term Discharge Agreement Regional Municipality of York	Required (If the collected water is proposed to be directed to the York Region Sewer System.)
Long-Term Discharge Agreement Regional Municipality of York	Not Required

The short-term construction dewatering discharge flow rates are calculated based on the rainfall event. Any stormwater entering the excavation to be pumped and discharged to the City of Vaughan Sewers (as a part of York Region sewer system) will require verification of quality prior to discharge to the City of Vaughan's storm or sanitary sewer system as a part of the water collection system.

Considering the location of the Site within the area designated as WHPA-Q, a pre- and post-development water balance assessment was completed to evaluate opportunities and constraints for developing Low Impact Development (LID) measures for the post development Site. A summary of findings is presented in **Table VIII**.

Table VIII: Summary of Pre- and Post-Development Water Balance Components

Pre-Development Site Breakdown Areas	Precipitation (m ³ /year)	Evapotranspiration (m ³ /year)	Infiltration (m ³ /year)	Run off (m ³ /year)
Pre-Development	13,863	4,881	2,201	6,781
Post-Development	13,864	4,479	1,948	7,436
Loss (-) and Gain (+)	-	-402	-253	+655

A review of the findings indicates that a total decrease of 402 m³/year and 253 m³/year for ET and infiltration, respectively, and an increase of 655 m³/year for runoff are expected for the post-development Site.

Low Impact Development (LID) measures such as infiltration trenches and permeable pavements could be considered to manage the generated runoff partially. Remaining volume can be discharged to the Regional Municipality of York storm sewer system. It is assumed that details will be provided in the Stormwater Management Report.

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Appendix A – Borehole Logs
Appendix B – MECP Water Well Records
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Appendix D – In-Situ Hydraulic Conductivity Testing Details
Appendix E – Grain Size Distribution Graphs
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Appendix G – Site Plan of the Proposed Building
Appendix H – Short-Term Dewatering and Long-Term Foundation Drainage Flow Rate Estimates
Appendix I – Pre- and Post-Development Water Balance Analyses

1.0 INTRODUCTION

1.1 Site Location and Project Description

Terraprobe Inc. (Terraprobe) was retained by the City of Vaughan to conduct a hydrogeological assessment for the proposed development of 9541 Weston Road (Fire Station No. 7-12) in the City of Vaughan, Ontario (the “Site”). The Site is approximately located 710 m to the north of the main intersection of Rutherford and Weston Road, at the east side of Weston Road in the City of Vaughan. Location of the Site is shown on **Figure 1**.

The Site is bounded by an institutional building to the north, Weston Road to the west, a wooded lot to the south and the east. It currently consists of Vellore Hall Park buildings, local access roads, at-grade parking lot and landscaped/green areas. The proposed development will include construction of a two-storey slab-on-grade fire station (City of Vaughan Fire Station No. 7-12) building with associated at grade parking lots. As such, the proposed study areas at the Site are located within the southwest and south portions of the Site where the existing at-grade parking lot and the portions of the green area are located.

Currently, municipal water and sewer services are provided to the vicinity of the Site. It is understood that future development will be municipally serviced.

The study was undertaken to assess hydrogeological conditions of the Site and to provide general information regarding the hydrogeological impact of the proposed development on the local groundwater function. The report addresses the following areas:

- Identifying the geological and hydrogeological setting of the Site;
- Confirming groundwater level and groundwater flow direction beneath the Site;
- Assessing groundwater quality in comparison with the Regional Municipality of York Sewer Use By-Law and City of Vaughan Sewer Use By-Law;
- Evaluate potential short-term construction dewatering needs for construction of the proposed development;
- Identifying potential impacts to the nearby groundwater receptors including water supply wells and natural heritage features regarding the proposed development;
- Providing mitigation plan on the potential impacts to the groundwater receptors associated to the proposed development; and,
- Providing recommendation on any needs for applying for Permit to Take Water (PTTW), or posting Environmental Activity and Sector Registry (EASR) with the Ministry of the Environment, Conservation and Parks (MECP).

1.2 Scope of Work

The scope of work for the hydrogeological assessment is summarized below:

- Review of Available Background Information: Available background geological and hydrogeological information for the Site including topographic mapping, surface geological and bedrock geological mapping, natural heritage features databases, and MECP water well records were reviewed.
- Review of City of Vaughan Official Plans and Toronto Region Conservation Authority (TRCA) Policy Areas: The City of Vaughan official plans and TRCA maps were reviewed to understand the location of the Site and the proposed development within the policy areas.
- Site Inspection: A visual inspection of the Site and surrounding areas to determine local topography and drainage, and an assessment of significant features was completed.
- Groundwater Monitoring and Hydraulic Conductivity Testing: Groundwater levels within the installed monitoring wells were monitored over four (4) monitoring events. In-situ hydraulic conductivity testing was completed within the installed monitoring wells to estimate the hydraulic conductivity of the strata within the well screen intervals.
- Groundwater Quality Assessment: Groundwater quality was assessed in comparison with the Regional Municipality of York Sewer Use By-Law to assess available options to discharge the potential short-term dewatering effluent.
- Review of Proposed Site Development Concept: The currently proposed site development concept was reviewed with respect to measures being implemented at the Site in order to estimate the potential construction dewatering needs.
- Construction Dewatering Flow Rate Estimate: Considering the proposed development plans, construction dewatering flow rate (short-term dewatering) was estimated using the stable groundwater table and estimated hydraulic conductivity measured in the Site.
- Mitigation Plans for Dewatering: A mitigation plan was recommended to mitigate potential short-term dewatering impacts to the nearby groundwater receptors (including natural heritage features and water supply wells), and structures, if applicable.
- Long-term foundation Drainage Flow Rate Estimate: Long-term foundation drainage flow rate was estimated using the stabilized groundwater level and estimated hydraulic conductivity measured in the Site; and reviewing the proposed development plans.

- Potential Short-Term Dewatering Permits: Considering the estimated short-term construction dewatering flow rates, recommendations were provided on any need for applying for a PTTW or posting on the EASR with the MECP, if required.
- Pre- and post-development Water Balance Assessment: Water balance parameters were assessed for the pre- and post-development Site conditions.



2.0 APPLICABLE REGULATIONS AND AGENCIES

The environmental regulations and policies relevant to this hydrogeological study are briefly discussed below.

2.1 Toronto Regional Conservation Authority (TRCA) Policies and Regulation (O. Reg. 166/06)

Under Section 28 of the Conservation Authorities Act, local conservation authorities are mandated to protect the health and integrity of the regional greenspace system, and to maintain or improve the hydrological and ecological functions performed by valley and stream corridors. The TRCA, through its regulatory mandate, is responsible for issuing permits under Ontario Regulation (O. Reg.) 166/06, Development, Interference with Wetlands and Alterations to Shorelines and Watercourses for development proposal or Site alteration work to shorelines and watercourses within the regulated areas.

TRCA Regulated Area online mapping was reviewed on February 14, 2022. It is our understanding that the Site is not located within a TRCA Regulated Area. As such, it is anticipated that obtaining a permit from the TRCA under O. Reg. 166/06 will not be required for the proposed development.

2.2 City of Vaughan Official Plan

The City of Vaughan's Official Plan sets up policies that deal with legislative and administrative concerns, guides physical growth, and addresses social, economic, and environmental concerns. The Official Plan provides land use planning designations and identifies areas of environmental significance where more stringent policies may apply for development applications.

City of Vaughan Official Plans were reviewed for the current study with the results summarized as below:

- Schedule 1A (Urban Area) - A review of the map, dated December, 2020, indicates that the Site is located within the Urban Area.
- Schedule 2 (Natural Heritage Network) - A review of the map, dated February, 2021 indicates that the Site is not located within an area designated as "Areas of Natural Heritage Network".
- Schedule 6 (Aquifer Vulnerability) - A review of the map, dated July, 2015, shows that the Site is not located within the high and low vulnerability aquifer zone.
- Schedule 11 (Wellhead Protection Areas) - A review of the map, dated July, 2015, shows that the Site is not located within the wellhead protection areas.
- Schedule 13 (Land Use) - A review of the map, dated July, 2015, shows that the Site is not located within the wellhead protection areas.

2.3 Permit to Take Water (PTTW)

According to Part III of O. Reg. 63/16, for construction dewatering, water takings of more than 50,000 L/day but less than 400,000 L/day is to be registered on EASR, while water takings of more than 400,000 L/day require a PTTW issued by the MECP. If it is identified that an EASR or PTTW is required for the Site, a hydrogeological assessment report will need to be submitted in support of the application. Construction dewatering estimation was completed as a part of the scope of work for the current assessment.

2.4 Clean Water Act

The MECP mandates the protection of existing and future sources of drinking water under the Clean Water Act, 2006 (CWA). Initiatives under the CWA include the delineation of Wellhead Protection Areas (WHPAs), significant groundwater recharge areas (SGRAs) and Highly Vulnerable Aquifers (HVAs) as well as the assessment of drinking water quality and quantity threats within Source Protection Regions. Source Protection Plans are developed under the CWA and include the restriction and prohibition of certain types of activities and land uses within WHPAs.

Based on a regional-scale source water protection mapping (Source Water Protection Information atlas) provided by the MECP, the Site is not located within a WHPA area, issue contributing area, HVA and intake protection zone. However, it is located within areas designated as WHPA Q1/Q2 with moderate stress.

3.0 METHODOLOGY

3.1 Borehole Advancement and Monitoring Well Installation

Drilling boreholes and construction of monitoring wells were conducted for geotechnical investigation by Englobe Corporation between January 13, 2022 and January 21, 2022. The program consisted of the drilling of sixteen (16) boreholes (BH) and installation of five (5) monitoring wells for geotechnical and hydrogeological assessment purposes. The locations of the boreholes and monitoring wells are shown on **Figure 2**.

Borehole drilling and monitoring well construction were completed by a licensed water well contractor, Drilltech Drilling Ltd., under the full-time supervision of a drilling supervisor from Englobe Corporation. Englobe's geotechnical supervisor logged the soil strata encountered during borehole advancement and collected representative soil samples for textural classification. The boreholes were drilled using continuous flight, solid-stem auguring equipment. Detailed descriptions of the encountered subsoil and groundwater conditions are provided by Englobe and presented on the borehole and monitoring well logs, on the enclosed **Appendix A**.

The monitoring wells were constructed using 50-mm diameter, which were installed in each of the selected geotechnical boreholes. Monitoring wells were equipped with steel flush mount or the monument protective casings at the ground surface as mentioned below in **Table 3-1**.

The UTM coordinates and ground surface elevations at the monitoring wells' locations, as well as the monitoring well construction details, are presented in **Table 3-1**. The ground surface elevations at the boreholes and monitoring wells' locations were provided by Englobe. The elevations provided on the Borehole Logs are approximate only, for the purpose of relating soil stratigraphy and should not be used or relied on for other purposes.

Table 3-1- Monitoring Well Installation Details

Monitoring Well ID	Installation Date	UTM Coordinates (m)		Ground El. (masl)	Monitoring Well Depth (mbgs)	Screen Interval (mbgs)	Casing Dia. (mm)	Protective Casing Type
		Easting	Northing					
BH1	January 14, 2022	615968	4854297	225.6	4.0	2.5-4.0	50	Flush Mount
BH8	January 13, 2022	615997	4854284	225.2	7.8	4.8-7.8	50	Flush Mount
BH9	January 13, 2022	615983	4854276	225.2	7.9	4.9-7.9	50	Flush Mount
BH12	January 21, 2022	616022	4854276	225.0	7.7	4.7-7.7	50	Flush Mount
BH15	January 21, 2022	616044	4854318	224.8	4.2	2.7-4.2	50	Monument

Notes:

mbgs metres below ground surface

masl metres above sea level

3.2 Groundwater Monitoring

All six (6) installed monitoring wells were utilized to measure and monitor groundwater levels. Monitoring wells were developed, and the groundwater monitoring program confirmed the stabilized groundwater level beneath the Site. The stabilized groundwater levels were monitored over four (4) monitoring events from February 2, 2022 to March 7, 2022, with the results presented in **Section 6.1**.

3.3 MECP Water Well Records Review

MECP Water Well Records (WWRs) were reviewed for the registered wells located at the Site and within 500 m radius of the Site boundaries (study area). The findings of the MECP well records are presented in the **Section 4.6** of the current report.

3.4 In-Situ Hydraulic Conductivity Test

Monitoring well BH15 was utilized to conduct hydraulic conductivity test since all other monitoring wells (BH1, BH9 and BH12) were found dry and BH8 has an inadequate water for the test. The in-situ hydraulic conductivity test (falling head and rising head) provides estimated hydraulic conductivity (K) for subsoil strata at the depths of the well screens. The monitoring wells were developed in advance of the tests. Well development involves the purging and removal of groundwater from each monitoring well to remove remnants of clay, silt and other debris introduced into the monitoring well during construction, and to induce the flow of formation groundwater through the well screens, thereby improving the transmissivity of the subsoil strata formation at the well screen depths.

The in-situ falling head hydraulic conductivity test involves the placement of a slug of known volume into the monitoring well, below the water table, to displace the groundwater level upward. The in-situ rising head hydraulic conductivity test involves removing a volume of water from the monitoring well to displace the groundwater level downward. The rate at which the water level recovers to static conditions (rising head/falling head) is tracked manually using a water level tape and a data logger. The rate at which the water table recovers to static conditions is used to estimate the K value for the water-bearing strata formation at the well screen depth using the Bouwer and Rice method (1976). The findings for the hydraulic conductivity testing are presented in **Section 6.3.1** of the current report.

3.5 Hydraulic Conductivity based on Grain Size Distribution Graphs

The Hazen equation estimation method was also used to estimate the hydraulic conductivity (K) for saturated subsoils at selected depths beneath the groundwater table beneath the Site. The method provides alternative hydraulic conductivity (K) estimates which are derived from the grain size diameter, whereby 10% by weight of the soil particles are finer and 90% are coarser (Freeze and Cherry, 1979). The soils

chosen for Hazen to estimate were selected from different stratigraphic units contacted at the boreholes' locations. Findings are presented in **Section 6.3.2**.

3.6 Groundwater Quality Assessment

Groundwater quality should be assessed in advance of earth work. As such, one (1) set of samples (sewer set) was collected from one (1) selected monitoring well (BH15) on February 14, 2022 to characterize its quality for evaluation against the Regional Municipality of York Storm and Sanitary Sewer Use By-Law (2014-23) parameters. This is performed to assess whether any anticipated dewatering effluent can be disposed of into the Regional Municipality of York sewer system during construction, or following site development for any long-term foundation drainage. Based on the results, recommendations for any pre-treatment for any dewatering/drainage effluent can be developed, if required.

One (1) selected monitoring well (BH15) was developed and purged of multiple well casings volumes of groundwater prior to sample collection. The groundwater sample was collected using a bailer. In accordance with the York Region Storm and Sanitary Sewer Use By-Law sampling protocols, one (1) complete set of groundwater samples was not filtered during collection, prior to placement in the laboratory sample bottles. Upon sampling, all of the bottles were placed on ice and packed in a cooler at about $6 \pm \text{C}^\circ$ for shipment to the analytical laboratory. Sample analysis were performed by an accredited lab by the Canadian Association for Laboratory Accreditation Inc. (CALA). Results of the analysis are discussed in **Section 6.3**.

3.7 Review of Regional Data and Available Reports for the Site

The maps, data, and documents provided by the MECP, Ontario Geological Survey (OGS), Ministry of Natural Resource and Forestry (MNRF), Oak Ridges Moraine Groundwater Program (ORMGP), and TRCA were reviewed. Additionally, an available geotechnical report was reviewed at the time of preparation of the current hydrogeological assessment report, with the findings summarized in **Sections 4 and 5**.

4.0 REGIONAL AND LOCAL SITE SETTING

4.1 Regional Geology

The current understanding of the surface geological setting of the Site is based on scientific work conducted by the OGS (OGS, 2003). The Site and surrounding area are located within an area mapped as Till deposits (5d), comprising clay to silt-texture till derived from glaciolacustrine deposits or shale. **Figure 3** illustrates the mapped surficial geology for the Site and the surrounding area.

The Oak Ridges Moraine Groundwater Program (ORMGP) produced a cross-sectional geological map to aid in the characterization of the general area. Considering the regional cross-section, it is understood that the overburden units prevalent in this area are as follows, with the youngest unit at the top:

- Undifferentiated Upper Sediments
- Halton Till (equivalent)
- Oak Ridges Moraine
- Channel Silt Aquitard
- Channel Sand Aquifer
- Thorncliffe Formation
- Sunnybrook Drift
- Scarborough Formation

Undifferentiated Upper Sediments: Based on the ORMGP cross-section, the undifferentiated upper sediments are mapped in close proximity to the ground surface. The approximate thickness of the undifferentiated upper sediments could reach 2.0 m beneath the Site.

Halton Till (or Equivalent Upper Till): The Halton Till is mainly comprised of sandy silt to clayey silt till interbedded with silt, clay, and a number of discontinuous sand and gravel lenses. It was deposited approximately 12,500 years ago. Based on cross-section, the Halton Till or equivalent is present close to the ground surface, with an approximate thickness of up to 20.0 m.

Oak Ridges Moraine and Channels: The Oak Ridges Aquifer Complex (ORAC) is a regionally significant aquifer in southern Ontario. The majority of the aquifer's recharge occurs at the crest of the moraine north of the Site. It is primarily composed of interbedded fine sand and silt deposits with localized coarse sand and gravel deposits. The ORAC is approximately 90 m thick beneath the crest of the moraine, but thins out rapidly towards the margins. Approximate thickness of the ORAC and the channels could reach to 48.9 m beneath the Site.

Thorncliffe Formation: The Thorncliffe Formation consists of glaciofluvial and glaciolacustrine sand and silt deposited approximately 30,000 to 50,000 years ago. The Thorncliffe Formation shows a

considerable variation in grain size and thickness, both locally and regionally. It acts as a regional aquifer. Based on the ORMGP cross-section, the thickness of the Thorncliffe could reach 0.7 m beneath the Site.

Sunnybrook Drift: The Sunnybrook Drift consists of silt to silty clay materials deposited 45,000 years ago and acts as a regional aquitard. The thickness of the Sunnybrook Drift is generally less than 10 m to 20 m. Based on the ORMGP cross-section, the estimated thickness that could reach to 7.9 m beneath the Site.

Scarborough Formation: The Scarborough Formation is composed of clay, silt, and sand sediments in a deltaic sequence. It acts as an aquifer of regional extent. This unit is mostly found within bedrock valleys and thins laterally away from the valleys. Based on the ORMGP cross-section, the thickness to the Scarborough Formation could reach 25.4 m beneath the Site.

The underlying bedrock at the Site is the Georgian Bay Formation, which consists of limestone along with shale (OGS, 2007). A review of the ORMGP cross-section indicates that the bedrock could be contacted at an approximate depth of 104.9 metres below ground surface (mbgs) beneath the Site.

4.2 Regional Physiography

The Site is located within a regional physiography of Southern Ontario known as Peel Plain. The Peel Plain within the vicinity of the Site comprises a Bevelled Till Plains.

The Peel Plain is a level-to-undulating tract of clay rich soils, covering an area of about 780 km² across the central portions of the Regional Municipalities of York, Peel, and Halton. The Peel Plain exhibits a gradual and fairly uniform downward slope, to the south, towards Lake Ontario. Across this plain the Credit, Humber, Don, and Rouge Rivers have cut deep incised valleys into the overburden soil profile, as have other streams such as the Bronte, Oakville, and Etobicoke Creeks. There are no large un-drained depressions, swamps, or bogs in the immediate area, and for many of the local inter-stream areas, drainage is still imperfect. The underlying geological material for the Peel Plain is mapped as glacial till mineral soil. The till unit, within much of the Peel Plain has been modified by a veneer of clay (Chapman and Putnam, 1984). **Figure 4** shows the location of the Site within the regional physiography map.

4.3 Regional Topography and Drainage

The ground surface elevation ranges approximately between 224.8 masl to 225.8 masl based on ground surface elevations measured at the borehole locations. Considering the regional topography map, ground surface elevation for the Site and the vicinity of the Site slopes southwesterly direction as shown on **Figure 5**. As such, it is anticipated that generated runoff (if it is not managed) will flow southwesterly direction toward a tributary of East Humber River flowing along the west boundary of the Site in a south/southeasterly direction.

4.4 Watershed Setting

TRCA interactive watershed map was reviewed on February 16, 2022. The Site is located at the border of the Don River watershed and the Humber River Watershed, where the southwest portion of the Site is located within the Humber River Watershed and the rest of the Site is mapped within the Don River Watershed. Both watersheds fall under TRCA jurisdiction. The Don River Watershed covers an area of approximately 36,000 ha, including portions of the City of Toronto, the Cities of Vaughan, Markham, and City of Richmond Hill in the Regional Municipality of York. The watershed drains southward from its heights along the ORM in the north (at an elevation of 315 masl) towards Lake Ontario in the south. Three (3) main geological features including the Bedrock Valley System, Oak Ridges Moraine, and areas of in-filling of eroded Quaternary sediments are presented within the watershed (TRCA, 2009). The Humber River Watershed includes 1,800 km of waterways and 600 bodies of water. It consists of the Main Humber, the East Humber, the West Humber, Black Creek, and the Lower Humber sub-watersheds. The Humber River watershed includes portions within 10 local municipalities, including; the City of Vaughan, the City of Richmond Hill, the Township of King and the Town of Aurora in the Regional Municipality of York; the Cities of Brampton and the City of Mississauga and the Town of Caledon in the Regional Municipality of Peel; the City of Toronto, the Town of Mono in Dufferin County, and the Township of Adjala-Tosorontio in Simcoe County (Toronto and Region Conservation Authority, 2008).

4.5 Local Surface Water and Natural Heritage Features

MNRF database was reviewed on February 16, 2022 for any natural heritage features including, watercourses, bodies of water, wetland features, Area of Natural and Scientific Interest (ANSI) and wooded areas. **Figure 6** shows the location of the Site within the surrounding Natural Heritage Features, partially.

Record review indicates that there are no records for natural heritage features including water bodies, watercourses and ANSI within the Site.

Tree lines and wooded areas are scattered around the Site. Don River West Branch flows approximately 1.5 km to the east, and East Humber River and associated tributaries, wetlands and wooded areas are located approximately 2.9 km to the west of the Site. Local ponds including Storm Water Management ponds are scattered around the Site with the closest record located approximately 500 m to northeast of the Site. Additionally, two (2) small ponds are mapped within the wooded area located adjacent to the east boundary of the Site. Record review indicates that wetland features are scattered around the Site, with the closest record located approximately 100 m to the southeast of the Site.

4.6 Ground Water Resources (MECP Well Records)

MECP well record database was reviewed for records located within a radius of 500 m from the approximate Site boundary (Study Area). The location of the well records is presented on **Figure 7** with the details for each record summarized in **Appendix B**. A total of 21 records were located within the Study Area. A summary of data obtained from record review is presented in **Table 4-1**.

Table 4-1 - MECP Well Record Summary

Number of the Well Records	21
Unknown Status	3 (14%)
Well Type	
Drilled Well	18 (86%)
Unknown	3 (14%)
Depth Ranges	
6.0 m to 30 m (20 ft to 100 ft)	7 (33%)
Greater than 30 m (100 ft)	6 (29%)
Unknown	8 (38%)
Water Use (Final Status)	
Water Supply	15 (71%)
Abandoned/Other	2 (10%)
Monitoring and Test Hole	3 (14%)
Unknown	1 (5%)
Reported Groundwater Static Level	
0 to 5 m (0 to 16 ft)	1 (5%)
6 to 30 m (100 ft)	13 (62%)
Greater than 30 m (100 ft)	1 (5%)
Unknown	6 (28%)

The above summary indicates that most of the local wells are registered as water supply wells. All fifteen water supply wells are used for domestic purposes. Thirteen of the registered wells are completed deeper than 6.0 mbgs. Static groundwater level was recorded in between 6 to 30 mbgs for 62% of the wells.

As there are water supply wells within the Study Area, a door to door well survey is required in advance of, during and after construction if dewatering is required.

4.7 Active Permit to Take Water Application Records Review

MECP website was reviewed for any active PTTW application records within 1.0 km radius of the Site on February 17, 2022. Record review indicates there are no records for active PTTW within the Study Area.

5.0 LOCAL GEOLOGY AND SUBSURFACE INVESTIGATION

Englobe completed a geotechnical investigation on January 13, 14 and 21, 2022. The fieldwork consisted of drilling of a total of fifteen (15) boreholes extending to maximum depths of investigation at 8.2 mbgs. Five (5) boreholes were equipped with monitoring wells to monitor groundwater conditions beneath the proposed structures. Information regarding borehole logs is presented in **Appendix A**. The approximate locations of boreholes are shown on **Figure 2**. A review of the geotechnical investigation report indicates that the stratigraphy beneath the investigated areas of the Site generally consists of the followings:

5.1 Pavement Structure

A flexible pavement structure was encountered at eleven (11) of the borehole locations within the project limits (Study Areas). The asphalt thickness ranges from 80 to 110 mm. The granular base/subbase material at the borehole locations consisted of sand and gravel that ranges from 120 mm to 300 mm. The in-situ moisture content of this material ranged from 8 to 26 percent presenting a moist to wet condition.

5.2 Topsoil

A surficial topsoil layer of an average depth of 0.2 m in thickness was encountered in BH4, BH13, BH15 and BH16. Beneath the topsoil, native deposits of sandy silty clay and silty clay till were encountered in BH15 and BH16, respectively. Granular material was also found below the topsoil layer in BH4 and BH13.

5.3 Native Soil

5.3.1 Sandy Silt

The native subsoil at the borehole locations within the project limits (Study Area) predominantly consisted of sandy silt. This material was encountered below the pavement structure. The sandy silt was generally in a loose to dense state with SPT 'N' values ranging from 4 to 49 per 300 mm penetration recorded. The natural moisture content of this material ranged from 11 to 20 percent indicating moist to wet conditions.

5.3.2 Silt

Silt deposit was encountered below the sandy silt in BH1, BH2, BH8 and under the pavement structure in BH11. This material extended to the termination depth of investigation in the above noted boreholes except for BH8. The silt was generally in a compact to very dense state with SPT 'N' values ranging from 10 to 71 per 300 mm penetration recorded. The natural moisture content of the layer ranged from 9 to 22 percent indicating moist to wet conditions.

5.3.3 Silty Sand

The subsoil below the sandy silt predominantly consisted of silty sand and generally extended to the termination depth of investigation. The silty sand deposit was generally in a loose to very dense state with SPT 'N' values ranging from 7 to 73 per 300 mm penetration recorded. The natural moisture content of this material ranged from 6 to 23 percent presenting a moist to wet condition.

5.3.4 Clayey Silt/Silty Clay

A stratum of clayey silt/silty clay/sandy silty clay was encountered below the silty sand in BH5, BH6, BH8, BH10, BH12, BH13, BH15 and BH16 extending to the termination depth of investigation in the above mentioned boreholes. In BH12 and BH16 clayey silt was also encountered below the pavement structure and topsoil, respectively. The clayey silt was generally in a firm to hard state with SPT 'N' values ranging from 6 to 32 per 300 mm penetration recorded. The natural moisture content of this material ranged from 9 to 20 percent indicating moist to wet conditions.

5.3.5 Sandy Silty Clay

Sandy silty clay was encountered below the cohesionless deposit in boreholes BH8, BH12 and BH13 respectively. This material extended to the depth of exploration in these three boreholes. The clayey sandy silt till was generally in a loose to compact state with SPT 'N' values ranging from 4 to 21 per 300 mm penetration recorded. The natural moisture content of this material ranged from 6.7 to 17.6 percent indicating a moist condition.

6.0 LOCAL HYDROGEOLOGICAL STUDY

6.1 Monitoring Well Development and Groundwater Level Monitoring

A groundwater monitoring program was completed between February 2, 2022 and March 7, 2022 as a part of the hydrogeological assessment. Five (5) monitoring wells, installed for the hydrogeological assessment (BH1, BH8, BH9, BH12 and BH15), were considered for monitoring program.

Groundwater levels were monitored over four (4) monitoring events. Terraprobe measured the groundwater levels using an interface probe (Solinst Interface Metre, Model 122). The measured groundwater levels, along with other monitoring wells details and findings, are presented in **Appendix C**. A summary of the groundwater level observations is provided in **Table 6-1**.

Table 6-1- A Summary of Groundwater Monitoring

MW* ID	Unit	Screen Interval	Groundwater Level				
			February 2, 2022	February 14, 2022	February 24, 2022	March 7, 2022	March 9, 2022
BH1	mbgs	2.5-4.0	Dry	Dry	4.00	4.01	4.01
	masl	224.6-221.6	Dry	Dry	221.59	221.58	221.58
BH8	mbgs	4.8-7.8	Dry	7.57	Dry	7.68	7.62
	masl	220.4-217.4	Dry	217.59	Dry	217.48	217.54
BH9	mbgs	4.9-7.9	Dry	Dry	7.73	7.69	7.76
	masl	220.3-217.3	Dry	Dry	217.43	217.47	217.40
BH12	mbgs	4.7-7.7	Dry	Dry	7.57	Dry	Dry
	masl	220.3-217.3	Dry	Dry	217.45	Dry	Dry
BH15	mbgs	2.7-4.2	2.71	2.69	1.29	1.00	1.18
	masl	225.7-223.7	222.14	222.16	223.56	223.85	223.67

Notes:

*MW Monitoring Well

mbgs metres below ground surface

masl metres above sea level

As shown in **Table 6-1**, the highest shallow groundwater level was measured at El. 223.85 metres above sea level (masl) at BH15. Since BH15 is outside the footprint of the proposed building and considering subsoil profile, the highest groundwater level for the design purposed is taken from BH1 at 221.59 masl.

6.2 Shallow Groundwater Flow Pattern

Groundwater level elevations measured on March 7, 2022 were considered to interpret the shallow groundwater flow pattern beneath the Study Areas. **Figure 8** presents the interpreted shallow groundwater elevation contours. A review of the plan indicates that the shallow groundwater is interpreted flowing a southerly direction in general towards the East Humber River.

6.3 Hydraulic Conductivity Testing

6.3.1 In-Situ Hydraulic Conductivity Testing

Monitoring well BH15 underwent single well response tests (SWRTs) to assess the hydraulic conductivity (K) for saturated shallow aquifer subsoils at the depths of the well screens as other wells were found dry or inadequate water for the tests. A monitoring well was equipped with a digital transducer to record the fluctuation made to complete the SWRT. Estimated hydraulic conductivity for the monitoring well BH15 was analysed using the Bouwer and Rice method (1976). The result of the SWRT test is presented in **Appendix D**, with a summary of the findings provided in **Table 6-2**.

Table 6-2- A Summary of Falling Head Hydraulic Conductivity Testing

Well ID	Ground El. (masl)	Monitoring Well Depth (mbgs)	Screen Interval (mbgs)	Screened Soil Strata	Hydraulic Conductivity (K in m/s)	Test Method
BH15	224.8	4.2	2.7 – 4.2	Silty Clay with Sand	1.44×10^{-7}	Rising Head Test

Notes:

mbgs metres below ground surface

masl metres above sea level

6.3.2 Hydraulic Conductivity Test Using Grain Size Distribution Graphs

The Hazen Equation method was adopted to estimate the hydraulic conductivity (K) for different soil layers which may contain groundwater during the seasonal high water table (spring) period, or if they are not encountered within the screen intervals.

The Hazen Equation method relies on the interrelationship between hydraulic conductivity and effective grain size, d_{10} , in the soil media. This empirical relation predicts a power-law relation with K, as follow:

$$K = Ad_{10}^2$$

where;

d_{10} : Value of the soil grain size gradation curve as determined by sieve analysis, whereby 10% by weight of the soil particles are finer and 90% by weight of the soil particles are coarser.

A: Coefficient; it is equal to 1 when K in cm/sec and d_{10} is in mm

The Hazen Equation estimation provides an indication of the groundwater yield capacity for saturated soil strata at the depths where soils samples were selected for grain size analysis. The grain size distribution graphs prepared for the geotechnical investigation were used to estimate the hydraulic conductivity, with the details are presented in **Appendix E**. The results of the Hazen equation are provided in **Table 6-3**, below.

Due to significant amount of clay and silt, values for hydraulic conductivity with acceptable accuracy cannot be estimated from grain size analysis for BH8(SS8), BH9(SS8), BH12(SS8), BH13(SS1) and BH15(SS5).

Table 6-3 -A Summary of Hydraulic Conductivity Using Hazen Equation

Borehole/ Monitoring Well ID	Soil Sample Depth (mbgs)	Soil Sample Elevation (masl)	Soil Strata	Hydraulic Conductivity (m/s)
BH1	3.5 (SS5)	222.1	silt trace clay	3.03×10^{-7}
BH2	2.0 (SS3)	223.0	silt trace clay and sand	4.23×10^{-7}
BH8	5.0 (SS7)	220.2	silt with sand trace clay	3.60×10^{-7}
BH10	2.5 (SS4)	222.6	silt trace clay and sand	5.63×10^{-7}
BH11	1.0 (SS2)	224.0	silt with clay	2.03×10^{-7}
BH12	5.0 (SS7)	220.0	silty sand trace clay	7.23×10^{-7}
BH16	2.0 (SS3)	222.9	silty clay with sand	1.69×10^{-8}

Notes:

mbgs metres below ground surface
masl metres above sea level

6.4 Groundwater Quality

One (1) set of unfiltered groundwater sample was collected by Terraprobe and analyzed by a laboratory accredited by SGS, laboratory the Canadian Association for Laboratory Accreditation. The sample was collected directly from monitoring well BH15 on February 14, 2022.

Monitoring well BH15 was purged and one (1) set of unfiltered groundwater samples was collected in accordance with York Region Storm and Sanitary Sewer Use By-Law sampling protocols. Upon sampling, all of the bottles were placed in a cooler for shipment to the analytical laboratory. Sample analysis was performed by SGS, a third party CALA-accredited laboratory. The groundwater quality test results and a certificate of analysis, including test results, are presented in **Appendix F**.

The analytical results for the unfiltered groundwater samples obtained from monitoring well BH15 indicates that the concentrations for all the analyzed parameters meet the Regional Municipality of York sanitary sewer use limits. There are exceedances for Total Suspended Solids (TSS), total manganese and total cyanide in comparison with the Regional Municipality of York storm sewer by-law limits. The exceedances, together with the storm and sanitary sewer use criteria, are presented in **Table 6-4**.

Table 6-4- Groundwater Quality Analysis Results Exceeded

Exceeded Parameter	Groundwater Quality Results (mg/L)	Regional Municipality of York Sanitary Sewer use By-Law Limits (mg/L)	Regional Municipality of York Storm Sewer Use By-Law Limits (mg/L)
TSS	234	350	15
Total Manganese	0.241	5.0	0.15
Total Cyanide	0.03	2.0	0.02

The results suggest that any construction dewatering or foundation drainage effluents should be acceptable for discharge to the Regional Municipality of York sanitary sewer. The anticipated effluent would not be acceptable for discharge to the Regional Municipality of York storm sewer system. However, implementing pre-treatment to lower TSS, total manganese and total cyanide to meet the Regional Municipality of York storm sewer by-law limits could permit its discharge to the Regional Municipality of York storm sewer system.

Pre-treatment to lower TSS could involve use of settling weir tanks and/or filter bags during construction. The final design for any dewatering effluent pre-treatment system is the responsibility of the contractors undertaking construction.

7.0 CONSTRUCTION DEWATERING

7.1 Proposed Development Plan Review

The proposed Site Plan provided by City of Vaughan and prepared by Thomasbrown Architects dated November 24, 2021 (drawing no. CR1.1) and the geotechnical report prepared by Englobe, dated March 30, 2022 were reviewed for the current assessment. The reviewed design drawings are presented in **Appendix G**.

Based on a review of the Site Plan prepared by Thomasbrown Architects dated November 24, 2021 (drawing numbers CR 1.1), the proposed development will include construction of a slab-on-grade Fire Station Number 7-12 and associated at-grade parking lot. The preliminary Finished Floor Elevation (FFE) is proposed at El. 225.75 masl as per the email received on March 17, 2022. As per Englobe's geotechnical report dated March 30, 2022, the base of the excavation is considered as 225.25 masl and the base of footing was considered at El. 222.75 masl (including 0.5 m of granular material beneath the footing).

7.2 A review of Geotechnical Report

A review of the Geotechnical report prepared by Englobe Corporation dated March 30, 2022 indicates that:

- The topsoil must be removed from all new foundation areas. Footing must be founded on the native silty sand/sandy silt or on engineering fill. In areas where the silty clay or clayey silt is encountered, it is recommended that the existing inorganic native soil is removed at the footing locations and a granular pad (extending 0.5 m width on either side of the footing) shall be placed with minimum thickness of 1.0 m below the foundation depths.
- Strip and spread footings can be designed using limit state static bearing pressures and the depth of the footing is 2.5 m as tabulated in Table 9, section 4.2.1 of the geotechnical report.
- The frost penetration depth for the Site is estimated at 1.2 m. All footings subject to frost action should be provided with a minimum of 1.2 m of soil cover.
- Based on the field evaluation of the subsurface conditions excavations for all footings must be cut back at side slopes of 1:1 (H:V).
- Perimeter drainage is not considered to be necessary for areas without basement.
- Underlying the topsoil and pavement structure, native deposits mainly comprise clayey silt/silty clay, sandy silt/silty sand, silt and clayey sandy silt.

7.3 Summary of Hydrogeological Conditions of Site Development

The results of the findings provided by Englobe Corporation, and the investigation completed by Terraprobe indicate the following hydrogeological features for the Site:

- The shallow groundwater table for design purposes should be considered to be at El. 221.59 ± masl (4.0 mbgs) measured at BH1 located north west of the proposed building footprint.
- The estimated hydraulic conductivity of 1.44×10^{-7} m/s, 4.23×10^{-7} and 7.23×10^{-7} m/s is considered for the clayey silt, silt, and sandy silt/silty sand units, respectively.

7.4 Short-Term Groundwater Control Requirements (Construction Dewatering)

Based on a review of the Site Plan prepared by Thomasbrown Architects dated November 24, 2021 (drawing numbers CR 1.1), the proposed development will include construction of a slab-on-grade Fire Station Number 7-12 and associated at-grade parking lot. The preliminary Finished Floor Elevation (FFE) is proposed at El. 225.75 masl as per the email received on March 17, 2022. As per Englobe's geotechnical report dated March 30, 2022, the base of the excavation for construction of the slab is considered as 225.25 masl and the base of footing was considered at El. 222.75 masl (including 0.5 m of granular material beneath the footing).

The highest known stabilized groundwater level, measured over the monitoring period within the proposed building footprint, is recorded at 221.59 masl (BH1) which is 1.16 m below the underside of the footing.

Considering the shallow groundwater level and proposed invert elevations, construction dewatering is not required for excavation and construction of the proposed slab-on-grade building. However, anticipated precipitation should be collected from the excavation trench that will be developed for construction of the proposed footings. The total wall length of the building is calculated from the drawing no. CR 1.1 prepared by Thomasbrown Architects dated November 24, 2021. Based on the reviewed plan, the total footing length of 143.4 m was considered for the proposed building. Additionally, based on a review of the geotechnical investigation report, the width of 4.0 m (1.0 m footing width and 1H:1V slope cutting) should be considered for construction of the footing. As such a trench with a length and width of 143.4 and 4 m was assumed as an average width of the trench for dewatering assessment from rainfall sources.

Volumes for a 30.8 mm was estimated using the Ministry of Transportation IDF Curve (http://www.mto.gov.on.ca/IDF_Curves/results_out.shtml?coords=43.832922,-79.557421). The details are presented in **Appendix G**. The estimated construction dewatering flow rates for the proposed development is summarized below:

- Anticipated construction dewatering for developing the proposed slab-on-grade building is 18,000 L/day from precipitation source if the excavation and construction of the trench is completed over 1 day. If a trench with a length of 50 m is excavated and constructed per day, a flow rate of 6,000 L/day is expected over storm event.

Additionally, considering the subsoil profile perched water may be contacted over the excavation and construction period.

As required by Ontario Regulation 63/16, a plan for discharge must consider the conveyance of storm water from a 100-year storm. The volume that will be generated in the occurrence of a 100-year storm event is approximately 59,000 L/day for construction of the proposed slab-on-grade building. Details are presented in **Appendix H**.

7.5 Long-Term Foundation Drainage

A slab-on-grade 2 storey building is proposed for the future development. Additionally, the proposed building will be constructed above shallow groundwater level. Additionally, construction of a foundation drainage is not proposed in the geotechnical investigation report. As such, discharge plan for long-term foundation drainage is not required for the post development structure.

Any localized protrusions extending below the base of the excavation, including elevator or sump pits should be waterproofed in the long-term

7.6 Permit Requirements

The total anticipated short-term dewatering flow rate reaches 18,000 L/day, which remains below the MECP Environmental Activity and Sector Registry (EASR) lower threshold limit of 50,000 L/day. As such, filing EASR with the MECP is not required. However, obtaining a discharge agreement from the City of Vaughan/York Region will be required.

The anticipated foundation-drainage flow rate is not anticipated. As such, applying for PTTW with the MECP is not required as well as obtaining a discharge agreement from the City of Vaughan/York Region will not be required for the long-term.

7.7 Zone of Influence (ZOI) Groundwater

The proposed excavation and construction will be completed above the stabilized shallow groundwater level. As such, ZOI with respect to dewatering activities is not anticipated.

7.8 Potential Dewatering Impacts and Mitigation Plan

7.8.1 Short-Term Discharge of Pumped Groundwater (Construction Dewatering)

The dewatering system must be appropriately filtered in order to prevent the pumping of fines and loss of ground during the dewatering activities.

The proposed excavation and construction will be completed above shallow groundwater level and the current quality assessment is presenting the groundwater quality. It is recommended the quality of the collected water is tested in advance of discharging to the Region's Sewer System if it is proposed to be directed to the Region's Sewer System. Alternatively, collected water could be hauled and disposed off-side using a licenced contractor.

7.8.2 Ground Settlement

Since the proposed building will be constructed above shallow groundwater table, Zone of Influence (ZOI) for dewatering is not expected. As such, no concerns are anticipated for ground settlement with respect to the proposed excavation and construction above shallow groundwater table.

7.8.3 Surface Water, Wetlands and Areas of Natural Significance

Record review indicates that no natural heritage features including water bodies, watercourses, wetland features and ANSI were identified on the Site. As such, no impacts to natural heritage features are anticipated pertaining the proposed development. However, the Site is located within areas designated as WHPA Q1/Q2 with moderate stress. As such, obtaining a permit from Toronto Regional Conservation Authority may be required.

7.8.4 Water Supply Wells and Zone of Influence

A review of the MECP well records confirmed that there are 21 records within the Study Area, of which fifteen (15) active water supply wells are registered within 500 m of the Site. As there are water supply wells within or in close proximity to the Site, a door to door well survey may be required in advance of, during and after construction. However, since the excavation and construction will be completed above shallow groundwater table, impacts to the nearby water supply wells are not anticipated.

7.8.5 Contamination Sources

Terraprobe is not aware of any available Phase One Environmental Site Assessment (ESA) and a Phase Two ESA for the Site.

8.0 PRE- AND POST-DEVELOPMENT WATER BALANCE

As a part of the hydrogeological assessment, a pre- and post-development water balance analyses were completed to compare pre-development and post-development hydrological conditions to evaluate potential changes in recharge and runoff volumes due to the proposed development.

The discussion below provides details on the methodology used and the results obtained from the analysis. A summary of the calculations is provided in **Appendix I**.

8.1 Site Water Balance Components

A site scale water balance analysis was completed following the Toronto and Region Source Protection Authority (TRSPA) tool provided by TRCA. The water balance method roughly estimates annual evapotranspiration, infiltration and runoff volumes. The modified water balance components were used for the pre- and post-development water balance analyses. **Table 8-1** summarizes the details for the water balance parameters adopted from TRSP tool.

Table 8-1- Summary of Water Balance Components

Precipitation (mm/year)	Evapotranspiration (mm/year)	Infiltration (mm/year)	Runoff (mm/year)
852	391	193	268

8.1.1 Methodology

A Site scale water balance analysis was completed in order to estimate the components of the hydrological cycle for the Site, and was modelled using the following equation:

$$P = DGS + ET + R + I$$

Where:

P= Precipitation, which represents the sum of all rainfall and snowfall

DGS=Change in groundwater storage

ET= Evapotranspiration

R= Runoff

I= Infiltration

Based on the TRCA tool; (<https://trca.ca/conservation/drinking-water-source-protection/trspa-water-balance-tool/>), the evapotranspiration in pervious areas at the Site is 391 mm/yr, runoff is 268 mm/yr and infiltration (groundwater recharge) is 193 mm/yr.

Although groundwater storage experiences both gains and losses on a short-term basis, the net change in groundwater storage (DGS) over the long-term is generally zero. For this reason, the change in groundwater storage (zero (0)) has not been included in the water balance calculations.

Evapotranspiration (ET) refers to the transfer of water from vegetation and the soil surface to the atmosphere in the form of water vapour. The term considers evaporation from the soil surface and from man-made surfaces together with transpiration from plants.

8.2 Site Water Balance

Water balance analyses were completed for pre-development and post-development conditions, separately with the details presented below:

8.2.1 Pre-Development Water Balance

Based on an email received on March 11, 2022 from the City of Vaughan via Englobe, the total Site area is 16,271 m². The pre-development water balance for the pervious areas at the Site is calculated by multiplying the existing landscape areas by the various, averaged annualized depth estimates for precipitation, ET, infiltration and runoff. The estimates for runoff and ET for impervious surfaces are 90% and 10% of the average annual precipitation, respectively. The average annual area-based estimates for each water balance component are summarized in **Table 8-2**.

Table 8-2- Summary of Pre-Development Volumetric Water Balance Components

Pre-Development Site Breakdown Areas	Coverage Area (m ²)	Precipitation (m ³ /year)	Evapotranspiration (m ³ /year)	Infiltration (m ³ /year)	Run off (m ³ /year)
Existing Buildings	701	598	60	0	538
Existing Pavements Areas	4,155	3,540	354	0	3,186
Existing Landscaped Areas	11,415	9,725	4,467	2,201	3,057
Total	16,271	13,863	4,881	2,201	6,781

8.2.2 Post-Development Water Balance

As previously mentioned, the total Site area is 16,271 m² out of which building areas, paved areas and landscaped areas are 1,595 m², 4,572 m² and 10,104 m², respectively. Detailed breakdown area for buildings, parking spaces, paved area and landscaped area are based on the email received on March 11, 2022 from the City of Vaughan.

The post-development water balance is calculated using the same depth based components that were used for the pre-development water balance calculations, i.e., average annual precipitation and average annual ET. The estimates for runoff and ET for impervious surfaces are 90% and 10% of the average annual precipitation, respectively. The estimated post-development water balance volumes are provided in **Table 8-3**.

Table 8-3- Summary of Post-Development Volumetric Water Balance Components

Post-Development Site Breakdown Areas	Coverage Area (m ²)	Precipitation (m ³ /year)	Evapotranspiration (m ³ /year)	Infiltration (m ³ /year)	Run off (m ³ /year)
Proposed and Existing Buildings Areas	1,595	1,358	135	0	1,223
Proposed and Existing Paved Areas	4,572	3,896	390	0	3,506
Proposed Landscaped Areas	10,104	8,609	3,954	1,948	2,707
Total Area	16,271	13,863	4,479	1,948	7,436

8.3 Water Balance Analysis Results

The volumetric comparisons in evapotranspiration, infiltration and runoff between the pre-developed and post-developed Site are summarized in **Table 8-4**.

Table 8-4- Pre- and Post-Development Volumetric Water Balance Components

Pre-Development Site Breakdown Areas	Precipitation (m ³ /year)	Evapotranspiration (m ³ /year)	Infiltration (m ³ /year)	Run off (m ³ /year)
Pre-Development	13,863	4,881	2,201	6,781
Post-Development	13,864	4,479	1,948	7,436
Loss (-) and Gain (+)	-	-402	-253	+655

A review of the findings indicates that a total decrease of 402 m³/year and 253 m³/year for ET and infiltration, respectively, and an increase of 655 m³/year for runoff are expected for the post-development Site. Low Impact Development (LID) measures, such as infiltration trenches and permeable pavements, could be considered to manage the generated runoff partially. Remaining volume can be discharged to the Regional Municipality of York storm sewer system. It is assumed that details will be provided in the Stormwater Management report.

Based on Table 3.5.1 of Low Impact Development Stormwater Management Planning and Design Guide, issued by TRCA dated January 2010, 1.0 m interval should be considered between the base of the proposed LID measures and groundwater level. Additionally, percolation rate of the soil, where the LID measures are proposed, should be confirmed using in-situ percolation testing techniques.

9.0 CONCLUSIONS AND RECOMMENDATIONS

- The Site is located within the Physiographic Region of Southern Ontario known as the Peel Plain Bevelled Till Plains.
- The Site and surrounding area are located within an area mapped as Till deposits (5d), comprising clay to silt-texture till derived from glaciolacustrine deposits or shale.
- The Site is located at the border of the Don River watershed and the Humber River Watershed, both watershed falls under TRCA jurisdiction, where the southwest portion of the Site is located within the Humber River Watershed and the rest of the Site is mapped within the Don River Watershed. There are no records for natural heritage features including water bodies, watercourses and ANSI within the Site.
- Underlying the topsoil and pavement structure, native deposits mainly comprise clayey silt/silty clay, sandy silt/silty sand, silt and clayey sandy silt to termination depth of investigation at 8.2 mbgs.
- The shallow groundwater table for design purposes should be considered to be at El. 221.59 ± masl (4.0 mbgs) measured at BH1 located north west of the proposed building footprint.
- The estimated hydraulic conductivity of 1.44×10^{-7} m/s, 4.23×10^{-7} and 7.23×10^{-7} m/s is considered for the clayey silt, silt, and sandy silt/silty sand units, respectively.
- Groundwater quality at a selected monitoring well (BH15) exceeds for Total Suspended Solid (TSS), total manganese and total cyanide in comparison with the York Region Storm Sewer By-Law Use Limits. The results review indicates that the water quality meets the York Region Sanitary Sewer By-Law Use Limits.
- Total short-term construction dewatering flow for construction of the proposed slab-on-grade building would be 18,000 L/day that is expected from precipitation source only.
- Total long-term foundation drainage flow for the post construction site is not anticipated.
- Posting EASR with MECP is not required for short-term construction dewatering flow control.
- Applying for PTTW with MECP is not required for long-term foundation drainage control.
- Applying for discharge agreement with the City of Vaughan/York Region is required for discharging short-term dewatering flows if the discharged water is proposed to be directed to the region's sewer system.
- The ZOI is not anticipated as the base of excavation for construction of the footings is proposed above the highest groundwater table.

- There are no records for water bodies, watercourses and ANSI on the Site or within close proximity of the Site.
- There are fifteen (15) water supply wells within the Study Area. Since, the excavation for construction of the footings will be completed above groundwater level, no concerns are anticipated regarding local groundwater users. As such, door to door well survey may not be required.
- A review of the findings indicates that a total decrease of 402 m³/year and 253 m³/year for ET and infiltration, respectively, and an increase of 655 m³/year for runoff are expected for the post-development Site. Low Impact Development (LID) measures, such as infiltration trenches and permeable pavements, could be considered to manage the generated runoff partially. Remaining volume can be discharged to the Regional Municipality of York storm sewer system. It is assumed that details will be provided in the Stormwater Management report.

10.0 CLOSURE

We trust that the above-noted information is suitable for your review. If you have any questions regarding this information, please do not hesitate to contact the undersigned.

Yours truly,

Terraprobe Inc.



Rachel Geddam, B.Eng., EIT.
Project Manager



Narjes Alijani, M.Sc., P.Geo
Senior Hydrogeologist



11.0 REFERENCES

1. Chapman, L.J. and D.F. Putnam, 1984. The Physiography of Southern Ontario. Ontario.
2. Freeze, A. and Cherry, J., 1979. Groundwater, Prentice-Hall Inc., New Jersey.
3. Geological Survey. Ontario Geological Survey (OGS), 2003. Surficial Geology of Southern Ontario. Miscellaneous Release – Data 128 – revised.
4. Geological Survey. Ontario Geological Survey (OGS), 2007. Bedrock Geology of Ontario. Miscellaneous Release – MRD 219.
5. Ministry of the Environment, Conservation and Parks, 2022, Source Protection Information Atlas Interactive Map.
6. Ministry of Natural Resources and Forestry, 2022. Natural Heritage Interactive Map.
7. Site Plan provided by the City of Vaughan and prepared by Thomasbrown Architects, dated November 24, 2021 (drawing no. CR 1.1).
8. Toronto and Region Conservation Authority, 2022, Online Regulated Area Map.
9. Toronto and Region Conservation Authority (TRCA), 2008. Humber River State of Watershed Report.
10. Toronto and Region Conservation Authority, Low Impact Development Stormwater Management Planning and Design Guide (Draft), January 2020.
11. Vaughan Fire Station 7-12, 9541 Weston Road, Woodbridge, City of Vaughan, Ontario, Geotechnical Report dated March 30, 2022 prepared by Englobe Corp (Draft).

12.0 LIMITATIONS OF LIABILITY

This report was prepared at the request of, and for the exclusive use of City of Vaughan and its affiliates (“the Intended User”) is intended to provide an assessment of the hydrogeological conditions of the Property located at 9541 Weston Road, in the City of Vaughan, Ontario (the Site). No one other than the Intended User has the right to use and rely on the work without first obtaining the written authorization of Terraprobe Inc. and the City of Vaughan.

Terraprobe Inc. expressly excludes liability to any party except the Intended User for any use of, and/or reliance upon, the work. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Terraprobe Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report, including consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The assessment should not be considered a comprehensive audit that eliminates all risks of encountering hydrogeological problems. The information presented in this report is based on information collected during the completion of the hydrogeological study by Terraprobe Inc. It was based on the conditions on the Site at the time of the hydrogeological study by a review of historical information and field investigation to assess the hydrogeological conditions of the Site, as reported herein.

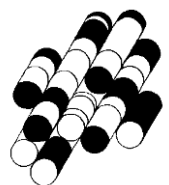
There is no warranty expressed or implied by this report regarding the hydrogeological conditions for the Site. Professional judgement was exercised in gathering and analyzing information collected by reviewing previous reports, data provided by government and are open to public and field work investigation. The conclusions presented are the product of professional care and competence, and cannot be construed as an absolute guarantee.

In the event that during future work new information regarding the hydrogeological conditions of the Site is encountered, or in the event that the outstanding responses from the regulatory agencies indicate outstanding issues on file with respect to the Site, Terraprobe Inc. should be notified in order that we may re-evaluate the findings of this assessment and provide amendments, as required.

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FIGURES

TERRAPROBE INC.

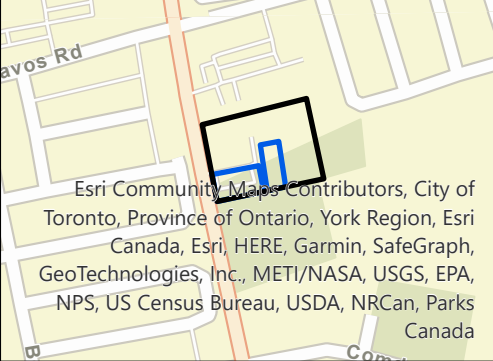




References:

ESRI, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus Ds, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Basemaps



Key Map



Notes:

Legend:

Field

-  Approximate Site Boundary
-  Approximate Study Area

Project Title:

Hydrogeological Assessment

Site Location:

9541 Weston Road, Vaughan, Ontario

Figure Title:

Site Location Plan

Designed By:

AN

File No.:

1-21-0843-46

Drawn By:

SSK

Scale:

As Shown

Reviewed By:

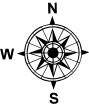
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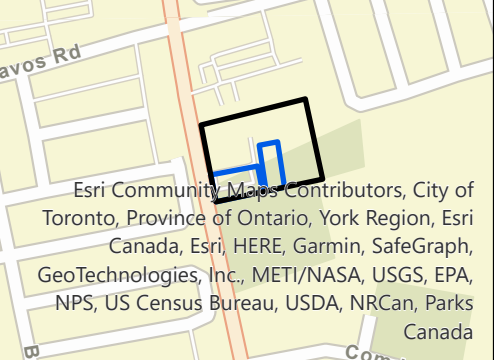
January 2022



References:

ESRI, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus Ds, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Basemaps

Key Map



Notes:

Legend:

- Approximate Site Boundary
- Approximate Study Area Approximate
- Monitoring Well Location
- Approximate Borehole Location

Project Title:

Hydrogeological Assessment

Site Location:

9541 Weston Road, Vaughan, Ontario

Figure Title:

Borehole and Monitoring Well Plan

Designed By:

AN

File No.:

1-21-0843-46

Drawn By:

SSK

Scale:

As Shown

Reviewed By:

BW


Figure No.:

2


Date:

January 2022





Consulting Geotechnical & Environmental Engineering
Construction Materials, Inspection & Testing

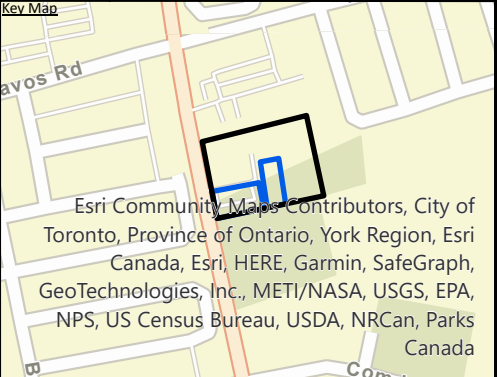


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References:

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
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Notes:

Legend:

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-  Approximate Study Area
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-  Collector
-  Local / Street

Project Title:

Hydrogeological Assessment

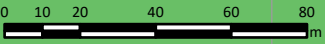
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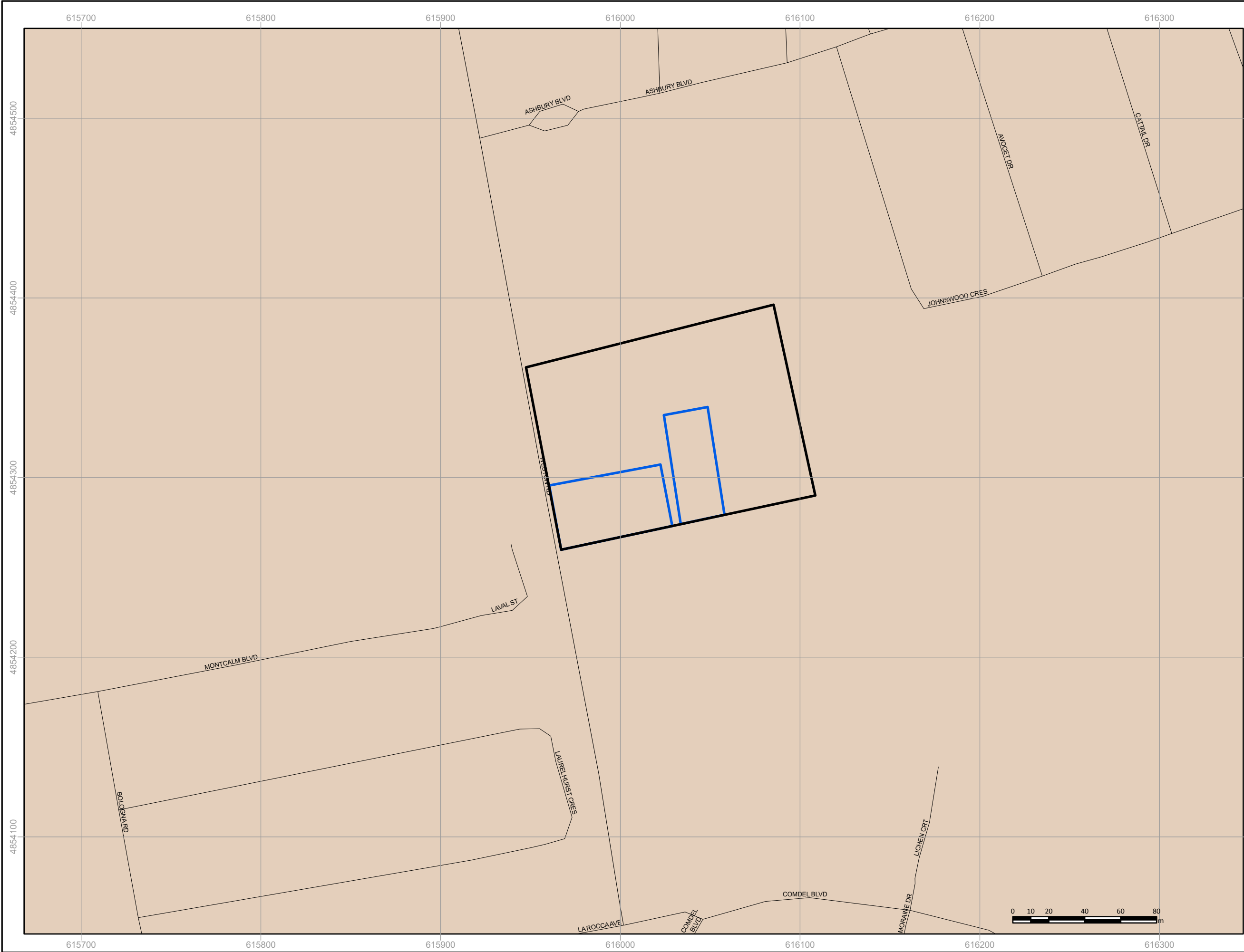
9541 Weston Road, Vaughan, Ontario


Figure Title:

Surficial Geology Map

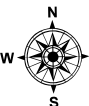
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Drawn By: SSK	Scale: As Shown
Reviewed By: BW	Figure No.: 3
Date: January 2022	







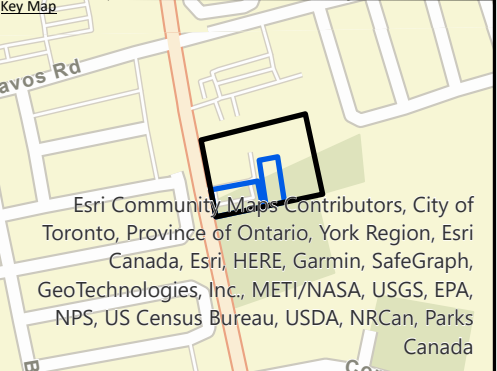
Consulting Geotechnical & Environmental Engineering
Construction Materials, Inspection & Testing



References:

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Key Map



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Notes:

Legend:

-  Approximate Site Boundary
-  Approximate Study Area
-  Collector
-  Local / Street
-  33, Peel Plain

Project Title:

Hydrogeological Assessment

Site Location:

9541 Weston Road, Vaughan, Ontario

Figure Title:

Physiography Map

Designed By: AN	File No.: 1-21-0843-46
Drawn By: SSK	Scale: As Shown
Reviewed By: BW	Figure No.: 4
Date: January 2022	



References:

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Notes:

Legend:

- Approximate Site Boundary
- Approximate Study Area
- Collector
- Local / Street
- City of Vaughan, Topographic Contours


Project Title:
Hydrogeological Assessment

Site Location:
9541 Weston Road, Vaughan, Ontario


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Reviewed By: BW	Figure No.: 5
Date: January 2022	





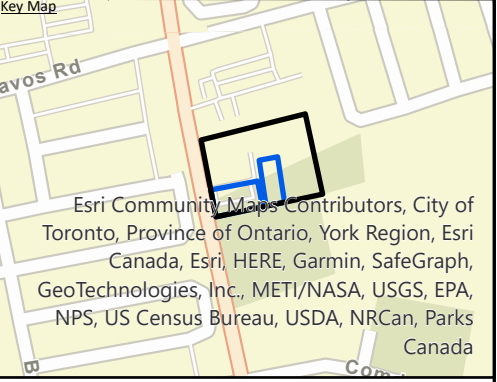
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Construction Materials, Inspection & Testing



References:

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Key Map



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Notes:

Legend:

-  Approximate Site Boundary
-  Approximate Study Area
-  Collector
-  Local / Street
-  Wooded Area

Project Title:

Hydrogeological Assessment

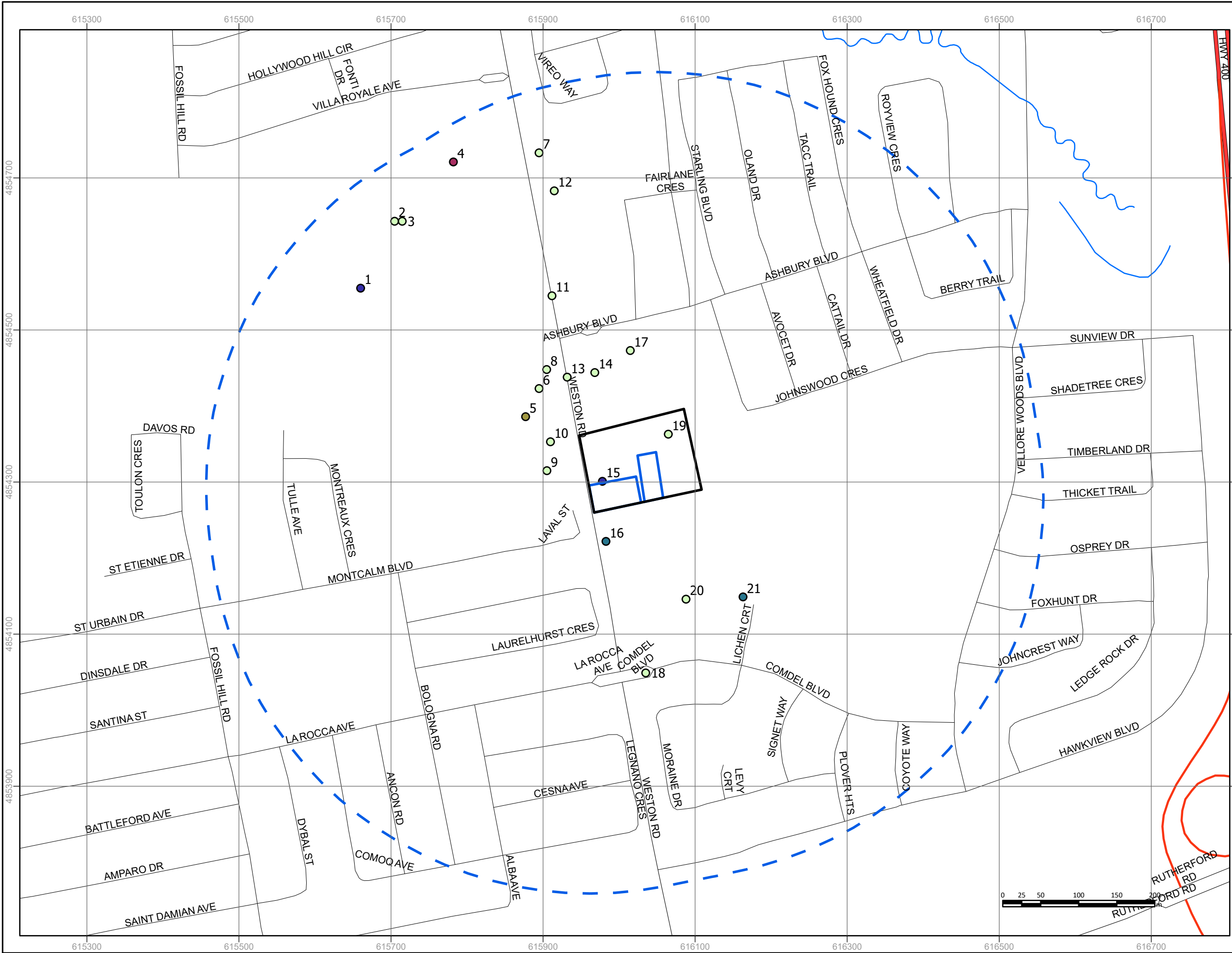
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9541 Weston Road, Vaughan, Ontario

Figure Title:

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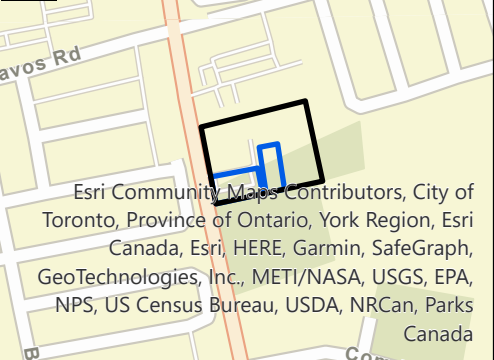
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Date: January 2022	



References:

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Key Map



Notes:

Legend:

- Approximate Site Boundary
- Approximate Study Area
- Approximate Study Area; 500m
- Water Course
- Collector
- Freeway
- Local / Street
- Ramp
- Unknown
- Abandoned-Other
- Monitoring and Test Hole
- Test Hole
- Water Supply

Project Title:

Hydrogeological Assessment

Site Location:

9541 Weston Road, Vaughan, Ontario

Figure Title:

MECP Well Records Map

Designed By:

AN

File No.:

1-21-0843-46

Drawn By:

SSK

Scale:

As Shown

Reviewed By:

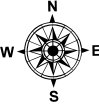
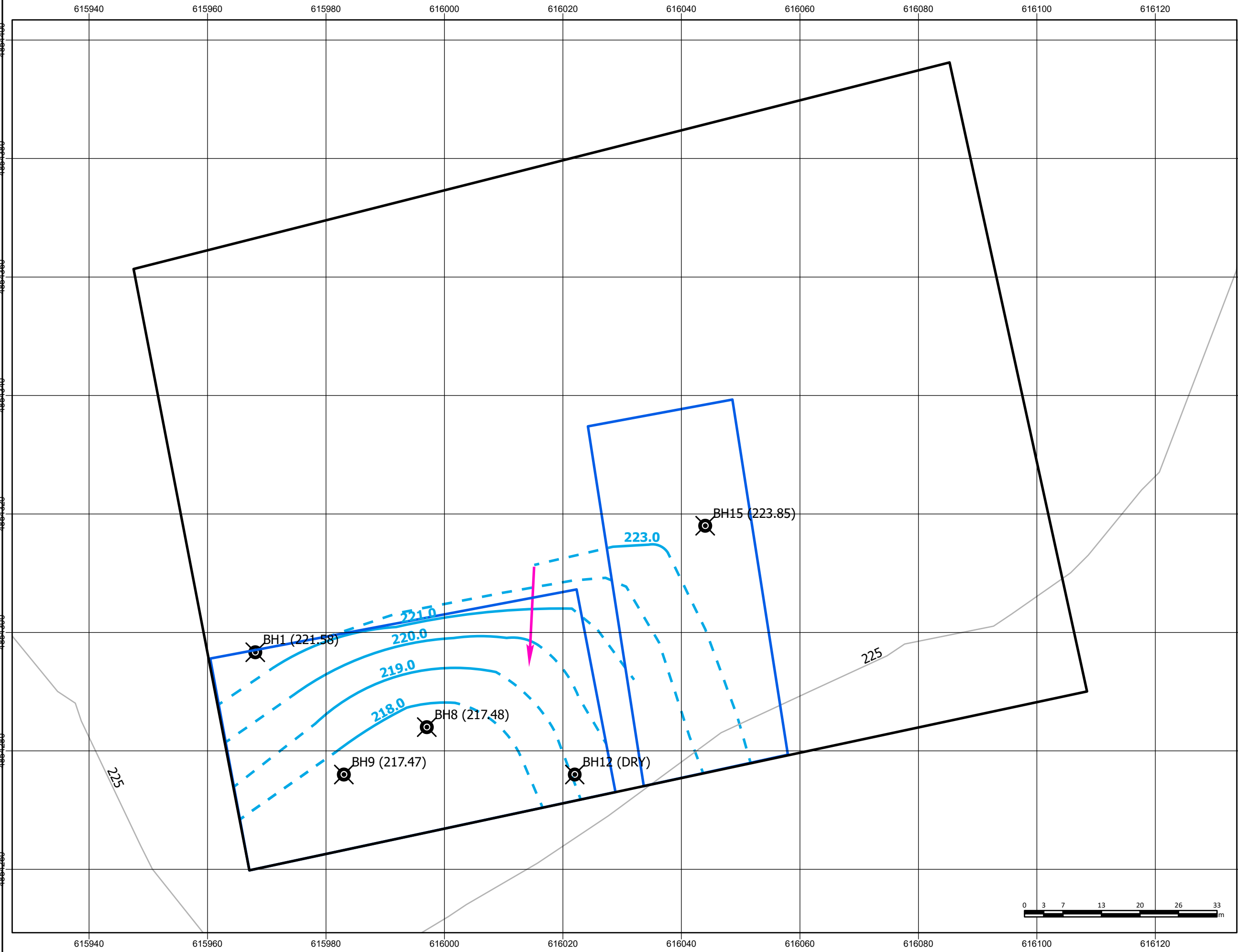
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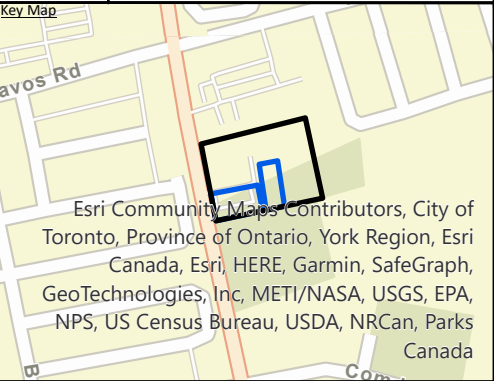
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Date:

January 2022



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Notes:

- Legend:**
- Approximate Site Boundary
 - Approximate Study Area
 - Approximate Monitoring Well Location
 - City of Vaughan, Topographic Contours
 - Interpreted Groundwater Contours
 - Inferred Groundwater Contours
 - Interpreted Groundwater Flow Direction

Project Title:
 Hydrogeological Assessment

Site Location:
 9541 Weston Road, Vaughan, Ontario

Figure Title:
 Groundwater Flow Direction

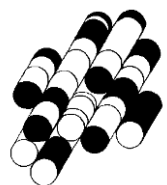
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Reviewed By: BW	Figure No.: 8
Date: January 2022	



APPENDIX A

Boreholes and Monitoring Well Logs

TERRAPROBE INC.



LOG OF BOREHOLE No. BH01

Englobe

Project No. 02112512.000

DRAWING No. BH1

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,296.606 E 615,967.529

Date Drilled: 2022-1-14

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



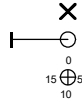
% Strain at Failure



Shear Strength by



Penetrometer Test



GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLING S	Soil Type	Natural Unit Weight kN/m ³	Percent of Fines, %
					40	80					
		ASPHALT CONCRETE (110 mm)	225.6	0	50	100	20		SS1		
		SAND AND GRAVEL (Granular Base/Subbase, 180 mm)	225.5		50		7.5				
		SANDY SILT: trace to some clay, brown, moist, loose to compact	225.3								
				1	5		17.5		SS2		
					14		17.6		SS3		
			2.2								
		SILT: trace clay, brown, moist, compact to very dense Gr: 0%, Sa: 0%, Si: 90.7%, Cl: 9.3%	223.4	2	22		14.9		SS4		
				3	62		20.7		SS5		
				4	62		20.8		SS6		
		Terminated at 4.4 m	4.4								
		Borehole advanced using continuous flight solid stem augering equipment on January 14, 2022 by DrillTech Drilling LTD.	221.2								

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion		
Feb 14, 2022	Dry	none
Feb 24, 2022	Dry	4.0

LOG OF BOREHOLE No. BH02

Englobe

Project No. 02112512.000

DRAWING No. BH2

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,300.325 E 615,988.755

Date Drilled: 2022-1-14

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



% Strain at Failure

Shear Strength by



Penetrometer Test

GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLING METHOD	Soil Type	Natural Unit Weight kN/m ³	Percent of Fines, %
					40	80	120	160			
		ASPHALT CONCRETE (110 mm)	225.0	0							
		SAND AND GRAVEL (Granular Base/Subbase, 140 mm)	224.9	0.1							
			224.8	0.2							
			224.6	0.4							
		SILTY SAND: brown, moist, compact	224.4	0.6							
		SILT: trace clay, trace sand, brown, moist, compact to dense									
		Gr: 0%, Sa: 0.9%, Si: 91.2%, Cl: 7.9%									
				1							
				2							
				3							
				4							
		Terminated at 4.4 m	220.6	4.4							
		Borehole advanced using continuous flight solid stem augering equipment on January 14, 2022 by DrillTech Drilling LTD.									

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

Checked By: A. Rahman

Logged By: P. Jin

LOG OF BOREHOLE No. BH03

Englobe

Project No. 02112512.000

DRAWING No. BH3

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,305.111 E 616,028.716

Date Drilled: 2022-1-14

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



% Strain at Failure



Shear Strength by



Penetrometer Test

GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLING METHOD	Soil Type	Natural Unit Weight kN/m³	Percent of Fines, %
					40	80	120	160			
		ASPHALT CONCRETE (90 mm)	224.9	0							
		SAND AND GRAVEL (Granular Base/Subbase, 120 mm)	224.8								
		SANDY SILT: trace clay, brown, moist, compact to dense	224.7								
				1							
				2							
				3							
				4							
		SILTY SAND: brown, moist, dense to very dense	222.0								
		Terminated at 4.4 m	220.5								
		Borehole advanced using continuous flight solid stem augering equipment on January 14, 2022 by DrillTech Drilling LTD.									

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

Checked By: A. Rahman

Logged By: P. Jin

LOG OF BOREHOLE No. BH04

Englobe

Project No. 02112512.000

DRAWING No. BH4

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,288.738 E 615,980.069

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content



Atterberg Limits



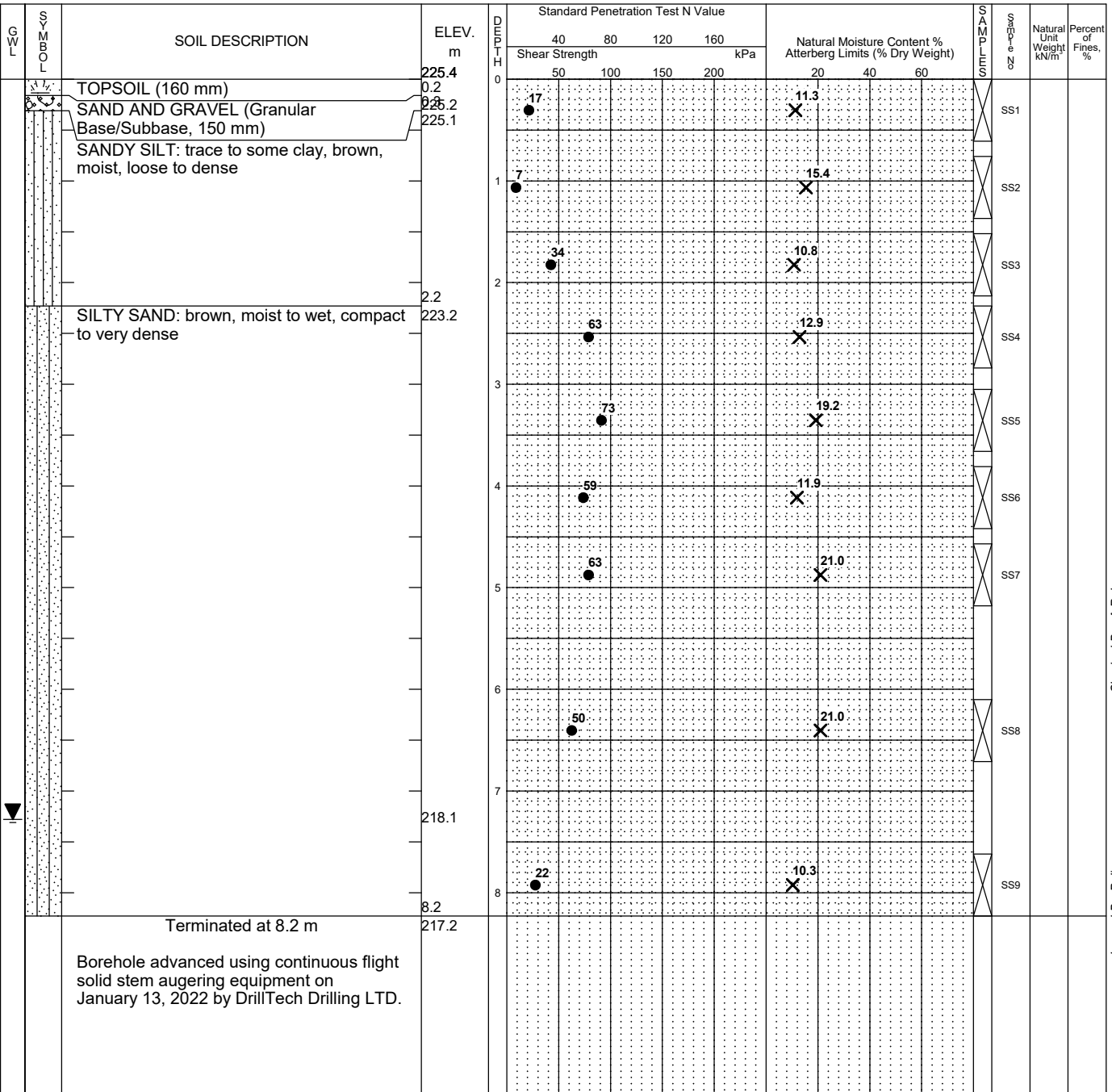
Undrained Triaxial at

% Strain at Failure



Shear Strength by

Penetrometer Test



LOG OF BOREHOLE No. BH05

Englobe

Project No. 02112512.000

DRAWING No. BH5

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,296.052 E 616,010.286

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

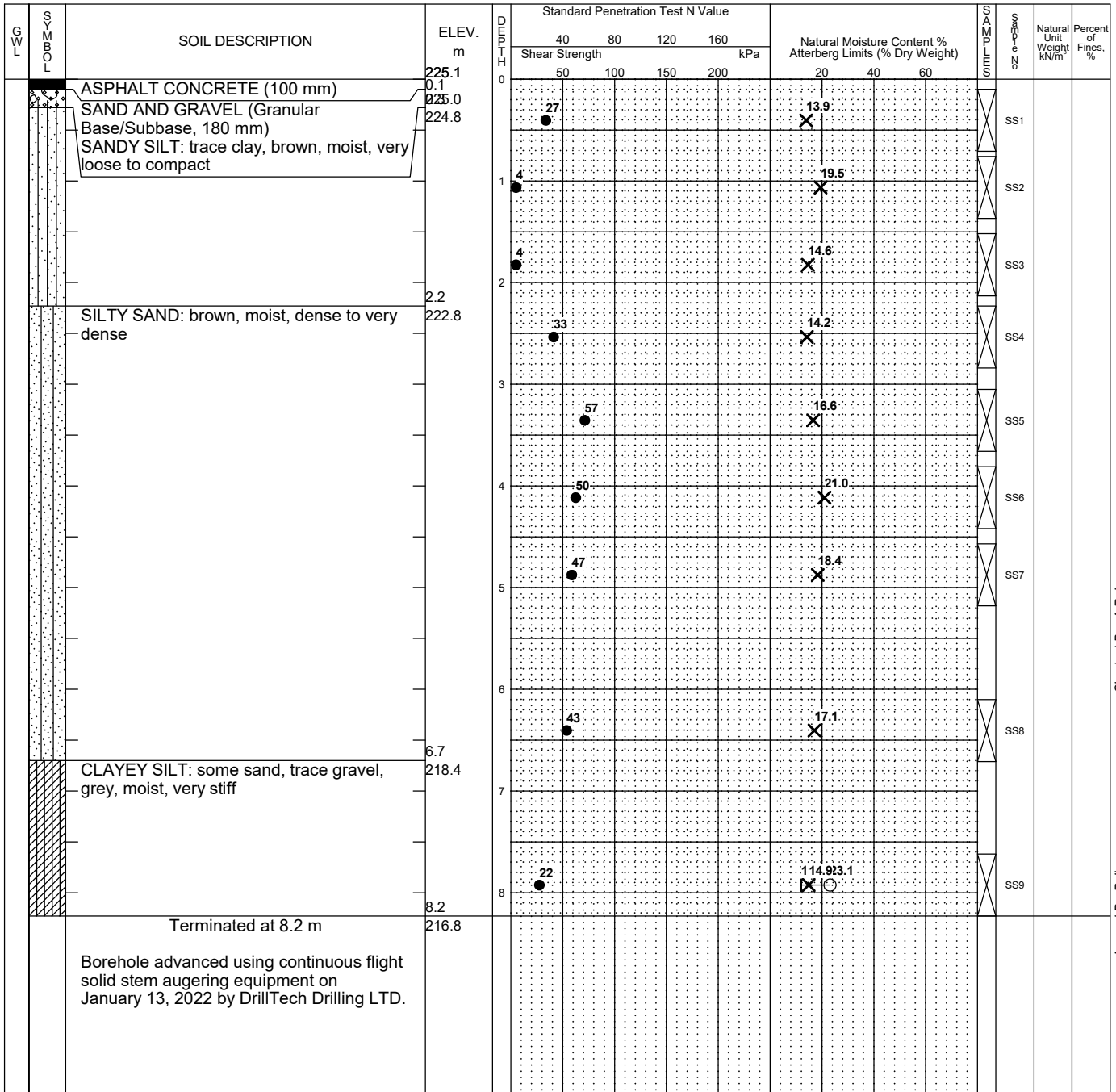


% Strain at Failure

Shear Strength by



Penetrometer Test



CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

LOG OF BOREHOLE No. BH06

Englobe

Project No. 02112512.000

DRAWING No. BH6

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,299.182 E 616,019.578

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

% Strain at Failure



Shear Strength by

Penetrometer Test



GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLING METHOD	Soil Zone	Natural Unit Weight kN/m ³	Percent of Fines, %
					40	80					
		ASPHALT CONCRETE (100 mm)	225.0	0	50	100	20		SS1		
		SAND AND GRAVEL (Granular Base/Subbase, 150 mm)	224.9		27		17.8				
		SANDY SILT: trace clay, brown, moist, compact	224.7								
				1	13		10.5		SS2		
				2	22		11.4		SS3		
					25		14.7		SS4		
		SILTY SAND: brown, moist, dense	222.1	3	33		16.6		SS5		
				4	42		12.3		SS6		
				5	40		14.8		SS7		
				6							
					33		18.6		SS8		
		SILTY CLAY: trace gravel, grey, wet, very stiff	218.3	7							
				8	17		115.7.3		SS9		
		Terminated at 8.2 m	216.7								
		Borehole advanced using continuous flight solid stem augering equipment on January 13, 2022 by DrillTech Drilling LTD.									

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

Checked By: A. Rahman

Logged By: P. Jin

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

LOG OF BOREHOLE No. BH07

Englobe

Project No. 02112512.000

DRAWING No. BH7

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,281.299 E 615,973.690

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



% Strain at Failure



Shear Strength by



Penetrometer Test

GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLING SPT	Soil Type	Natural Unit Weight kN/m³	Percent of Fines, %
					40	80	120	160			
		ASPHALT CONCRETE (110 mm)	225.3	0							
		SAND AND GRAVEL (Granular Base/Subbase, 150 mm)	225.2	0.1							
		SANDY SILT: trace to some clay, brown, moist, loose to compact	225.0	0.2	13						
				1	5						
				1.1					15.1		
				2	13				17.5		
				2.2							
		SILTY SAND: brown, moist, dense to very dense	223.1	2.2	32				14.4		
				3	45				14.0		
				4	39				18.6		
		Terminated at 4.4 m	220.9	4.4							
		Borehole advanced using continuous flight solid stem augering equipment on January 13, 2022 by DrillTech Drilling LTD.									

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

Checked By: A. Rahman

Logged By: P. Jin

LOG OF BOREHOLE No. BH08

Englobe

Project No. 02112512.000

DRAWING No. BH8

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,284.188 E 615,997.335

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



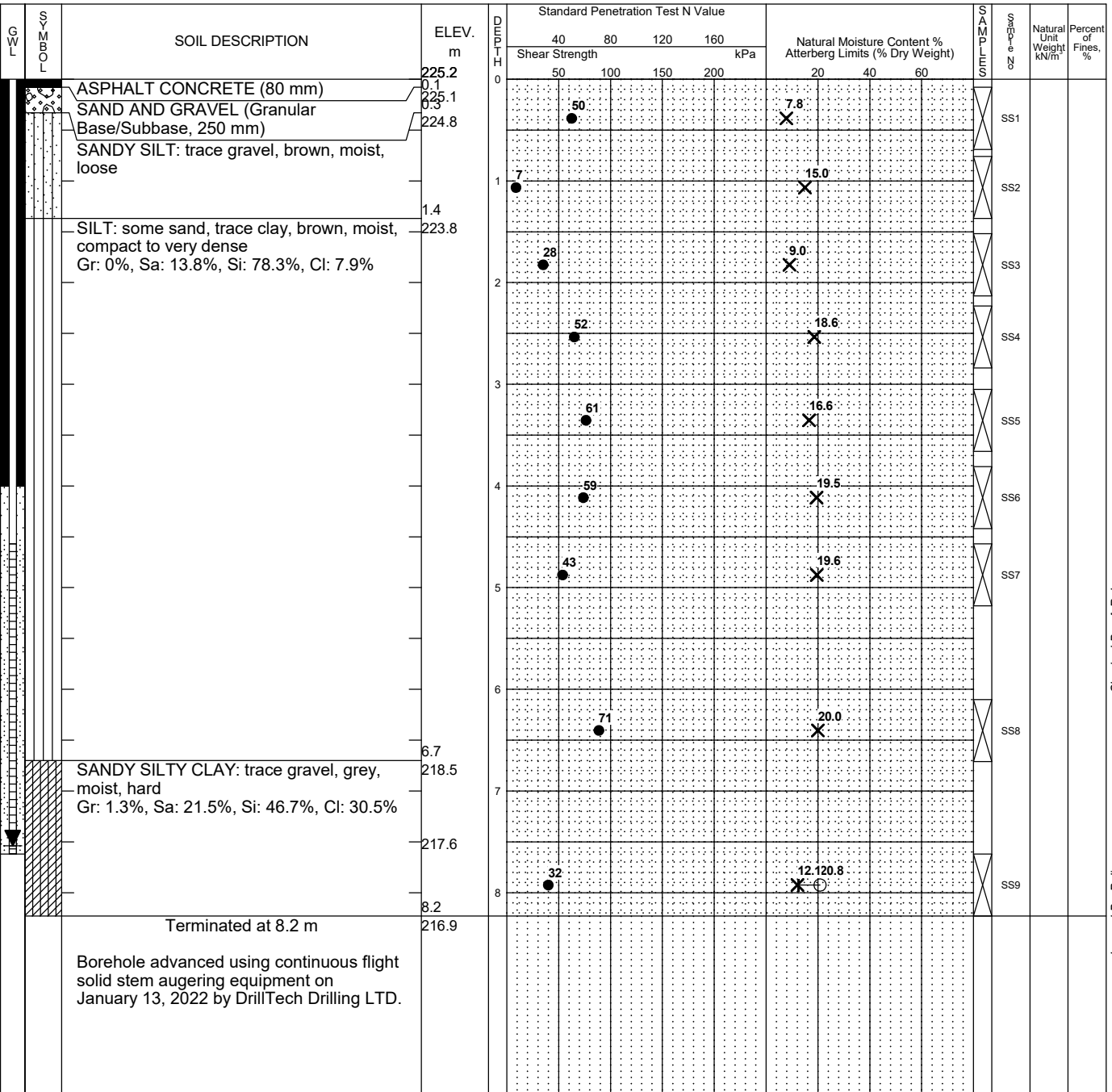
% Strain at Failure



Shear Strength by



Penetrometer Test



Time	Water Level (m)	Depth to Cave (m)
Upon Completion	7.6	none
Feb 14, 2022	7.6	
Feb 24, 2022	Dry	

Checked By: A. Rahman

Logged By: P. Jin

LOG OF BOREHOLE No. BH09

Englobe

Project No. 02112512.000

DRAWING No. BH9

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,275.648 E 615,983.373

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



% Strain at Failure



Shear Strength by



Penetrometer Test



GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value				Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLING SPT	Soil Type	Natural Unit Weight kN/m ³	Percent of Fines, %				
					Shear Strength kPa												
					40	80	120	160		20	40	60					
		ASPHALT CONCRETE (100 mm)	225.2	0													
		SAND AND GRAVEL (Granular Base/Subbase, 300 mm)	225.1	0.1						9.2							
		SANDY SILT: brown, moist, compact	224.8	0.4			58			X							
				1													
										12.9							
				10						X							
										11.2							
				16						X							
				2													

LOG OF BOREHOLE No. BH10

Englobe

Project No. 02112512.000

DRAWING No. BH10

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,285.523 E 616,013.237

Date Drilled: 2022-1-14

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



% Strain at Failure

Shear Strength by



Penetrometer Test



LOG OF BOREHOLE No. BH11

Englobe

Project No. 02112512.000

DRAWING No. BH11

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,275.359 E 616,002.160

Date Drilled: 2022-1-21

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

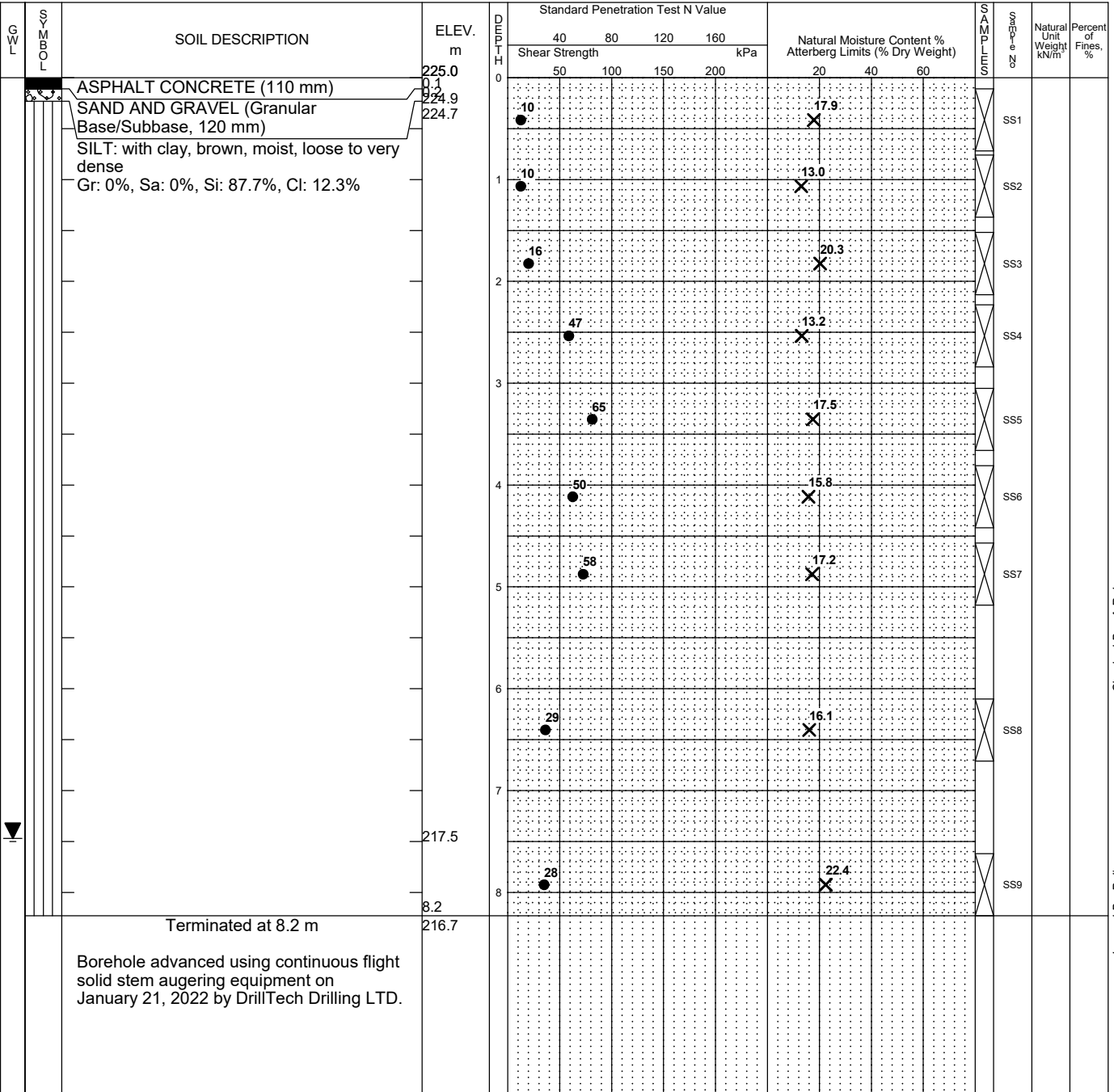


% Strain at Failure

Shear Strength by



Penetrometer Test



Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	7.5	none

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

LOG OF BOREHOLE No. BH12

Englobe

Project No. 02112512.000

DRAWING No. BH12

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,275.874 E 616,022.481

Date Drilled: 2022-1-21

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



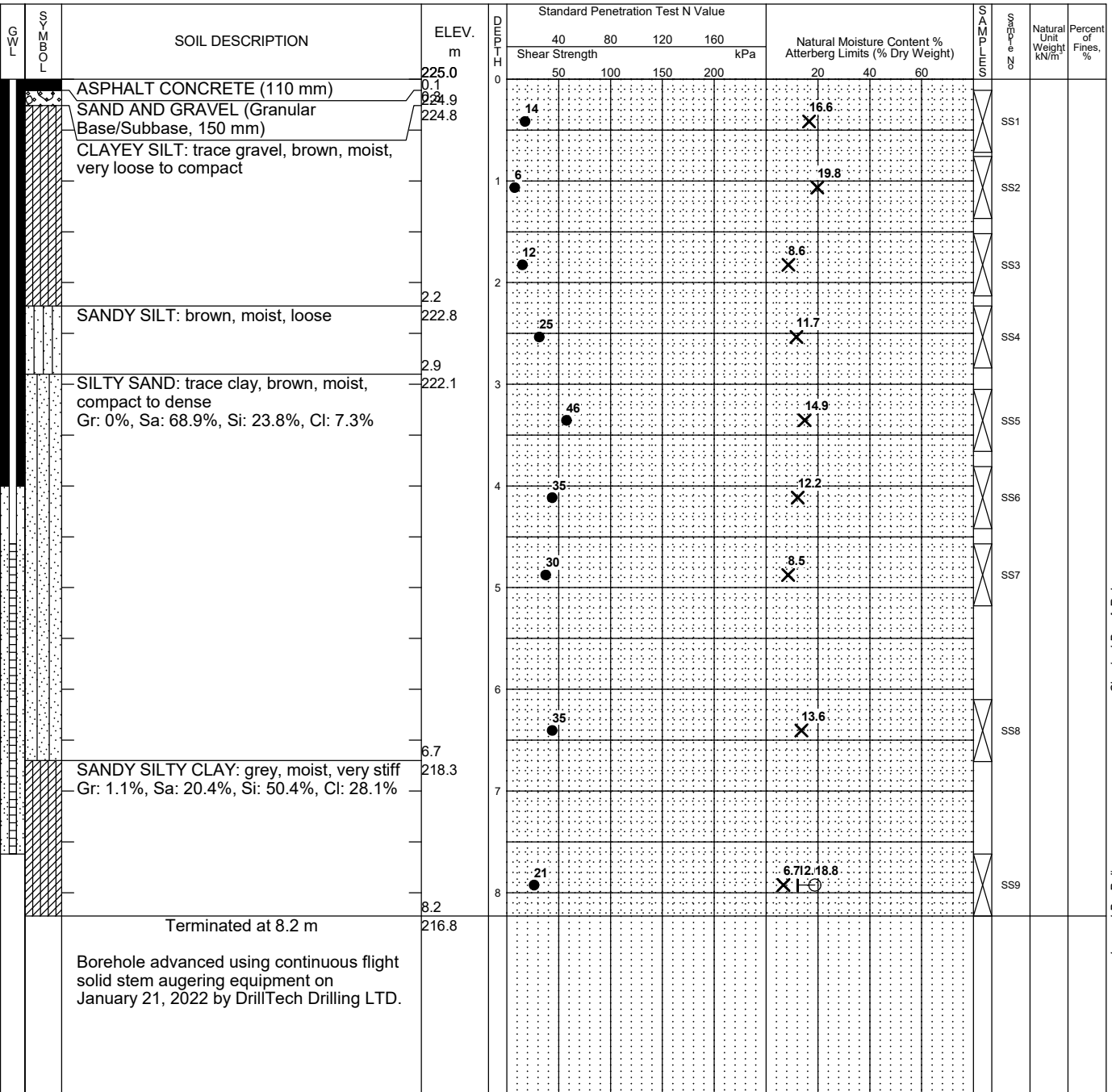
% Strain at Failure



Shear Strength by



Penetrometer Test



Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none
Feb 14, 2022	Dry	
Feb 24, 2022	7.6	

Checked By: A. Rahman

Logged By: P. Jin

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

LOG OF BOREHOLE No. BH13

Englobe

Project No. 02112512.000

DRAWING No. BH13

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,286.170 E 616,050.535

Date Drilled: 2022-1-21

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



% Strain at Failure

Shear Strength by



Penetrometer Test

GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLING LOG	Soil Type	Natural Unit Weight kN/m ³	Percent of Fines, %
					40	80					
		TOPSOIL (200 mm)	225.8	0							
		SAND AND GRAVEL (Granular Base/Subbase, 150 mm)	225.6	0.2	15		25.9		SS1		
		SANDY SILTY CLAY: brown, moist, firm to hard Gr: 0.3%, Sa: 25.2%, Si: 43.7%, Cl: 30.8%	225.4	1	7		20.0		SS2		
				2	12		12.0		SS3		
				3	21		11.8		SS4		
				4	30		12.3		SS5		
				4.4	40		13.4		SS6		
		Terminated at 4.4 m	221.4								
		Borehole advanced using continuous flight solid stem augering equipment on January 21, 2022 by DrillTech Drilling LTD.									

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

Checked By: A. Rahman

Logged By: P. Jin

LOG OF BOREHOLE No. BH15

Englobe

Project No. 02112512.000

DRAWING No. BH15

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,317.902 E 616,043.569

Date Drilled: 2022-1-21

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

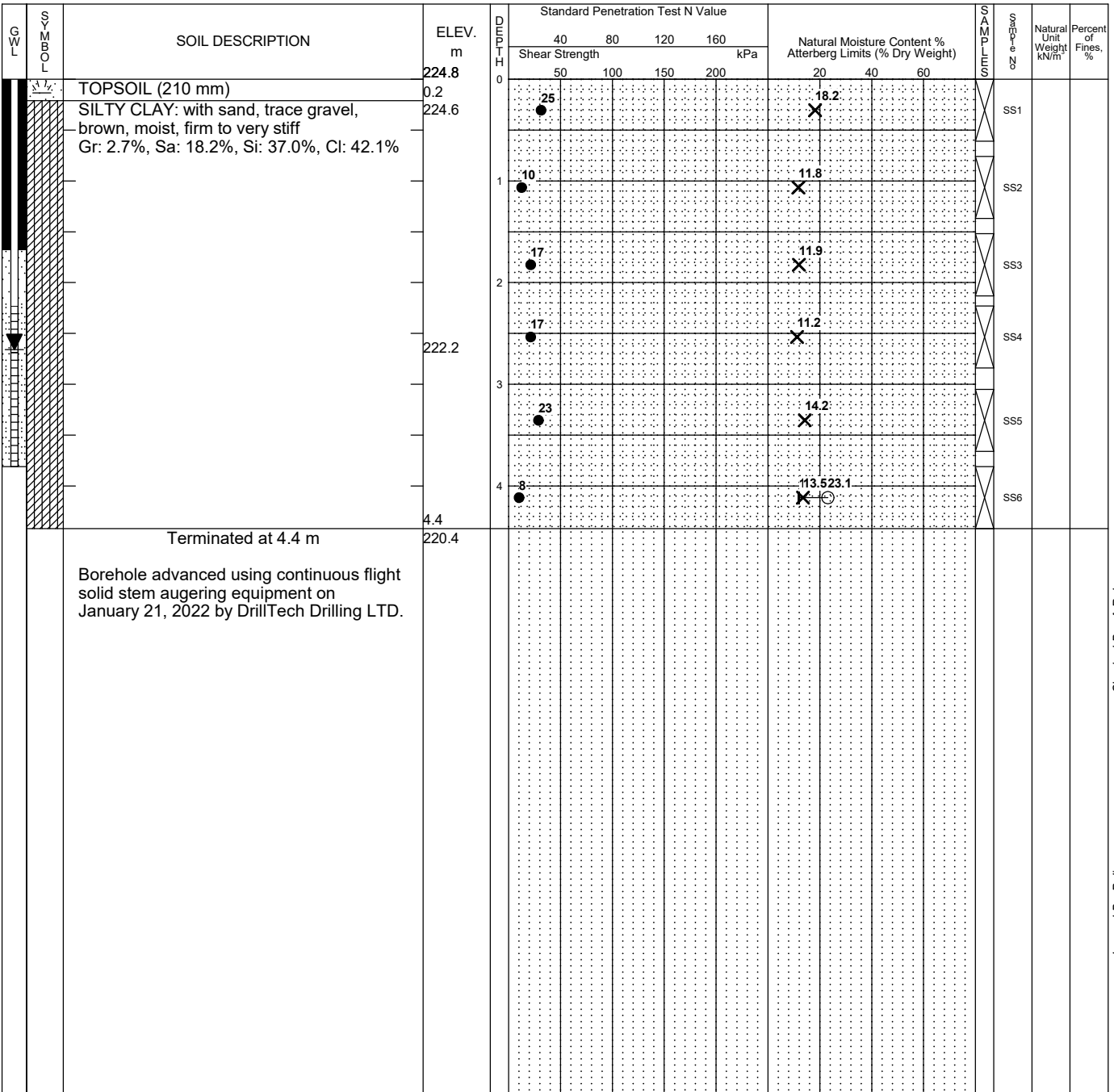


% Strain at Failure

Shear Strength by



Penetrometer Test



Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	2.7	none
Feb 14, 2022	2.7	
Feb 24, 2022	1.3	

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

LOG OF BOREHOLE No. BH16

Englobe

Project No. 02112512.000

DRAWING No. BH16

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,334.484 E 616,039.548

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by



Vane Test

Natural Moisture Content



Atterberg Limits



Undrained Triaxial at



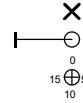
% Strain at Failure



Shear Strength by



Penetrometer Test



GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value				Natural Moisture Content % Atterberg Limits (% Dry Weight)				SAMPLING	Soil Type	Natural Unit Weight kN/m	Percent of Fines, %
					Shear Strength											
					40	80	120	160	20	40	60					
		TOPSOIL (200 mm)	224.9	0												
		SILTY CLAY: with sand, brown, moist, compact Gr: 0%, Sa: 10.4%, Si: 65.6%, Cl: 24%	224.7	0.2	15					14.6				SS1		
				1	15					12.2				SS2		
				2	13					12.4				SS3		
				3	23					13.5				SS4		
				4	22					20.4				SS5		
				4	16					20.2				SS6		
		Terminated at 4.4 m	220.5													
		Borehole advanced using continuous flight solid stem augering equipment on January 13, 2022 by DrillTech Drilling LTD.														

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

Checked By: A. Rahman

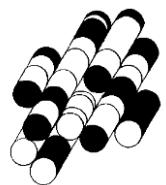
Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

APPENDIX B

MECP Well Records

TERRAPROBE INC.



MECP Well Records Summary

WEL L ID	MECP* WWR ID	Construction Method	Well Depth (m)**	Well Usage		Static Water Level (m)**	Water Found Depth (m)**	Top of Screen Depth (m)**	Bottom of Screen Depth (m)**	Date Completed
				Final Status	First Use					
1	6925055	Not Known	-	Abandoned-Other	Not Used	-	-	-	-	Tuesday, July 13, 1999
2	6909406	Cable Tool	-	Water Supply	Domestic	30.5	79.3	-	-	Thursday, December 11, 1969
3	6906779	Boring	-	Water Supply	Domestic	3.05	3.05	-	-	Wednesday, October 8, 1958
4	7257448	Rotary (Convent.)	6.1	Monitoring and Test Hole	Monitoring and Test Hole	-	5.795	4.575	6.1	Wednesday, December 2, 2015
5	7276114	-	-	-	-	-	-	-	-	Friday, May 20, 2016
6	6906780	Jetting	32.94	Water Supply	Domestic	28.975	28.365	31.415	32.94	Friday, May 28, 1948
7	6914407	Rotary (Convent.)	23.49	Water Supply	Livestock	13.115	15.25	22.57	23.485	Monday, November 14, 1977
8	6906778	Jetting	23.49	Water Supply	Domestic	16.775	21.96	21.96	23.485	Tuesday, October 16, 1962
9	6921136	Rotary (Convent.)	25.93	Water Supply	Domestic	13.725	19.825	25.01	25.925	Tuesday, January 17, 1989
10	6906777	Cable Tool	35.08	Water Supply	Domestic	14.64	32.635	33.855	35.075	Thursday, August 3, 1967
11	6906660	Cable Tool	30.5	Water Supply	Domestic	12.2	30.5	29.28	30.5	Monday, June 10, 1957
12	6914396	Rotary (Convent.)	33.25	Water Supply	Domestic	14.335	30.5	32.33	33.245	Thursday, October 6, 1977
13	6906659	Cable Tool	27.45	Water Supply	Domestic	15.86	26.23	26.23	27.45	Monday, May 2, 1960
14	6921482	Rotary (Convent.)	33.86	Water Supply	Domestic	12.81	32.635	32.94	33.855	Monday, April 2, 1990
15	6925576	Not Known	-	Abandoned-Other	Not Used	-	-	-	-	Tuesday, August 1, 2000
16	6906658	Rotary (Convent.)	-	Test Hole	-	-	-	-	-	Wednesday, August 19, 1964
17	6913822	Rotary (Convent.)	28.06	Water Supply	Domestic	14.335	27.45	27.145	28.06	Tuesday, October 26, 1976
18	6919834	Cable Tool	-	Water Supply	Domestic	24.4	66.185	-	-	Friday, September 2, 1988
19	6914229	Boring	-	Water Supply	Domestic	6.1	6.1	-	-	Thursday, September 8, 1977
20	6923108	Rotary (Convent.)	32.03	Water Supply	Domestic	7.93	28.67	30.195	32.025	Wednesday, November 2, 1994
21	7320102	Boring	8.54	Test Hole	Test Hole	-	-	5.49	8.54	Friday, August 3, 2018

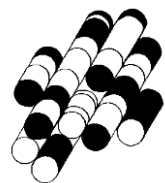
*MECP WWID: Ministry of the Environment , Conservation and Parks Water Well Records Identification

**metres below ground surface

APPENDIX C

Groundwater Monitoring Details

TERRAPROBE INC.



9541 Weston Road, Vaughan

Groundwater Depths (m below ground surface)

Monitoring Well ID	Ground Surface Elevation (masl)	Well Depth (mbgs)	Stick-up (magl)	Top of the Well Screen Depth (mbgs)	1st GW Monitoring Event	2nd GW Monitoring Event	3rd GW Monitoring Event	4th GW Monitoring Event	5th GW Monitoring Event
					Water Depth February 2, 2022 (mbgs)	Water Depth February 14, 2022 (mbgs)	Water Depth February 24, 2022 (mbgs)	Water Depth March 7, 2022 (mbgs)	Water Depth March 9, 2022 (mbgs)
BH1	225.59	4.03	-	1.03	Dry	Dry	4.00	4.01	4.01
BH8	225.16	7.79	-	4.79	Dry	7.57	Dry	7.68	7.62
BH9	225.16	7.85	-	4.85	Dry	Dry	7.73	7.69	7.76
BH12	225.02	7.69	-	4.69	Dry	Dry	7.57	Dry	Dry
BH15	224.85	4.17	0.82	1.17	2.71	2.69	1.29	1.00	1.18

Groundwater Elevations (m above sea level)

Monitoring Well ID	Ground Surface Elevation (masl)	Well Screen Bottom Elevation (masl)	Top of the Riser Elevation (masl)	Top of the Well Screen Depth (masl)	1st GW Monitoring Event	2nd GW Monitoring Event	3rd GW Monitoring Event	4th GW Monitoring Event	4th GW Monitoring Event
					Groundwater Elevation February 2, 2022 (masl)	Groundwater Elevation February 14, 2022 (masl)	Groundwater Elevation February 24, 2022 (masl)	Groundwater Elevation March 7, 2022 (masl)	Groundwater Elevation March 9, 2022 (masl)
BH1	225.59	221.56	-	224.56	Dry	Dry	221.59	221.58	221.58
BH8	225.16	217.37	-	220.37	Dry	217.59	Dry	217.48	217.54
BH9	225.16	217.31	-	220.31	Dry	Dry	217.43	217.47	217.40
BH12	225.02	217.33	-	220.33	Dry	Dry	217.45	Dry	Dry
BH15	224.85	220.68	225.67	223.68	222.14	222.16	223.56	223.85	223.67

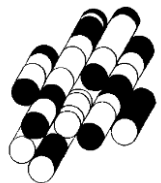
Note: mbgs - metres below ground surface

masl - metres above sea level

APPENDIX D

In-situ Hydraulic Conductivity Test Results

TERRAPROBE INC.





Terraprobe

Slug Test Analysis Report

Project: 9541 Weston Road, Vaughan

Number: 1-21-0843-46

Client: City of Vaughan

Location: Vaughan

Slug Test: BH15

Test Well: BH15

Test Conducted by: AA

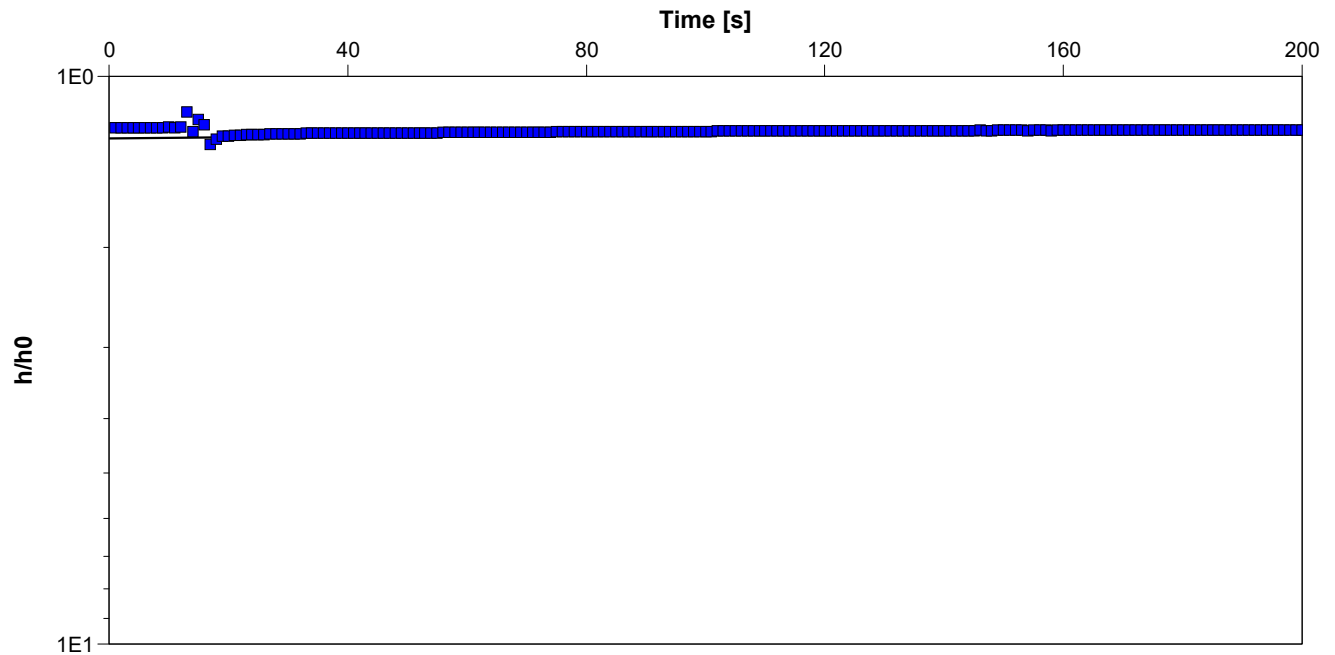
Test Date: 2/24/2022

Analysis Performed by: AN

BH15 - RHT

Analysis Date: 3/1/2022

Aquifer Thickness: 1.40 m



Calculation using Bouwer & Rice

Observation Well

Hydraulic Conductivity
[m/s]

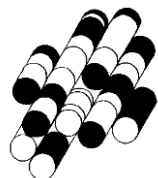
BH15

1.44×10^{-7}

APPENDIX E

Grain Size Distribution Graphs

TERRAPROBE INC.



GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH1_SS5
SAMPLING DEPTH, m: 3.50
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Silt trace Clay
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	82.2
37.5	100.0	0.026	67.4
26.5	100.0	0.017	42.4
19.0	100.0	0.010	21.5
13.2	100.0	0.007	13.7
9.5	100.0	0.005	9.3
4.75	100.0	0.003	5.3
2.36	100.0	0.001	2.7
1.18	100.0	ATTERBERG LIMITS, %	
0.60	100.0		
0.30	100.0		
0.15	100.0	Plastic Limit	
0.075	100.0	Liquid Limit	
		Plastic Index	

GRAIN SIZE PROPORTIONS, %

% GRAVEL (> 4.75 mm): 0.0
% SAND (75 µm to 4.75 mm): 0.0
% Silt (5 µm to 75 µm): 90.7
% Clay (< 5 µm): 9.3
SUSCEPTIBILITY TO FROST HEAVING: High

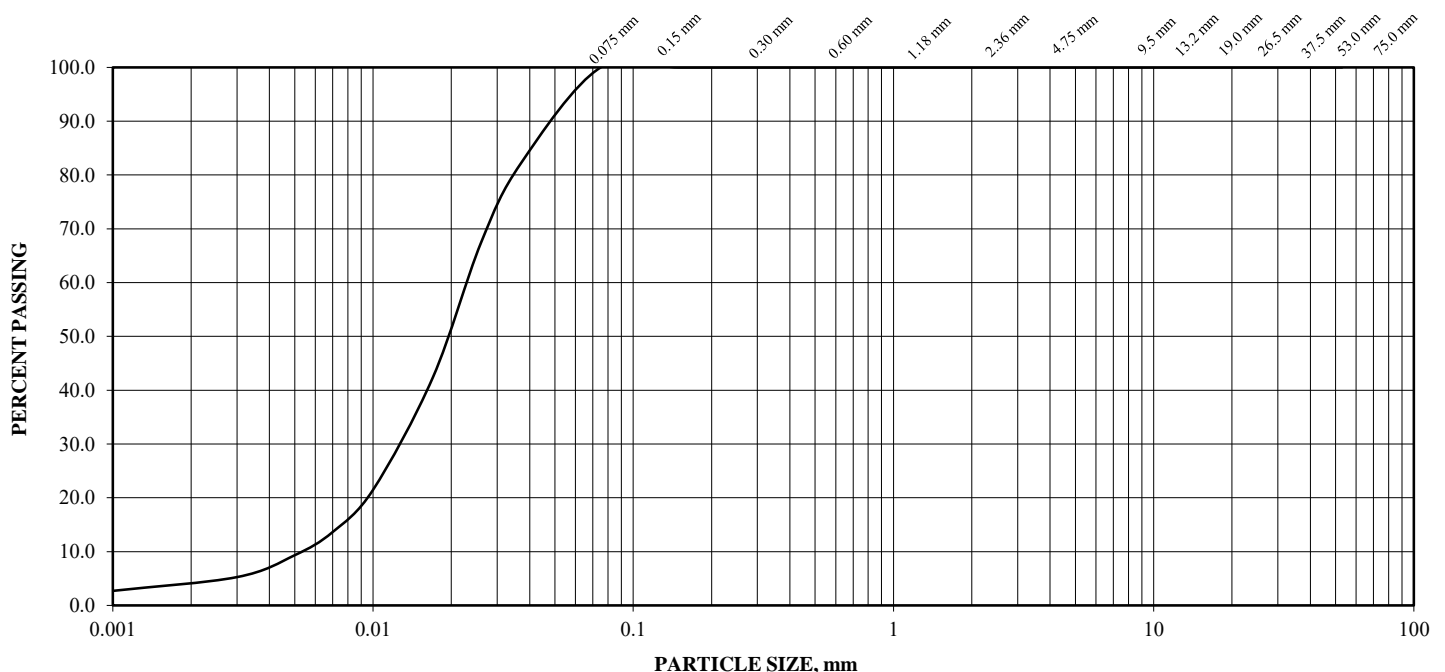
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH2_SS3
SAMPLING DEPTH, m: 2.00
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Silt trace Clay and Sand
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	75.2
37.5	100.0	0.026	60.1
26.5	100.0	0.017	39.1
19.0	100.0	0.010	20.6
13.2	100.0	0.007	11.8
9.5	100.0	0.005	7.9
4.75	100.0	0.003	4.4
2.36	100.0	0.001	1.8
1.18	100.0	ATTERBERG LIMITS, %	
0.60	100.0		
0.30	100.0		
0.15	100.0	Plastic Limit	
0.075	99.1	Liquid Limit	
		Plastic Index	

GRAIN SIZE PROPORTIONS, %

% GRAVEL (> 4.75 mm): 0.0
% SAND (75 µm to 4.75 mm): 0.9
% Silt (5 µm to 75 µm): 91.2
% Clay (< 5 µm): 7.9
SUSCEPTIBILITY TO FROST HEAVING: High

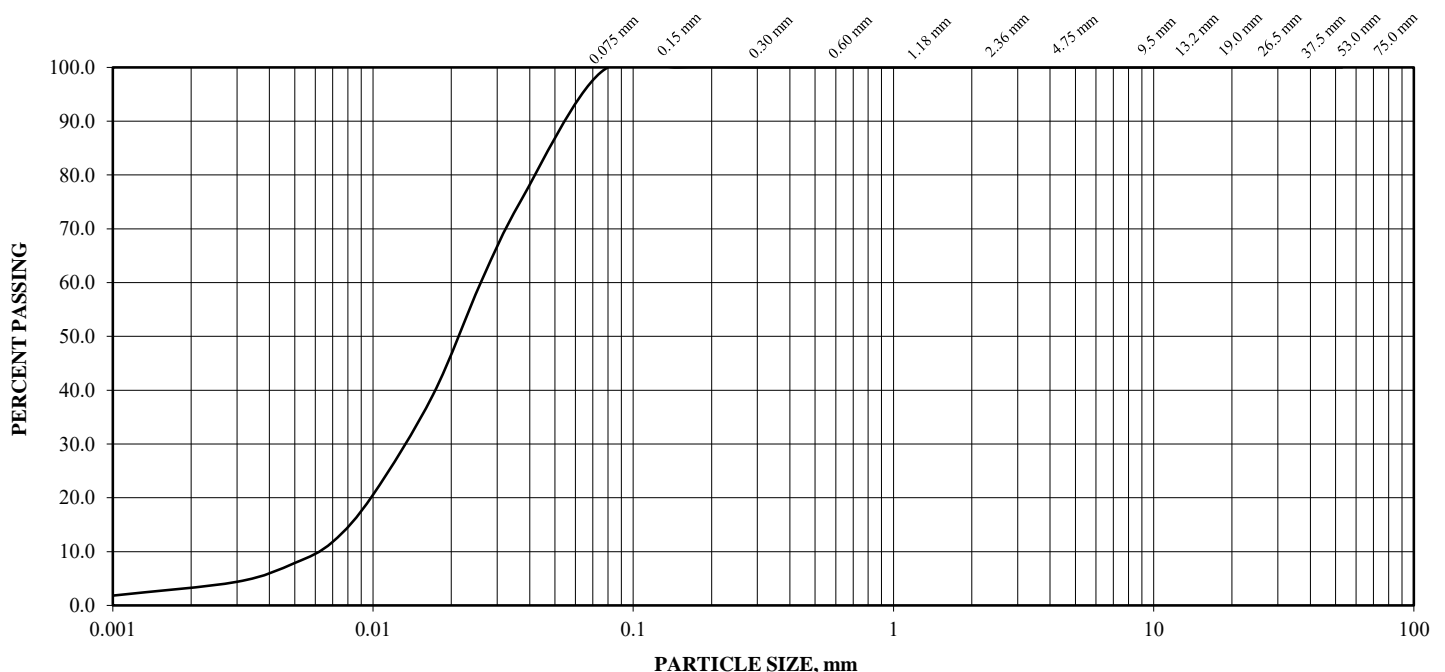
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH8_SS7
SAMPLING DEPTH, m: 5.00
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Silt with Sand trace Clay
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %
% GRAVEL (> 4.75 mm): 0.0
% SAND (75 µm to 4.75 mm): 13.8
% Silt (5 µm to 75 µm): 78.3
% Clay (<5 µm): 7.9
SUSCEPTIBILITY TO FROST HEAVING: High

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	58.5
37.5	100.0	0.026	44.7
26.5	100.0	0.017	31.0
19.0	100.0	0.010	18.7
13.2	100.0	0.007	11.9
9.5	100.0	0.005	7.9
4.75	100.0	0.003	4.5
2.36	100.0	0.001	2.7
1.18	100.0	ATTERBERG LIMITS, %	
0.60	100.0		
0.30	100.0		
0.15	99.4	Plastic Limit	
0.075	86.2	Liquid Limit	
		Plastic Index	

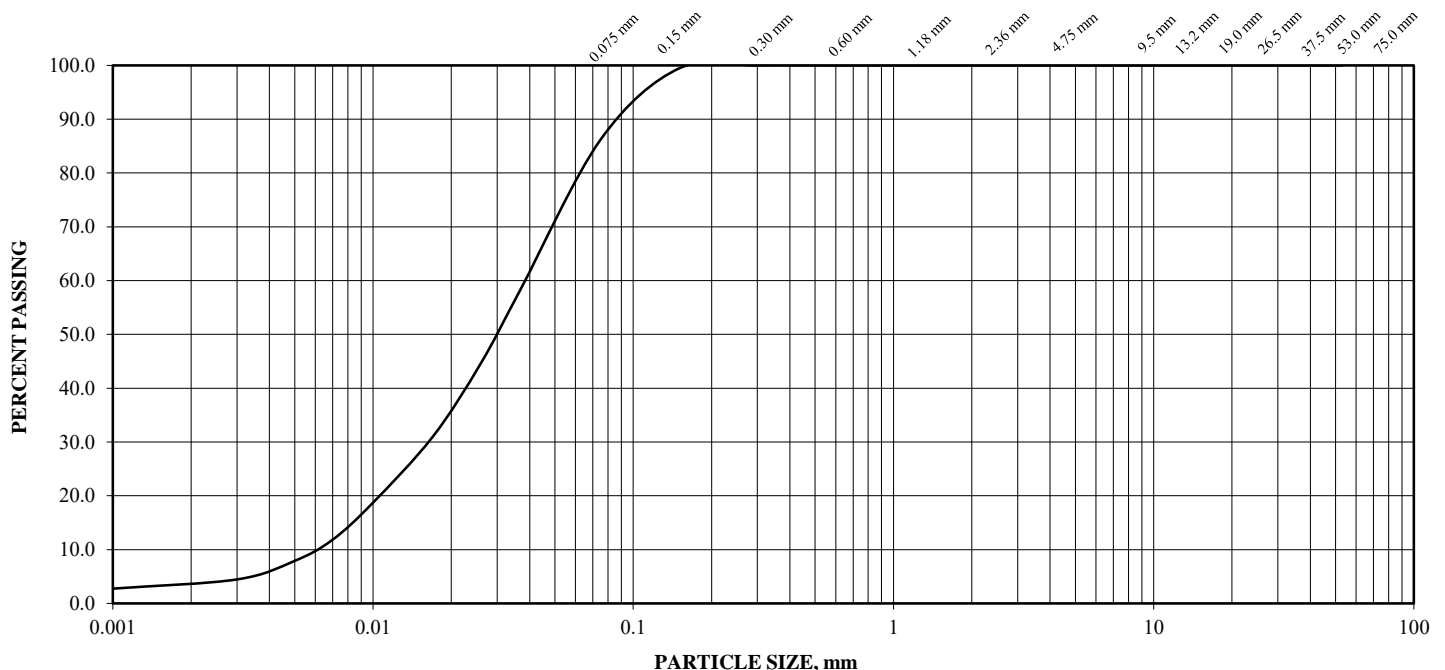
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH8_SS8
SAMPLING DEPTH, m: 6.50
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Sandy Silty Clay trace Gravel
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	65.9
37.5	100.0	0.026	59.8
26.5	100.0	0.017	52.5
19.0	100.0	0.010	43.1
13.2	100.0	0.007	36.5
9.5	100.0	0.005	30.5
4.75	98.7	0.003	22.3
2.36	97.2	0.001	13.0
1.18	95.5	ATTERBERG LIMITS, %	
0.60	93.2		
0.30	89.7		
0.15	84.1	Plastic Limit	12.4
0.075	77.2	Liquid Limit	20.8
		Plastic Index	8.4

GRAIN SIZE PROPORTIONS, %

% GRAVEL (> 4.75 mm): 1.3
% SAND (75 µm to 4.75 mm): 21.5
% Silt (5 µm to 75 µm): 46.7
% Clay (< 5 µm): 30.5
SUSCEPTIBILITY TO FROST HEAVING: Moderate

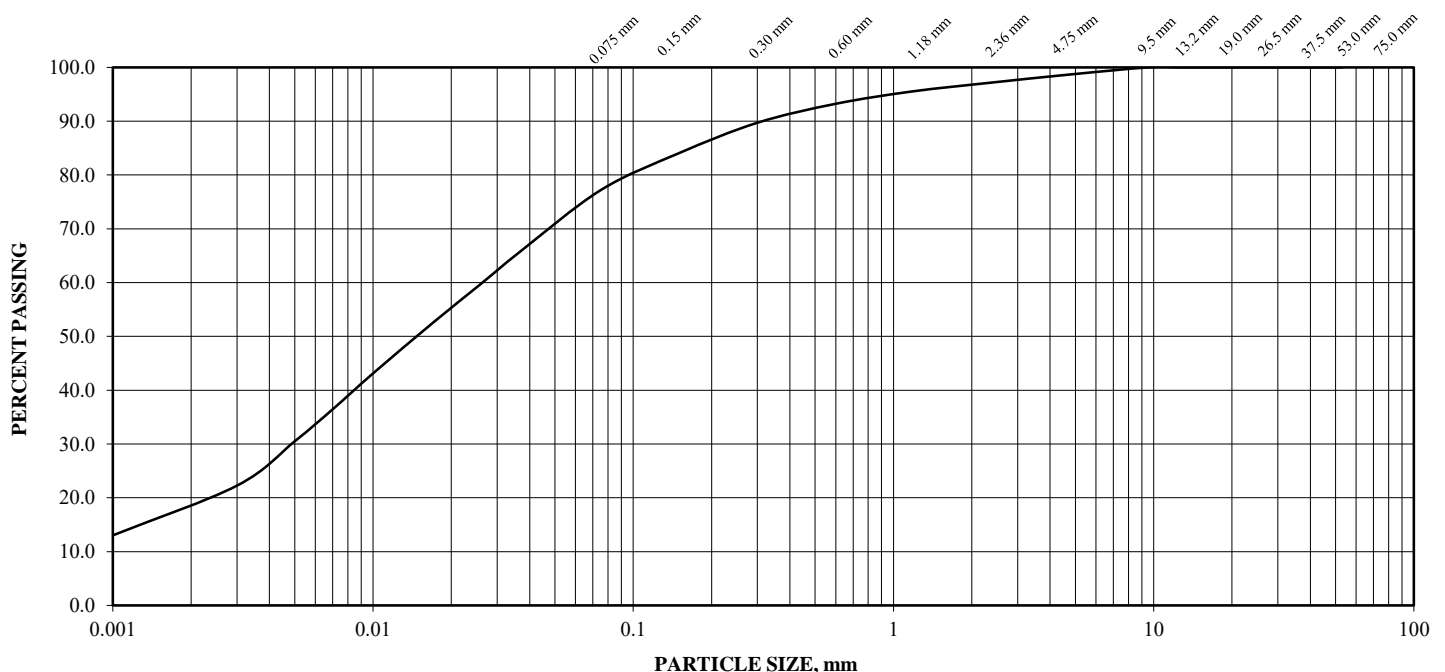
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH9_SS8
SAMPLING DEPTH, m: 6.50
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Silty Clay with Sand trace Gravel
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %
% GRAVEL (> 4.75 mm): 1.4
% SAND (75 µm to 4.75 mm): 19.2
% Silt (5 µm to 75 µm): 46.0
% Clay (< 5 µm): 33.4
SUSCEPTIBILITY TO FROST HEAVING: Moderate

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	68.7
37.5	100.0	0.026	62.4
26.5	100.0	0.017	54.8
19.0	100.0	0.010	45.0
13.2	100.0	0.007	38.4
9.5	100.0	0.005	33.4
4.75	98.6	0.003	27.3
2.36	97.5	0.001	15.4
1.18	96.7	ATTERBERG LIMITS, %	
0.60	95.6		
0.30	93.4		
0.15	87.3		
0.075	79.4	Plastic Limit	
		Liquid Limit	
		Plastic Index	

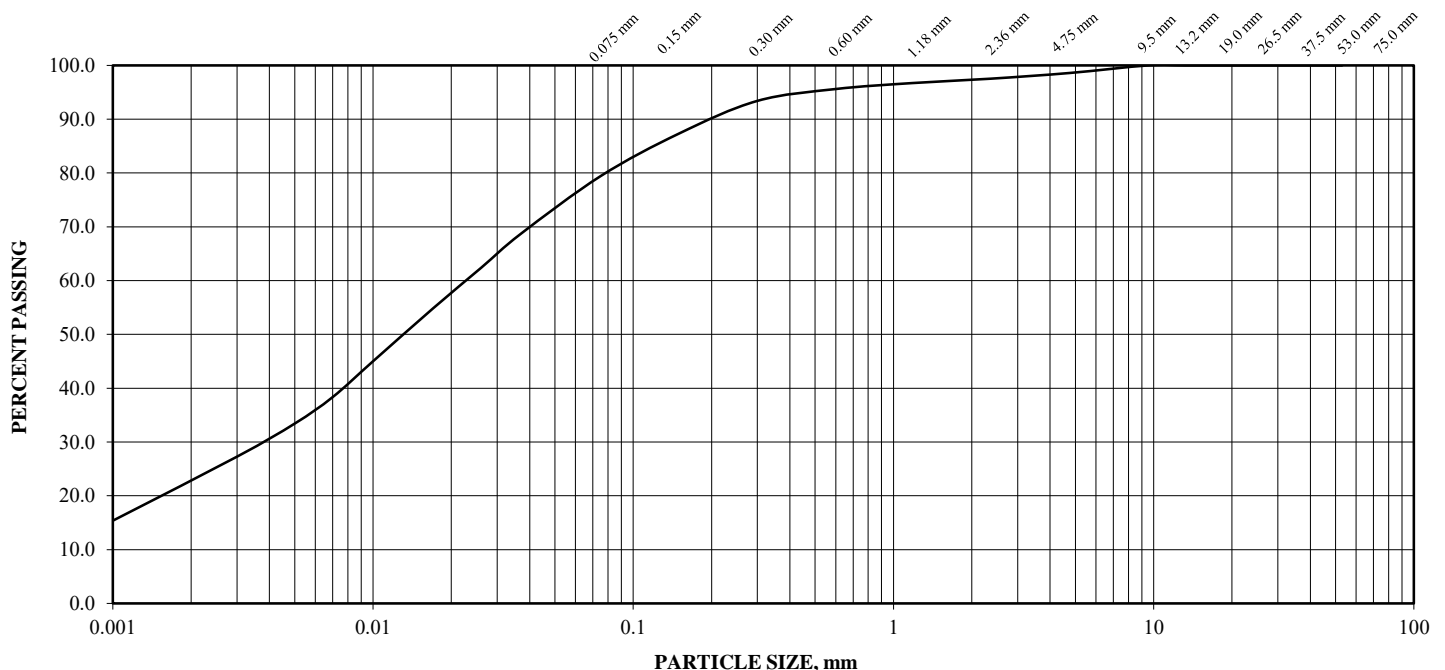
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH10_SS4
SAMPLING DEPTH, m: 2.50
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Silt trace Clay and Sand
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %
% GRAVEL (> 4.75 mm): 0.0
% SAND (75 µm to 4.75 mm): 5.5
% Silt (5 µm to 75 µm): 88.0
% Clay (<5 µm): 6.5
SUSCEPTIBILITY TO FROST HEAVING: High

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	54.6
37.5	100.0	0.026	37.3
26.5	100.0	0.017	23.3
19.0	100.0	0.010	13.9
13.2	100.0	0.007	9.1
9.5	100.0	0.005	6.5
4.75	100.0	0.003	4.7
2.36	100.0	0.001	2.9
1.18	100.0	ATTERBERG LIMITS, %	
0.60	100.0		
0.30	100.0		
0.15	100.0	Plastic Limit	
0.075	94.5	Liquid Limit	
		Plastic Index	

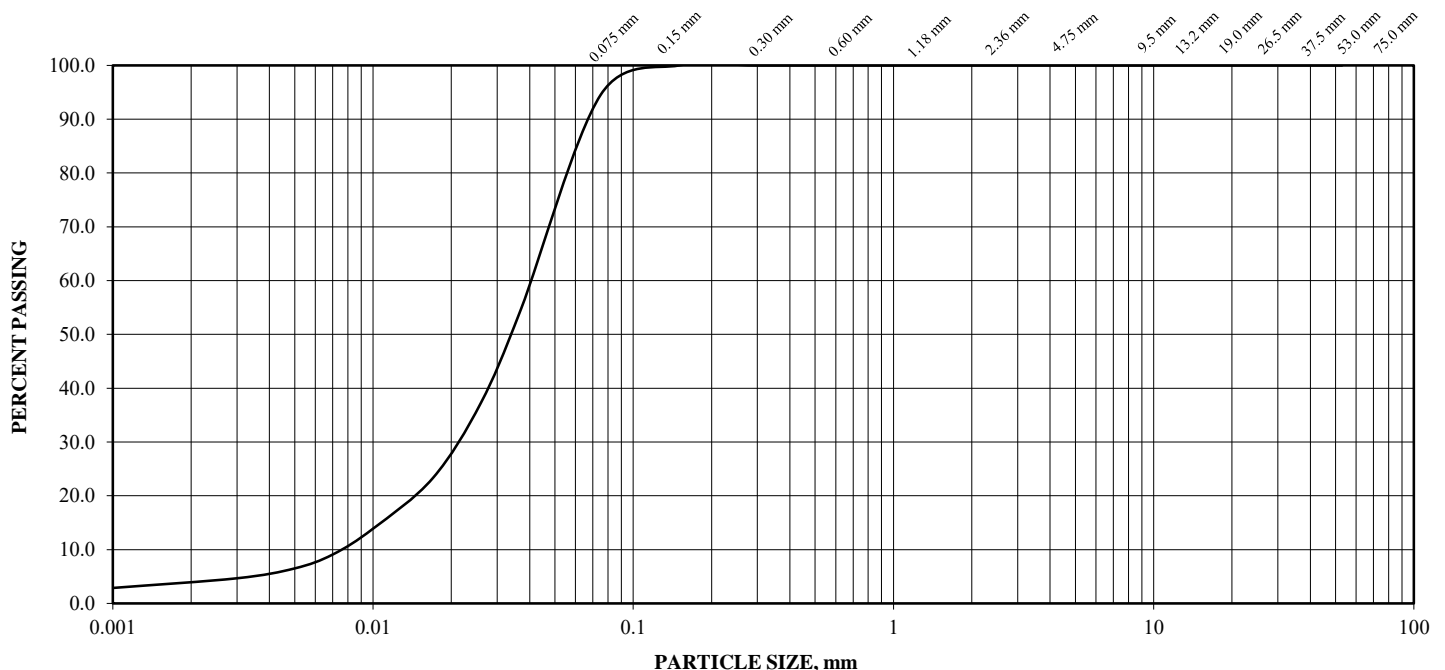
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH11_SS2
SAMPLING DEPTH, m: 1.00
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Silt with Clay
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	97.7
37.5	100.0	0.026	81.5
26.5	100.0	0.017	60.0
19.0	100.0	0.010	29.7
13.2	100.0	0.007	19.0
9.5	100.0	0.005	12.3
4.75	100.0	0.003	6.3
2.36	100.0	0.001	4.6
1.18	100.0	ATTERBERG LIMITS, %	
0.60	100.0		
0.30	100.0		
0.15	100.0	Plastic Limit	
0.075	100.0	Liquid Limit	
		Plastic Index	

GRAIN SIZE PROPORTIONS, %

% GRAVEL (> 4.75 mm): 0.0
% SAND (75 µm to 4.75 mm): 0.0
% Silt (5 µm to 75 µm): 87.7
% Clay (< 5 µm): 12.3
SUSCEPTIBILITY TO FROST HEAVING: High

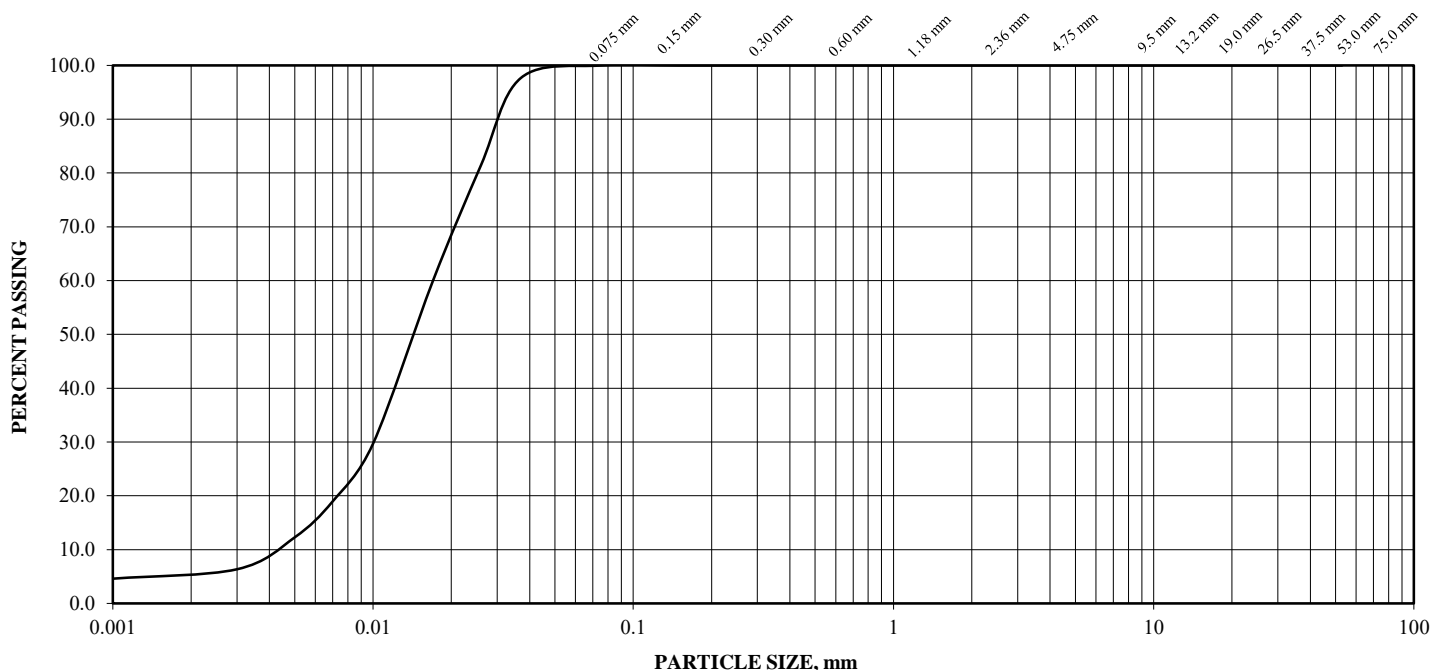
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH12_SS7
SAMPLING DEPTH, m: 5.00
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Silty Sand trace Clay
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %
% GRAVEL (> 4.75 mm): 0.0
% SAND (75 µm to 4.75 mm): 68.9
% Silt (5 µm to 75 µm): 23.8
% Clay (< 5 µm): 7.3
SUSCEPTIBILITY TO FROST HEAVING: Low

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	20.1
37.5	100.0	0.026	17.0
26.5	100.0	0.017	14.1
19.0	100.0	0.010	10.9
13.2	100.0	0.007	8.9
9.5	100.0	0.005	7.3
4.75	100.0	0.003	5.5
2.36	99.2	0.001	3.7
1.18	98.5	ATTERBERG LIMITS, %	
0.60	97.0		
0.30	88.1		
0.15	56.1	Plastic Limit	
0.075	31.1	Liquid Limit	
		Plastic Index	

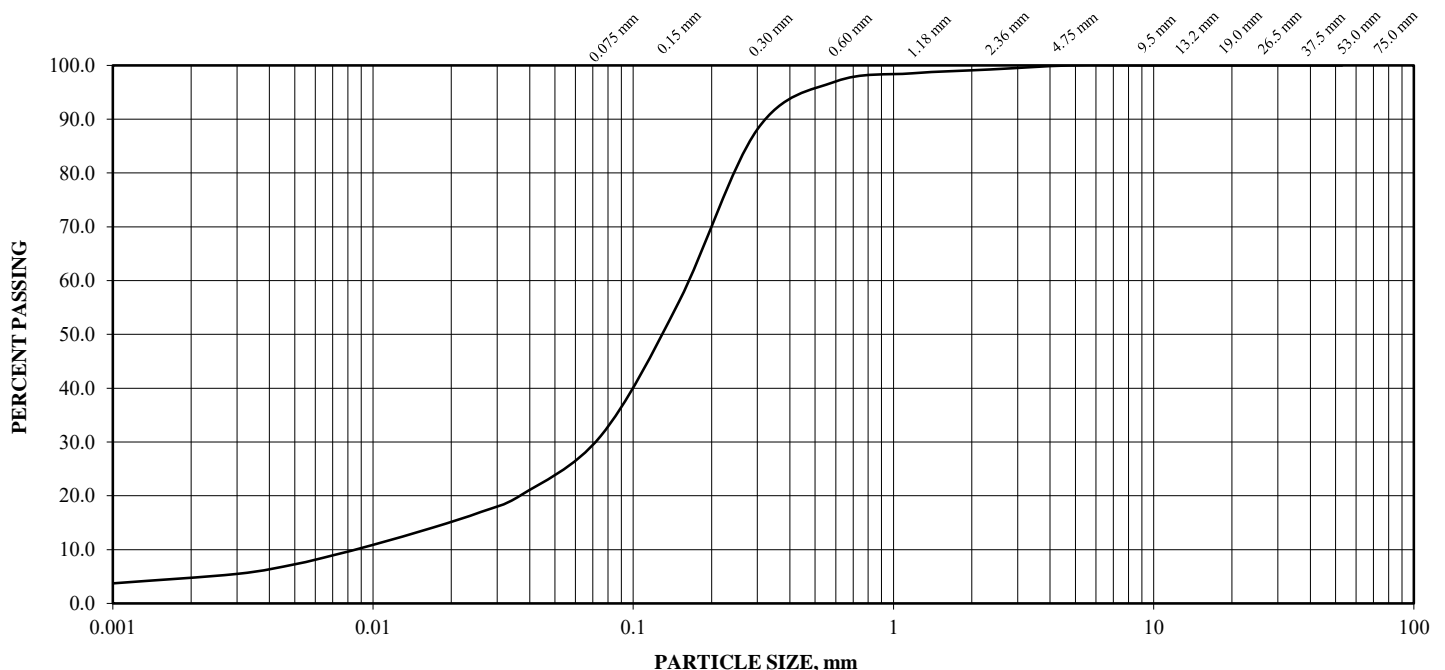
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH12_SS8
SAMPLING DEPTH, m: 6.50
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Sandy Silty Clay trace Gravel
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %
% GRAVEL (> 4.75 mm): 1.1
% SAND (75 µm to 4.75 mm): 20.4
% Silt (5 µm to 75 µm): 50.4
% Clay (< 5 µm): 28.1
SUSCEPTIBILITY TO FROST HEAVING: Moderate

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	61.5
37.5	100.0	0.026	54.5
26.5	100.0	0.017	47.4
19.0	100.0	0.010	39.0
13.2	100.0	0.007	32.8
9.5	100.0	0.005	28.1
4.75	98.9	0.003	22.1
2.36	97.9	0.001	12.9
1.18	97.2	ATTERBERG LIMITS, %	
0.60	96.5		
0.30	94.2	Plastic Limit	12.0
0.15	88.5	Liquid Limit	18.8
0.075	78.5	Plastic Index	6.8

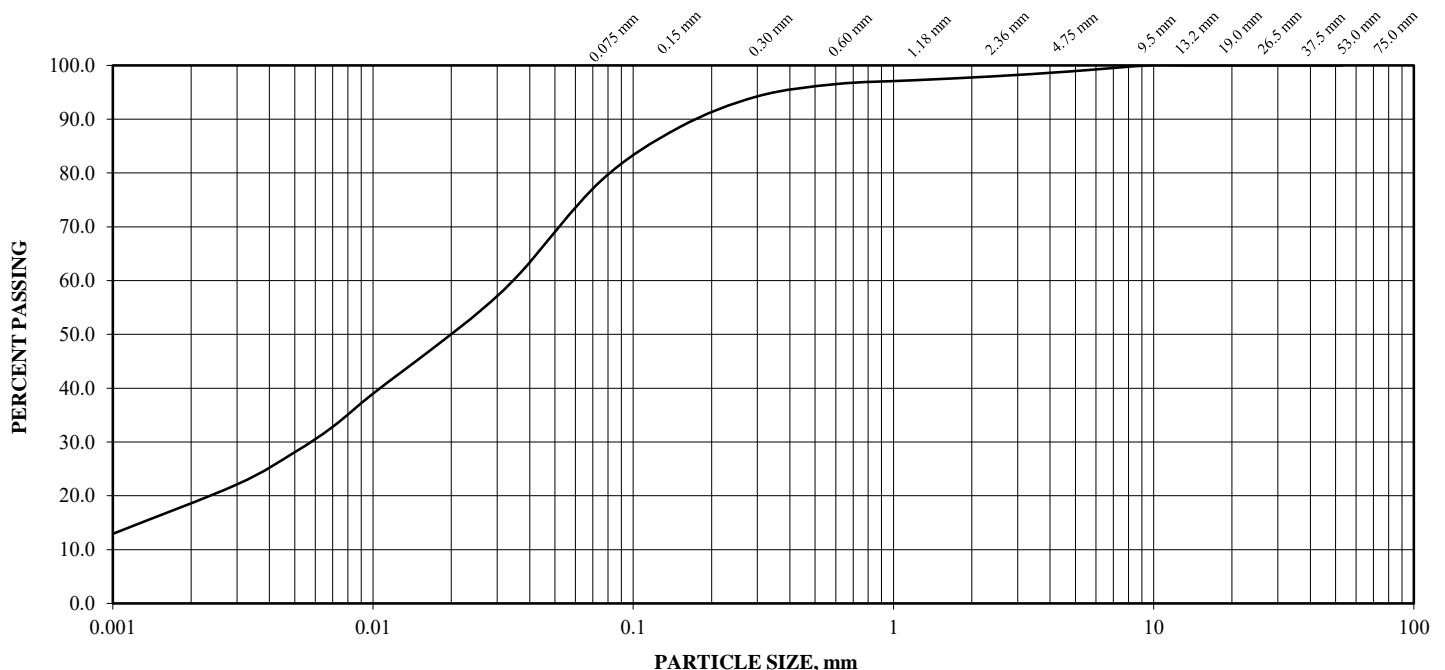
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH13_SS1
SAMPLING DEPTH, m: 0.50
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Sandy Silty Clay trace Gravel
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %
% GRAVEL (> 4.75 mm): 0.3
% SAND (75 µm to 4.75 mm): 25.2
% Silt (5 µm to 75 µm): 43.7
% Clay (< 5 µm): 30.8
SUSCEPTIBILITY TO FROST HEAVING: Moderate

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	60.2
37.5	100.0	0.026	54.0
26.5	100.0	0.017	47.5
19.0	100.0	0.010	39.7
13.2	100.0	0.007	34.3
9.5	100.0	0.005	30.8
4.75	99.7	0.003	27.1
2.36	99.2	0.001	21.1
1.18	98.7	ATTERBERG LIMITS, %	
0.60	97.7		
0.30	93.8		
0.15	84.9	Plastic Limit	
0.075	74.5	Liquid Limit	
		Plastic Index	

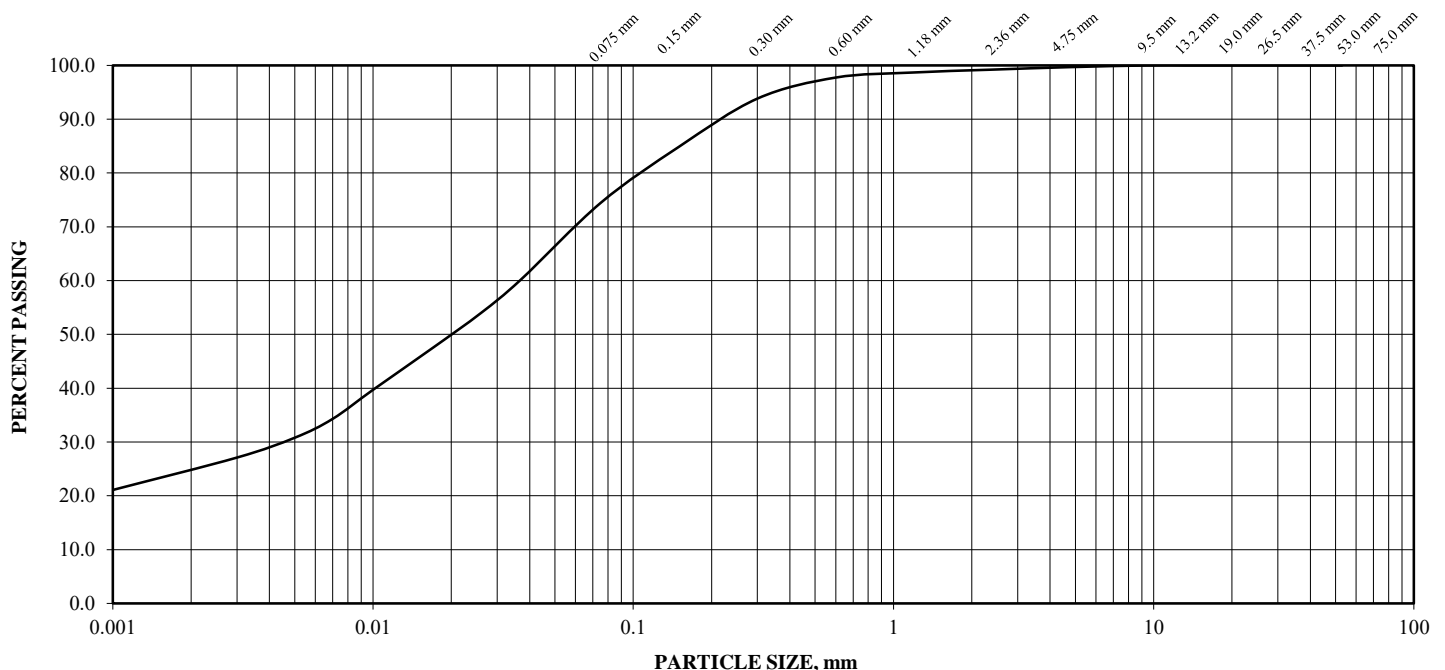
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH15_SS5
SAMPLING DEPTH, m: 3.50
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Silty Clay with Sand trace Gravel
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %
% GRAVEL (> 4.75 mm): 2.7
% SAND (75 µm to 4.75 mm): 18.2
% Silt (5 µm to 75 µm): 37.0
% Clay (< 5 µm): 42.1
SUSCEPTIBILITY TO FROST HEAVING: Low

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	72.2
37.5	100.0	0.026	68.1
26.5	100.0	0.017	62.5
19.0	100.0	0.010	54.6
13.2	100.0	0.007	48.2
9.5	100.0	0.005	42.1
4.75	97.3	0.003	33.8
2.36	96.6	0.001	23.2
1.18	95.4	ATTERBERG LIMITS, %	
0.60	93.9		
0.30	90.5	Plastic Limit	11.9
0.15	84.9	Liquid Limit	23.1
0.075	79.0	Plastic Index	11.2

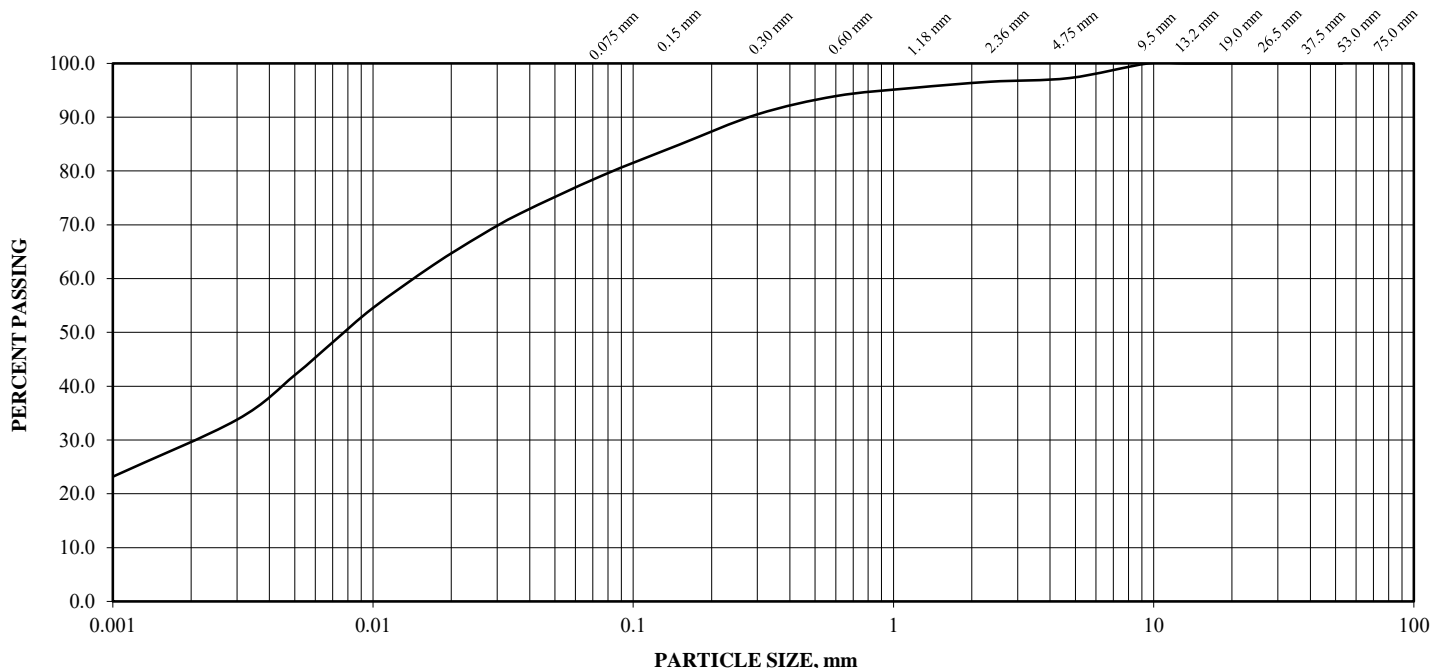
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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GRAIN SIZE ANALYSIS AND HYDROMETER TEST REPORT MTO LS-602, 702, AND 703/704

PROJECT: 02112512.000 CLIENT/JOB NAME: City of Vaughan CONTRACT NUMBER: -

ROS ID: 101009 PROJECT/LOCATION: Geo. Tech. Investigation / City of Vaughan Fire Station 7-12

SAMPLING LOCATION: BH16_SS3
SAMPLING DEPTH, m: 2.00
SAMPLING METHOD: Split Spoon
SAMPLED BY: P.J. Englobe Corp
SAMPLE DESCRIPTION: Silty Clay with Sand
SAMPLING DATE: 2022-01-21
SAMPLE RECEIVED DATE: 2022-01-21

GRAIN SIZE PROPORTIONS, %
% GRAVEL (> 4.75 mm): 0.0
% SAND (75 µm to 4.75 mm): 10.4
% Silt (5 µm to 75 µm): 65.6
% Clay (< 5 µm): 24.0
SUSCEPTIBILITY TO FROST HEAVING: High

GRAIN SIZE ANALYSIS		HYDROMETER ANALYSIS	
SIEVE SIZE mm	% PASSING	DIAMETER mm	% PASSING
53.0	100.0	0.037	72.7
37.5	100.0	0.026	65.0
26.5	100.0	0.017	54.9
19.0	100.0	0.010	41.2
13.2	100.0	0.007	31.1
9.5	100.0	0.005	24.0
4.75	100.0	0.003	16.8
2.36	99.6	0.001	9.3
1.18	99.2	ATTERBERG LIMITS, %	
0.60	98.6		
0.30	97.3		
0.15	95.4	Plastic Limit	
0.075	89.6	Liquid Limit	
		Plastic Index	

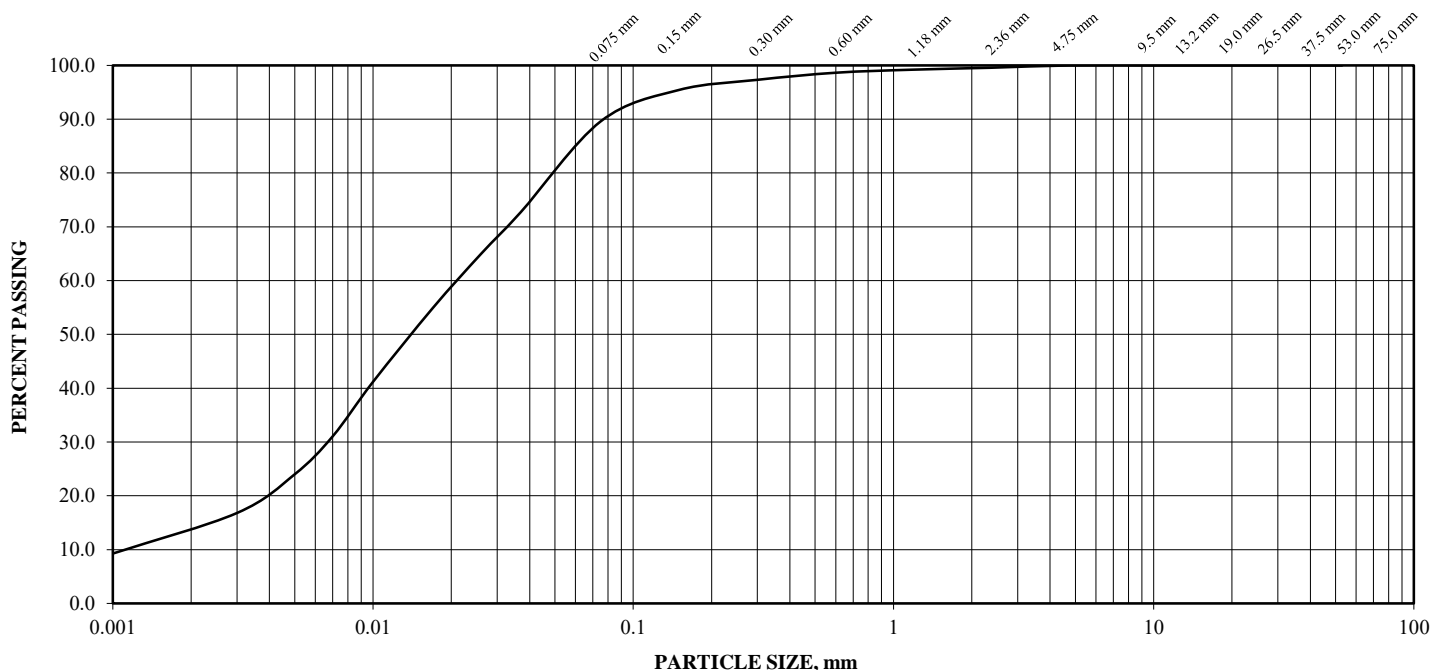
PARTICLE SIZE DISTRIBUTION, MTO LS-702

U.S. BUREAU OF SOILS CLASSIFICATION (AS USED IN MINISTRY OF TRANSPORTATION OF ONTARIO PAVEMENT DESIGNS)

CLAY	SILT	VERY FINE SAND	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	GRAVEL
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UNIFIED SOILS CLASSIFICATION ASTM D 2487

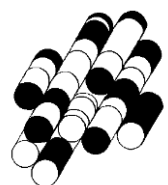
FINES (SILT & CLAY)	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
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APPENDIX F

Groundwater Quality Test Results

TERRAPROBE INC.





FINAL REPORT

CA40166-FEB22 R1

1-21-0843-46, 9541 Weston Rd.

Prepared for

Terraprobe Inc



FINAL REPORT

CA40166-FEB22 R1

First Page

CLIENT DETAILS

Client Terraprobe Inc
Address 11 Indell Lane
Brampton, ON
L6T 3Y3, Canada
Contact Amar Neku
Telephone (905) 796-2650
Facsimile (905) 796-2250
Email aneku@terraprobe.ca
Project 1-21-0843-46, 9541 Weston Rd.
Order Number
Samples Ground Water (1)

LABORATORY DETAILS

Project Specialist Brad Moore Hon. B.Sc
Laboratory SGS Canada Inc.
Address 185 Concession St., Lakefield ON, K0L 2H0
Telephone 705-652-2143
Facsimile 705-652-6365
Email brad.moore@sgs.com
SGS Reference CA40166-FEB22
Received 02/14/2022
Approved 02/23/2022
Report Number CA40166-FEB22 R1
Date Reported 02/23/2022

COMMENTS

RL - SGS Reporting Limit

Nonylphenol Ethoxylates is the sum of nonylphenol monoethoxylate and nonylphenol diethoxylate.

Temperature of Sample upon Receipt: 6 degrees C

Cooling Agent Present: Yes

Custody Seal Present: Yes

Chain of Custody Number: 024464

Increased O&Gtot RL due to sample matrix

SIGNATORIES

Brad Moore Hon. B.Sc



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FINAL REPORT

CA40166-FEB22 R1

Client: Terraprobe Inc

Project: 1-21-0843-46, 9541 Weston Rd.

Project Manager: Amar Neku

Samplers: Aloa Alborne

MATRIX: WATER

Sample Number 8

Sample Name BH15 D
(unfiltered)

Sample Matrix Ground Water

Sample Date 14/02/2022

L1 = SANSEW / WATER / - - York - Discharge of Sewage ~ Sanitary Water - BL_2014_23

L2 = SANSEW / WATER / - - York - Discharge of Sewage ~ Storm Water - BL_2014_23

Parameter	Units	RL	L1	L2	Result
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General Chemistry

Biochemical Oxygen Demand (BOD5)	mg/L	2	300	15	< 4 ↑
Total Suspended Solids	mg/L	2	350	15	234
Total Kjeldahl Nitrogen	as N mg/L	0.5	100	1	0.7

Metals and Inorganics

Sulphate	mg/L	0.2	1500		65
Cyanide (total)	mg/L	0.01	2	0.02	0.03
Fluoride	mg/L	0.06	10		1.50
Aluminum (total)	mg/L	0.001	50		4.45
Antimony (total)	mg/L	0.0009	5		< 0.0009
Arsenic (total)	mg/L	0.0002	1	0.02	0.0024
Cadmium (total)	mg/L	0.000003	0.7	0.008	0.000063
Chromium (total)	mg/L	0.00008	2	0.08	0.00724
Cobalt (total)	mg/L	0.000004	5		0.00288
Copper (total)	mg/L	0.0002	3	0.05	0.0077
Lead (total)	mg/L	0.00009	1	0.12	0.00266
Manganese (total)	mg/L	0.00001	5	0.15	0.241
Molybdenum (total)	mg/L	0.00004	5		0.00742
Nickel (total)	mg/L	0.0001	2	0.08	0.0088
Phosphorus (total)	mg/L	0.003	10	0.4	0.185
Selenium (total)	mg/L	0.00004	1	0.02	0.00028
Silver (total)	mg/L	0.00005	5	0.12	0.00009



FINAL REPORT

CA40166-FEB22 R1

Client: Terraprobe Inc

Project: 1-21-0843-46, 9541 Weston Rd.

Project Manager: Amar Neku

Samplers: Aloa Alborne

MATRIX: WATER

Sample Number 8

Sample Name BH15 D
(unfiltered)

Sample Matrix Ground Water

Sample Date 14/02/2022

L1 = SANSEW / WATER / - - York - Discharge of Sewage ~ Sanitary Water - BL_2014_23

L2 = SANSEW / WATER / - - York - Discharge of Sewage ~ Storm Water - BL_2014_23

Parameter	Units	RL	L1	L2	Result
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Metals and Inorganics (continued)

Tin (total)	mg/L	0.00006	5		0.00327
Titanium (total)	mg/L	0.00005	5		0.104
Zinc (total)	mg/L	0.002	2	0.04	0.020

Nonylphenol and Ethoxylates

Nonylphenol	mg/L	0.001	0.02		< 0.001
Nonylphenol Ethoxylates	mg/L	0.01	0.2		< 0.01
Nonylphenol diethoxylate	mg/L	0.01			< 0.01
Nonylphenol monoethoxylate	mg/L	0.01			< 0.01

Oil and Grease

Oil & Grease (total)	mg/L	2			< 4 †
Oil & Grease (animal/vegetable)	mg/L	4	150		< 4
Oil & Grease (mineral/synthetic)	mg/L	4	15		< 4

Other (ORP)

pH	No unit	0.05	10.5	9	8.40
Mercury (total)	mg/L	0.00001	0.01	0.0004	< 0.00001



FINAL REPORT

CA40166-FEB22 R1

Client: Terraprobe Inc

Project: 1-21-0843-46, 9541 Weston Rd.

Project Manager: Amar Neku

Samplers: Aloa Alborne

MATRIX: WATER

Sample Number 8

Sample Name BH15 D
(unfiltered)

Sample Matrix Ground Water

Sample Date 14/02/2022

L1 = SANSEW / WATER / - - York - Discharge of Sewage ~ Sanitary Water - BL_2014_23

L2 = SANSEW / WATER / - - York - Discharge of Sewage ~ Storm Water - BL_2014_23

Parameter	Units	RL	L1	L2	Result
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PCBs

Polychlorinated Biphenyls (PCBs) - Total	mg/L	0.0001	0.001	0.0004	< 0.0001
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Phenols

4AAP-Phenolics	mg/L	0.002	1	0.008	0.002
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SVOCs

di-n-Butyl Phthalate	mg/L	0.002	0.08	0.015	< 0.002
Bis(2-ethylhexyl)phthalate	mg/L	0.002	0.012	0.0088	0.002

VOCs

Chloroform	mg/L	0.0005	0.04	0.002	< 0.0005
1,2-Dichlorobenzene	mg/L	0.0005	0.05	0.0056	< 0.0005
1,4-Dichlorobenzene	mg/L	0.0005	0.08	0.0068	< 0.0005
cis-1,2-Dichloroethene	mg/L	0.0005	4	0.0056	< 0.0005
trans-1,3-Dichloropropene	mg/L	0.0005	0.14	0.0056	< 0.0005
Methylene Chloride	mg/L	0.0005	2	0.0052	< 0.0005
1,1,2,2-Tetrachloroethane	mg/L	0.0005	1.4	0.017	< 0.0005
Tetrachloroethylene (perchloroethylene)	mg/L	0.0005	1	0.0044	< 0.0005
Trichloroethylene	mg/L	0.0005	0.4	0.008	< 0.0005
Methyl ethyl ketone	mg/L	0.02	8		< 0.02
Styrene	mg/L	0.0005	0.2		< 0.0005



FINAL REPORT

CA40166-FEB22 R1

Client: Terraprobe Inc
Project: 1-21-0843-46, 9541 Weston Rd.
Project Manager: Amar Neku
Samplers: Aloa Alborne

MATRIX: WATER

Sample Number 8
Sample Name BH15 D
(unfiltered)
Sample Matrix Ground Water
Sample Date 14/02/2022

L1 = SANSEW / WATER / - - York - Discharge of Sewage ~ Sanitary Water - BL_2014_23

L2 = SANSEW / WATER / - - York - Discharge of Sewage ~ Storm Water - BL_2014_23

Parameter	Units	RL	L1	L2	Result
VOCs - BTEX					
Benzene	mg/L	0.0005	0.01	0.002	< 0.0005
Ethylbenzene	mg/L	0.0005	0.16	0.002	< 0.0005
Toluene	mg/L	0.0005	0.27	0.002	< 0.0005
Xylene (total)	mg/L	0.0005	1.4	0.0044	< 0.0005
m-p-xylene	mg/L	0.0005			< 0.0005
o-xylene	mg/L	0.0005			< 0.0005



EXCEEDANCE SUMMARY

				SANSEW / WATER / - - York - Discharge of Sewage ~ Sanitary Water - BL_2014_23 L1	SANSEW / WATER / - - York - Discharge of Sewage ~ Storm Water - BL_2014_23 L2
Parameter	Method	Units	Result		

BH15 D (unfiltered)

Total Suspended Solids	SM 2540D	mg/L	234	15
Manganese	SM 3030/EPA 200.8	mg/L	0.241	0.15
Cyanide	SM 4500	mg/L	0.03	0.02



FINAL REPORT

CA40166-FEB22 R1

QC SUMMARY

Anions by IC
Method: EPA300/MA300-Ions1.3 | Internal ref.: ME-CA-IENVIIC-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Sulphate	DIO0290-FEB22	mg/L	0.2	<0.2	4	20	99	90	110	84	75	125

Biochemical Oxygen Demand
Method: SM 5210 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-007

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Biochemical Oxygen Demand (BOD5)	BOD0034-FEB22	mg/L	2	< 2	0	30	99	70	130	NV	70	130

Cyanide by SFA
Method: SM 4500 | Internal ref.: ME-CA-IENVISFA-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Cyanide (total)	SKA0132-FEB22	mg/L	0.01	<0.01	ND	10	104	90	110	88	75	125



FINAL REPORT

CA40166-FEB22 R1

QC SUMMARY

Fluoride by Specific Ion Electrode
Method: SM 4500 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-014

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Fluoride	EWL0260-FEB22	mg/L	0.06	<0.06	6	10	102	90	110	101	75	125

Mercury by CVAAS
Method: EPA 7471A/SM 3112B | Internal ref.: ME-CA-IENVISPE-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Mercury (total)	EHG0030-FEB22	mg/L	0.00001	< 0.00001	ND	20	83	80	120	76	70	130



FINAL REPORT

CA40166-FEB22 R1

QC SUMMARY

Metals in aqueous samples - ICP-MS
Method: SM 3030/EPA 200.8 | Internal ref.: ME-CA-ENVISPE-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Silver (total)	EMS0102-FEB22	mg/L	0.00005	<0.00005	2	20	101	90	110	90	70	130
Aluminum (total)	EMS0102-FEB22	mg/L	0.001	<0.001	1	20	95	90	110	116	70	130
Arsenic (total)	EMS0102-FEB22	mg/L	0.0002	<0.0002	11	20	102	90	110	96	70	130
Cadmium (total)	EMS0102-FEB22	mg/L	0.000003	<0.000003	14	20	102	90	110	111	70	130
Cobalt (total)	EMS0102-FEB22	mg/L	0.000004	<0.000004	4	20	102	90	110	101	70	130
Chromium (total)	EMS0102-FEB22	mg/L	0.00008	<0.00008	5	20	105	90	110	114	70	130
Copper (total)	EMS0102-FEB22	mg/L	0.0002	<0.0002	4	20	99	90	110	100	70	130
Manganese (total)	EMS0102-FEB22	mg/L	0.00001	<0.00001	3	20	101	90	110	99	70	130
Molybdenum (total)	EMS0102-FEB22	mg/L	0.00004	<0.00004	1	20	93	90	110	100	70	130
Nickel (total)	EMS0102-FEB22	mg/L	0.0001	<0.0001	4	20	93	90	110	101	70	130
Lead (total)	EMS0102-FEB22	mg/L	0.00009	<0.00001	2	20	102	90	110	103	70	130
Phosphorus (total)	EMS0102-FEB22	mg/L	0.003	<0.003	5	20	92	90	110	NV	70	130
Antimony (total)	EMS0102-FEB22	mg/L	0.0009	<0.0009	ND	20	109	90	110	120	70	130
Selenium (total)	EMS0102-FEB22	mg/L	0.00004	<0.00004	4	20	106	90	110	92	70	130
Tin (total)	EMS0102-FEB22	mg/L	0.00006	<0.00006	7	20	100	90	110	NV	70	130
Titanium (total)	EMS0102-FEB22	mg/L	0.00005	<0.00005	12	20	95	90	110	NV	70	130
Zinc (total)	EMS0102-FEB22	mg/L	0.002	<0.002	6	20	104	90	110	97	70	130



FINAL REPORT

CA40166-FEB22 R1

QC SUMMARY

Nonylphenol and Ethoxylates

Method: ASTM D7065-06 | Internal ref.: ME-CA-IENVIGC-LAK-AN-015

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Nonylphenol diethoxylate	GCM0223-FEB22	mg/L	0.01	<0.01			85	55	120			
Nonylphenol Ethoxylates	GCM0223-FEB22	mg/L	0.01	0								
Nonylphenol monoethoxylate	GCM0223-FEB22	mg/L	0.01	<0.01			87	55	120			
Nonylphenol	GCM0223-FEB22	mg/L	0.001	<0.001			63	55	120			

Oil & Grease

Method: MOE E3401 | Internal ref.: ME-CA-IENVIGC-LAK-AN-019

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Oil & Grease (total)	GCM0215-FEB22	mg/L	2	<2	NSS	20	98	75	125			



FINAL REPORT

CA40166-FEB22 R1

QC SUMMARY

Oil & Grease-AV/MS

Method: MOE E3401/SM 5520F | Internal ref.: ME-CA-IENVIGC-LAK-AN-019

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Oil & Grease (animal/vegetable)	GCM0215-FEB22	mg/L	4	< 4	NSS	20	NA	70	130			
Oil & Grease (mineral/synthetic)	GCM0215-FEB22	mg/L	4	< 4	NSS	20	NA	70	130			

pH

Method: SM 4500 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
pH	EWL0241-FEB22	No unit	0.05	NA	0		102			NA		

Phenols by SFA

Method: SM 5530B-D | Internal ref.: ME-CA-IENVISFA-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
4AAP-Phenolics	SKA0128-FEB22	mg/L	0.002	<0.002	NV	10	106	80	120	NV	75	125



FINAL REPORT

CA40166-FEB22 R1

QC SUMMARY

Polychlorinated Biphenyls

Method: MOE E3400/EPA 8082A | Internal ref.: ME-CA-IENVIGC-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Polychlorinated Biphenyls (PCBs) - Total	GCM0212-FEB22	mg/L	0.0001	<0.0001	ND	30	116	60	140	111	60	140

Semi-Volatile Organics

Method: EPA 3510C/8270D | Internal ref.: ME-CA-IENVIGC-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Bis(2-ethylhexyl)phthalate	GCM0199-FEB22	mg/L	0.002	< 0.002	NSS	30	119	50	140	NSS	50	140
di-n-Butyl Phthalate	GCM0199-FEB22	mg/L	0.002	< 0.002	NSS	30	112	50	140	NSS	50	140



FINAL REPORT

CA40166-FEB22 R1

QC SUMMARY

Suspended Solids

Method: SM 2540D | Internal ref.: ME-CA-IENVIEWL-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Total Suspended Solids	EWL0242-FEB22	mg/L	2	< 2	0	10	100	90	110	NA		

Total Nitrogen

Method: SM 4500-N C/4500-NO3- F | Internal ref.: ME-CA-IENVISFA-LAK-AN-002

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Total Kjeldahl Nitrogen	SKA0136-FEB22	as N mg/L	0.5	<0.5	2	10	103	90	110	106	75	125



FINAL REPORT

CA40166-FEB22 R1

QC SUMMARY

Volatile Organics

Method: EPA 5030B/8260C | Internal ref.: ME-CA-ENVIGC-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
1,1,2,2-Tetrachloroethane	GCM0221-FEB22	mg/L	0.0005	<0.0005	ND	30	96	60	130	99	50	140
1,2-Dichlorobenzene	GCM0221-FEB22	mg/L	0.0005	<0.0005	ND	30	96	60	130	102	50	140
1,4-Dichlorobenzene	GCM0221-FEB22	mg/L	0.0005	<0.0005	ND	30	96	60	130	100	50	140
Benzene	GCM0221-FEB22	mg/L	0.0005	<0.0005	ND	30	98	60	130	102	50	140
Chloroform	GCM0221-FEB22	mg/L	0.0005	<0.0005	ND	30	97	60	130	100	50	140
cis-1,2-Dichloroethene	GCM0221-FEB22	mg/L	0.0005	<0.0005	ND	30	95	60	130	100	50	140
Ethylbenzene	GCM0221-FEB22	mg/L	0.0005	<0.0005	ND	30	97	60	130	104	50	140
m-p-xylene	GCM0221-FEB22	mg/L	0.0005	<0.0005	ND	30	97	60	130	106	50	140
Methyl ethyl ketone	GCM0221-FEB22	mg/L	0.02	<0.02	ND	30	97	50	140	95	50	140
Methylene Chloride	GCM0221-FEB22	mg/L	0.0005	<0.0005	ND	30	98	60	130	97	50	140
o-xylene	GCM0221-FEB22	mg/L	0.0005	<0.0005	ND	30	98	60	130	107	50	140
Styrene	GCM0221-FEB22	mg/L	0.0005	<0.0005	ND	30	98	60	130	104	50	140
Tetrachloroethylene (perchloroethylene)	GCM0221-FEB22	mg/L	0.0005	<0.0005	ND	30	98	60	130	104	50	140
Toluene	GCM0221-FEB22	mg/L	0.0005	<0.0005	ND	30	97	60	130	103	50	140
trans-1,3-Dichloropropene	GCM0221-FEB22	mg/L	0.0005	<0.0005	ND	30	98	60	130	100	50	140
Trichloroethylene	GCM0221-FEB22	mg/L	0.0005	<0.0005	ND	30	97	60	130	103	50	140



FINAL REPORT

CA40166-FEB22 R1

QC SUMMARY

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

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

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

Multielement Scan Qualifier: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

Duplicate Qualifier: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Matrix Spike Qualifier: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.



LEGEND

FOOTNOTES

NSS Insufficient sample for analysis.

RL Reporting Limit.

↑ Reporting limit raised.

↓ Reporting limit lowered.

NA The sample was not analysed for this analyte

ND Non Detect

Samples analysed as received. Solid samples expressed on a dry weight basis. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act" published by the Ministry and dated March 9, 2004 as amended.

SGS provides criteria information (such as regulatory or guideline limits and summary of limit exceedances) as a service. Every attempt is made to ensure the criteria information in this report is accurate and current, however, it is not guaranteed. Comparison to the most current criteria is the responsibility of the client and SGS assumes no responsibility for the accuracy of the criteria levels indicated. This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

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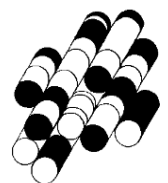
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APPENDIX G

Site Plans of Proposed Development

TERRAPROBE INC.

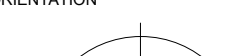


CLIENT

ARCHITECT
THOMASBROWNARCHITECTS
187 SPADINA AVENUE, SUITE 500 | TORONTO ONTARIO | M5T 2C8

PROFESSIONAL SEAL

ORIENTATION



TRUE NORTH

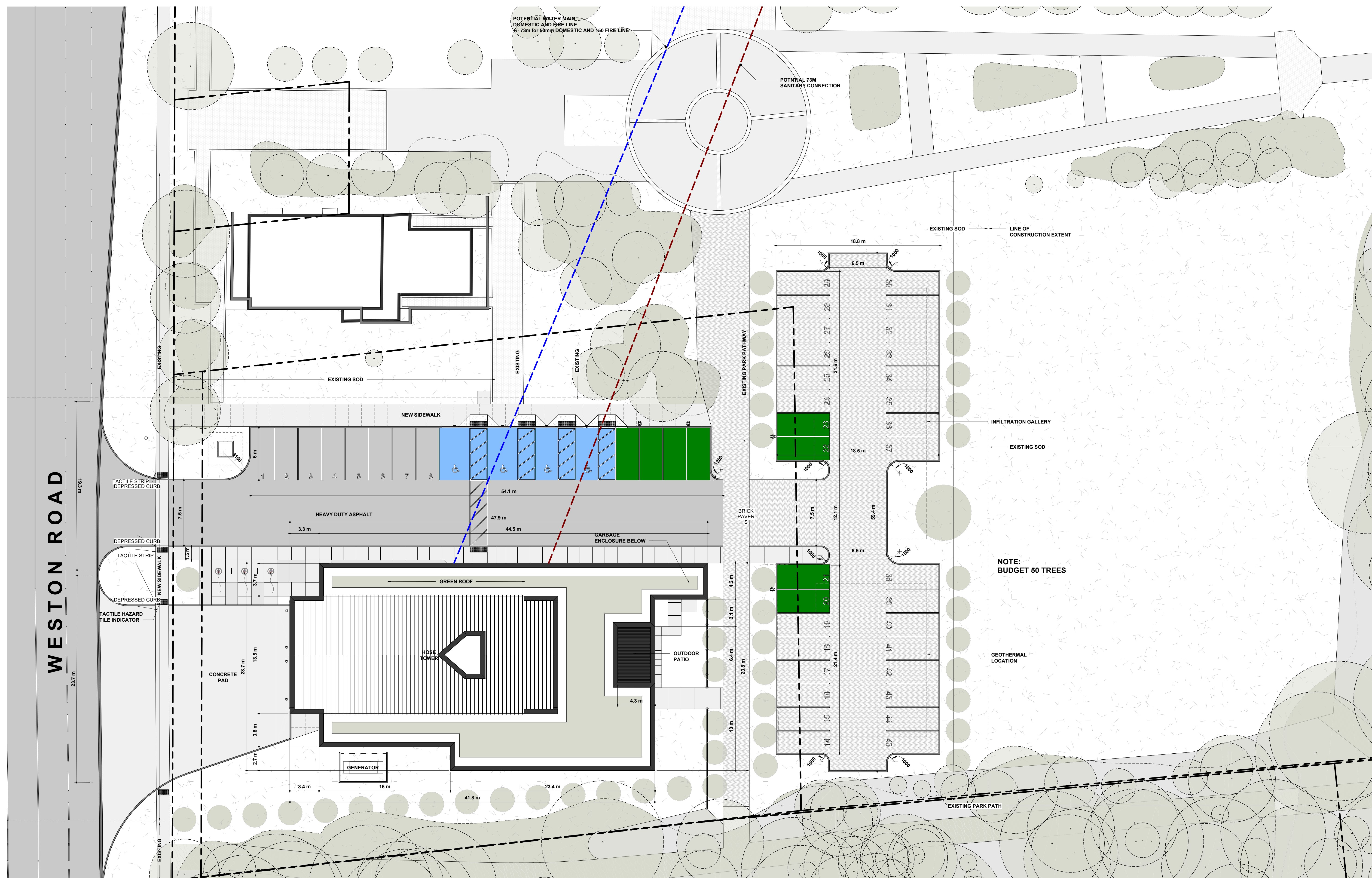
CONSTRUCTION NORTH

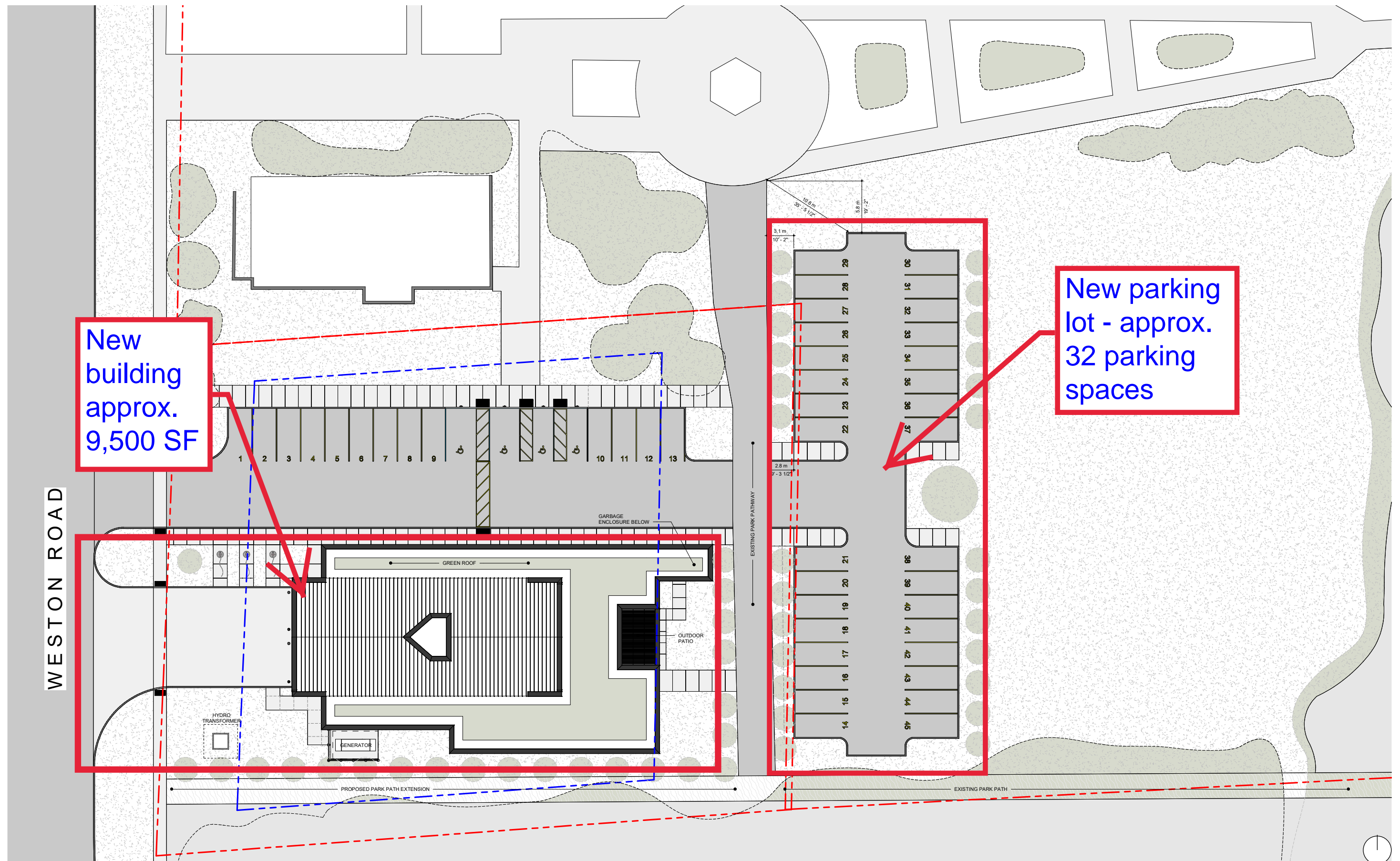
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PROJECT NAME

DRAWING No.	CR 11	REVISION
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CRM



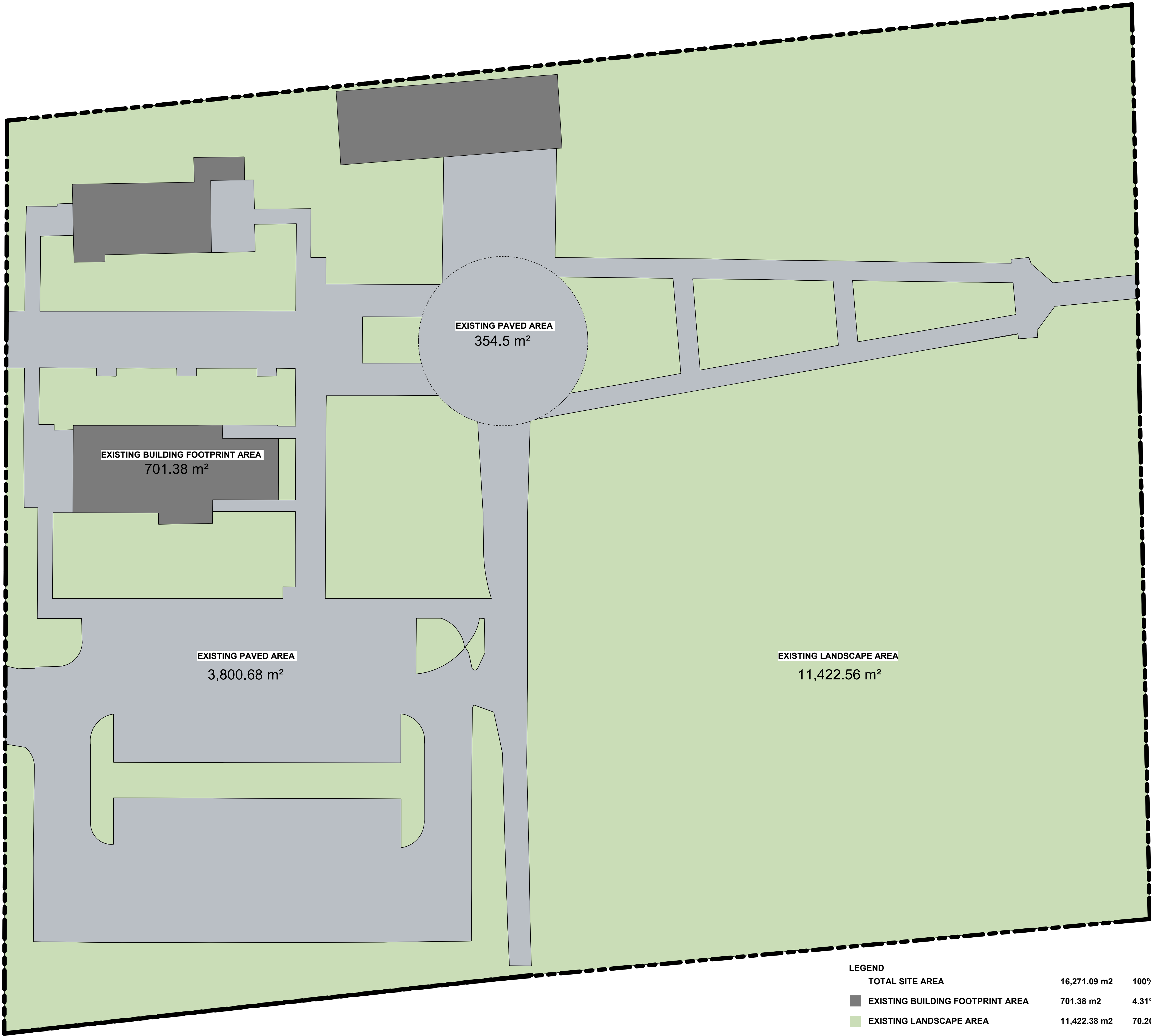


New building approx. 9,500 SF

New parking lot - approx. 32 parking spaces

WESTON ROAD





1 SITE PLAN - EXISTING - PRE-DEVELOPMENT
1 : 250

LEGEND			
	TOTAL SITE AREA	16,271.09 m2	100%
	EXISTING BUILDING FOOTPRINT AREA	701.38 m2	4.31%
	EXISTING LANDSCAPE AREA	11,422.38 m2	70.20%
	EXISTING PAVED AREA	4,155.18 m2	25.54%

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CITY OF VAUGHAN FIRE
STATION 7-12
9541 WESTON ROAD, VAUGHAN

CLIENT

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ARCHITECT
THOMASBROWNARCHITECTS
197 SPADINA AVENUE, SUITE 500 | TORONTO ONTARIO | M5T 2C9

PROFESSIONAL SEAL

DWG TITLE
SITE PLAN -
EXISTING -
PRE-DEVELOPMENT

ORIENTATION

N

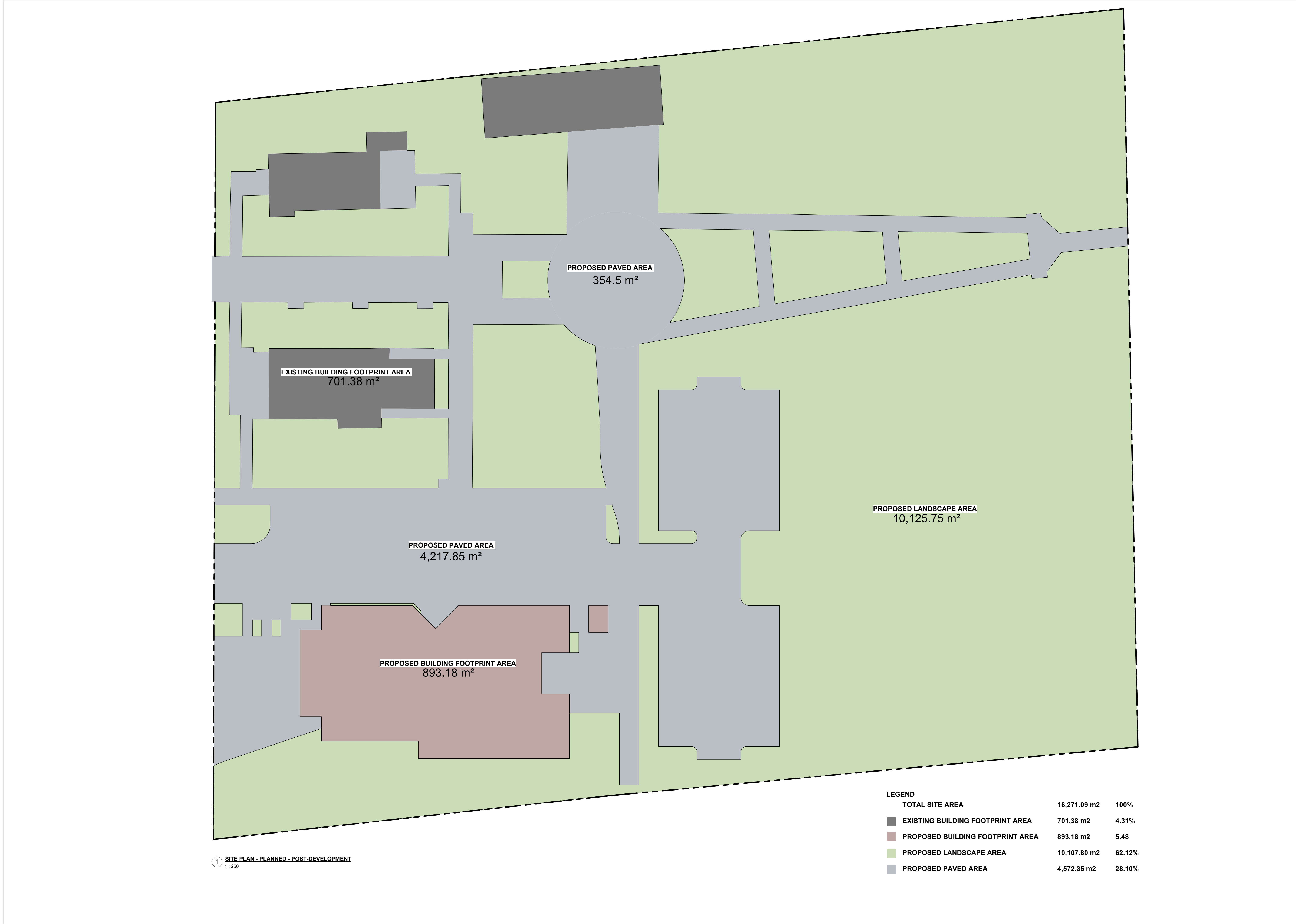
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CONSTRUCTION NORTH

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DWG TITLE
SITE PLAN -
PLANNED -
POST-DEVELOPMENT

ORIENTATION
TRUE NORTH CONSTRUCTION NORTH

DATE
2021-11-24

SCALE
1 : 250

DWG STATUS :
SD

PROJECT No.
2104

DRAWING No.
D1.16

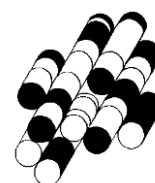
REVISION

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APPENDIX H

Short-Term Dewatering Flow Rate Estimates

TERRAPROBE INC.



9541 Weston Road, Vaughan

Short-Term Construction Dewatering Flow Rate Estimate Details

Dewatering flow rate from Groundwater Source		
Excavation Dimensions		
Total Footing Length	143.4	
Width of Footing	4	
Area (m²)	573.6	
Perimeter (m)	294.8	
Q BASE		
Flow (m³/day)	Length of Base (m)	Flow (L/day)
0.0000000	4	0
Q SIDES (m³/day)		
Flow	Perimeter (m)	Flow (L/day)
0.00E+00	294.8	0.00E+00
Q Total	L/day	-
Safety Factor		1.5
	L/day	-
	L/day	-

Dewatering Flow Rate from Rainfall Event		
Rainfall Event		
Year	2	100
Hour	3	12
Depth (mm)	30.8	102
Depth (m)	0.0308	0.102
2 Year Event (L/day)	17,667	18,000
100 Year Event (L/Day)	58,507	59,000

Estimated Short-Term Dewatering Flow Rate

L/day	18,000.00
L/min	12.50

Project: 1-21-0843-46
9541 Weston Road, City of Vaughan

MTO IDF Curve Lookup: http://www.mto.gov.on.ca/IDF_Curves/terms.shtml
IDF Curve: 43° 49' 45" N, 79° 33' 14" W (43.829167,-79.554167)

Intensity Data

Duration time (min)	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	126.1	77.7	58.5	36	22.2	13.7	6.3	3.9	2.4
5-yr	166.4	102.5	77.2	47.6	29.3	18	8.4	5.2	3.2
10-yr	192.6	118.6	89.3	55	33.9	20.9	9.7	6	3.7
25-yr	226.1	139.3	104.9	64.6	39.8	24.5	11.4	7	4.3
50-yr	250.5	154.3	116.2	71.6	44.1	27.2	12.6	7.8	4.8
100-yr	274.9	169.3	127.6	78.6	48.4	29.8	13.8	8.5	5.2

Plot Data

time (min)	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
5	126.1	166.4	192.6	226.1	250.5	274.9
10	77.7	102.5	118.6	139.3	154.3	169.3
15	58.5	77.2	89.3	104.9	116.2	127.6
30	36	47.6	55	64.6	71.6	78.6
60	22.2	29.3	33.9	39.8	44.1	48.4
120	13.7	18	20.9	24.5	27.2	29.8
360	6.3	8.4	9.7	11.4	12.6	13.8
720	3.9	5.2	6	7	7.8	8.5
1440	2.4	2.4	3.7	4.3	4.8	5.2

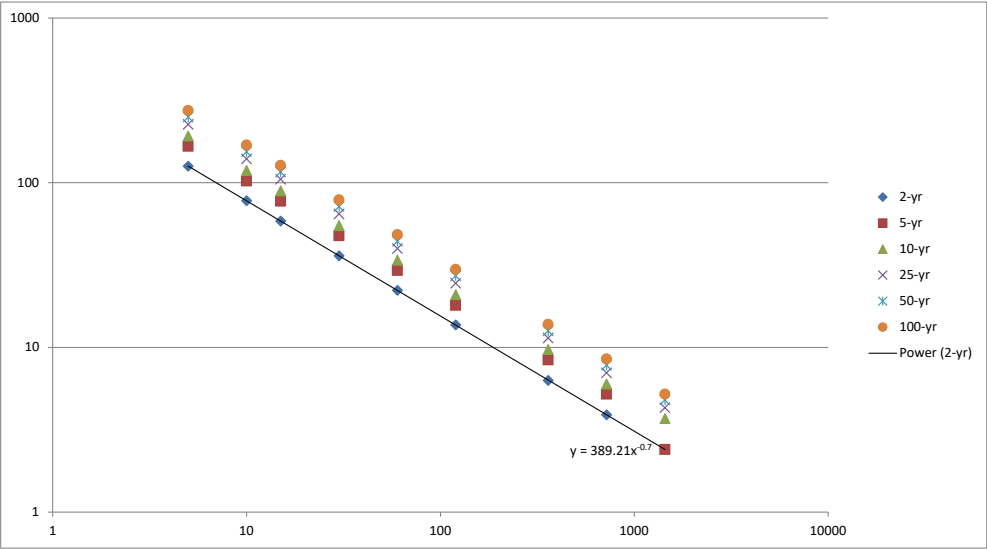
Use a scatter plot
use logarithmic axes with base 10

2-yr 3hr event

Fit a trendline through the 2-year curve using a power equation
Show equation of trendline on graph
Use equation to calculate the intensity of the 3-hr event (x=180)

$$I = 389.21x^{-0.7}$$
$$= 10.26817 \text{ mm/hr}$$
$$\text{depth} = 3\text{hr} * I$$
$$30.80452 \text{ mm}$$

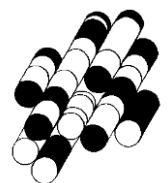
100-yr 12hr event (directly from IDF data)
I= 8.5 mm/hr
depth = 102.0 mm



APPENDIX I

Pre and Post Development Water Balance Analyses

TERRAPROBE INC.



Pre- and Post Water Balance - 9541 Weston Road (Fire Station Number 7-12), Vaughan

1. Climate Information (using TRSP Water Balance Tool)

	Row Data	Modified	
Precipitation	852 mm/a	852 mm/a	0.85 m/a
Evapotranspiration	412 mm/a	391 mm/a	0.39 m/a
Runoff	282 mm/a	268 mm/a	0.27 m/a
Recharge	203 mm/a	193 mm/a	0.19 m/a

The site development area is underlain by clayey silt fill.

2. Site Statistics

Pre- Development Site Coverage

	Subcatchment Areas
Area Covered by Existing Buildings (Roof Top)	701 m ²
Area Covered by Existing Paved Area	4,155
Area Covered by Existing Landscaped Area	11,415
TOTAL:	16,271

Post-Development Site Coverage

	Subcatchment Areas
Area Covered by Existing and Proposed Buildings (Roof Top)	1,595 m ²
Area Covered by Proposed Paved Area	4,572 m ²
Area Covered by Proposed Landscaped Area	10,104 m ²
TOTAL:	16,271 m ²

3. Annual Pre-Development Water Balance

Land Use	Area (m ²)	Precipitation (m ³ /yr)	Evapotranspiration (m ³ /yr)	Infiltration (m ³ /yr)	Runoff (m3/yr)
Existing Buildings	701	598	60	0	538
Existing Paved Area	4,155	3,540	354	0	3,186
Existing Landscaped Area	11,415	9,725	4,467	2,201	3,057
TOTAL	16,271	13,863	4,881	2,201	6,781

4. Annual Post-Development Water Balance

Land Use	Area (m ²)	Precipitation (m ³ /yr)	Evapotranspiration (m ³ /yr)	Infiltration (m ³ /yr)	Runoff (m3/yr)
Buildings	1,595	1,358	135	0	1,223
Proposed Paved Area	4,572	3,896	390	0	3,506
Proposed Landscaped Area	10,104	8,609	3,954	1,948	2,707
TOTAL	16,271	13,863	4,479	1,948	7,436

	Precipitation (m ³ /yr)	Evapotranspiration (m ³ /yr)	Infiltration (m ³ /yr)	Runoff (m3/yr)
Pre-Development	13,863	4,881	2,201	6,781
Post-Development	13,863	4,479	1,948	7,436
Gain/Loss (-)		-402	-253	655

* <https://trca.ca/conservation/drinking-water-source-protection/trspa-water-balance-tool/>

Phase One Environmental Site Assessment

9541 Weston Road, Vaughan, Ontario

City of Vaughan
Final Report
Reference No.02112512.000

June 22, 2022
01-02112512.000-0100-EN-004-00



eNGLOBE

City of Vaughan
Reference No. 02112512.000

Prepared by:



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Environmental Engineer
Environment GTA/East - ON

Reviewed by:



Wilson Jiang, Ph.D.
Technical Reviewer
Environment GTA/East - ON

Approved by:



Sam Voore, M.Eng., P.Eng., QP_{ESA}
Director of Operations
Environment GTA/East - ON

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City of Vaughan

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Revisions and publications log

REVISION No.	DATE	DESCRIPTION
0A	April 19, 2022	Draft report published for comments
00	June 22, 2022	Final report published for the Client

Distribution

1 PDF copy	Ms. Adriana Tantalo
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1 Summary

Englobe Corp. (Englobe) was retained by the City of Vaughan (hereinafter referred to as the “Client”) to complete a Phase One Environmental Site Assessment (Phase One ESA) for the property located at 9541 Weston Road in Vaughan, Ontario (hereinafter referred to as “Site” or “Phase One Property”). The location of the Site is shown on the Site Location Plan, Figure 1 in Appendix A.

The Site is located on the east side of Weston Road, approximately 200 meters (m) south of the intersection of Weston Road and Ashberry Boulevard in the City of Vaughan, Ontario. It is an irregularly shaped parcel of land with approximately 4,092 m² in area, which is currently occupied with an asphalt paved parking lot and grassed area. The Site is surrounded by residential, commercial community and institutional buildings to the north and west, and woodlands to the south and east. Weston Road is adjacent to the west of the Site. The Site and surrounding properties are shown on the Site and Surrounding Land Use Plan, Figure 2 in Appendix A.

This Phase One ESA is being completed for the Client for due diligence purposes in preparation of proposed fire station development work of the Site and the work described herein is to be completed in general accordance with the Ontario Regulation (O. Reg.) 153/04 Records of Site Condition - Part XV.1 of the Environmental Protection Act, as amended up to 407/19 (O. Reg. 153/04, as amended). Englobe understands that the filing of a Record of Site Condition (RSC) with the Ontario Ministry of the Environment, Conservation and Parks (MECP) is not required at this time.

This Phase One ESA includes a review of historical archival information for the Site and surrounding properties within the Study Area, interviews with the Site representative(s) and regulatory personnel if available, a Site reconnaissance, and preparing a report summarizing the findings and recommendations of the assessment. No intrusive investigation or chemical testing (i.e., sampling or testing of air, soil, groundwater, surface water, or building materials, etc.) was carried out during the assessment period. In addition, this Phase One ESA did not include an assessment of biological features or related aspects of the natural environment.

Based on the information obtained and reviewed as part of this assessment, current and/or historical Potentially Contaminating Activities (PCAs) associated with the Site and surrounding properties within the Phase One Study Area were identified and were shown in Figure 3 in Appendix A. A summary of the identified PCAs resulting in associated Areas of Potential Environmental Concern (APECs) on the Phase One Property is presented below. APECs resulting from the PCAs identified at the Site and surrounding properties are summarized in the table below.

Areas of Potential Environmental Concern

APEC	Location of APEC	Potentially Contaminating Activity (PCA)	Location of PCA	Contaminants of Potential Concern*	Media Potentially Impacted
APEC 1	Entire Site	Historical use of fill materials # 30 - Importation of Fill Materials of Unknown Quality	On-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR and pH, PHCs, BTEX, VOCs, PAHs, PCBs, OCPs	Soil
APEC 2	The north portion of the Site	Registered as a waste generator of photo processing wastes and inorganic laboratory chemicals # Undefined PCA No.	Off-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, and VOCs	Soil and Groundwater

Notes: *
PHCs - Petroleum Hydrocarbon Fractions F1 to F4
BTEX - Benzene, Toluene, Ethylbenzene and Xylenes
VOCs - Volatile Organic Compounds
PAHs - Polycyclic Aromatic Hydrocarbons

PCBs- Polychlorinated Biphenyl
OCPs - Organochlorine Pesticides
B-HWS-Hot Water Soluble Boron
EC-Electrical Conductivity
SAR-Sodium Absorption Ratio

Based on the information obtained as part of this Phase One ESA conducted under the supervision of Sam Voore, P.Eng., QP_{ESA}, two (2) APECs were identified on the Site resulting from the current and historical PCAs identified on the Site and the surrounding properties within the Phase One Study Area. Therefore, a Phase Two ESA will be required and is recommended to be conducted in order to assess the environmental quality of soil and groundwater at the Phase One Property

The statements in this Executive Summary are subject to the same Property and Confidentiality as contained below, and Statement of Limitations included in Section 9. It should be read in conjunction with the remainder of this report.

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Subcontractors of Englobe who may have performed laboratory work are duly evaluated according to the purchasing procedure of our quality system. For further information or details, please contact your project manager.”

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2 Introduction

Englobe Corp. (Englobe) was retained by the City of Vaughan (hereinafter referred to as the “Client”) to complete a Phase One Environmental Site Assessment (Phase One ESA) for the property located at 9541 Weston Road in Vaughan, Ontario (hereinafter referred to as “Site” or “Phase One Property”). The location of the Site is shown on the Site Location Map, Figure 1 in Appendix A.

This Phase One ESA is being completed for the Client for due diligence purposes in preparation of proposed fire station development work of the Site, and the work described herein is to be completed in general accordance with the Ontario Regulation (O. Reg.) 153/04 Records of Site Condition - Part XV.1 of the Environmental Protection Act, as amended up to 407/19 (O. Reg. 153/04, as amended). Englobe understands that the filing of a Record of Site Condition (RSC) with the Ontario Ministry of the Environment, Conservation and Parks (MECP) is not required at this time.

The purpose of the Phase One ESA was to identify where any current or historic potentially contaminating activities (PCAs) are occurring, or have occurred, which may have resulted in the identification of Areas of Potential Environmental Concern (APECs) at the Phase One Property (i.e. PCAs as outlined in Table 2 of Schedule D of O. Reg. 153/04, as amended), as well as to determine whether a Phase Two ESA is required at the Phase One Property.

2.1 Phase One Property Information

The Site is located on the east side of Weston Road, approximately 200 m south of the intersection of Weston Road and Ashberry Boulevard in the City of Vaughan, Ontario. It is an irregularly shaped parcel of land with approximately 4,092 m² in area, which is currently occupied with an asphalt paved parking lot and grassed area. The Site is surrounded by residential, commercial community and institutional buildings to the north and west, and woodlands to the south and east. Weston Road is adjacent to the west of the Site. The Site and surrounding properties are shown on the Site and Surrounding Land Use Plan, Figure 2 in Appendix A.

The Property Identification Number (PIN) and legal description of the Phase One Property are listed in the table below.

Table 1 Description of the Investigated Site

Property	Detail
Site Address	9541 Weston Road, Vaughan, Ontario
Site Area	4,092 m ²
PIN (s)	03329-0297
Legal Description(s)	PT LT 17 CON 5, VAUGHAN, PT 1, 65R10012, VAUGHAN
Geodetic Coordinates to Centroid (approx.)	UTM Zone 17T 616000 m E 4854295 m N 1983 North American Datum
Number of Buildings	None
Current Owner	The Corporation of the City of Vaughan
Current Use	Parking lot (community use)

Notes: PIN - Property Identification Number
UTM - Universal Transverse Mercator

Information gathered from discussions and correspondence during this assessment include the following individuals and/or organizations:

- Environmental Risk Information Services (ERIS), a division of Glacier Media Inc.;
- Ontario Ministry of Natural Resources and Forestry (MNRF);
- Public Information Services, Technical Standards and Safety Authority (TSSA); and
- Freedom of Information and Protection of Privacy Act, Ontario Ministry of the Environment Conservation and Parks (MECP).

3 Scope of Investigation

This Phase One ESA was completed according to the Ontario Regulation (O. Reg.) 153/04 Records of Site Condition - Part XV.1 of the Environmental Protection Act, as amended up to 407/19 (O. Reg. 153/04, as amended). This report is completed for due diligence, and the filing of a Record of Site Condition (RSC) with the Ontario Ministry of the Environment, Conservation and Parks (MECP) is not required at this time.

Englobe has completed this Phase One ESA in accordance with the scope of work as stated in Englobe's proposal to the Client, dated December 14, 2021, and approved on December 16, 2021. This assessment included a review of historical archival information for the Site and surrounding properties within the Study Area, information requests and review of relevant documents, a Site reconnaissance, and a final report on the findings of the assessment. No intrusive investigation or chemical testing (i.e. sampling or testing of air, soil, groundwater, surface water or building materials) was carried out during the assessment period. In addition, this Phase One ESA did not include an assessment of biological features or related aspects of the natural environment.

Since neighbouring properties may affect or be affected by the property being assessed, the historical review also included the adjoining and surrounding properties within a 250 m radius of the Site boundary. The information review for the Site and surrounding properties included the following sources of information:

- Current and historical land use of the Site and neighbouring properties;
- Known or suspected contamination on the Site and the neighbouring properties; and
- Site topography and groundwater flow directions which would influence the migration of contaminants onto or away from the Site.

The information review for the Site and surrounding properties included the following sources of information:

- Interviews/correspondence with the Site representative(s) and regulatory and municipal personnel;
- Environmental source information including MECP search databases, and a review of an ERIS Database Report prepared by ERIS;
- A review of an Enviroscan Report including Fire Insurance Plans (FIPs) prepared by Opta Information Intelligence, an SCM Company; and
- A review of physical setting sources including aerial photographs, topography, hydrology and geology maps, the presence of fill materials, water bodies and areas of natural significance, and water well records.

A Site reconnaissance was completed on January 14, 2022, by Mr. Feng Li of Englobe to observe the conditions at the Site and surrounding properties within the Phase One Study Area. The Site reconnaissance was intended to observe the following:

- Hazardous materials - usage, storage, disposal, treatment and transport on the property (if any);
- Product handling, raw material storage/transportation, equipment cleaning, etc.;
- Storage tanks and containers - above ground storage tanks (ASTs) and underground storage tanks (USTs);
- Water supply - source of potable water;
- Stained soil, pavement, concrete, floors and walls;

- Sewage disposal - pits, lagoons, septic systems and wastewater treatment;
- Topographic, geological and hydrogeological features;
- Watercourses, ditches and standing water; and
- Adjacent property land uses that might impact the Site.

Key aspects of the Site reconnaissance were documented in the site photographs for future reference and are included in this report as Appendix E.

All the data collected during the records review, Site visit and interviews were compiled by Englobe. The information has been presented in a logical manner that identifies actual and potential environmental issues that may affect the Site. A summary of all areas identified as being potentially and/or actually contaminated by historical and/or present land use activities and the level of uncertainty associated with each item is included in the conclusions section of this report. If applicable, recommendations to reduce the amount of uncertainty are presented.

4 Records Review

4.1 General

4.1.1 Phase One Study Area Determination

For the purpose of this Phase One ESA, Englobe has considered the assessment of Study Area that includes the Site and surrounding properties located entirely or partially within a 250 m offset of the Site boundary (Study Area, refer to the Site and Surrounding Land Use Plan, Figure 2 in Appendix A). It is Englobe's opinion that there are no additional properties outside of the 250 m radius that should be included as part of the Phase One Study Area in this Phase One ESA.

4.1.2 First Developed Use Determination

According to the available aerial photographs, the Site has been partially developed as residential use prior to 1954, and all onsite buildings/structures appear to be demolished sometime between 1988 and 1995. It appears that the Site was fully developed as a parking lot as part of Vellore Cultural Daycamp since 2002 and has remained the same property use as to the present.

4.1.3 Fire Insurance Plans (FIPs)

Englobe requested copies of available Fire Insurance Plans (FIPs) and other relevant insurance products from Opta Information Intelligence (Opta) through ERIS. Opta Enviroscan maintains records, including plans and maps for Canadian cities, which indicate past and existing structures on properties, including above-ground storage tanks (ASTs) and underground storage tanks (USTs). There were no insurance plans or inspection reports available for the Site or the Study Area. A copy of this report is presented in Appendix B.

4.1.4 City Directory Information

The City Directory Search provides the names of businesses that were operating at certain municipal addresses at a point in time. They do not provide details as to the activities at the properties. A city directory search for the Study Area was requested through ERIS. The city directory search results show the Site area and properties within 250 m of the Site. Pertinent information gleaned from the city directory search that have potential to impact the environmental condition of the soil or groundwater at the Site are summarized in Table 1 below. The full results of the city directory search are provided in Appendix B.

Table 2: City Directory Search Summary

Year	Municipal Address	Distance/Direction to Project Area	Listing
1999	9541 Weston Road	Onsite	Vellore Cultural Daycamp
	9465 Weston Road	110 m south	Residential building
	9516 Weston Road	70 m northwest	Address Not Listed

Year	Municipal Address	Distance/Direction to Project Area	Listing
	9520 Weston Road	75 m northwest	Address Not Listed
	9544 Weston Road	107 m northwest	Address Not Listed
	9545 Weston Road	60 north	Address Not Listed
	9555 Weston Road	80 northeast	Address Not Listed
	9564 Weston Road	130 m northwest	Address Not Listed
	9565 Weston Road	65 m north	Residential building
	9575 Weston Road	165 m north	Residential building
	9585 Weston Road	190 m north	Residential building
1994, 1989, 1983, 1977-78, 1972-73, 1966, 1960	9541 Weston Road	Onsite	Address Not Listed
	Same as above	Off-site	Address Not Listed

Regarding the above-noted database records, no onsite or off-site records were considered to be a potential environmental concern for the Site.

4.1.5 Chain of Title

Englobe obtained the land parcel information from GeoWarehouse on December 15, 2021, regarding the current and past owners of the land parcels comprising the Site. The results of the land title search are shown in the following table.

Table 3: Summary of Title Search Findings

Date	Property Owner
Prior to 1999	Unknown
1999-Present	The Corporation of the City of Vaughan

4.1.6 Environmental Reports

Englobe requested copies of all available previous environmental reports, which were completed for the Site. No reports regarding relevant information for the Phase One ESA were available.

4.2 Environmental Source Information

4.2.1 MECP Freedom of Information (FOI)

An FOI request was submitted to the MECP for information regarding any environmental concerns, orders, spills, investigations/prosecutions, Waste Generator Numbers/Classes and Certificates of

Approval related to the Site. At the time of writing this report, Englobe has not received a response from the MECP. Any relevant information which may be received from the MECP will be forwarded as an addendum to this report. A copy of the MECP request is included in Appendix C.

4.2.2 Environmental Risk Information Services (ERIS)

A regulatory database search for the Site was carried out by ERIS in December 2021. The ERIS Database Report included a review of public and private database records for the Site and surrounding properties within the Study Area. The ERIS Database Report included a diagram, a description of each database, and a description of each record when information was available. In total, there was 1 record found for the Site and 54 records found for the Study Area, as summarized in Table 3.

Table 4: ERIS Database Search Results

Database Name	Database	Project Area	Within 250 m
Borehole	BORE	0	1
Environmental Compliance Approval	ECA	0	1
Ontario Regulation 347 Waste Generators Summary	GEN	0	23
Fuel Oil Spills and Leaks	INC	0	1
Pesticide Register	PES	0	2
Record of Site Condition	RSC	0	1
Scott's Manufacturing Directory	SCT	0	1
Water Well Information System	WWIS	1	14
TOTAL RECORDS		1	54

The ERIS report was reviewed in full, and the relevant environmental information that has potential to impact the environmental condition of the soil or groundwater pertaining to the Site and surrounding properties within the Study Area is summarized in Tables 4 and 5, respectively. The full results of the ERIS Database Report are provided in Appendix B.

Table 5: ERIS Report Summary - Site

Address	Database	Description	Potential Environmental Concern
Onsite	WWIS	A record of an abandoned water well.	Due to the nature of the records, they are not considered to be a potential environmental concern for the Site.

Table 6: ERIS Report Summary - Surrounding Properties

Address Site	Distance and Direction	Database	Description	Potential Environmental Concern
9565 Weston Road	65 m north	GEN	The property was registered as photo processing wastes, inorganic laboratory chemicals, pathological and pharmaceutical waste generator.	Due to the historical occurrence and moderate to high likelihood of impact to the environment, the record is considered a potential environmental concern for the Site. These PCAs contribute to the APECs.
9581 Weston Road	135 m north	GEN	The property was registered as a pathological waste generator.	Due to the historical occurrence, distance and down-gradient from the Site and low likelihood of impact to the environment, the record is NOT considered to be a potential environmental concern for the Site.

Address Site	Distance and Direction	Database	Description	Potential Environmental Concern
141 Montcalm Boulevard	155 m southwest	GEN	The property was registered as a waste generator of organic and inorganic laboratory chemicals.	Due to the historical occurrence, distance and down-gradient from the Site and low likelihood of impact to the environment, the record is NOT considered to be a potential environmental concern for the Site.
82 Johnstown Crescent	230 m east	PES	The property was registered as a licensed pesticide operator.	Due to the historical occurrence, distance and cross-gradient from the Site and low likelihood of impact to the environment, the record is NOT considered to be a potential environmental concern for the Site.

Notes: **Bold** Records indicate PCAs that contribute to APECs for the Site.

Although the PCAs identified at the other surrounding properties are noted in the ERIS Database Report, based on the nature of the records, the inferred groundwater flow direction, and/or separation distances from the Project Area, they are not considered to be a potential environmental concern for the Project Area. Regarding the above-noted database records, no onsite record was considered to be a potential environmental concern for the Site. Only one off-site (9565 Weston Road) record of a waste generator is considered as a potential environmental concern for the Site.

4.2.3 Technical Standards and Safety Authority (TSSA)

The TSSA was contacted for information regarding fuel storage tanks with respect to the Site and the surrounding properties located at 9541 Weston Road, 9545 Weston Road, 9591 Weston Road, 9555 Weston Road, 9581 Weston Road, 9587 Weston Road and 9591 Weston Road. A response received from TSSA via e-mail on February 11, 2022, indicates that no records were on file for the Site and requested addresses. A copy of the TSSA response is included in Appendix C.

4.2.4 Ontario Ministry of Natural Resources and Forestry (MNRF)

The MNRF online maps were reviewed on March 18, 2022, for any areas of natural significance (ANSIs) or provincially significant wetlands (PSWs). No ANSIs or PSWs were observed at the Phase One Property or within the Phase One Study Area.

4.3 Physical Setting Sources

4.3.1 Aerial Photographs

Aerial photographs can provide an indication of historical land uses with respect to the Site and surrounding properties. Copies of nine aerial photographs in the years of 1954, 1970, 1978, 1988, 1995, 1999, 2002, 2014 and 2021 were obtained from York Region General Map Historical Aerials. Aerial photographs showing the approximate Site location and features and surrounding properties are presented in Appendix D.

Table 7: Aerial Photograph Summary

Aerial Photograph Year	Site Observations	Surrounding Properties Observations
1954	The Site appears to be residential use; The onsite structures are observed at the southwest portion of the Site.	The north adjacent building is observed. The east and south adjacent properties appear to be undeveloped/vacant or Agricultural lands. Weston Road appears to be developed at west adjacent to the Site.
1970	There are no significant changes to the Site compared to the previous photograph.	More residential buildings appear to be developed within the Study Area.
1978	One warehouse/structure is observed at the northeast portion of the Site.	There are no significant changes to the surrounding properties compared to the previous photograph.
1988	There are no significant changes to the Site compared to the previous photograph.	There are no significant changes to the surrounding properties compared to the previous photograph.
1995	All onsite buildings/structures appear to be demolished.	There are no significant changes to the surrounding properties compared to the previous photograph.
1999	The Site appears to be vacant and used as a park.	There are no significant changes to the surrounding properties compared to the previous photograph.
2002	The Site appears to be developed as a parking lot.	Vellore Hall Park is observed to be developed at north and adjacent properties. More residential buildings appear to be developed in the north and west portions of the Study Area.
2014	There are no significant changes to the Site compared to the previous photograph.	There are no significant changes to the surrounding properties compared to the previous photograph.
2021	There are no significant changes to the Site from the previous photograph.	There are no significant changes to the surrounding properties compared to the previous photograph.

4.3.2 Topography, Hydrology, and Geology

As part of this Phase One ESA, Englobe completed a review of the following topographic, geological, and physiographic maps showing the Site and surrounding areas:

- Natural Heritage Information Centre (NHIC) Interactive Map, Ministry of Natural Resources and Forestry (MNRF, 2020);
- 2010 Ontario Base Map (OBM), Ontario Ministry of Natural Resources supplied by ERIS, scale 1: 22,000;
- Ontario Ministry of Natural Resources, Ontario Geological Survey, Physiography of Southern Ontario; and
- Ontario Geological Survey 2000. Quaternary Geology, seamless coverage of the Province of Ontario, Ontario Geological Survey, Data Set 15 - Revised, scale 1:1,000,000.

The Site is generally flat with elevation ranging from approximately 225 m to 226 m above sea level (asl). The nearest water body is an unnamed creek and/or a water pond located approximately 600 m northeast to the Site and drains southeast. The shallow groundwater is inferred to flow in south to southeasterly direction based on topography and location of nearby water bodies. Depending on climate conditions, surface water, seasonal fluctuation, ditching, underground services, and ground surface cover may affect the shallow groundwater flow on a local level.

The Site is located within an area with quaternary geology consists of Halton Till including predominantly silt to silty clay matrix, high in matrix carbonate content and clast poor Pleistocene. The physiography in the area of the Site and Study Area is Bevelled Till Plains. The surficial geology of the Site and Study Area consists of clayey silt to sandy silt. The bedrock geology consists of Georgina Bay

Formation, Blue Mountain Formation, Billings Formation, Collingwood Member, Eastview Member with shale, limestone, dolostone and siltstone.

Based on the MECP well records, the depth to the bedrock within the Study Area ranges from approximately 64 m to 91 m below the ground surface (bgs). Based on MECP Well records for the surrounding properties, the soil stratigraphy at the Site is expected to comprise of clayey silt, overlaying clay and silty clay.

4.3.3 Fill Materials

Based on the historical photographs, some structures were demolished at the Site. The Site has been used for a parking lot where asphalt paved ground was observed during the Site visit on January 14, 2022. There is a potential that fill material was used on the Site during development. The unknown environmental quality of the fill material is a potential environmental concern for the Site.

4.3.4 Water Bodies and Areas of Natural Significance

During the Site visit on January 14, 2022, no water body was observed at the Site or adjacent properties. The closest water body is an unnamed creek and/or a water pond, approximately 600 m to the northeast of the Phase One Property.

Based on a review of information provided on the MNRF Natural Heritage on-line mapping and information provided by ERIS, there are no local or provincially significant wetlands (PSW) or ANSI on or directly adjacent to the Site.

4.3.5 Well Records

Based on a review of the well records presented in the ERIS report and the MECP well record Map (MECP 2021), there was one (1) abandoned well identified on the Site. Fourteen (14) groundwater wells were identified on surrounding properties, including 11 domestic water supply wells, 2 monitoring wells and 1 non-specified well listed for the surrounding properties within the Study Area.

4.4 Site Operating Records

Englobe requested the operating records from the Client and the tenants, and no records were available for Englobe's review during the Phase One ESA. Based on the site visit, no current site operation was observed during Phase One ESA.

5 Interviews

An interview was conducted through an interview questionnaire provided to the Supervisor (Alex Sorbara) of the Facility Management Department in the City of Vaughan. Alex Sorbara has completed the questionnaire on January 21, 2022. The completed Interview Questionnaire is provided in Appendix C. A summary of pertinent information provided to Englobe are listed as follows:

- Alex Sorbara is the current facility supervisor of various sites/buildings in the City of Vaughan.
- The Site use is recreation/community use and is surrounded by park/residential properties to the east, woodlot to the south, regional road (Weston Road) to the west, and commercial plaza properties to the north.
- There are no underground storage tanks (USTs) or aboveground storage tanks (ASTs).
- There is no chemicals storage at the Site, except for regular cleaning supplies stored in the north adjacent building.
- There are no asbestos-containing materials (ACMs) in the buildings, and ACMs survey or audit has been conducted for the buildings at north adjacent properties.
- There are no Polychlorinated Biphenyls (PCBs), transformers or capacitors at the Site;
- There is no Urea Formaldehyde Foam Insulation (UFFI) at the Site.
- No spill occurred or recorded at the Site.
- The north adjacent properties were developed in the 1990s for commercial use.
- No fill materials have been imported to the Site.
- No previous environmental assessment, environmental monitoring wells, or private and public water wells have been conducted/installed at the Site.

6 Site Reconnaissance

6.1 General Requirements

A visual survey of the Phase One Study Area was completed by Mr. Feng Li of Englobe on January 14, 2022. The qualifications of the assessors are provided in Appendix I. The Site reconnaissance was conducted over approximately one hour to complete, and the weather conditions were sunny with a temperature of -20 °C. The ground was partially covered by snow.

It should be noted that Englobe did not access the buildings at the north adjacent properties at the time of the Site visit. It is the opinion of Englobe that this limitation does not impact the findings/conclusions of this Phase One ESA.

Site photographs showing various areas of the Site and surrounding properties, including a written description for each photograph, are provided in Appendix E.

6.2 Physical Impediments

No physical impediments were encountered during the Site reconnaissance.

6.3 Specific Observations at Phase One Property

The Site was irregular in shape and was approximately 4,092 m² in area. The Site is accessed from the west via Weston Road.

There are no onsite buildings or structures. A parking lot covers the majority of the Site with asphalt paved surface, and the remainder of the Site is a grass-covered park area. The Site has an open area in the woodlot to the east and south.

The Site features are shown in Figure 3 in Appendix A on the Site Plan.

6.3.1 On-Site Buildings/Structures

No buildings/structures are located on the Site. Englobe did not assess buried and underground infrastructure. Underground utilities including gas, water, sewer, communication cables and electric lines were observed.

6.3.2 Site Operations

The Site is a community parking providing accessibility to vehicles and pedestrians. No current operations are undertaken at the Site.

6.3.3 Utilities and Mechanical Systems

6.3.3.1 Wastewater

No wastewater is generated at the Site. However, underground sanitary sewer services from the adjacent/surrounding properties may extend throughout the Site.

6.3.3.2 Water

No potable water supply was observed at the Site. However, underground water supply services from the adjacent/surrounding properties are expected to extend throughout the Site. Domestic water supply wells were identified in the ERIS report for the Site and the surrounding properties.

6.3.3.3 Stormwater

Stormwater is directed to catch basins observed at the parking area of the Site, which transfer the stormwater to the municipal system extending throughout the Site.

6.3.3.4 Electricity

Electricity extends along the west adjacent property (Weston Road) using overhead hydro poles.

6.3.3.5 Heating and Cooling

No evidence of heating and cooling systems was observed at the Site during the Site visit.

6.3.4 Waste Management

6.3.4.1 Hazardous Waste Generation

The Site is not registered as a waste generator.

6.3.4.2 Solid Waste Generation

No solid wastes are generated at the Site. Solid waste observed to be stored at the parking lot for pickup on garbage days.

6.3.5 Above ground and Underground Storage Tanks

No ASTs or indications of USTs (fill/vent pipes) were observed at the Site.

6.3.6 Pits/Floor Drains/Trenches and Oil/Water Separators

No pits, floor drains, trenches, or oil/water separators were observed at the Site. Stormwater catch basins were observed at various locations throughout the Site.

6.3.7 Chemical Storage and Handling

6.3.7.1 Storage of Products and Wastes

No storage of products and wastes were observed at the Site.

6.3.7.2 Compressed Gas Storage

No storage of compressed gases was observed at the Site.

6.3.7.3 Unidentified Substances

No unidentified substances were observed at the Site.

6.3.8 Spills and Staining

No significant signs of staining or distressed vegetation were observed at the Project Area. Minor oil staining from the vehicles was noted at various locations at the parking lot of the Site.

6.3.9 Railway Lines

No railway lines were observed at the Site.

6.3.10 Air Emissions

No air emission sources were observed at the Site, other than the emission from the vehicles while parking.

6.3.11 Special Attention Items

Table 8: Special Attention Items

Characteristics	Comments
Asbestos Containing Material	Although no building structures are present at the Site, asbestos is suspected to be present in the asphalt pavement.
Lead	No evidence of the current use of lead-based materials is present at the Site. The historical buildings at the Site may use lead-based painting materials.
(Polychlorinated Biphenyls) PCBs	No evidence of the current use of PCBs is present at the Site. The historical buildings at the Site may use light ballast containing PCBs.
Ozone Depleting Substances (ODS)	No air handler units, rooftop units or refrigerators were noted within the Site. Thus, it is unlikely that ODS is present at the Site.
Radon Gas	Based on the geology of the area, radon gas accumulation is not expected to be a significant environmental concern at the Site. However, it should be noted that no testing for radon gas was completed at the Site during this assessment. Based on Radon Potential Map Ontario, the Radon level at the Site area is elevated.
Electromagnetic Frequencies (EMFs)	High-voltage transmission lines, which could generate significant electromagnetic fields, were not identified on or adjacent to the Site. Although electromagnetic fields are assumed to be typical for developed areas, no testing was performed as part of this assessment.
Noise and Vibration	Noise generated at the Site during the Site visit was limited to the nearby roadways, which may be considered a noise source. No noise or vibration testing was performed as part of this assessment.

6.4 Enhanced Investigation

As defined by O. Reg. 153/04, As defined by O. Reg. 153/04, as amended, the Site is considered to be an enhanced investigation property if it is currently used or has ever been used in whole or in part for industrial use, or commercial uses including a garage, a bulk liquid dispensing facility such as a gas station, or for the operation of dry cleaning equipment. As the Site has not been used for industrial purposes, auto garage, gas station or dry cleaner, the Enhanced Investigation is not required.

6.5 Observations at Surrounding Properties

The neighbouring properties adjoining and surrounding the Site were observed during the Site reconnaissance from accessible public locations. These properties are identified on the Site and Surrounding Land Use Plan, Figure 2, contained in Appendix A, and are summarized in Table 9.

Table 9: Surrounding Property Observations

Position Relative to Site	Property Description	Potential for Contamination
North	Community property, commercial properties further north	These properties are not considered to be of potential environmental concern for the Site area.
South	Woodlot, residential further south	These properties are not considered to be of potential environmental concern for the Site area.
West	Community property (Weston Road), residential further west	These properties are not considered to be of potential environmental concern for the Site area.
East	Woodlot, residential further east	These properties are not considered to be of potential environmental concern for the Site area.

6.6 Written Description of Investigation

Englobe conducted a Phase One ESA at the Site which comprises parking lot and grassed area, at the municipal addresses of 9541 Weston Road in Vaughan, Ontario. Englobe conducted this Phase One ESA for due diligence purposes in preparation of proposed fire station development work of the Site, and is not required for the filing of a Record of Site Condition with the MECP; therefore, this Phase One ESA was completed in accordance with O. Reg. 153/04, as amended.

The Phase One ESA site reconnaissance was conducted by Mr. Feng Li of Englobe on January 14, 2022, under the supervision of Mr. Sam Voore, P.Eng., a Qualified Person as defined by O. Reg. 153/04, as amended. The findings of Englobe's Site reconnaissance and interviews can be found throughout Section 5 and 6 of this report.

7 Review and Evaluation of Information

7.1 Current and Past Uses

Based on the information reviewed, the current and past land uses at the Site are provided in the following table.

Table 10: Current and Past Uses

Dates	Names of Owner	Description of Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, etc.
Prior to 1954	Unknown	Unknown	Unknown

Dates	Names of Owner	Description of Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, etc.
1954 to 1999	Unknown	Residential use	Onsite structures are observed at the southwest portion of the Site in 1954, which appears to be demolished sometime between 1988 and 1995.
1999 to 2002	City of Vaughan	Community use	The Site was a portion of a park listed as Vellore Cultural Daycamp.
2002 to present	City of Vaughan	Community use	The Site appeared to be fully developed as a parking lot.

7.2 Potentially Contaminating Activities

Based on the information obtained and reviewed as part of this assessment, current and historical potentially contaminating activities (PCAs) associated with the Site and surrounding properties within the Study Area are identified as the following table:

Table 11: PCAs identified on the Site and within the Phase One Study Area

No.	PCA Descriptions and Details	PCA Location	Source	Risk	Potentially Impacted Media
1	Fill material might have been imported to the Site during construction	On-site	Aerial Photograph	Moderate	Soil
2	The property was registered as a waste generator of photo processing wastes and inorganic laboratory chemicals.	Off-Site 9565 Weston Road	ERIS	Moderate to Low	Soil and Groundwater

7.3 Areas of Potential Environmental Concern

Areas of Potential Environmental Concern (APECs) on the Site associated with the identified on-Site and off-Site PCAs are shown on the Areas of Potential Environmental Concern, Figure 3, contained in Appendix A, and are presented in the following table.

Table 12: APECs identified at the Phase One Property

APEC	Location of APEC	Potentially Contaminating Activity	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC 1	Entire Site	Historical use of fill materials # 30 - Importation of Fill Materials of Unknown Quality	On-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR and pH, PHCs, BTEX, VOCs, PAHs, PCBs, OCPs	Soil
APEC 2	The north portion of the Site	Registered as a waste generator of photo processing wastes and inorganic laboratory chemicals # Undefined PCA No.	Off-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, and VOCs	Soil and Groundwater

7.4 Phase One Conceptual Site Model

The mandatory requirements for the Phase One Conceptual Site Model outlined in “Table 1 of Schedule D, Part VI - Phase One Environmental Site Assessment Report in O. Reg. 153/04 as amended”, and the findings/details from this Phase One ESA are summarized in the table below.

Table 13: Phase One Conceptual Site Model

O. Reg. 153/04 Schedule D (Part VI) Table 1 Requirement	Phase One ESA Findings / Details
Show any existing buildings and structures	No buildings or structures are located on the Site.
Identify and locate water bodies located in whole or in part on the Study Area	No water bodies were observed on the Site or Study Area.
Identify and locate any areas of natural significance located in whole or in part on the Study Area	There were no ANSIs or PSWs at the Site or within the Study Area.
Locate any drinking water wells at the Site	Based on a review of the well records presented in the ERIS report, no potable water supply well was identified on the Site, while 11 domestic water supply wells were identified on the surrounding properties within the Study Area.
Show roads, including names, within the Study Area	The Site is located to the east of Weston Road. The Phase One Study Area consists of a parking lot in the southeastern quadrant of the intersection of Weston Road and Ashberry Boulevard in the City of Vaughan, Ontario.
Show uses of properties adjacent to the Site	The surrounding and adjacent properties consist of residential, commercial and institutional properties.
Identify and locate any PCAs/APECs	PCAs identified for the Site are summarized in Table 11 in section 7.2. The locations of the PCAs are shown on the Potential Contaminating Activity, Figure 3 in Appendix A. APECs identified for the Site are summarized in Table 12 in section 7.3. The locations of the APECs are shown on the Area of Potential Environmental Concern, Figure 3 in Appendix A.
Describe and assess any areas where potentially contaminating activity on or potentially affecting the Site has occurred	Based on the PCAs and identified APECs on the Site, media potentially impacted includes soil and groundwater.
Describe and assess and contaminants of potential environmental concern	Based on the PCAs and identified APECs on the Site, the following contaminants of potential environmental concern have been identified: PHC (Fractions F1-F4), BTEX, PAHs, PCBs, VOCs, OCPs, Metals As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR and pH.
Describe and assess the potential for underground utilities, if any, to affect contaminant distribution and transport	The underground utilities consist of sanitary/storm sewers, water distribution, gas, communication, and/or hydro services. There is potential for these utilities to affect contaminant distribution and transport given that the underground utility corridors can serve as preferential pathways.

O. Reg. 153/04 Schedule D (Part VI) Table 1 Requirement	Phase One ESA Findings / Details
Describe and assess available regional or Site specific geological and hydrogeological information	<p>Based on a review of the contour lines from the OBM, the topography of the Site and the surrounding area appears to be relatively flat and gently slopes to south. The Site appears to be at elevations between approximately 225 m and 226 m asl, depending on location.</p> <p>The surficial geology of the Site and Study Area consists of clayey silt to sandy silt. The bedrock geology consists of Georgina Bay Formation, Blue Mountain Formation, Billings Formation, Collingwood Member, Eastview Member with shale, limestone, dolostone and siltstone.</p> <p>Based on aerial photographs, an unnamed creek, which is approximately 600 m northeast of the Site, flows from northwest to southeast. The shallow groundwater in the Site area appears to flow in a south/southeast direction.</p>
Describe and assess how any uncertainty or absence of information obtained in each of the components of the Phase One ESA could affect the validity of the model.	<p>The material in the Phase One ESA report prepared by Englobe reflects the judgment of Englobe in light of the information made available at the time of the Site reconnaissance on the date set out in the report and on information available at the time of preparation of this report. It should be noted that assessments made throughout this environmental assignment rely heavily on information supplied by others. While every effort has been made to use reliable and multiple sources, Englobe makes no guaranty of the accuracy or completeness of this third-party information available to us at the time of preparing this report. Hence, the historical records review is considered to be a potential source of uncertainty during the Phase One ESA. It is Englobe's opinion that the uncertainty or absence of information in the records review, interviews, and site reconnaissance of the Phase One ESA are not anticipated to affect the validity of the conclusions.</p>

8 Conclusions and Recommendations

This Phase One ESA conducted under the supervision of Sam Voore, P.Eng., QP_{ESA}, includes a review of historical archival information for the Site and surrounding properties within the Study Area, interviews with the Site representative(s) and regulatory personnel if available, a Site reconnaissance, and preparing a report summarizing the findings and recommendations of the assessment. No intrusive investigation or chemical testing (i.e., sampling or testing of air, soil, groundwater, surface water, or building materials, etc.) was carried out during the assessment period. In addition, this Phase One ESA did not include an assessment of biological features or related aspects of the natural environment.

This Phase One ESA is being completed for the City of Vaughan for due diligence purposes in preparation of proposed fire station development work of the Site and the work described herein is to be completed in general accordance with the Ontario Regulation (O. Reg.) 153/04 Records of Site Condition - Part XV.1 of the Environmental Protection Act, as amended up to 407/19 (O. Reg. 153/04, as amended). Englobe understands that the filing of a Record of Site Condition (RSC) with the Ontario Ministry of the Environment, Conservation and Parks (MECP) is not required at this time.

Based on the information obtained and reviewed as part of this assessment, two (2) APECs associated with the Site (onsite fill materials with unknown quality) and surrounding properties (offsite waste generator) within the Phase One Study Area were identified at the Site and surrounding properties are summarized in the table below.

APEC	Location of APEC	Potentially Contaminating Activity	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC 1	Entire Site	Historical use of fill materials # 30 - Importation of Fill Materials of Unknown Quality	On-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR and pH, PHCs, BTEX, VOCs, PAHs, PCBs, OCPs	Soil
APEC 2	The north portion of the Site	Registered as a waste generator of photo processing wastes and inorganic laboratory chemicals # Undefined PCA No.	Off-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, and VOCs	Soil and groundwater

Therefore, a Phase Two ESA will be required and is recommended to be conducted in order to assess the environmental quality of the soil and groundwater at the Phase One Property.

9 Statement of Limitations

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The Company makes no representation concerning the legal significance of its findings, nor as to the present or future value of the property, or its fitness for a particular purpose and hereby disclaims any responsibility or liability for consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

Since the passage of time, natural occurrences, and direct or indirect human intervention may affect the views, conclusions and recommendations (if any) provided in this Report, it is intended for immediate use.

In preparing this Report, the Company has relied in good faith on information provided by others and has assumed that such information is factual, accurate and complete. The Company accepts no responsibility or liability for any deficiency, misstatement or inaccuracy in this Report resulting from the information provided, concealed or not fully disclosed by those individuals.

The conclusions presented herein are based on information gathered from a limited historical review of readily available geological, historical and regulatory information and a field inspection program.

Sampling and analysis of soil, groundwater or any other material were not carried out as part of this assessment. Consequently, the presence and/or extent of any adverse environmental impact cannot be verified. The potential for environmental liability and/or environmental impact is an opinion that has been arrived at within the scope of this assessment.

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

Any description of the Site and its physical setting documented in this Report is presented for informational purposes only, to provide the reader a better understanding of the Site and scope of work. Any topographic benchmarks and elevations are primarily to establish relative elevation differences between sampling locations and should not be used for other purposes such as grading, excavation, planning, development, or similar purposes.

Any results from laboratory or other subcontractors reported herein have been carried out by others, and the Company cannot warrant their accuracy.

This Statement of Limitations forms an integral part of this report.

10 References

Environmental Risk Information Services (ERIS) Database Report, 2021, 9541 Weston Road, Vaughan, ON

Ministry of Northern Development and Mines, Quaternary Geology, Southern Ontario, Map 2508, scale 1:50,000

Ministry of Environment, Conservation and Parks (MECP). Map: Well Records.
<https://www.ontario.ca/environment-and-energy/map-well-records>

Ministry of Natural Resources and Forestry, Land Information Ontario Imagery.

Ontario Geological Survey. 2003. Surficial Geology of Southern Ontario

Radon Potential Map Ontario. 2013. Radon Environmental Management Corp.

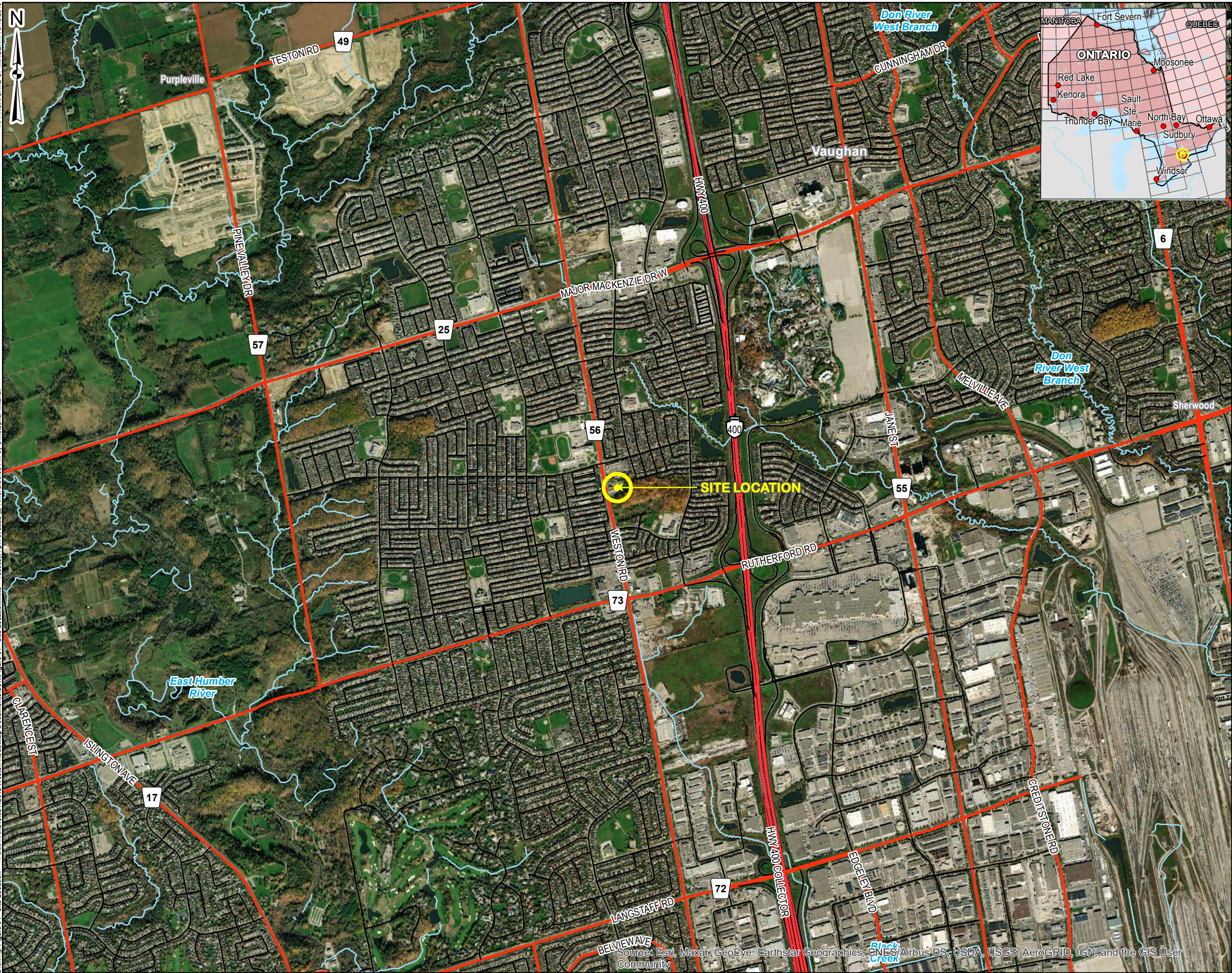
Ontario Geological Survey, Bedrock Geology of Southern Ontario, MRD 126 - Revision 1, 1:250,000 scale Bedrock Geology of Ontario, 1990.

Appendix A

Figures

- Site Location Plan
- Study Area and Surrounding Land Use Plan
- PCAs and APECs










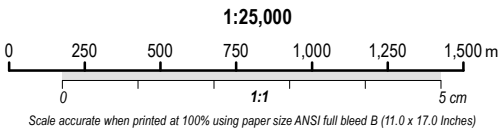
Notes

1. This drawing shall be read in conjunction with the associated technical report.
2. Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

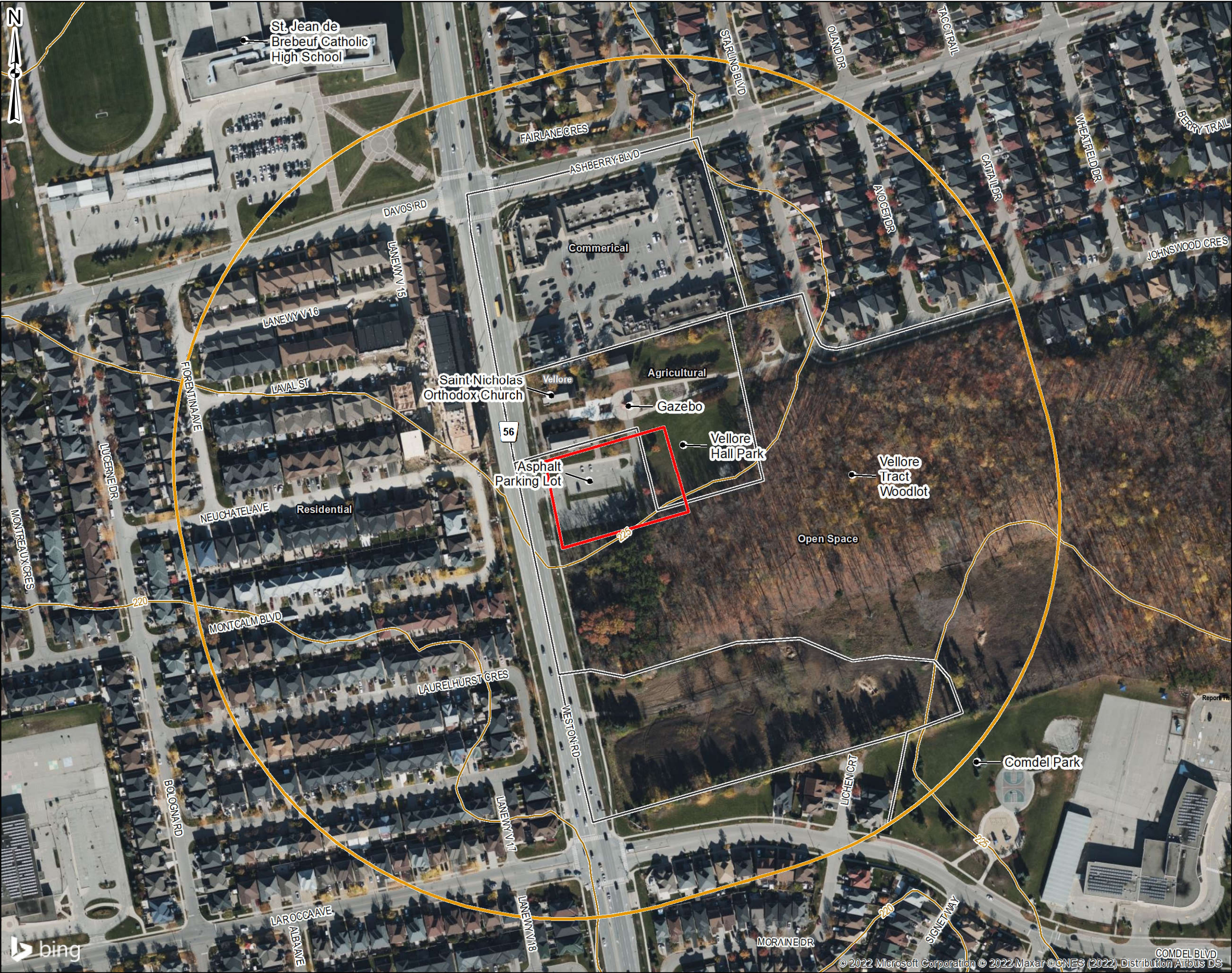
Legend



-  Expressway / Highway
-  Major Road
-  Minor Road
-  Railway
-  Watercourse



A	2022-04-05	-	02112512
Revision	Date	Issue	GIS #
Client City of Vaughan			
Site 9541 Weston Road, Vaughan, Ontario			
Title Phase One Environmental Site Assessment			
Drawing Title Site Location Plan			
Designed By S.W.		Scale 1:25,000	
Drawn By C.M.		Date April, 2022	
Approved By W.J.		Project No. 02112512.000	
Figure No. 1			

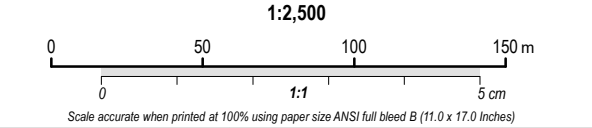


Notes

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

2. Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

- Legend**
- Site Boundary
 - 250 m Study Area
 - City of Vaughn Zoning
 - Contour (5 m Interval)



A	2022-04-05	-	02112512
Revision	Date	Issue	GIS #

Client
City of Vaughan

Site
9541 Weston Road, Vaughan, Ontario

Phase One Environmental Site Assessment

Drawing Title
Study Area and Surrounding Land Use Plan

Designed By	S.W.	Scale	1:2,500
Drawn By	C.M.	Date	April, 2022
Approved By	W.J.	Project No.	02112512.000

Figure No.
2

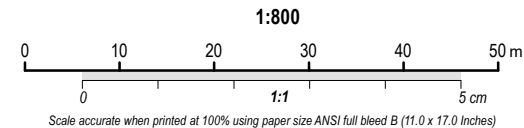


APPROX. DATE OF IMAGERY: 10/15/2019
Drawing: Figure 03 - Site Plan
Folder: A:\GIS\02112512 Weston Road\Map Documents\Phase I\Figure 03 - Site Plan.mxd
Tuesday, April 19, 2022 @ Time: 3:27:39 PM by Christopher Mitchell



Notes
1. This drawing shall be read in conjunction with the associated technical report.
2. Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

- Legend**
- Potentially Contaminating Activity (PCA)
 - Site Boundary
 - Area of Potential Environmental Concern (APEC)**
 - APEC1
 - APEC2



A	2022-04-19	-	02112512
Revision	Date	Issue	GIS #

Client
City of Vaughan

Site
9541 Weston Road, Vaughan, Ontario

Report Title
Phase One Environmental Site Assessment

Drawing Title
Site Plan

Designed By	S.W.	Scale	1:800
Drawn By	C.M.	Date	April, 2022
Approved By	W.J.	Project No.	02112512.000

Figure No.
3

No.	Potentially Contaminating Activities (PCAs)	Location of PCA
On-site PCAs		
1	Fill material might have been imported to the Project Area during construction	On-site
Off-Site PCAs		
2	The property was registered as a waste generator of photo processing wastes and inorganic laboratory chemicals.	Off-Site - 9565 Weston Road

Appendix B

ERIS Reports

- ERIS
- FIPs
- City Directory



eNGLOBE



DATABASE REPORT

Project Property:	<i>Phase One ESA/Excess soil 9541 Weston Road Vaughan ON</i>
Project No:	<i>02112512.000</i>
Report Type:	<i>RSC Report (Urban)</i>
Order No:	<i>21122001000</i>
Requested by:	<i>DST Consulting Engineers Inc.</i>
Date Completed:	<i>December 23, 2021</i>

Environmental Risk Information Services

A division of Glacier Media Inc.

1.866.517.5204 | info@erisinfo.com | erisinfo.com

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Executive Summary

Property Information:

Project Property: *Phase One ESA/Excess soil
9541 Weston Road Vaughan ON*

Project No: *02112512.000*

Order Information:

Order No: *21122001000*

Date Requested: *December 20, 2021*

Requested by: *DST Consulting Engineers Inc.*

Report Type: *RSC Report (Urban)*

Historical/Products:

City Directory Search *CD - Subject Site plus 10 Adjacent Properties*

Insurance Products *Fire Insurance Maps/Inspection Reports/Site Plans*

Topographic Map *RSC Maps*

Executive Summary: Report Summary

Database	Name	Searched	Project Property	Boundary to 0.30km	Total
AAGR	Abandoned Aggregate Inventory	Y	0	0	0
AGR	Aggregate Inventory	Y	0	0	0
AMIS	Abandoned Mine Information System	Y	0	0	0
ANDR	Anderson's Waste Disposal Sites	Y	0	0	0
AST	Aboveground Storage Tanks	Y	0	0	0
AUWR	Automobile Wrecking & Supplies	Y	0	0	0
BORE	Borehole	Y	0	1	1
CA	Certificates of Approval	Y	0	0	0
CDRY	Dry Cleaning Facilities	Y	0	0	0
CFOT	Commercial Fuel Oil Tanks	Y	0	0	0
CHEM	Chemical Manufacturers and Distributors	Y	0	0	0
CHM	Chemical Register	Y	0	0	0
CNG	Compressed Natural Gas Stations	Y	0	0	0
COAL	Inventory of Coal Gasification Plants and Coal Tar Sites	Y	0	0	0
CONV	Compliance and Convictions	Y	0	0	0
CPU	Certificates of Property Use	Y	0	0	0
DRL	Drill Hole Database	Y	0	0	0
DTNK	Delisted Fuel Tanks	Y	0	0	0
EASR	Environmental Activity and Sector Registry	Y	0	0	0
EBR	Environmental Registry	Y	0	0	0
ECA	Environmental Compliance Approval	Y	0	1	1
EEM	Environmental Effects Monitoring	Y	0	0	0
EHS	ERIS Historical Searches	Y	0	8	8
EIIS	Environmental Issues Inventory System	Y	0	0	0
EMHE	Emergency Management Historical Event	Y	0	0	0
EPAR	Environmental Penalty Annual Report	Y	0	0	0
EXP	List of Expired Fuels Safety Facilities	Y	0	0	0
FCON	Federal Convictions	Y	0	0	0
FCS	Contaminated Sites on Federal Land	Y	0	0	0
FOFT	Fisheries & Oceans Fuel Tanks	Y	0	0	0
FRST	Federal Identification Registry for Storage Tank Systems (FIRSTS)	Y	0	0	0
FST	Fuel Storage Tank	Y	0	0	0
FSTH	Fuel Storage Tank - Historic	Y	0	0	0
GEN	Ontario Regulation 347 Waste Generators Summary	Y	0	23	23
GHG	Greenhouse Gas Emissions from Large Facilities	Y	0	0	0
HINC	TSSA Historic Incidents	Y	0	0	0

Database	Name	Searched	Project Property	Boundary to 0.30km	Total
IAFT	Indian & Northern Affairs Fuel Tanks	Y	0	0	0
INC	Fuel Oil Spills and Leaks	Y	0	1	1
LIMO	Landfill Inventory Management Ontario	Y	0	0	0
MINE	Canadian Mine Locations	Y	0	0	0
MNR	Mineral Occurrences	Y	0	0	0
NATE	National Analysis of Trends in Emergencies System (NATES)	Y	0	0	0
NCPL	Non-Compliance Reports	Y	0	0	0
NDFT	National Defense & Canadian Forces Fuel Tanks	Y	0	0	0
NDSP	National Defense & Canadian Forces Spills	Y	0	0	0
NDWD	National Defence & Canadian Forces Waste Disposal Sites	Y	0	0	0
NEBI	National Energy Board Pipeline Incidents	Y	0	0	0
NEBP	National Energy Board Wells	Y	0	0	0
NEES	National Environmental Emergencies System (NEES)	Y	0	0	0
NPCB	National PCB Inventory	Y	0	0	0
NPRI	National Pollutant Release Inventory	Y	0	0	0
OGWE	Oil and Gas Wells	Y	0	0	0
OOGW	Ontario Oil and Gas Wells	Y	0	0	0
OPCB	Inventory of PCB Storage Sites	Y	0	0	0
ORD	Orders	Y	0	0	0
PAP	Canadian Pulp and Paper	Y	0	0	0
PCFT	Parks Canada Fuel Storage Tanks	Y	0	0	0
PES	Pesticide Register	Y	0	2	2
PINC	Pipeline Incidents	Y	0	0	0
PRT	Private and Retail Fuel Storage Tanks	Y	0	0	0
PTTW	Permit to Take Water	Y	0	0	0
REC	Ontario Regulation 347 Waste Receivers Summary	Y	0	0	0
RSC	Record of Site Condition	Y	0	1	1
RST	Retail Fuel Storage Tanks	Y	0	0	0
SCT	Scott's Manufacturing Directory	Y	0	2	2
SPL	Ontario Spills	Y	0	1	1
SRDS	Wastewater Discharger Registration Database	Y	0	0	0
TANK	Anderson's Storage Tanks	Y	0	0	0
TCFT	Transport Canada Fuel Storage Tanks	Y	0	0	0
VAR	Variances for Abandonment of Underground Storage Tanks	Y	0	0	0
WDS	Waste Disposal Sites - MOE CA Inventory	Y	0	0	0
WDSH	Waste Disposal Sites - MOE 1991 Historical Approval Inventory	Y	0	0	0
WWIS	Water Well Information System	Y	2	13	15
Total:			2	53	55

Executive Summary: Site Report Summary - Project Property

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist (m)</i>	<i>Elev diff (m)</i>	<i>Page Number</i>
<u>1</u>	WWIS		lot 17 con 5 ON <i>Well ID:</i> 6914229	NE/0.0	-0.41	<u>22</u>
<u>2</u>	WWIS		lot 18 con 5 ON <i>Well ID:</i> 6925576	WSW/0.0	0.15	<u>25</u>

Executive Summary: Site Report Summary - Surrounding Properties

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist (m)</i>	<i>Elev Diff (m)</i>	<i>Page Number</i>
3	BORE		ON	SE/3.6	-0.84	26
4	GEN	Richard Goodfellow dentistry profesionl	9565 weston rd 2nd floor woodbridge ON L4H3A5	NW/16.5	0.16	27
4	GEN	Richard Goodfellow dentistry profesionl	9565 weston rd 2nd floor woodbridge ON L4H3A5	NW/16.5	0.16	27
4	GEN	Richard Goodfellow dentistry profesionl	9565 weston rd 2nd floor woodbridge ON L4H3A5	NW/16.5	0.16	27
4	GEN	Vellore Woods Dentistry	9565 weston rd 2nd floor woodbridge ON L4H3A5	NW/16.5	0.16	28
4	GEN	Vellore Woods Dentistry	9565 Weston Road 2nd floor Woodbridge ON L4H3A5	NW/16.5	0.16	28
4	GEN	Vellore Woods Dentistry	9565 Weston Road 2nd floor Woodbridge ON L4H3A5	NW/16.5	0.16	29
5	WWIS		lot 17 con 5 ON Well ID: 6906658	SSW/29.2	-1.27	29
6	EHS		9575 Weston Road Vaughan ON L4L 1A6	NW/40.6	0.73	34
7	WWIS		lot 17 con 6 ON Well ID: 6906777	W/42.5	0.16	35
8	EHS		9555, 9581, 9587, 9591 Weston Rd Vaughan ON	N/48.8	0.16	38
9	WWIS		lot 17 con 6 ON	W/54.4	-0.91	38

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
			Well ID: 6921136			
10	ECA	St. Magnus Developments Inc.	9554 Weston Rd Part of Lot 17 and 18, Concession 6 Vaughan ON L4K 2Y4	W/56.2	0.16	42
11	EHS		Weston Road And Laval Street Vaughan ON	W/65.4	-0.19	42
12	WWIS		lot 18 con 5 ON Well ID: 6921482	NW/70.5	1.16	42
13	WWIS		lot 18 con 5 ON Well ID: 6906659	NW/75.0	1.16	47
14	SCT	Emily's Bakery Ltd.	9591 Weston Rd Unit 1-2 Woodbridge ON L4H 3A5	NNE/76.2	-0.84	51
15	WWIS		ON Well ID: 7276114	WNW/76.4	0.18	51
16	WWIS		lot 18 con 6 ON Well ID: 6906780	WNW/80.3	1.16	52
17	WWIS		lot 18 con 5 ON Well ID: 6913822	N/84.9	0.16	55
18	WWIS		lot 18 con 6 ON Well ID: 6906778	NW/94.6	1.16	61
19	GEN	Dhuga Dentistry Professional Corporation	9581 Weston Road Unit 1 Vaughan ON L4H 3A5	N/97.3	-0.17	64
19	GEN	Dhuga Dentistry Professional Corporation	9581 Weston Road Unit 1 Vaughan ON L4H 3A5	N/97.3	-0.17	64
19	GEN	Dhuga Dentistry Professional Corporation	9581 Weston Road Unit 1 Vaughan ON L4H 3A5	N/97.3	-0.17	64
19	GEN	Dhuga Dentistry Professional Corporation	9581 Weston Road Unit 1 Vaughan ON L4H 3A5	N/97.3	-0.17	65

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
<u>20</u>	GEN	Home Alone Property Management Ltd.	141 Montcalm Blvd, Vaughan ON L4H 2N2	WSW/119.8	-5.15	<u>65</u>
<u>21</u>	WWIS		lot 17 con 5 ON Well ID: 6923108	SSE/132.7	-2.83	<u>65</u>
<u>22</u>	EHS		9465 Weston Rd Woodbridge ON L4H 2E5	SE/135.3	-1.87	<u>70</u>
<u>23</u>	EHS		9465 Weston Road Woodbridge ON L4H 2E6	SE/136.1	-1.92	<u>70</u>
<u>23</u>	EHS		9465 Weston Road Woodbridge ON L4H 2E6	SE/136.1	-1.92	<u>70</u>
<u>23</u>	EHS		9465 Weston Road Woodbridge ON L4H 2E6	SE/136.1	-1.92	<u>70</u>
<u>23</u>	EHS		9465 Weston Road Woodbridge ON L4H 2E6	SE/136.1	-1.92	<u>71</u>
<u>24</u>	WWIS		9465 WESTON RD WOODBIDGE ON Well ID: 7320102	SE/151.9	-1.83	<u>71</u>
<u>25</u>	RSC		9401 Weston Rd Woodbridge ON L4L 1A6	SSW/152.8	-4.48	<u>73</u>
<u>26</u>	SPL	Enbridge Gas Distribution	88-90 Laval St, Woodbridge Vaughan ON	W/160.7	-1.45	<u>73</u>
<u>27</u>	PES	TURF SPECIALTIES	82 JOHNSWOOD CRES WOODBIDGE ON L4H2K9	ENE/166.4	-3.15	<u>74</u>
<u>27</u>	PES	TURF SPECIALTIES	82 JOHNSWOOD CRES WOODBIDGE ON L4H2K9	ENE/166.4	-3.15	<u>74</u>
<u>28</u>	WWIS		lot 18 con 5 ON	NW/183.3	1.16	<u>75</u>

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
			Well ID: 6906660			
29	WWIS		lot 36 con 5 ON Well ID: 6919834	S/209.9	-4.80	78
30	INC		1 LUCERNE DRIVE, BLOCK 100, UNIT 7, WOODBIDGE ON	WSW/266.6	-5.76	82
31	SCT	L.C. Adam Apparell	127 Bologna Rd Woodbridge ON L4H 2M6	WSW/267.4	-6.81	83
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	NW/290.4	4.21	83
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	NW/290.4	4.21	84
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	NW/290.4	4.21	84
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	NW/290.4	4.21	85
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	NW/290.4	4.21	86
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	NW/290.4	4.21	87
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	NW/290.4	4.21	87
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	NW/290.4	4.21	88
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	NW/290.4	4.21	89
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	NW/290.4	4.21	90

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist (m)</i>	<i>Elev Diff (m)</i>	<i>Page Number</i>
<u>32</u>	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	NW/290.4	4.21	<u>91</u>
<u>32</u>	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	NW/290.4	4.21	<u>92</u>

Executive Summary: Summary By Data Source

BORE - Borehole

A search of the BORE database, dated 1875-Jul 2018 has found that there are 1 BORE site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	ON	3.6	<u>3</u>

ECA - Environmental Compliance Approval

A search of the ECA database, dated Oct 2011- Sep 30, 2021 has found that there are 1 ECA site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
St. Magnus Developments Inc.	9554 Weston Rd Part of Lot 17 and 18, Concession 6 Vaughan ON L4K 2Y4	56.2	<u>10</u>

EHS - ERIS Historical Searches

A search of the EHS database, dated 1999-Jun 30, 2021 has found that there are 8 EHS site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	9575 Weston Road Vaughan ON L4L 1A6	40.6	<u>6</u>
	9555, 9581, 9587, 9591 Weston Rd Vaughan ON	48.8	<u>8</u>
	Weston Road And Laval Street Vaughan ON	65.4	<u>11</u>
	9465 Weston Rd Woodbridge ON L4H 2E5	135.3	<u>22</u>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	9465 Weston Road Woodbridge ON L4H 2E6	136.1	<u>23</u>
	9465 Weston Road Woodbridge ON L4H 2E6	136.1	<u>23</u>
	9465 Weston Road Woodbridge ON L4H 2E6	136.1	<u>23</u>
	9465 Weston Road Woodbridge ON L4H 2E6	136.1	<u>23</u>

GEN - Ontario Regulation 347 Waste Generators Summary

A search of the GEN database, dated 1986-Aug 31, 2021 has found that there are 23 GEN site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
Vellore Woods Dentistry	9565 Weston Road 2nd floor Woodbridge ON L4H3A5	16.5	<u>4</u>
Vellore Woods Dentistry	9565 Weston Road 2nd floor Woodbridge ON L4H3A5	16.5	<u>4</u>
Vellore Woods Dentistry	9565 weston rd 2nd floor woodbridge ON L4H3A5	16.5	<u>4</u>
Richard Goodfellow dentistry profesionl	9565 weston rd 2nd floor woodbridge ON L4H3A5	16.5	<u>4</u>
Richard Goodfellow dentistry profesionl	9565 weston rd 2nd floor woodbridge ON L4H3A5	16.5	<u>4</u>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
Richard Goodfellow dentistry profesionl	9565 weston rd 2nd floor woodbridge ON L4H3A5	16.5	<u>4</u>
Dhuga Dentistry Professional Corporation	9581 Weston Road Unit 1 Vaughan ON L4H 3A5	97.3	<u>19</u>
Dhuga Dentistry Professional Corporation	9581 Weston Road Unit 1 Vaughan ON L4H 3A5	97.3	<u>19</u>
Dhuga Dentistry Professional Corporation	9581 Weston Road Unit 1 Vaughan ON L4H 3A5	97.3	<u>19</u>
Dhuga Dentistry Professional Corporation	9581 Weston Road Unit 1 Vaughan ON L4H 3A5	97.3	<u>19</u>
Home Alone Property Management Ltd.	141 Montcalm Blvd, Vaughan ON L4H 2N2	119.8	<u>20</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	290.4	<u>32</u>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	290.4	<u>32</u>

INC - Fuel Oil Spills and Leaks

A search of the INC database, dated May 31, 2021 has found that there are 1 INC site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	1 LUCERNE DRIVE, BLOCK 100, UNIT 7, WOODBIDGE ON	266.6	<u>30</u>

PES - Pesticide Register

A search of the PES database, dated Oct 2011- Sep 30, 2021 has found that there are 2 PES site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
TURF SPECIALTIES	82 JOHNSWOOD CRES WOODBIDGE ON L4H2K9	166.4	<u>27</u>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
TURF SPECIALTIES	82 JOHNSWOOD CRES WOODBIDGE ON L4H2K9	166.4	27

RSC - Record of Site Condition

A search of the RSC database, dated 1997-Sept 2001, Oct 2004-Oct 2021 has found that there are 1 RSC site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	9401 Weston Rd Woodbridge ON L4L 1A6	152.8	25

SCT - Scott's Manufacturing Directory

A search of the SCT database, dated 1992-Mar 2011* has found that there are 2 SCT site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
Emily's Bakery Ltd.	9591 Weston Rd Unit 1-2 Woodbridge ON L4H 3A5	76.2	14
L.C. Adam Apparell	127 Bologna Rd Woodbridge ON L4H 2M6	267.4	31

SPL - Ontario Spills

A search of the SPL database, dated 1988-Sep 2020 has found that there are 1 SPL site(s) within approximately 0.30 kilometers of the project property.

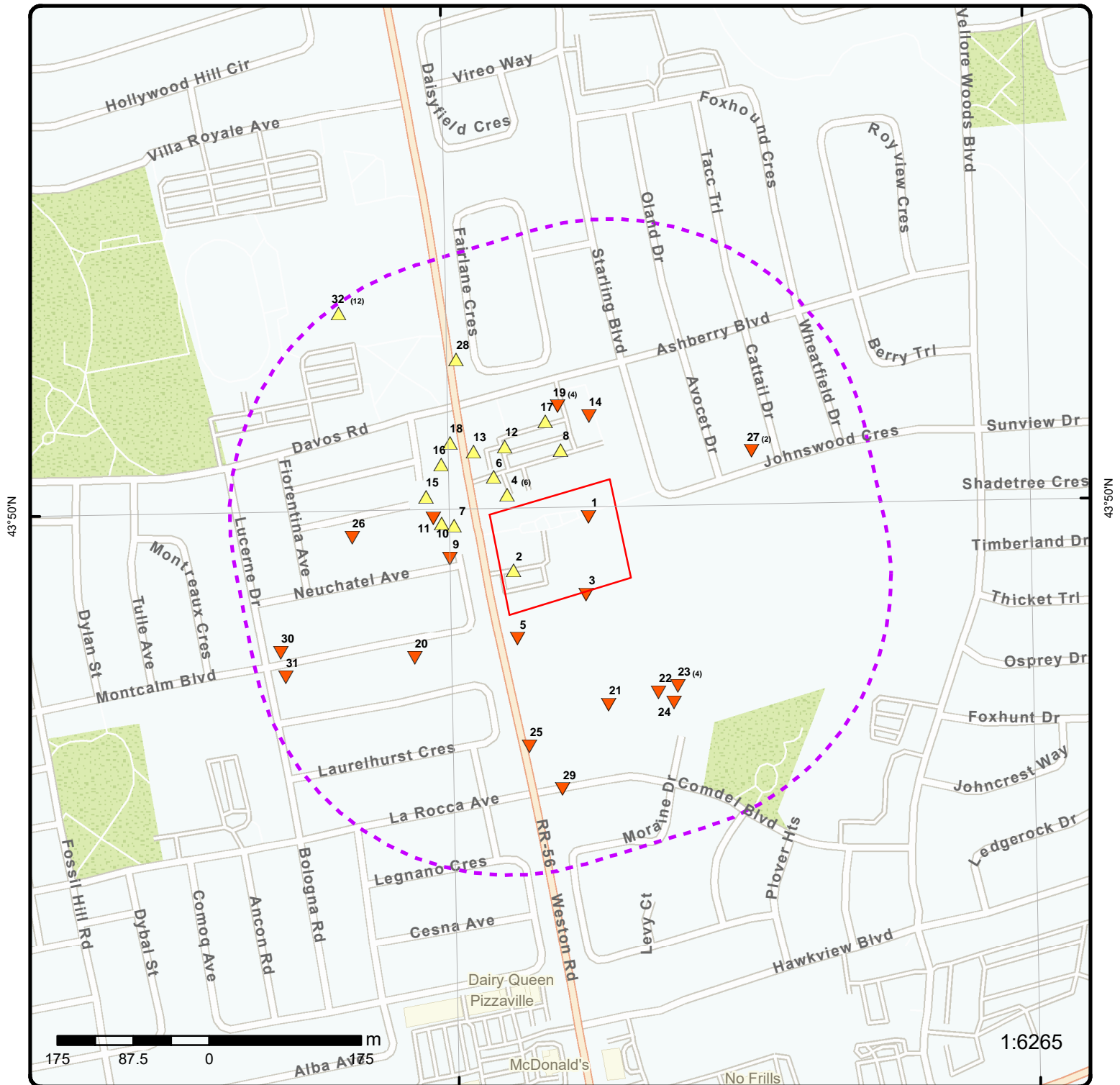
<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
Enbridge Gas Distribution	88-90 Laval St, Woodbridge Vaughan ON	160.7	26

WWIS - Water Well Information System

A search of the WWIS database, dated Apr 30, 2021 has found that there are 15 WWIS site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	lot 17 con 5 ON <i>Well ID:</i> 6914229	0.0	<u>1</u>
	lot 18 con 5 ON <i>Well ID:</i> 6925576	0.0	<u>2</u>
	lot 17 con 5 ON <i>Well ID:</i> 6906658	29.2	<u>5</u>
	lot 17 con 6 ON <i>Well ID:</i> 6906777	42.5	<u>7</u>
	lot 17 con 6 ON <i>Well ID:</i> 6921136	54.4	<u>9</u>
	lot 18 con 5 ON <i>Well ID:</i> 6921482	70.5	<u>12</u>
	lot 18 con 5 ON <i>Well ID:</i> 6906659	75.0	<u>13</u>
	ON <i>Well ID:</i> 7276114	76.4	<u>15</u>
	lot 18 con 6 ON <i>Well ID:</i> 6906780	80.3	<u>16</u>
	lot 18 con 5 ON <i>Well ID:</i> 6913822	84.9	<u>17</u>
	lot 18 con 6 ON <i>Well ID:</i> 6906778	94.6	<u>18</u>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	lot 17 con 5 ON <i>Well ID:</i> 6923108	132.7	<u>21</u>
	9465 WESTON RD WOODBRIIDGE ON <i>Well ID:</i> 7320102	151.9	<u>24</u>
	lot 18 con 5 ON <i>Well ID:</i> 6906660	183.3	<u>28</u>
	lot 36 con 5 ON <i>Well ID:</i> 6919834	209.9	<u>29</u>



Map: 0.3 Kilometer Radius

Order Number: 21122001000

Address: 9541 Weston Road, Vaughan, ON

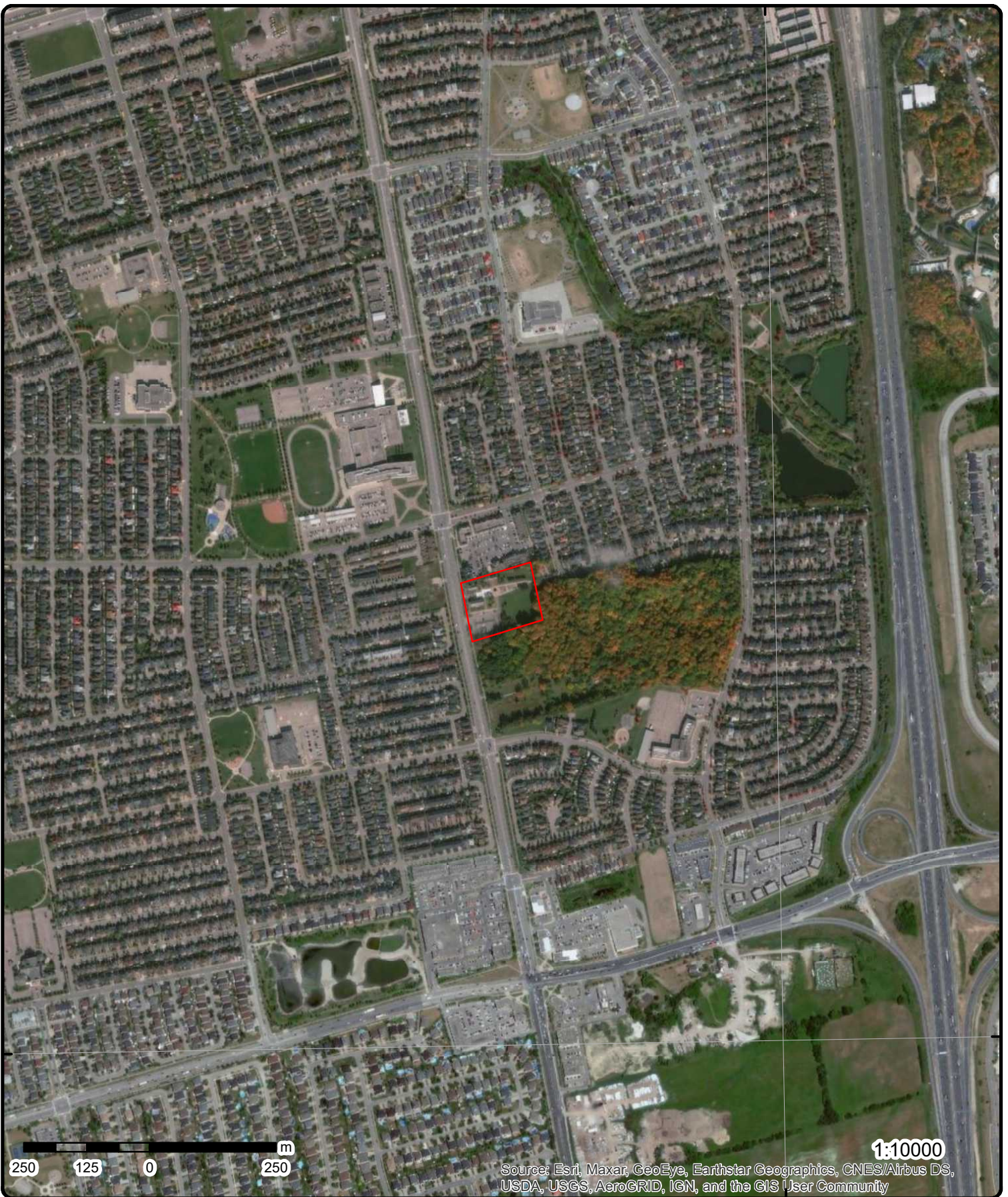


Project Property	Freeways; Highways	Beach	Shopping & Sports Area
Buffer Outline	Traffic Circle; Ramp	Airport	University/College
Eris Sites with Higher Elevation	Major Arterial; Minor Arterial	Industrial Area	Cemetery; Golf Course
Eris Sites with Same Elevation	Local Road	Military Base	Parkt (National)
Eris Sites with Lower Elevation	Service Road; Traffic Circle; Ramp	Aircraft Roads	Park (City/County)
Eris Sites with Unknown Elevation	Rail	Native Reservation	
		Hospital	

79°33'W

43°49'30"N

43°49'30"N



Aerial Year: 2019

Order Number: 21122001000

Address: 9541 Weston Road, Vaughan, ON



Source: ESRI World Imagery

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79°34'30"W

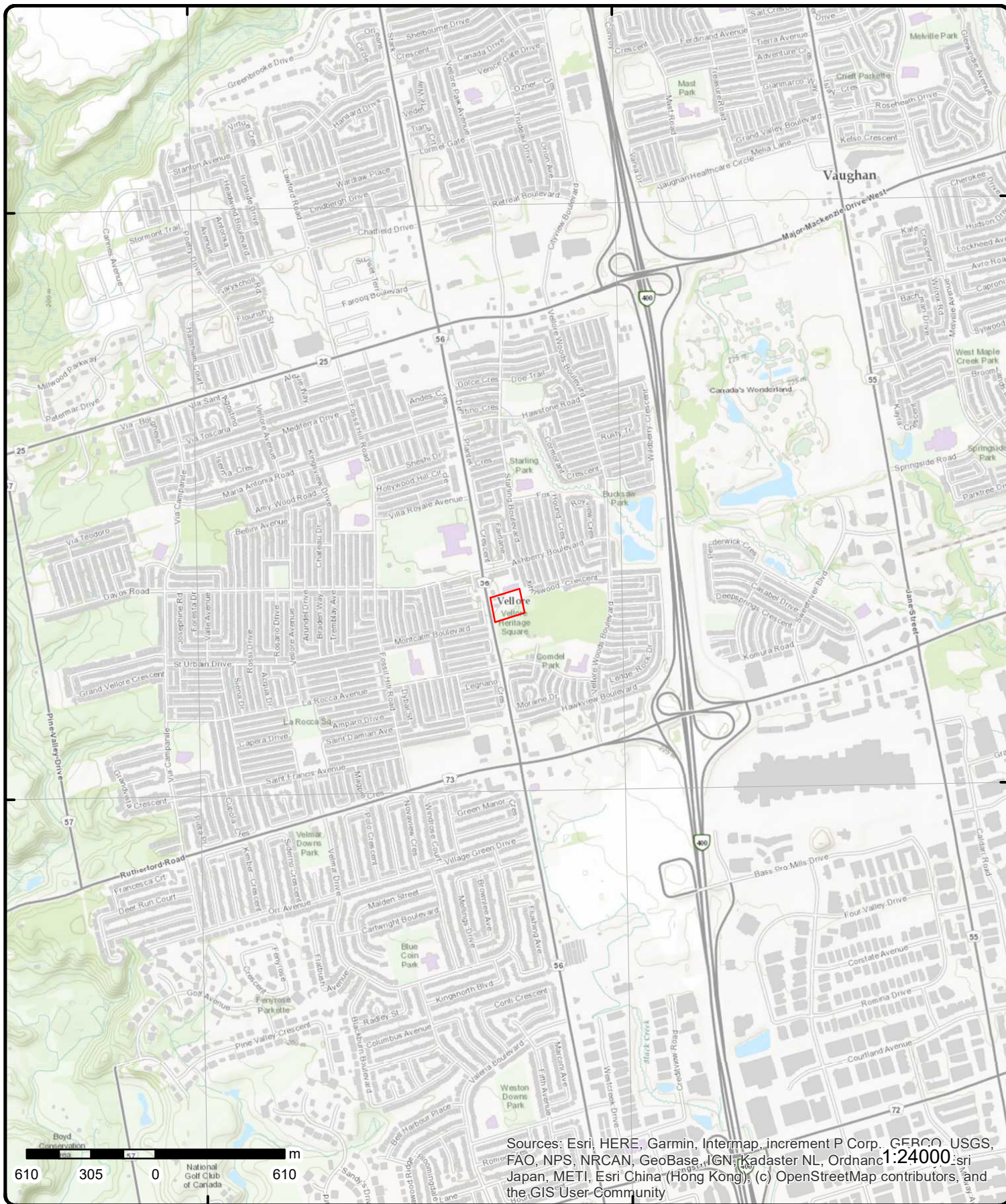
79°33'W

43°51'N

43°51'N

43°49'30"N

43°49'30"N



Topographic Map

Address: 9541 Weston Road, ON

Source: ESRI World Topographic Map

Order Number: 21122001000



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Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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1	1 of 1	NE/0.0	225.3 / -0.41	lot 17 con 5 ON	WWIS
-------------------	--------	--------	---------------	--------------------	------

Well ID:	6914229	Data Entry Status:	
Construction Date:		Data Src:	1
Primary Water Use:	Domestic	Date Received:	11/16/1977
Sec. Water Use:	0	Selected Flag:	True
Final Well Status:	Water Supply	Abandonment Rec:	
Water Type:		Contractor:	2214
Casing Material:		Form Version:	1
Audit No:		Owner:	
Tag:		Street Name:	
Construction Method:		County:	YORK AND TORONT
Elevation (m):		Municipality:	VAUGHAN TOWN (VAUGHAN TWP)
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	017
Well Depth:		Concession:	05
Overburden/Bedrock:		Concession Name:	CON
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	
Flowing (Y/N):		Zone:	
Flow Rate:		UTM Reliability:	
Clear/Cloudy:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/691\6914229.pdf

Additional Detail(s) (Map)

Well Completed Date:	1977/09/08
Year Completed:	1977
Depth (m):	11.5824
Latitude:	43.8332291870935
Longitude:	-79.5563859033772
Path:	691\6914229.pdf

Bore Hole Information

Bore Hole ID:	10504805	Elevation:	224.228515
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	o	East83:	616064.70
Code OB Desc:	Overburden	North83:	4854363.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	4
Date Completed:	08-Sep-1977 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	p4
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932769375			
Layer:		3			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		30.0			
Formation End Depth:		38.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932769373			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		79			
Mat2 Desc:		PACKED			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		20.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932769374			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		20.0			
Formation End Depth:		30.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966914229			
Method Construction Code:		6			
Method Construction:		Boring			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11053375			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930817850			
Layer:		1			
Material:					
Open Hole or Material:					
Depth From:					
Depth To:		30			
Casing Diameter:		30			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					
Casing ID:		930817851			
Layer:		2			
Material:		2			
Open Hole or Material:		GALVANIZED			
Depth From:					
Depth To:		38			
Casing Diameter:		24			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996914229			
Pump Set At:					
Static Level:		20.0			
Final Level After Pumping:		30.0			
Recommended Pump Depth:		35.0			
Pumping Rate:		6.0			
Flowing Rate:					
Recommended Pump Rate:		3.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		2			
Water State After Test:		CLOUDY			
Pumping Test Method:					
Pumping Duration HR:		0			
Pumping Duration MIN:		30			
Flowing:		No			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		935140082			
Test Type:		Recovery			
Test Duration:		60			
Test Level:		20.0			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		933997401			
Layer:		1			
Kind Code:		5			
Kind:		Not stated			
Water Found Depth:		20.0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Water Found Depth UOM:		ft			
2	1 of 1	WSW/0.0	225.9 / 0.15	lot 18 con 5 ON	WWIS
Well ID: 6925576		Data Entry Status:			
Construction Date:		Data Src: 1			
Primary Water Use: Not Used		Date Received: 9/25/2000			
Sec. Water Use:		Selected Flag: True			
Final Well Status: Abandoned-Other		Abandonment Rec:			
Water Type:		Contractor: 3108			
Casing Material:		Form Version: 1			
Audit No: 210821		Owner:			
Tag:		Street Name:			
Construction		County: YORK AND TORONT			
Method:		Municipality: VAUGHAN TOWN (VAUGHAN TWP)			
Elevation (m):		Site Info:			
Elevation Reliability:		Lot: 018			
Depth to Bedrock:		Concession: 05			
Well Depth:		Concession Name: CON			
Overburden/Bedrock:		Easting NAD83:			
Pump Rate:		Northing NAD83:			
Static Water Level:		Zone:			
Flowing (Y/N):		UTM Reliability:			
Flow Rate:					
Clear/Cloudy:					
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/692\6925576.pdf			
<u>Additional Detail(s) (Map)</u>					
Well Completed Date: 2000/08/01					
Year Completed: 2000					
Depth (m):					
Latitude: 43.8326847455032					
Longitude: -79.5574773861464					
Path: 692\6925576.pdf					
<u>Bore Hole Information</u>					
Bore Hole ID: 10515854		Elevation: 224.895385			
DP2BR:		Elevrc:			
Spatial Status:		Zone: 17			
Code OB: —		East83: 615978.00			
Code OB Desc: No formation data		North83: 4854301.00			
Open Hole:		Org CS:			
Cluster Kind:		UTMRC: 3			
Date Completed: 01-Aug-2000 00:00:00		UTMRC Desc: margin of error : 10 - 30 m			
Remarks:		Location Method: gps			
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Method of Construction & Well Use</u>					
Method Construction ID: 966925576					
Method Construction Code: 0					
Method Construction: Not Known					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Other Method Construction:					
Pipe Information					
Pipe ID:	11064424				
Casing No:	1				
Comment:					
Alt Name:					
3	1 of 1	SE/3.6	224.9 / -0.84	ON	BORE
Borehole ID:	589693			Inclin FLG:	No
OGF ID:	215500288			SP Status:	Initial Entry
Status:	Unknown			Surv Elev:	No
Type:	Outcrop			Piezometer:	No
Use:				Primary Name:	OGS-OLW-62-278
Completion Date:				Municipality:	
Static Water Level:				Lot:	
Primary Water Use:				Township:	
Sec. Water Use:				Latitude DD:	43.83242
Total Depth m:	1			Longitude DD:	-79.556439
Depth Ref:	Ground Surface			UTM Zone:	17
Depth Elev:				Easting:	616062
Drill Method:				Northing:	4854273
Orig Ground Elev m:	225			Location Accuracy:	
Elev Reliabil Note:				Accuracy:	Not Applicable
DEM Ground Elev m:	224				
Concession:					
Location D:					
Survey D:					
Comments:					
Borehole Geology Stratum					
Geology Stratum ID:	218339740			Mat Consistency:	
Top Depth:	0			Material Moisture:	
Bottom Depth:	1			Material Texture:	
Material Color:				Non Geo Mat Type:	
Material 1:	Till			Geologic Formation:	
Material 2:	Sand			Geologic Group:	
Material 3:				Geologic Period:	
Material 4:				Depositional Gen:	
Gsc Material Description:					
Stratum Description:	Di sa **Note: Many records provided by the department have a truncated [Stratum Description] field.				
Source					
Source Type:	Data Survey			Source Appl:	Spatial/Tabular
Source Orig:	Ontario Geological Survey			Source Iden:	6
Source Date:	Varies to 2004			Scale or Res:	1:50,000
Confidence:	H			Horizontal:	NAD83
Observatio:				Verticalda:	Mean Average Sea Level
Source Name:	Ontario Geological Survey Fieldwork Mapping				
Source Details:	YPDT Master Database A: -2092977982				
Confiden 1:	Location taken from OGS 1:50,000 maps by CAMC staff or consultants.				
Source List					
Source Identifier:	6			Horizontal Datum:	NAD83
Source Type:	Data Survey			Vertical Datum:	Mean Average Sea Level
Source Date:	Varies to 2004			Projection Name:	Universal Transvers Mercator

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Scale or Resolution: 1:50,000 Source Name: Ontario Geological Survey Fieldwork Mapping Source Originators: Ontario Geological Survey					
4	1 of 6	NW/16.5	225.9 / 0.16	Richard Goodfellow dentistry profesionl 9565 weston rd 2nd floor woodbridge ON L4H3A5	GEN
Generator No: ON6845187 Status: Approval Years: 2016 Contam. Facility: No MHSW Facility: No SIC Code: 621210 SIC Description: OFFICES OF DENTISTS PO Box No: Country: Canada Choice of Contact: CO_OFFICIAL Co Admin: Phone No Admin:					
Detail(s)					
Waste Class: 264 Waste Class Desc: PHOTOPROCESSING WASTES Waste Class: 312 Waste Class Desc: PATHOLOGICAL WASTES Waste Class: 261 Waste Class Desc: PHARMACEUTICALS Waste Class: 148 Waste Class Desc: INORGANIC LABORATORY CHEMICALS					
4	2 of 6	NW/16.5	225.9 / 0.16	Richard Goodfellow dentistry profesionl 9565 weston rd 2nd floor woodbridge ON L4H3A5	GEN
Generator No: ON6845187 Status: Approval Years: 2015 Contam. Facility: No MHSW Facility: No SIC Code: 621210 SIC Description: OFFICES OF DENTISTS PO Box No: Country: Canada Choice of Contact: CO_OFFICIAL Co Admin: Phone No Admin:					
Detail(s)					
Waste Class: 261 Waste Class Desc: PHARMACEUTICALS Waste Class: 312 Waste Class Desc: PATHOLOGICAL WASTES Waste Class: 148 Waste Class Desc: INORGANIC LABORATORY CHEMICALS Waste Class: 264 Waste Class Desc: PHOTOPROCESSING WASTES					
4	3 of 6	NW/16.5	225.9 / 0.16	Richard Goodfellow dentistry profesionl 9565 weston rd 2nd floor woodbridge ON L4H3A5	GEN
Generator No: ON6845187 Status: PO Box No: Country: Canada					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Approval Years: Contam. Facility: MHSW Facility: SIC Code: SIC Description:	2014 No No 621210 OFFICES OF DENTISTS			Choice of Contact: Co Admin: Phone No Admin:	CO_OFFICIAL
<u>Detail(s)</u>					
Waste Class: Waste Class Desc:	312 PATHOLOGICAL WASTES				
Waste Class: Waste Class Desc:	261 PHARMACEUTICALS				
Waste Class: Waste Class Desc:	264 PHOTOPROCESSING WASTES				
Waste Class: Waste Class Desc:	148 INORGANIC LABORATORY CHEMICALS				
<u>4</u>	4 of 6	NW/16.5	225.9 / 0.16	Vellore Woods Dentistry 9565 weston rd 2nd floor woodbridge ON L4H3A5	GEN
Generator No: Status: Approval Years: Contam. Facility: MHSW Facility: SIC Code: SIC Description:	ON6845187 Registered As of Dec 2018			PO Box No: Country: Choice of Contact: Co Admin: Phone No Admin:	Canada
<u>Detail(s)</u>					
Waste Class: Waste Class Desc:	148 C Misc. wastes and inorganic chemicals				
Waste Class: Waste Class Desc:	261 A Pharmaceuticals				
Waste Class: Waste Class Desc:	264 L Photoprocessing wastes				
Waste Class: Waste Class Desc:	264 T Photoprocessing wastes				
Waste Class: Waste Class Desc:	312 P Pathological wastes				
<u>4</u>	5 of 6	NW/16.5	225.9 / 0.16	Vellore Woods Dentistry 9565 Weston Road 2nd floor Woodbridge ON L4H3A5	GEN
Generator No: Status: Approval Years: Contam. Facility: MHSW Facility: SIC Code: SIC Description:	ON6845187 Registered As of Jul 2020			PO Box No: Country: Choice of Contact: Co Admin: Phone No Admin:	Canada
<u>Detail(s)</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Waste Class:		148 C			
Waste Class Desc:		Misc. wastes and inorganic chemicals			
Waste Class:		264 T			
Waste Class Desc:		Photoprocessing wastes			
Waste Class:		312 P			
Waste Class Desc:		Pathological wastes			
Waste Class:		264 L			
Waste Class Desc:		Photoprocessing wastes			
Waste Class:		261 A			
Waste Class Desc:		Pharmaceuticals			
<hr/>					
<u>4</u>	6 of 6	NW/16.5	225.9 / 0.16	Vellore Woods Dentistry 9565 Weston Road 2nd floor Woodbridge ON L4H3A5	GEN
Generator No:	ON6845187			PO Box No:	
Status:	Registered			Country:	Canada
Approval Years:	As of Aug 2021			Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:					
SIC Description:					
 <u>Detail(s)</u>					
Waste Class:		312 P			
Waste Class Desc:		Pathological wastes			
Waste Class:		148 C			
Waste Class Desc:		Misc. wastes and inorganic chemicals			
Waste Class:		261 A			
Waste Class Desc:		Pharmaceuticals			
Waste Class:		264 T			
Waste Class Desc:		Photoprocessing wastes			
Waste Class:		264 L			
Waste Class Desc:		Photoprocessing wastes			
<hr/>					
<u>5</u>	1 of 1	SSW/29.2	224.4 / -1.27	lot 17 con 5 ON	WWIS
Well ID:	6906658			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:				Date Received:	12/22/1964
Sec. Water Use:				Selected Flag:	True
Final Well Status:	Test Hole			Abandonment Rec:	
Water Type:				Contractor:	2801
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	YORK AND TORONT
Elevation (m):				Municipality:	VAUGHAN TOWN (VAUGHAN TWP)
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	017
Well Depth:				Concession:	05
Overburden/Bedrock:				Concession Name:	CON

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:				Easting NAD83: Northing NAD83: Zone: UTM Reliability:	
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/690\6906658.pdf			
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:		1964/08/19			
Year Completed:		1964			
Depth (m):		92.6592			
Latitude:		43.8319729353231			
Longitude:		-79.5574360777739			
Path:		690\6906658.pdf			
<u>Bore Hole Information</u>					
Bore Hole ID:		10497357	Elevation:		223.031433
DP2BR:		266.00	Elevrc:		
Spatial Status:			Zone:		17
Code OB:		z	East83:		615982.70
Code OB Desc:		Mixed Layer below top of bedrcok	North83:		4854222.00
Open Hole:			Org CS:		
Cluster Kind:			UTMRC:		9
Date Completed:		19-Aug-1964 00:00:00	UTMRC Desc:		unknown UTM
Remarks:			Location Method:		p9
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932734941			
Layer:		10			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		245.0			
Formation End Depth:		266.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932734937			
Layer:		6			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		06			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat2 Desc:		SILT			
Mat3:		11			
Mat3 Desc:		GRAVEL			
Formation Top Depth:		56.0			
Formation End Depth:		132.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734933			
Layer:		2			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		1.0			
Formation End Depth:		10.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734939			
Layer:		8			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		139.0			
Formation End Depth:		226.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734942			
Layer:		11			
Color:					
General Color:					
Mat1:		17			
Most Common Material:		SHALE			
Mat2:		05			
Mat2 Desc:		CLAY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		266.0			
Formation End Depth:		276.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734944			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Layer:		13			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		17			
Mat2 Desc:		SHALE			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		293.0			
Formation End Depth:		300.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932734940			
Layer:		9			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		226.0			
Formation End Depth:		245.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932734938			
Layer:		7			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		132.0			
Formation End Depth:		139.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932734936			
Layer:		5			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		37.0			
Formation End Depth:		56.0			
Formation End Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734943			
Layer:		12			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		17			
Mat2 Desc:		SHALE			
Mat3:		11			
Mat3 Desc:		GRAVEL			
Formation Top Depth:		276.0			
Formation End Depth:		293.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734932			
Layer:		1			
Color:					
General Color:					
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		1.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734945			
Layer:		14			
Color:					
General Color:					
Mat1:		17			
Most Common Material:		SHALE			
Mat2:		05			
Mat2 Desc:		CLAY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		300.0			
Formation End Depth:		304.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734934			
Layer:		3			
Color:					
General Color:					
Mat1:		08			
Most Common Material:		FINE SAND			
Mat2:		05			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Mat2 Desc:		CLAY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		10.0			
Formation End Depth:		35.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932734935			
Layer:		4			
Color:					
General Color:					
Mat1:		08			
Most Common Material:		FINE SAND			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		35.0			
Formation End Depth:		37.0			
Formation End Depth UOM:		ft			
 <u>Method of Construction & Well</u> <u>Use</u>					
Method Construction ID:		966906658			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
 <u>Pipe Information</u>					
Pipe ID:		11045927			
Casing No:		1			
Comment:					
Alt Name:					
 <u>Construction Record - Casing</u>					
Casing ID:		930809728			
Layer:		1			
Material:					
Open Hole or Material:					
Depth From:					
Depth To:					
Casing Diameter:		5			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			

<u>6</u>	1 of 1	NW/40.6	226.4 / 0.73	9575 Weston Road Vaughan ON L4L 1A6	EHS
<hr/>					
Order No:	20030204008			Nearest Intersection:	Weston and Ashbury
Status:	C			Municipality:	Regional Municipality of York
Report Type:	Complete Report			Client Prov/State:	ON
Report Date:	2/13/03			Search Radius (km):	0.25
Date Received:	2/4/03			X:	-79.557741
Previous Site Name:				Y:	43.83366
Lot/Building Size:	0.139 hectares				
Additional Info Ordered:	Fire Insur. Maps and/or Site Plans and/or Inspection Reports				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
7	1 of 1	W/42.5	225.9 / 0.16	lot 17 con 6 ON	WWIS
Well ID: 6906777		Data Entry Status:			
Construction Date:		Data Src: 1			
Primary Water Use: Domestic		Date Received: 1/4/1968			
Sec. Water Use: 0		Selected Flag: True			
Final Well Status: Water Supply		Abandonment Rec:			
Water Type:		Contractor: 1622			
Casing Material:		Form Version: 1			
Audit No:		Owner:			
Tag:		Street Name:			
Construction Method:		County: YORK AND TORONT			
Elevation (m):		Municipality: VAUGHAN TOWN (VAUGHAN TWP)			
Elevation Reliability:		Site Info:			
Depth to Bedrock:		Lot: 017			
Well Depth:		Concession: 06			
Overburden/Bedrock:		Concession Name: CON			
Pump Rate:		Easting NAD83:			
Static Water Level:		Northing NAD83:			
Flowing (Y/N):		Zone:			
Flow Rate:		UTM Reliability:			
Clear/Cloudy:					
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/690\6906777.pdf			
<u>Additional Detail(s) (Map)</u>					
Well Completed Date: 1967/08/03					
Year Completed: 1967					
Depth (m): 35.052					
Latitude: 43.8331635115822					
Longitude: -79.5583153593033					
Path: 690\6906777.pdf					
<u>Bore Hole Information</u>					
Bore Hole ID: 10497476		Elevation: 226.079376			
DP2BR:		Elevrc:			
Spatial Status:		Zone: 17			
Code OB: o		East83: 615909.70			
Code OB Desc: Overburden		North83: 4854353.00			
Open Hole:		Org CS:			
Cluster Kind:		UTMRC: 4			
Date Completed: 03-Aug-1967 00:00:00		UTMRC Desc: margin of error : 30 m - 100 m			
Remarks:		Location Method: p4			
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID: 932735518					
Layer: 4					
Color:					
General Color:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		09			
Mat2 Desc:		MEDIUM SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		80.0			
Formation End Depth:		107.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932735516			
Layer:		2			
Color:		5			
General Color:		YELLOW			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		1.0			
Formation End Depth:		32.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932735519			
Layer:		5			
Color:					
General Color:					
Mat1:		10			
Most Common Material:		COARSE SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		107.0			
Formation End Depth:		115.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932735517			
Layer:		3			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		32.0			
Formation End Depth:		80.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Materials Interval</u>					
Formation ID:		932735515			
Layer:		1			
Color:					
General Color:					
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		1.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966906777			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11046046			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930809867			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		111			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		933388936			
Layer:		1			
Slot:		020			
Screen Top Depth:		111			
Screen End Depth:		115			
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		4			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996906777			
Pump Set At:					
Static Level:		48.0			
Final Level After Pumping:		105.0			
Recommended Pump Depth:		110.0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pumping Rate: 3.0 Flowing Rate: Recommended Pump Rate: 3.0 Levels UOM: ft Rate UOM: GPM Water State After Test Code: 1 Water State After Test: CLEAR Pumping Test Method: 1 Pumping Duration HR: 6 Pumping Duration MIN: 0 Flowing: No					
<u>Water Details</u>					
Water ID: 933990171 Layer: 1 Kind Code: 1 Kind: FRESH Water Found Depth: 107.0 Water Found Depth UOM: ft					
8	1 of 1	N/48.8	225.9 / 0.16	9555, 9581, 9587, 9591 Weston Rd Vaughan ON	EHS
Order No: 20080904008 Status: C Report Type: Standard Report Report Date: 9/8/2008 Date Received: 9/4/2008 Previous Site Name: Lot/Building Size: Additional Info Ordered:					
Nearest Intersection: Municipality: Client Prov/State: ON Search Radius (km): 0.25 X: -79.556776 Y: 43.833931					
9	1 of 1	W/54.4	224.8 / -0.91	lot 17 con 6 ON	WWIS
Well ID: 6921136 Construction Date: Primary Water Use: Domestic Sec. Water Use: Final Well Status: Water Supply Water Type: Casing Material: Audit No: 26990 Tag: Construction Method: Elevation (m): Elevation Reliability: Depth to Bedrock: Well Depth: Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:					
Data Entry Status: Data Src: 1 Date Received: 7/23/1990 Selected Flag: True Abandonment Rec: Contractor: 1663 Form Version: 1 Owner: Street Name: County: YORK AND TORONT Municipality: VAUGHAN TOWN (VAUGHAN TWP) Site Info: Lot: 017 Concession: 06 Concession Name: CON Easting NAD83: Northing NAD83: Zone: UTM Reliability:					
PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/692/6921136.pdf					
<u>Additional Detail(s) (Map)</u>					
Well Completed Date: 1989/01/17					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Year Completed:		1989			
Depth (m):		33.528			
Latitude:		43.8328222140141			
Longitude:		-79.5583820348273			
Path:		692\6921136.pdf			
<u>Bore Hole Information</u>					
Bore Hole ID:	10511448			Elevation:	223.384323
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:	o			East83:	615905.00
Code OB Desc:	Overburden			North83:	4854315.00
Open Hole:				Org CS:	
Cluster Kind:				UTMRC:	4
Date Completed:	17-Jan-1989 00:00:00			UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	gps
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932806669				
Layer:	1				
Color:	6				
General Color:	BROWN				
Mat1:	11				
Most Common Material:	GRAVEL				
Mat2:	01				
Mat2 Desc:	FILL				
Mat3:					
Mat3 Desc:					
Formation Top Depth:	0.0				
Formation End Depth:	2.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932806672				
Layer:	4				
Color:	2				
General Color:	GREY				
Mat1:	28				
Most Common Material:	SAND				
Mat2:	10				
Mat2 Desc:	COARSE SAND				
Mat3:					
Mat3 Desc:					
Formation Top Depth:	65.0				
Formation End Depth:	86.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932806671				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Layer:		3			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		14.0			
Formation End Depth:		65.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932806674			
Layer:		6			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		28			
Mat3 Desc:		SAND			
Formation Top Depth:		93.0			
Formation End Depth:		110.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932806673			
Layer:		5			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		86.0			
Formation End Depth:		93.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932806670			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		2.0			
Formation End Depth:		14.0			
Formation End Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		933213571			
Layer:		2			
Plug From:		85			
Plug To:		110			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		933213570			
Layer:		1			
Plug From:		0			
Plug To:		82			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966921136			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11060018			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930825465			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		82			
Casing Diameter:		6			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		933397599			
Layer:		1			
Slot:		014			
Screen Top Depth:		82			
Screen End Depth:		85			
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		6			
<u>Results of Well Yield Testing</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pump Test ID: 996921136 Pump Set At: Static Level: 45.0 Final Level After Pumping: 79.0 Recommended Pump Depth: 79.0 Pumping Rate: 9.0 Flowing Rate: Recommended Pump Rate: 7.0 Levels UOM: ft Rate UOM: GPM Water State After Test Code: 1 Water State After Test: CLEAR Pumping Test Method: 1 Pumping Duration HR: 2 Pumping Duration MIN: 0 Flowing: No					
Water Details					
Water ID: 934003965 Layer: 1 Kind Code: 1 Kind: FRESH Water Found Depth: 65.0 Water Found Depth UOM: ft					
10	1 of 1	W/56.2	225.9 / 0.16	St. Magnus Developments Inc. 9554 Weston Rd Part of Lot 17 and 18, Concession 6 Vaughan ON L4K 2Y4	ECA
Approval No: 2141-ATCPYB Approval Date: 2017-11-27 Status: Approved Record Type: ECA Link Source: IDS SWP Area Name: Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS Business Name: St. Magnus Developments Inc. Address: 9554 Weston Rd Part of Lot 17 and 18, Concession 6 Full Address: Full PDF Link: https://www.accessenvironment.ene.gov.on.ca/instruments/5896-AT6N9L-14.pdf PDF Site Location:					
MOE District: City: Longitude: Latitude: Geometry X: Geometry Y:					
11	1 of 1	W/65.4	225.5 / -0.19	Weston Road And Laval Street Vaughan ON	EHS
Order No: 20160407152 Status: C Report Type: Custom Report Report Date: 14-APR-16 Date Received: 07-APR-16 Previous Site Name: Lot/Building Size: Additional Info Ordered:					
Nearest Intersection: Municipality: Client Prov/State: ON Search Radius (km): .25 X: -79.558616 Y: 43.833237					
12	1 of 1	NW/70.5	226.9 / 1.16	lot 18 con 5 ON	WWIS
Well ID: 6921482 Data Entry Status:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Construction Date:			Data Src:	1	
Primary Water Use: Domestic			Date Received:	7/30/1991	
Sec. Water Use:			Selected Flag:	True	
Final Well Status: Water Supply			Abandonment Rec:		
Water Type:			Contractor:	1663	
Casing Material:			Form Version:	1	
Audit No: 79162			Owner:		
Tag:			Street Name:		
Construction Method:			County:	YORK AND TORONT	
Elevation (m):			Municipality:	VAUGHAN TOWN (VAUGHAN TWP)	
Elevation Reliability:			Site Info:		
Depth to Bedrock:			Lot:	018	
Well Depth:			Concession:	05	
Overburden/Bedrock:			Concession Name:	CON	
Pump Rate:			Easting NAD83:		
Static Water Level:			Northing NAD83:		
Flowing (Y/N):			Zone:		
Flow Rate:			UTM Reliability:		
Clear/Cloudy:					
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/692\6921482.pdf			
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:		1990/04/02			
Year Completed:		1990			
Depth (m):		36.576			
Latitude:		43.8339734460722			
Longitude:		-79.5575707184373			
Path:		692\6921482.pdf			
<u>Bore Hole Information</u>					
Bore Hole ID:		10511792		Elevation:	224.935073
DP2BR:				Elevrc:	
Spatial Status:		Improved		Zone:	17
Code OB:		o		East83:	615968.00
Code OB Desc:		Overburden		North83:	4854444.00
Open Hole:				Org CS:	N83
Cluster Kind:				UTMRC:	4
Date Completed:		02-Apr-1990 00:00:00		UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	
Elevrc Desc:					
Location Source Date:		As of Fall, 2005			
Improvement Location Source:		YPDT_Master_A.mdb from Conservation Authority Moraine Coalition			
Improvement Location Method:		Map			
Source Revision Comment:		Sourced from Hunter and Assoc. by CAMC. Source notes: HUNTER 2001 ORM AVI STUDY; Address Maps/OBM (UTM 1982)/Orthophoto (1999)/Parc; Original units in CAMC's source: UTM NAD83 UTMs and Gnd Elev updated by Hunter Brought into CAMC data on: 02/08/2002. Source ID: 6921482			
Supplier Comment:		Changed from lot/centroid coordinates.			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932808860			
Layer:		8			
Color:		2			
General Color:		GREY			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		30			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Mat3 Desc:		MEDIUM GRAVEL			
Formation Top Depth:		107.0			
Formation End Depth:		112.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932808862			
Layer:		10			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		73			
Mat2 Desc:		HARD			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		119.0			
Formation End Depth:		120.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932808861			
Layer:		9			
Color:		2			
General Color:		GREY			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		08			
Mat2 Desc:		FINE SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		112.0			
Formation End Depth:		119.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932808858			
Layer:		6			
Color:		2			
General Color:		GREY			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		05			
Mat2 Desc:		CLAY			
Mat3:		08			
Mat3 Desc:		FINE SAND			
Formation Top Depth:		81.0			
Formation End Depth:		97.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932808856			
Layer:		4			
Color:		3			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		73			
Mat3 Desc:		HARD			
Formation Top Depth:		28.0			
Formation End Depth:		52.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932808857			
Layer:		5			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		28			
Mat2 Desc:		SAND			
Mat3:		85			
Mat3 Desc:		SOFT			
Formation Top Depth:		52.0			
Formation End Depth:		81.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932808859			
Layer:		7			
Color:		2			
General Color:		GREY			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		08			
Mat2 Desc:		FINE SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		97.0			
Formation End Depth:		107.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932808854			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		28			
Mat3 Desc:		SAND			
Formation Top Depth:		1.0			
Formation End Depth:		26.0			
Formation End Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932808853			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		1.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932808855			
Layer:		3			
Color:					
General Color:					
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		26.0			
Formation End Depth:		28.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		933213815			
Layer:		1			
Plug From:		0			
Plug To:		108			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966921482			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11060362			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930825867			
Layer:		1			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Material:					
Open Hole or Material:		1	STEEL		
Depth From:					
Depth To:		108			
Casing Diameter:		62			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		933397845			
Layer:		1			
Slot:		014			
Screen Top Depth:		108			
Screen End Depth:		111			
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		6			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996921482			
Pump Set At:					
Static Level:		42.0			
Final Level After Pumping:		108.0			
Recommended Pump Depth:		100.0			
Pumping Rate:		20.0			
Flowing Rate:					
Recommended Pump Rate:		10.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		1			
Pumping Duration MIN:		45			
Flowing:		No			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934881463			
Test Type:		Recovery			
Test Duration:		45			
Test Level:		42.0			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		934004293			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		107.0			
Water Found Depth UOM:		ft			
13	1 of 1	NW/75.0	226.9 / 1.16	lot 18 con 5 ON	WWIS
Well ID:		6906659		Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:		Domestic		Date Received:	8/2/1960

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Sec. Water Use:	0			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	4823
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	YORK AND TORONT
Elevation (m):				Municipality:	VAUGHAN TOWN (VAUGHAN TWP)
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	018
Well Depth:				Concession:	05
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/690\6906659.pdf			
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:	1960/05/02				
Year Completed:	1960				
Depth (m):	27.432				
Latitude:	43.8339251376759				
Longitude:	-79.5580233832938				
Path:	690\6906659.pdf				
<u>Bore Hole Information</u>					
Bore Hole ID:	10497358			Elevation:	225.434204
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:	o			East83:	615931.70
Code OB Desc:	Overburden			North83:	4854438.00
Open Hole:				Org CS:	
Cluster Kind:				UTMRC:	5
Date Completed:	02-May-1960 00:00:00			UTMRC Desc:	margin of error : 100 m - 300 m
Remarks:				Location Method:	p5
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932734947				
Layer:	2				
Color:	7				
General Color:	RED				
Mat1:	09				
Most Common Material:	MEDIUM SAND				
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:	2.0				
Formation End Depth:	30.0				
Formation End Depth UOM:	ft				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734946			
Layer:		1			
Color:					
General Color:					
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		2.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734948			
Layer:		3			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		30.0			
Formation End Depth:		80.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734949			
Layer:		4			
Color:					
General Color:					
Mat1:		06			
Most Common Material:		SILT			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		80.0			
Formation End Depth:		86.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734950			
Layer:		5			
Color:					
General Color:					
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:		09			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat2 Desc:		MEDIUM SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		86.0			
Formation End Depth:		90.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966906659			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11045928			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930809729			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		86			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		933388886			
Layer:		1			
Slot:		018			
Screen Top Depth:		86			
Screen End Depth:		90			
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		4			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996906659			
Pump Set At:					
Static Level:		52.0			
Final Level After Pumping:		72.0			
Recommended Pump Depth:		72.0			
Pumping Rate:		3.0			
Flowing Rate:					
Recommended Pump Rate:		3.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		24			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pumping Duration MIN:		0			
Flowing:		No			
<u>Water Details</u>					
Water ID:		933990063			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		86.0			
Water Found Depth UOM:		ft			
14	1 of 1	NNE/76.2	224.9 / -0.84	Emily's Bakery Ltd. 9591 Weston Rd Unit 1-2 Woodbridge ON L4H 3A5	SCT
Established:		01-AUG-01			
Plant Size (ft²):					
Employment:					
<u>--Details--</u>					
Description:		Retail Bakeries			
SIC/NAICS Code:		311811			
Description:		Retail Bakeries			
SIC/NAICS Code:		311811			
15	1 of 1	WNW/76.4	225.9 / 0.18	ON	WWIS
Well ID:		7276114		Data Entry Status:	Yes
Construction Date:				Data Src:	
Primary Water Use:				Date Received:	11/29/2016
Sec. Water Use:				Selected Flag:	True
Final Well Status:				Abandonment Rec:	
Water Type:				Contractor:	7215
Casing Material:				Form Version:	8
Audit No:		C34204		Owner:	
Tag:		A206740		Street Name:	
Construction Method:				County:	YORK AND TORONT
Elevation (m):				Municipality:	VAUGHAN TOWN (VAUGHAN TWP)
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):					
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:		2016/05/20			
Year Completed:		2016			
Depth (m):					
Latitude:		43.8334656713867			
Longitude:		-79.5587148047164			
Path:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Bore Hole Information</u>					
Bore Hole ID:	1006298972			Elevation:	225.536666
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:				East83:	615877.00
Code OB Desc:				North83:	4854386.00
Open Hole:				Org CS:	UTM83
Cluster Kind:				UTMRC:	4
Date Completed:	20-May-2016 00:00:00			UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					

<u>16</u>	1 of 1	WNW/80.3	226.9 / 1.16	lot 18 con 6 ON	WWIS
Well ID:	6906780			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Domestic			Date Received:	3/22/1949
Sec. Water Use:	0			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	1622
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	YORK AND TORONT
Elevation (m):				Municipality:	VAUGHAN TOWN (VAUGHAN TWP)
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	018
Well Depth:				Concession:	06
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/690\6906780.pdf

Additional Detail(s) (Map)

Well Completed Date: 1948/05/28
Year Completed: 1948
Depth (m): 32.9184
Latitude: 43.8337959290229
Longitude: -79.5584867018023
Path: 690\6906780.pdf

Bore Hole Information

Bore Hole ID:	10497479	Elevation:	225.565994
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	o	East83:	615894.70
Code OB Desc:	Overburden	North83:	4854423.00
Open Hole:		Org CS:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Cluster Kind:				UTMRC:	4
Date Completed:	28-May-1948 00:00:00			UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	p4
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932735528			
Layer:		3			
Color:					
General Color:					
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		30.0			
Formation End Depth:		75.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932735527			
Layer:		2			
Color:					
General Color:					
Mat1:		06			
Most Common Material:		SILT			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		10.0			
Formation End Depth:		30.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932735526			
Layer:		1			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		10.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Materials Interval</u>					
Formation ID:		932735529			
Layer:		4			
Color:					
General Color:					
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		75.0			
Formation End Depth:		108.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966906780			
Method Construction Code:		8			
Method Construction:		Jetting			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11046049			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930809870			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		103			
Casing Diameter:		2			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		933388938			
Layer:		1			
Slot:		010			
Screen Top Depth:		103			
Screen End Depth:		108			
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		2			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996906780			
Pump Set At:					
Static Level:		95.0			
Final Level After Pumping:					
Recommended Pump Depth:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pumping Rate: 2.0 Flowing Rate: Recommended Pump Rate: Levels UOM: ft Rate UOM: GPM Water State After Test Code: 1 Water State After Test: CLEAR Pumping Test Method: 1 Pumping Duration HR: 5 Pumping Duration MIN: 0 Flowing: No					
<u>Water Details</u>					
Water ID: 933990174 Layer: 1 Kind Code: 1 Kind: FRESH Water Found Depth: 93.0 Water Found Depth UOM: ft					
17	1 of 1	N/84.9	225.9 / 0.16	lot 18 con 5 ON	WWIS
Well ID: 6913822 Construction Date: Primary Water Use: Domestic Sec. Water Use: 0 Final Well Status: Water Supply Water Type: Casing Material: Audit No: Tag: Construction Method: Elevation (m): Elevation Reliability: Depth to Bedrock: Well Depth: Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:					
Data Entry Status: Data Src: 1 Date Received: 2/15/1977 Selected Flag: True Abandonment Rec: Contractor: 1663 Form Version: 1 Owner: Street Name: County: YORK AND TORONT Municipality: VAUGHAN TOWN (VAUGHAN TWP) Site Info: Lot: 018 Concession: 05 Concession Name: CON Easting NAD83: Northing NAD83: Zone: UTM Reliability:					
PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/691\6913822.pdf					
<u>Additional Detail(s) (Map)</u>					
Well Completed Date: 1976/10/26 Year Completed: 1976 Depth (m): 45.72 Latitude: 43.8342271405623 Longitude: -79.5569837469023 Path: 691\6913822.pdf					
<u>Bore Hole Information</u>					
Bore Hole ID: 10504402 DP2BR: Spatial Status: Code OB: 0					
Elevation: 223.937240 Elevrc: Zone: 17 East83: 616014.70					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Code OB Desc:	Overburden			North83:	4854473.00
Open Hole:				Org CS:	
Cluster Kind:				UTMRC:	5
Date Completed:	26-Oct-1976 00:00:00			UTMRC Desc:	margin of error : 100 m - 300 m
Remarks:				Location Method:	p5
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767187			
Layer:		6			
Color:		2			
General Color:		GREY			
Mat1:		08			
Most Common Material:		FINE SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		65.0			
Formation End Depth:		77.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767189			
Layer:		8			
Color:		2			
General Color:		GREY			
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		90.0			
Formation End Depth:		95.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767183			
Layer:		2			
Color:		5			
General Color:		YELLOW			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		81			
Mat3 Desc:		SANDY			
Formation Top Depth:		1.0			
Formation End Depth:		19.0			
Formation End Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932767184			
Layer:		3			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		19.0			
Formation End Depth:		46.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932767188			
Layer:		7			
Color:					
General Color:					
Mat1:		28			
Most Common Material:		SAND			
Mat2:		05			
Mat2 Desc:		CLAY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		77.0			
Formation End Depth:		90.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932767195			
Layer:		14			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		145.0			
Formation End Depth:		150.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932767186			
Layer:		5			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat3:					
Mat3 Desc:					
Formation Top Depth:		48.0			
Formation End Depth:		65.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767191			
Layer:		10			
Color:		2			
General Color:		GREY			
Mat1:		10			
Most Common Material:		COARSE SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		107.0			
Formation End Depth:		109.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767182			
Layer:		1			
Color:					
General Color:					
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		1.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767190			
Layer:		9			
Color:		2			
General Color:		GREY			
Mat1:		08			
Most Common Material:		FINE SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		95.0			
Formation End Depth:		107.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767194			
Layer:		13			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Color:					
General Color:					
Mat1:		08			
Most Common Material:		FINE SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		135.0			
Formation End Depth:		145.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767193			
Layer:		12			
Color:		2			
General Color:		GREY			
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		122.0			
Formation End Depth:		135.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767192			
Layer:		11			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		109.0			
Formation End Depth:		122.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767185			
Layer:		4			
Color:		2			
General Color:		GREY			
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		46.0			
Formation End Depth:		48.0			
Formation End Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Method of Construction & Well Use</u>					
Method Construction ID:	966913822				
Method Construction Code:	2				
Method Construction:	Rotary (Convent.)				
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:	11052972				
Casing No:	1				
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:	930817427				
Layer:	1				
Material:	1				
Open Hole or Material:	STEEL				
Depth From:					
Depth To:	89				
Casing Diameter:	5				
Casing Diameter UOM:	inch				
Casing Depth UOM:	ft				
<u>Construction Record - Screen</u>					
Screen ID:	933392816				
Layer:	1				
Slot:	012				
Screen Top Depth:	89				
Screen End Depth:	92				
Screen Material:					
Screen Depth UOM:	ft				
Screen Diameter UOM:	inch				
Screen Diameter:	5				
<u>Results of Well Yield Testing</u>					
Pump Test ID:	996913822				
Pump Set At:					
Static Level:	47.0				
Final Level After Pumping:	85.0				
Recommended Pump Depth:	90.0				
Pumping Rate:	8.0				
Flowing Rate:					
Recommended Pump Rate:	6.0				
Levels UOM:	ft				
Rate UOM:	GPM				
Water State After Test Code:	1				
Water State After Test:	CLEAR				
Pumping Test Method:	2				
Pumping Duration HR:	1				
Pumping Duration MIN:	0				
Flowing:	No				
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:	934364728				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Test Type:		Recovery			
Test Duration:		15			
Test Level:		47.0			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		933996982			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		90.0			
Water Found Depth UOM:		ft			

Additional Detail(s) (Map)

Well Completed Date: 1962/10/16
Year Completed: 1962
Depth (m): 23.4696
Latitude: 43.8340193831969
Longitude: -79.5583569412486
Path: 690/6906778.pdf

Bore Hole Information

Bore Hole ID:	10497477	Elevation:	225.514755
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	o	East83:	615904.70
Code OB Desc:	Overburden	North83:	4854448.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	4
Date Completed:	16-Oct-1962 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	p4
Elevrc Desc:			
Location Source Date:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Improvement Location Source: Improvement Location Method: Source Revision Comment: Supplier Comment:					
<u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932735520			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		20.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932735521			
Layer:		2			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		20.0			
Formation End Depth:		64.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932735522			
Layer:		3			
Color:		2			
General Color:		GREY			
Mat1:		08			
Most Common Material:		FINE SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		64.0			
Formation End Depth:		72.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932735523			
Layer:		4			
Color:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
General Color:					
Mat1:		10			
Most Common Material:		COARSE SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		72.0			
Formation End Depth:		77.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966906778			
Method Construction Code:		8			
Method Construction:		Jetting			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11046047			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930809868			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		72			
Casing Diameter:		2			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		933388937			
Layer:		1			
Slot:		010			
Screen Top Depth:		72			
Screen End Depth:		77			
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		2			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996906778			
Pump Set At:					
Static Level:		55.0			
Final Level After Pumping:					
Recommended Pump Depth:		71.0			
Pumping Rate:		2.0			
Flowing Rate:					
Recommended Pump Rate:		2.0			
Levels UOM:		ft			
Rate UOM:		GPM			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Water State After Test Code: 1 Water State After Test: CLEAR Pumping Test Method: 1 Pumping Duration HR: 3 Pumping Duration MIN: 0 Flowing: No					
<u>Water Details</u>					
Water ID: 933990172 Layer: 1 Kind Code: 1 Kind: FRESH Water Found Depth: 72.0 Water Found Depth UOM: ft					
19	1 of 4	N/97.3	225.5 / -0.17	Dhuga Dentistry Professional Corporation 9581 Weston Road Unit 1 Vaughan ON L4H 3A5	GEN
Generator No: ON4680900 Status: Approval Years: 2016 Contam. Facility: No MHSW Facility: No SIC Code: 621210 SIC Description: OFFICES OF DENTISTS					
PO Box No: Country: Canada Choice of Contact: CO_OFFICIAL Co Admin: Phone No Admin:					
<u>Detail(s)</u>					
Waste Class: 312 Waste Class Desc: PATHOLOGICAL WASTES					
19	2 of 4	N/97.3	225.5 / -0.17	Dhuga Dentistry Professional Corporation 9581 Weston Road Unit 1 Vaughan ON L4H 3A5	GEN
Generator No: ON4680900 Status: Approval Years: 2015 Contam. Facility: No MHSW Facility: No SIC Code: 621210 SIC Description: OFFICES OF DENTISTS					
PO Box No: Country: Canada Choice of Contact: CO_OFFICIAL Co Admin: Amber Nagy-Ouellette Phone No Admin: 905.879.1600 Ext.					
<u>Detail(s)</u>					
Waste Class: 312 Waste Class Desc: PATHOLOGICAL WASTES					
19	3 of 4	N/97.3	225.5 / -0.17	Dhuga Dentistry Professional Corporation 9581 Weston Road Unit 1 Vaughan ON L4H 3A5	GEN
Generator No: ON4680900 Status: Registered Approval Years: As of Dec 2017 Contam. Facility: MHSW Facility: SIC Code: SIC Description:					
PO Box No: Country: Canada Choice of Contact: Co Admin: Phone No Admin:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Detail(s)</u>					
Waste Class:		312 P			
Waste Class Desc:		Pathological wastes			
<u>19</u>	4 of 4	N/97.3	225.5 / -0.17	Dhuga Dentistry Professional Corporation 9581 Weston Road Unit 1 Vaughan ON L4H 3A5	GEN
Generator No:	ON4680900			PO Box No:	
Status:	Registered			Country:	Canada
Approval Years:	As of Jul 2020			Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:					
SIC Description:					
<u>Detail(s)</u>					
Waste Class:		312 P			
Waste Class Desc:		Pathological wastes			
<u>20</u>	1 of 1	WSW/119.8	220.5 / -5.15	Home Alone Property Management Ltd. 141 Montcalm Blvd, Vaughan ON L4H 2N2	GEN
Generator No:	ON5817118			PO Box No:	
Status:				Country:	
Approval Years:	07,08			Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:	531310				
SIC Description:	Real Estate Property Managers				
<u>Detail(s)</u>					
Waste Class:		263			
Waste Class Desc:		ORGANIC LABORATORY CHEMICALS			
Waste Class:		148			
Waste Class Desc:		INORGANIC LABORATORY CHEMICALS			
<u>21</u>	1 of 1	SSE/132.7	222.9 / -2.83	lot 17 con 5 ON	WWIS
Well ID:	6923108			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Domestic			Date Received:	3/22/1995
Sec. Water Use:				Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	1663
Casing Material:				Form Version:	1
Audit No:	159722			Owner:	
Tag:				Street Name:	
Construction Method:				County:	YORK AND TORONT
Elevation (m):				Municipality:	VAUGHAN TOWN (VAUGHAN TWP)
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	017
Well Depth:				Concession:	05
Overburden/Bedrock:				Concession Name:	CON

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:				Easting NAD83: Northing NAD83: Zone: UTM Reliability:	
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/692\6923108.pdf			
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:		1994/11/02			
Year Completed:		1994			
Depth (m):		35.9664			
Latitude:		43.8312723286711			
Longitude:		-79.5561432883828			
Path:		692\6923108.pdf			
<u>Bore Hole Information</u>					
Bore Hole ID:		10513411		Elevation:	221.218048
DP2BR:				Elevrc:	
Spatial Status:		Improved		Zone:	17
Code OB:		o		East83:	616088.00
Code OB Desc:		Overburden		North83:	4854146.00
Open Hole:				Org CS:	N83
Cluster Kind:				UTMRC:	4
Date Completed:		02-Nov-1994 00:00:00		UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	
Elevrc Desc:					
Location Source Date:		As of Fall, 2005			
Improvement Location Source:		YPDT_Master_A.mdb from Conservation Authority Moraine Coalition			
Improvement Location Method:		Map			
Source Revision Comment:		Sourced from Hunter and Assoc. by CAMC. Source notes: HUNTER 2001 ORM AVI STUDY; Address Maps/OBM (UTM 1982)/Orthophoto (1999)/Parc; Original units in CAMC's source: UTM NAD83 UTMs and Gnd Elev updated by Hunter Brought into CAMC data on: 02/08/2002. Source ID: 6923108			
Supplier Comment:		Changed from lot/centroid coordinates.			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932817562			
Layer:		5			
Color:		2			
General Color:		GREY			
Mat1:		08			
Most Common Material:		FINE SAND			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		105.0			
Formation End Depth:		109.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932817561			
Layer:		4			
Color:		2			
General Color:		GREY			
Mat1:		08			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Most Common Material:		FINE SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		94.0			
Formation End Depth:		105.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932817563			
Layer:		6			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		109.0			
Formation End Depth:		118.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932817559			
Layer:		2			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		16.0			
Formation End Depth:		62.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932817558			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		28			
Mat2 Desc:		SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		16.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock Materials Interval</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Formation ID:		932817560			
Layer:		3			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		28			
Mat3 Desc:		SAND			
Formation Top Depth:		62.0			
Formation End Depth:		94.0			
Formation End Depth UOM:		ft			
 <u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		933215981			
Layer:		2			
Plug From:		20			
Plug To:		99			
Plug Depth UOM:		ft			
 <u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		933215980			
Layer:		1			
Plug From:		0			
Plug To:		20			
Plug Depth UOM:		ft			
 <u>Method of Construction & Well Use</u>					
Method Construction ID:		966923108			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
 <u>Pipe Information</u>					
Pipe ID:		11061981			
Casing No:		1			
Comment:					
Alt Name:					
 <u>Construction Record - Casing</u>					
Casing ID:		930827640			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		99			
Casing Diameter:		6			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
 <u>Construction Record - Screen</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Screen ID:		933398930			
Layer:		1			
Slot:		008			
Screen Top Depth:		99			
Screen End Depth:		105			
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		6			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996923108			
Pump Set At:					
Static Level:		26.0			
Final Level After Pumping:		100.0			
Recommended Pump Depth:		100.0			
Pumping Rate:		7.0			
Flowing Rate:					
Recommended Pump Rate:		7.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		2			
Pumping Duration HR:		1			
Pumping Duration MIN:		30			
Flowing:		No			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934876548			
Test Type:		Draw Down			
Test Duration:		45			
Test Level:		98.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934635723			
Test Type:		Draw Down			
Test Duration:		30			
Test Level:		96.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		935149840			
Test Type:		Draw Down			
Test Duration:		60			
Test Level:		100.0			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934361307			
Test Type:		Draw Down			
Test Duration:		15			
Test Level:		92.0			
Test Level UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Water Details</u>					
Water ID:	934005701				
Layer:	1				
Kind Code:	1				
Kind:	FRESH				
Water Found Depth:	94.0				
Water Found Depth UOM:	ft				
<u>22</u>	1 of 1	SE/135.3	223.8 / -1.87	9465 Weston Rd Woodbridge ON L4H 2E5	EHS
Order No:	20180801018			Nearest Intersection:	
Status:	C			Municipality:	
Report Type:	Standard Express Report			Client Prov/State:	ON
Report Date:	01-AUG-18			Search Radius (km):	.25
Date Received:	01-AUG-18			X:	-79.555429
Previous Site Name:				Y:	43.831396
Lot/Building Size:					
Additional Info Ordered:					
<u>23</u>	1 of 4	SE/136.1	223.8 / -1.92	9465 Weston Road Woodbridge ON L4H 2E6	EHS
Order No:	20200805054			Nearest Intersection:	
Status:	C			Municipality:	
Report Type:	RSC Report - Quote			Client Prov/State:	ON
Report Date:	10-AUG-20			Search Radius (km):	.3
Date Received:	05-AUG-20			X:	-79.55514788
Previous Site Name:				Y:	43.83145622
Lot/Building Size:					
Additional Info Ordered:	Fire Insur. Maps and/or Site Plans				
<u>23</u>	2 of 4	SE/136.1	223.8 / -1.92	9465 Weston Road Woodbridge ON L4H 2E6	EHS
Order No:	20200805054			Nearest Intersection:	
Status:	C			Municipality:	
Report Type:	RSC Report - Quote			Client Prov/State:	ON
Report Date:	10-AUG-20			Search Radius (km):	.3
Date Received:	05-AUG-20			X:	-79.55514788
Previous Site Name:				Y:	43.83145622
Lot/Building Size:					
Additional Info Ordered:	Fire Insur. Maps and/or Site Plans				
<u>23</u>	3 of 4	SE/136.1	223.8 / -1.92	9465 Weston Road Woodbridge ON L4H 2E6	EHS
Order No:	20200805054			Nearest Intersection:	
Status:	C			Municipality:	
Report Type:	RSC Report - Quote			Client Prov/State:	ON
Report Date:	10-AUG-20			Search Radius (km):	.3
Date Received:	05-AUG-20			X:	-79.55514788
Previous Site Name:				Y:	43.83145622
Lot/Building Size:					
Additional Info Ordered:	Fire Insur. Maps and/or Site Plans				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
23	4 of 4	SE/136.1	223.8 / -1.92	9465 Weston Road Woodbridge ON L4H 2E6	EHS
Order No: 20200805054				Nearest Intersection:	
Status: C				Municipality:	
Report Type: RSC Report - Quote				Client Prov/State: ON	
Report Date: 10-AUG-20				Search Radius (km): .3	
Date Received: 05-AUG-20				X: -79.55514788	
Previous Site Name:				Y: 43.83145622	
Lot/Building Size:					
Additional Info Ordered:		Fire Insur. Maps and/or Site Plans			
24	1 of 1	SE/151.9	223.9 / -1.83	9465 WESTON RD WOODBIDGE ON	WWIS
Well ID: 7320102				Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use: Test Hole				Date Received: 10/15/2018	
Sec. Water Use: Monitoring				Selected Flag: True	
Final Well Status: Test Hole				Abandonment Rec:	
Water Type:				Contractor: 7323	
Casing Material:				Form Version: 7	
Audit No: Z271871				Owner:	
Tag: A182146				Street Name: 9465 WESTON RD	
Construction Method:				County: YORK AND TORONT	
Elevation (m):				Municipality: VAUGHAN TOWN (VAUGHAN TWP)	
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):					
Additional Detail(s) (Map)					
Well Completed Date: 2018/08/03					
Year Completed: 2018					
Depth (m): 8.5344					
Latitude: 43.8312875438124					
Longitude: -79.5552101092584					
Path:					
Bore Hole Information					
Bore Hole ID: 1007297765				Elevation:	
DP2BR:				Elevrc:	
Spatial Status:				Zone: 17	
Code OB:				East83: 616163.00	
Code OB Desc:				North83: 4854149.00	
Open Hole:				Org CS: UTM83	
Cluster Kind:				UTMRC: 4	
Date Completed: 03-Aug-2018 00:00:00				UTMRC Desc: margin of error : 30 m - 100 m	
Remarks:				Location Method: wwr	
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		1007537457			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		28.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		1007537465			
Layer:		1			
Plug From:		0			
Plug To:		16			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		1007537466			
Layer:		2			
Plug From:		16			
Plug To:		28			
Plug Depth UOM:		ft			
<u>Method of Construction & Well</u>					
<u>Use</u>					
Method Construction ID:		1007537464			
Method Construction Code:		6			
Method Construction:		Boring			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1007537456			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Screen</u>					
Screen ID:		1007537461			
Layer:		1			
Slot:		.10			
Screen Top Depth:		18			
Screen End Depth:		28			
Screen Material:		5			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		2.25			
<u>Water Details</u>					
Water ID:		1007537459			
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		ft			
<u>Hole Diameter</u>					
Hole ID:		1007537458			
Diameter:		6.0			
Depth From:		0.0			
Depth To:		28.0			
Hole Depth UOM:		ft			
Hole Diameter UOM:		inch			
25	1 of 1	SSW/152.8	221.2 / -4.48	9401 Weston Rd Woodbridge ON L4L 1A6	RSC
RSC ID:				Cert Date:	
RA No:				Cert Prop Use No:	
RSC Type:				Intended Prop Use:	
Curr Property Use:				Qual Person Name:	
Ministry District:		York Durham		Stratified (Y/N):	
Filing Date:		05/24/00		Audit (Y/N):	
Date Ack:				Entire Leg Prop. (Y/N):	
Date Returned:		06/30/00		Accuracy Estimate:	
Restoration Type:				Telephone:	
Soil Type:				Fax:	
Criteria:				Email:	
CPU Issued Sect					
1686:					
Asmt Roll No:					
Prop ID No (PIN):					
Property Municipal Address:					
Mailing Address:					
Latitude & Latitude:					
UTM Coordinates:					
Consultant:		Unknown			
Legal Desc:					
Measurement Method:					
Applicable Standards:					
RSC PDF:					
26	1 of 1	W/160.7	224.2 / -1.45	Enbridge Gas Distribution 88-90 Laval St, Woodbridge Vaughan ON	SPL
Ref No:		3224-9CDL5L		Discharger Report:	
Site No:				Material Group:	
Incident Dt:		2013/10/11		Health/Env Conseq:	
Year:				Client Type:	
Incident Cause:		Leak/Break		Sector Type:	Valve/Fitting/Piping
Incident Event:				Agency Involved:	
Contaminant Code:		35		Nearest Watercourse:	
Contaminant Name:		NATURAL GAS (METHANE)		Site Address:	88-90 Laval St, Woodbridge
Contaminant Limit 1:				Site District Office:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Confirmed Nature of Impact: Air Pollution Receiving Medium: Receiving Env: MOE Response: Referral to others Dt MOE Arvl on Scn: MOE Reported Dt: 2013/10/11 Dt Document Closed: 2013/11/01 Incident Reason: Operator/Human Error Site Name: Residential Townhouse<UNOFFICIAL> Site County/District: Site Geo Ref Meth: Incident Summary: TSSA: Meter damage, safe Contaminant Qty: 0 other - see incident description					
Site Postal Code: Site Region: Site Municipality: Vaughan Site Lot: Site Conc: Northing: Easting: Site Geo Ref Accu: Site Map Datum: SAC Action Class: TSSA - Fuel Safety Branch - Hydrocarbon Fuel Release/Spill Source Type:					
27	1 of 2	ENE/166.4	222.5 / -3.15	TURF SPECIALTIES 82 JOHNSTOWN CRES WOODBRIIDGE ON L4H2K9	PES
Detail Licence No: 02-01-04711-0 Licence No: 04711 Status: Approval Date: Report Source: Legacy Licenses (Excluding TS) Licence Type: Operator Licence Type Code: 02 Licence Class: 01 Licence Control: 0 Latitude: Longitude: Lot: Concession: Region: 3 District: County: 69 Trade Name: PDF Link: PDF Site Location:					
Operator Box: Operator Class: Operator No: Operator Type: Oper Area Code: 905 Oper Phone No: 3032949 Operator Ext: Operator Lot: Oper Concession: Operator Region: 3 Operator District: Operator County: 69 Op Municipality: Post Office Box: MOE District: SWP Area Name:					
27	2 of 2	ENE/166.4	222.5 / -3.15	TURF SPECIALTIES 82 JOHNSTOWN CRES WOODBRIIDGE ON L4H2K9	PES
Detail Licence No: Licence No: 04711 Status: Approval Date: Report Source: Legacy Licenses (Excluding TS) Licence Type: Operator Licence Type Code: 01 Licence Class: 06 Licence Control: Latitude: Longitude: Lot: Concession: Region: District: County:					
Operator Box: Operator Class: Operator No: Operator Type: Oper Area Code: 905 Oper Phone No: 3032949 Operator Ext: Operator Lot: Oper Concession: Operator Region: Operator District: Operator County: Op Municipality: Post Office Box: MOE District: SWP Area Name:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Trade Name: PDF Link: PDF Site Location:					
28	1 of 1	NW/183.3	226.9 / 1.16	lot 18 con 5 ON	WWIS
Well ID: 6906660		Data Entry Status:			
Construction Date:		Data Src: 1			
Primary Water Use: Domestic		Date Received: 2/14/1958			
Sec. Water Use: 0		Selected Flag: True			
Final Well Status: Water Supply		Abandonment Rec:			
Water Type:		Contractor: 1622			
Casing Material:		Form Version: 1			
Audit No:		Owner:			
Tag:		Street Name:			
Construction Method:		County: YORK AND TORONT			
Elevation (m):		Municipality: VAUGHAN TOWN (VAUGHAN TWP)			
Elevation Reliability:		Site Info:			
Depth to Bedrock:		Lot: 018			
Well Depth:		Concession: 05			
Overburden/Bedrock:		Concession Name: CON			
Pump Rate:		Easting NAD83:			
Static Water Level:		Northing NAD83:			
Flowing (Y/N):		Zone:			
Flow Rate:		UTM Reliability:			
Clear/Cloudy:					
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/690\6906660.pdf			
Additional Detail(s) (Map)					
Well Completed Date: 1957/06/10					
Year Completed: 1957					
Depth (m): 30.48					
Latitude: 43.8348913738386					
Longitude: -79.5582488769865					
Path: 690\6906660.pdf					
Bore Hole Information					
Bore Hole ID: 10497359		Elevation: 224.058959			
DP2BR:		Elevrc:			
Spatial Status:		Zone: 17			
Code OB: o		East83: 615911.70			
Code OB Desc: Overburden		North83: 4854545.00			
Open Hole:		Org CS:			
Cluster Kind:		UTMRC: 9			
Date Completed: 10-Jun-1957 00:00:00		UTMRC Desc: unknown UTM			
Remarks:		Location Method: p9			
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
Overburden and Bedrock Materials Interval					
Formation ID:		932734951			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Layer:		1			
Color:					
General Color:					
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		1.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932734953			
Layer:		3			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		20.0			
Formation End Depth:		70.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932734952			
Layer:		2			
Color:					
General Color:					
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		1.0			
Formation End Depth:		20.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932734955			
Layer:		5			
Color:					
General Color:					
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:		09			
Mat2 Desc:		MEDIUM SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		90.0			
Formation End Depth:		100.0			
Formation End Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734954			
Layer:		4			
Color:					
General Color:					
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		70.0			
Formation End Depth:		90.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966906660			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11045929			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930809730			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		96			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		933388887			
Layer:		1			
Slot:		008			
Screen Top Depth:		96			
Screen End Depth:		100			
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		4			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996906660			
Pump Set At:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Static Level:		40.0			
Final Level After Pumping:		60.0			
Recommended Pump Depth:					
Pumping Rate:		3.0			
Flowing Rate:					
Recommended Pump Rate:					
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		24			
Pumping Duration MIN:		0			
Flowing:		No			
<u>Water Details</u>					
Water ID:		933990064			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		100.0			
Water Found Depth UOM:		ft			
29	1 of 1	S/209.9	220.9 / -4.80	lot 36 con 5 ON	WWIS
Well ID:		6919834		Data Entry Status:	
Construction Date:				Data Src: 1	
Primary Water Use:		Domestic		Date Received: 9/14/1988	
Sec. Water Use:				Selected Flag: True	
Final Well Status:		Water Supply		Abandonment Rec:	
Water Type:				Contractor: 3656	
Casing Material:				Form Version: 1	
Audit No:		39205		Owner:	
Tag:				Street Name:	
Construction Method:				County: YORK AND TORONT	
Elevation (m):				Municipality: VAUGHAN TOWN (VAUGHAN TWP)	
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot: 036	
Well Depth:				Concession: 05	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/691\6919834.pdf			
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:		1988/09/02			
Year Completed:		1988			
Depth (m):		67.056			
Latitude:		43.8304075651174			
Longitude:		-79.5568233175794			
Path:		691\6919834.pdf			
<u>Bore Hole Information</u>					
Bore Hole ID:		10510157		Elevation: 219.327987	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
DP2BR:	209.00			Elevrc:	
Spatial Status:				Zone:	17
Code OB:	r			East83:	616035.00
Code OB Desc:	Bedrock			North83:	4854049.00
Open Hole:				Org CS:	
Cluster Kind:				UTMRC:	3
Date Completed:	02-Sep-1988 00:00:00			UTMRC Desc:	margin of error : 10 - 30 m
Remarks:				Location Method:	gps
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932798764				
Layer:	4				
Color:	2				
General Color:	GREY				
Mat1:	05				
Most Common Material:	CLAY				
Mat2:	34				
Mat2 Desc:	TILL				
Mat3:	66				
Mat3 Desc:	DENSE				
Formation Top Depth:	112.0				
Formation End Depth:	180.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932798761				
Layer:	1				
Color:	6				
General Color:	BROWN				
Mat1:	05				
Most Common Material:	CLAY				
Mat2:	34				
Mat2 Desc:	TILL				
Mat3:	66				
Mat3 Desc:	DENSE				
Formation Top Depth:	0.0				
Formation End Depth:	12.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932798763				
Layer:	3				
Color:	2				
General Color:	GREY				
Mat1:	06				
Most Common Material:	SILT				
Mat2:	66				
Mat2 Desc:	DENSE				
Mat3:					
Mat3 Desc:					
Formation Top Depth:	82.0				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Formation End Depth:		112.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932798766			
Layer:		6			
Color:		2			
General Color:		GREY			
Mat1:		34			
Most Common Material:		TILL			
Mat2:		66			
Mat2 Desc:		DENSE			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		197.0			
Formation End Depth:		209.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932798767			
Layer:		7			
Color:		2			
General Color:		GREY			
Mat1:		17			
Most Common Material:		SHALE			
Mat2:		66			
Mat2 Desc:		DENSE			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		209.0			
Formation End Depth:		220.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932798762			
Layer:		2			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		34			
Mat2 Desc:		TILL			
Mat3:		66			
Mat3 Desc:		DENSE			
Formation Top Depth:		12.0			
Formation End Depth:		82.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932798765			
Layer:		5			
Color:		6			
General Color:		BROWN			
Mat1:		28			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Most Common Material:		SAND			
Mat2:		84			
Mat2 Desc:		SILTY			
Mat3:		66			
Mat3 Desc:		DENSE			
Formation Top Depth:		180.0			
Formation End Depth:		197.0			
Formation End Depth UOM:		ft			
 <u>Method of Construction & Well Use</u>					
Method Construction ID:		966919834			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
 <u>Pipe Information</u>					
Pipe ID:		11058727			
Casing No:		1			
Comment:					
Alt Name:					
 <u>Construction Record - Casing</u>					
Casing ID:		930823914			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		212			
Casing Diameter:		6			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
 <u>Results of Well Yield Testing</u>					
Pump Test ID:		996919834			
Pump Set At:					
Static Level:		80.0			
Final Level After Pumping:		140.0			
Recommended Pump Depth:		180.0			
Pumping Rate:		12.0			
Flowing Rate:					
Recommended Pump Rate:		7.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		2			
Pumping Duration HR:		2			
Pumping Duration MIN:		15			
Flowing:		No			
 <u>Draw Down & Recovery</u>					
Pump Test Detail ID:		935150756			
Test Type:					
Test Duration:		60			
Test Level:		140.0			
Test Level UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:	934878122				
Test Type:					
Test Duration:	45				
Test Level:	140.0				
Test Level UOM:	ft				
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:	934628342				
Test Type:					
Test Duration:	30				
Test Level:	120.0				
Test Level UOM:	ft				
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:	934361782				
Test Type:					
Test Duration:	15				
Test Level:	100.0				
Test Level UOM:	ft				
<u>Water Details</u>					
Water ID:	934002770				
Layer:	1				
Kind Code:	1				
Kind:	FRESH				
Water Found Depth:	217.0				
Water Found Depth UOM:	ft				
<u>30</u>	1 of 1	WSW/266.6	219.9 / -5.76	1 LUCERNE DRIVE, BLOCK 100, UNIT 7, WOODBIDGE ON	INC
Incident No:	1808792			Any Health Impact:	Unknown
Incident ID:				Any Enviro Impact:	Unknown
Instance No:				Service Interrupted:	Unknown
Status Code:				Was Prop Damaged:	Unknown
Attribute Category:	FS-Perform L1 Incident Insp			Reside App. Type:	
Context:				Commer App. Type:	
Date of Occurrence:	2016/02/17 00:00:00			Indus App. Type:	
Time of Occurrence:	12:00:00			Institut App. Type:	
Incident Created On:				Venting Type:	
Instance Creation Dt:				Vent Conn Mater:	
Instance Install Dt:				Vent Chimney Mater:	
Occur Insp Start Date:	2016/02/17 00:00:00			Pipeline Type:	
Approx Quant Rel:				Pipeline Involved:	
Tank Capacity:				Pipe Material:	
Fuels Occur Type:	CO Release			Depth Ground Cover:	
Fuel Type Involved:	Natural Gas			Regulator Location:	
Enforcement Policy:	NULL			Regulator Type:	
Prc Escalation Req:	NULL			Operation Pressure:	
Tank Material Type:				Liquid Prop Make:	
Tank Storage Type:				Liquid Prop Model:	
Tank Location Type:				Liquid Prop Serial No:	
Pump Flow Rate Cap:				Liquid Prop Notes:	
Task No:	6055177			Equipment Type:	
Notes:				Equipment Model:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Drainage System: Sub Surface Contam.: Aff Prop Use Water: Contam. Migrated: Contact Natural Env: Incident Location: Occurence Narrative: Operation Type Involved: Item: Item Description: Device Installed Location:		1 LUCERNE DRIVE, BLOCK 100, UNIT 7, WOODBRIDGE - CO RELEASE unable to confirm CO Private Dwelling		Serial No: Cylinder Capacity: Cylinder Cap Units: Cylinder Mat Type: Near Body of Water:	
31	1 of 1	WSW/267.4	218.9 / -6.81	L.C. Adam Apparell 127 Bologna Rd Woodbridge ON L4H 2M6	SCT
Established: Plant Size (ft²): Employment:		01-JAN-94 1600			
--Details-- Description: SIC/NAICS Code:		Clothing Accessories and Other Clothing Manufacturing 315990			
32	1 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	GEN
Generator No: Status: Approval Years: Contam. Facility: MHSW Facility: SIC Code: SIC Description:		ON6162584 07,08 611110 Elementary and Secondary Schools		PO Box No: Country: Choice of Contact: Co Admin: Phone No Admin:	
<u>Detail(s)</u>					
Waste Class: Waste Class Desc:		145 PAINT/PIGMENT/COATING RESIDUES			
Waste Class: Waste Class Desc:		146 OTHER SPECIFIED INORGANICS			
Waste Class: Waste Class Desc:		148 INORGANIC LABORATORY CHEMICALS			
Waste Class: Waste Class Desc:		211 AROMATIC SOLVENTS			
Waste Class: Waste Class Desc:		212 ALIPHATIC SOLVENTS			
Waste Class: Waste Class Desc:		213 PETROLEUM DISTILLATES			
Waste Class: Waste Class Desc:		251 OIL SKIMMINGS & SLUDGES			
Waste Class: Waste Class Desc:		252 WASTE OILS & LUBRICANTS			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>263</div> <div>ORGANIC LABORATORY CHEMICALS</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>264</div> <div>PHOTOPROCESSING WASTES</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>331</div> <div>WASTE COMPRESSED GASES</div> </div>					
32	2 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	GEN
<div> <div>Generator No:</div> <div>Status:</div> <div>Approval Years:</div> <div>Contam. Facility:</div> <div>MHSW Facility:</div> <div>SIC Code:</div> <div>SIC Description:</div> <div>ON6162584</div> <div>2009</div> <div>611110</div> <div>Elementary and Secondary Schools</div> </div> <div> <div>PO Box No:</div> <div>Country:</div> <div>Choice of Contact:</div> <div>Co Admin:</div> <div>Phone No Admin:</div> </div>					
<u>Detail(s)</u>					
<div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>145</div> <div>PAINT/PIGMENT/COATING RESIDUES</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>146</div> <div>OTHER SPECIFIED INORGANICS</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>148</div> <div>INORGANIC LABORATORY CHEMICALS</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>211</div> <div>AROMATIC SOLVENTS</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>212</div> <div>ALIPHATIC SOLVENTS</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>213</div> <div>PETROLEUM DISTILLATES</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>251</div> <div>OIL SKIMMINGS & SLUDGES</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>252</div> <div>WASTE OILS & LUBRICANTS</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>263</div> <div>ORGANIC LABORATORY CHEMICALS</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>264</div> <div>PHOTOPROCESSING WASTES</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>331</div> <div>WASTE COMPRESSED GASES</div> </div>					
32	3 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	GEN
<div> <div>Generator No:</div> <div>Status:</div> <div>ON6162584</div> </div> <div> <div>PO Box No:</div> <div>Country:</div> </div>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Approval Years: Contam. Facility: MHSW Facility: SIC Code: SIC Description:	2010 611110			Choice of Contact: Co Admin: Phone No Admin: Elementary and Secondary Schools	
<u>Detail(s)</u>					
Waste Class:		251			
Waste Class Desc:		OIL SKIMMINGS & SLUDGES			
Waste Class:		331			
Waste Class Desc:		WASTE COMPRESSED GASES			
Waste Class:		145			
Waste Class Desc:		PAINT/PIGMENT/COATING RESIDUES			
Waste Class:		252			
Waste Class Desc:		WASTE OILS & LUBRICANTS			
Waste Class:		264			
Waste Class Desc:		PHOTOPROCESSING WASTES			
Waste Class:		213			
Waste Class Desc:		PETROLEUM DISTILLATES			
Waste Class:		146			
Waste Class Desc:		OTHER SPECIFIED INORGANICS			
Waste Class:		211			
Waste Class Desc:		AROMATIC SOLVENTS			
Waste Class:		148			
Waste Class Desc:		INORGANIC LABORATORY CHEMICALS			
Waste Class:		212			
Waste Class Desc:		ALIPHATIC SOLVENTS			
Waste Class:		263			
Waste Class Desc:		ORGANIC LABORATORY CHEMICALS			

<u>32</u>	4 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	GEN
Generator No: Status: Approval Years: Contam. Facility: MHSW Facility: SIC Code: SIC Description:	ON6162584 2011 611110			PO Box No: Country: Choice of Contact: Co Admin: Phone No Admin: Elementary and Secondary Schools	
<u>Detail(s)</u>					
Waste Class:		252			
Waste Class Desc:		WASTE OILS & LUBRICANTS			
Waste Class:		148			
Waste Class Desc:		INORGANIC LABORATORY CHEMICALS			
Waste Class:		211			
Waste Class Desc:		AROMATIC SOLVENTS			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Waste Class:		145			
Waste Class Desc:		PAINT/PIGMENT/COATING RESIDUES			
Waste Class:		212			
Waste Class Desc:		ALIPHATIC SOLVENTS			
Waste Class:		251			
Waste Class Desc:		OIL SKIMMINGS & SLUDGES			
Waste Class:		213			
Waste Class Desc:		PETROLEUM DISTILLATES			
Waste Class:		331			
Waste Class Desc:		WASTE COMPRESSED GASES			
Waste Class:		263			
Waste Class Desc:		ORGANIC LABORATORY CHEMICALS			
Waste Class:		146			
Waste Class Desc:		OTHER SPECIFIED INORGANICS			
Waste Class:		264			
Waste Class Desc:		PHOTOPROCESSING WASTES			

32	5 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	GEN
Generator No:	ON6162584			PO Box No:	
Status:				Country:	
Approval Years:	2012			Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:	611110				
SIC Description:	Elementary and Secondary Schools				
<u>Detail(s)</u>					
Waste Class:		251			
Waste Class Desc:		OIL SKIMMINGS & SLUDGES			
Waste Class:		212			
Waste Class Desc:		ALIPHATIC SOLVENTS			
Waste Class:		145			
Waste Class Desc:		PAINT/PIGMENT/COATING RESIDUES			
Waste Class:		146			
Waste Class Desc:		OTHER SPECIFIED INORGANICS			
Waste Class:		213			
Waste Class Desc:		PETROLEUM DISTILLATES			
Waste Class:		252			
Waste Class Desc:		WASTE OILS & LUBRICANTS			
Waste Class:		264			
Waste Class Desc:		PHOTOPROCESSING WASTES			
Waste Class:		331			
Waste Class Desc:		WASTE COMPRESSED GASES			
Waste Class:		148			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Waste Class Desc:		INORGANIC LABORATORY CHEMICALS			
Waste Class:		263			
Waste Class Desc:		ORGANIC LABORATORY CHEMICALS			
Waste Class:		211			
Waste Class Desc:		AROMATIC SOLVENTS			
32	6 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	GEN
Generator No:		ON6162584		PO Box No:	
Status:				Country:	
Approval Years:		2013		Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:		611110			
SIC Description:		ELEMENTARY AND SECONDARY SCHOOLS			
<u>Detail(s)</u>					
Waste Class:		150			
Waste Class Desc:		INERT INORGANIC WASTES			
Waste Class:		264			
Waste Class Desc:		PHOTOPROCESSING WASTES			
Waste Class:		252			
Waste Class Desc:		WASTE OILS & LUBRICANTS			
Waste Class:		146			
Waste Class Desc:		OTHER SPECIFIED INORGANICS			
Waste Class:		331			
Waste Class Desc:		WASTE COMPRESSED GASES			
Waste Class:		211			
Waste Class Desc:		AROMATIC SOLVENTS			
Waste Class:		212			
Waste Class Desc:		ALIPHATIC SOLVENTS			
Waste Class:		148			
Waste Class Desc:		INORGANIC LABORATORY CHEMICALS			
Waste Class:		251			
Waste Class Desc:		OIL SKIMMINGS & SLUDGES			
Waste Class:		145			
Waste Class Desc:		PAINT/PIGMENT/COATING RESIDUES			
Waste Class:		213			
Waste Class Desc:		PETROLEUM DISTILLATES			
Waste Class:		263			
Waste Class Desc:		ORGANIC LABORATORY CHEMICALS			
32	7 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	GEN
Generator No:		ON6162584		PO Box No:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Status:				Country:	Canada
Approval Years:	2016			Choice of Contact:	CO_OFFICIAL
Contam. Facility:	No			Co Admin:	Joseph McLoughlin
MHSW Facility:	No			Phone No Admin:	905-713-1211 Ext.12387
SIC Code:	611110				
SIC Description:		ELEMENTARY AND SECONDARY SCHOOLS			
<u>Detail(s)</u>					
Waste Class:		148			
Waste Class Desc:		INORGANIC LABORATORY CHEMICALS			
Waste Class:		211			
Waste Class Desc:		AROMATIC SOLVENTS			
Waste Class:		331			
Waste Class Desc:		WASTE COMPRESSED GASES			
Waste Class:		145			
Waste Class Desc:		PAINT/PIGMENT/COATING RESIDUES			
Waste Class:		212			
Waste Class Desc:		ALIPHATIC SOLVENTS			
Waste Class:		150			
Waste Class Desc:		INERT INORGANIC WASTES			
Waste Class:		252			
Waste Class Desc:		WASTE OILS & LUBRICANTS			
Waste Class:		264			
Waste Class Desc:		PHOTOPROCESSING WASTES			
Waste Class:		263			
Waste Class Desc:		ORGANIC LABORATORY CHEMICALS			
Waste Class:		146			
Waste Class Desc:		OTHER SPECIFIED INORGANICS			
Waste Class:		251			
Waste Class Desc:		OIL SKIMMINGS & SLUDGES			
Waste Class:		213			
Waste Class Desc:		PETROLEUM DISTILLATES			

32	8 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	GEN
<hr/>					
Generator No:	ON6162584			PO Box No:	
Status:				Country:	Canada
Approval Years:	2015			Choice of Contact:	CO_OFFICIAL
Contam. Facility:	No			Co Admin:	Joseph McLoughlin
MHSW Facility:	No			Phone No Admin:	905-713-1211 Ext.12387
SIC Code:	611110				
SIC Description:	ELEMENTARY AND SECONDARY SCHOOLS				
 <u>Detail(s)</u>					
Waste Class:	148				
Waste Class Desc:	INORGANIC LABORATORY CHEMICALS				
Waste Class:	252				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Waste Class Desc:		WASTE OILS & LUBRICANTS			
Waste Class:		146			
Waste Class Desc:		OTHER SPECIFIED INORGANICS			
Waste Class:		212			
Waste Class Desc:		ALIPHATIC SOLVENTS			
Waste Class:		331			
Waste Class Desc:		WASTE COMPRESSED GASES			
Waste Class:		211			
Waste Class Desc:		AROMATIC SOLVENTS			
Waste Class:		150			
Waste Class Desc:		INERT INORGANIC WASTES			
Waste Class:		264			
Waste Class Desc:		PHOTOPROCESSING WASTES			
Waste Class:		145			
Waste Class Desc:		PAINT/PIGMENT/COATING RESIDUES			
Waste Class:		251			
Waste Class Desc:		OIL SKIMMINGS & SLUDGES			
Waste Class:		213			
Waste Class Desc:		PETROLEUM DISTILLATES			
Waste Class:		263			
Waste Class Desc:		ORGANIC LABORATORY CHEMICALS			

32	9 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	GEN
Generator No:	ON6162584			PO Box No:	
Status:				Country:	Canada
Approval Years:	2014			Choice of Contact:	CO_OFFICIAL
Contam. Facility:	No			Co Admin:	Joseph McLoughlin
MHSW Facility:	No			Phone No Admin:	905-713-1211 Ext.12387
SIC Code:	611110				
SIC Description:	ELEMENTARY AND SECONDARY SCHOOLS				

Detail(s)

Waste Class:	252
Waste Class Desc:	WASTE OILS & LUBRICANTS
Waste Class:	331
Waste Class Desc:	WASTE COMPRESSED GASES
Waste Class:	150
Waste Class Desc:	INERT INORGANIC WASTES
Waste Class:	264
Waste Class Desc:	PHOTOPROCESSING WASTES
Waste Class:	145
Waste Class Desc:	PAINT/PIGMENT/COATING RESIDUES
Waste Class:	212
Waste Class Desc:	ALIPHATIC SOLVENTS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Waste Class: Waste Class Desc:		148 INORGANIC LABORATORY CHEMICALS			
Waste Class: Waste Class Desc:		213 PETROLEUM DISTILLATES			
Waste Class: Waste Class Desc:		211 AROMATIC SOLVENTS			
Waste Class: Waste Class Desc:		263 ORGANIC LABORATORY CHEMICALS			
Waste Class: Waste Class Desc:		146 OTHER SPECIFIED INORGANICS			
Waste Class: Waste Class Desc:		251 OIL SKIMMINGS & SLUDGES			
32	10 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	GEN
Generator No: Status: Approval Years: Contam. Facility: MHSW Facility: SIC Code: SIC Description:	ON6162584 Registered As of Dec 2018		PO Box No: Country: Choice of Contact: Co Admin: Phone No Admin:	Canada	
<u>Detail(s)</u>					
Waste Class: Waste Class Desc:	145 H Wastes from the use of pigments, coatings and paints				
Waste Class: Waste Class Desc:	146 L Other specified inorganic sludges, slurries or solids				
Waste Class: Waste Class Desc:	146 T Other specified inorganic sludges, slurries or solids				
Waste Class: Waste Class Desc:	148 B Misc. wastes and inorganic chemicals				
Waste Class: Waste Class Desc:	148 C Misc. wastes and inorganic chemicals				
Waste Class: Waste Class Desc:	148 I Misc. wastes and inorganic chemicals				
Waste Class: Waste Class Desc:	148 L Misc. wastes and inorganic chemicals				
Waste Class: Waste Class Desc:	148 R Misc. wastes and inorganic chemicals				
Waste Class: Waste Class Desc:	150 L Inert organic wastes				
Waste Class: Waste Class Desc:	211 H Aromatic solvents and residues				
Waste Class: Waste Class Desc:	212 B Aliphatic solvents and residues				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Waste Class:		212 H			
Waste Class Desc:		Aliphatic solvents and residues			
Waste Class:		212 L			
Waste Class Desc:		Aliphatic solvents and residues			
Waste Class:		213 I			
Waste Class Desc:		Petroleum distillates			
Waste Class:		252 L			
Waste Class Desc:		Waste crankcase oils and lubricants			
Waste Class:		263 I			
Waste Class Desc:		Misc. waste organic chemicals			
Waste Class:		264 T			
Waste Class Desc:		Photoprocessing wastes			
Waste Class:		331 I			
Waste Class Desc:		Waste compressed gases including cylinders			

[32](#)

11 of 12

NW/290.4

229.9 / 4.21

York Catholic District School Board
St Jean de Brebeuf CHS 2 Davos Road
Vaughan ON L4H 2Y1

GEN

Generator No:

ON6162584

Status:

Registered

Approval Years:

As of Jul 2020

Contam. Facility:

MHSW Facility:

SIC Code:

SIC Description:

PO Box No:

Country:

Canada

Choice of Contact:

Co Admin:

Phone No Admin:

Detail(s)

Waste Class:

150 L

Waste Class Desc:

Inert organic wastes

Waste Class:

331 I

Waste Class Desc:

Waste compressed gases including cylinders

Waste Class:

213 I

Waste Class Desc:

Petroleum distillates

Waste Class:

146 T

Waste Class Desc:

Other specified inorganic sludges, slurries or solids

Waste Class:

148 R

Waste Class Desc:

Misc. wastes and inorganic chemicals

Waste Class:

263 I

Waste Class Desc:

Misc. waste organic chemicals

Waste Class:

146 L

Waste Class Desc:

Other specified inorganic sludges, slurries or solids

Waste Class:

252 L

Waste Class Desc:

Waste crankcase oils and lubricants

Waste Class:

264 T

Waste Class Desc:

Photoprocessing wastes

Waste Class:

148 B

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Waste Class Desc:		Misc. wastes and inorganic chemicals			
Waste Class:		211 H			
Waste Class Desc:		Aromatic solvents and residues			
Waste Class:		212 H			
Waste Class Desc:		Aliphatic solvents and residues			
Waste Class:		212 L			
Waste Class Desc:		Aliphatic solvents and residues			
Waste Class:		148 C			
Waste Class Desc:		Misc. wastes and inorganic chemicals			
Waste Class:		145 H			
Waste Class Desc:		Wastes from the use of pigments, coatings and paints			
Waste Class:		148 L			
Waste Class Desc:		Misc. wastes and inorganic chemicals			
Waste Class:		148 I			
Waste Class Desc:		Misc. wastes and inorganic chemicals			
Waste Class:		212 B			
Waste Class Desc:		Aliphatic solvents and residues			
32	12 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	GEN
Generator No:		ON6162584		PO Box No:	
Status:		Registered		Country: Canada	
Approval Years:		As of Aug 2021		Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:					
SIC Description:					
Detail(s)					
Waste Class:		213 I			
Waste Class Desc:		Petroleum distillates			
Waste Class:		252 L			
Waste Class Desc:		Waste crankcase oils and lubricants			
Waste Class:		212 H			
Waste Class Desc:		Aliphatic solvents and residues			
Waste Class:		146 L			
Waste Class Desc:		Other specified inorganic sludges, slurries or solids			
Waste Class:		148 B			
Waste Class Desc:		Misc. wastes and inorganic chemicals			
Waste Class:		212 L			
Waste Class Desc:		Aliphatic solvents and residues			
Waste Class:		212 B			
Waste Class Desc:		Aliphatic solvents and residues			
Waste Class:		145 H			
Waste Class Desc:		Wastes from the use of pigments, coatings and paints			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Waste Class: Waste Class Desc:		148 R Misc. wastes and inorganic chemicals			
Waste Class: Waste Class Desc:		150 L Inert organic wastes			
Waste Class: Waste Class Desc:		148 I Misc. wastes and inorganic chemicals			
Waste Class: Waste Class Desc:		331 I Waste compressed gases including cylinders			
Waste Class: Waste Class Desc:		148 L Misc. wastes and inorganic chemicals			
Waste Class: Waste Class Desc:		146 T Other specified inorganic sludges, slurries or solids			
Waste Class: Waste Class Desc:		211 H Aromatic solvents and residues			
Waste Class: Waste Class Desc:		148 C Misc. wastes and inorganic chemicals			
Waste Class: Waste Class Desc:		264 T Photoprocessing wastes			
Waste Class: Waste Class Desc:		263 I Misc. waste organic chemicals			

Unplottable Summary

Total: **32** Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
CA	SINGLAND HOLDINGS LTD.	WESTON RD., VELLORE WOODS SUB.	VAUGHAN CITY ON	
CA	REALTY GROWTH & REVENUE FUND GEN. PARTNE	LOT 16&17, CONC.7/BARKER SUBD.	VAUGHAN CITY ON	
CA	SINGLAND HOLDINGS LTD.	PT.LOTS 16-20/C-5, WESTON RD.	VAUGHAN CITY ON	
CA	SINGLAND HOLDINGS LTD.	WESTON RD., PT.LOT 16, CON. 5	VAUGHAN CITY ON	
CA	MAJORSOUTH DEVELOPMENT CORP.	WESTON RD., VELLORE WOODS SUB.	VAUGHAN CITY ON	
CA		Lot 16, Concession 5	Vaughan ON	
CA		Lot 16, Concession 5	Vaughan ON	
CA	Vellore Village - Phase 3	Part of Lot 17 and 18, Concession 6	Vaughan ON	
CA	Vellore Village - Phase 3	Part of Lot 17 and 18, Concession 6	Vaughan ON	
CA		Part of Lot 16 and 17, Concession 5	Vaughan ON	
CA	Vellore Woods Community	Pt. Lot 16 & Pt. S. half of Lot 17, Con. 5	Vaughan ON	
CA		Part of Lot 16 and 17, Concession 5	Vaughan ON	
CA	Vellore Woods Community	Pt. Lot 16 & Pt. S. half of Lot 17, Con. 5	Vaughan ON	
CA		Part of Lot 18, Concession 5	Vaughan ON	
CA	St. Magnus Developments Inc.		Vaughan ON	
CA	YORK CITY WESTON RD.	WESTON RD.	YORK CITY ON	
CA	WESTWIL HOLDINGS INC.	WESTON ROAD S.W.M. FAC.	VAUGHAN TOWN ON	
CA	BRAMALEA LIMITED	STREET 'A' WESTON RD.	YORK CITY ON	

WESTPOINTE VILLAGE DEV.

CA	TORONTO STAR NEWSPAPERS LTD. LOTS 2&3	CONC. 5-7271 WESTON ROAD	VAUGHAN TOWN ON	
CA	ROYBRIDGE HOLDINGS LTD.	VELLORE WOODS SUBD., WESTON RD	VAUGHAN CITY ON	
CA	WESTON/400 BUSINESS PARK	WESTON RD.	VAUGHAN TOWN ON	
PES	EMPIRE GARDEN CENTRE	R R 1 HIGHWAY #56	YORK ON	N0A 1R0
PES	EMPIRE GARDEN CENTRE	R R 1 HIGHWAY #56	YORK ON	N0A 1R0
RSC		Pt. Lot 17, Conc. 6, Designated as Parts 5, 6, 7, Plan 65R-20822,	Vaughan ON	
RSC		Lot 18, Concession 5	Vaughan ON	
RSC		Lot 16, Concession 5	Vaughan ON	
RSC		Weston Road E/S Part of Lots 16 & 17, concession 5	Vaughan ON	
RSC		Pt. Lot 18, Conc. 6, Designated as Part 9, Plan 65R-20822,	Vaughan ON	
RSC		Pt. Lot 17, Conc. 6, Designated as Part 8, Plan 65R-20822,	Vaughan ON	
RSC		Pt. Lot 17, Conc. 6, Designated as Parts 5, 6, 7, Plan 65R-20822,	Vaughan ON	
RSC		Pt. Lot 18, Conc. 6, Designated as Part 9, Plan 65R-20822,	Vaughan ON	
SPL	TRANSPORT TRUCK	WESTON RD NORTH OF HWY 407 MOTOR VEHICLE (OPERATING FLUID)	VAUGHAN CITY ON	

Unplottable Report

Site: SINGLAND HOLDINGS LTD.
WESTON RD., VELLORE WOODS SUB. VAUGHAN CITY ON

Database:
CA

Certificate #: 7-0280-99-
Application Year: 99
Issue Date: 5/7/1999
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: REALTY GROWTH & REVENUE FUND GEN. PARTNE
LOT 16&17, CONC.7/BARKER SUBD. VAUGHAN CITY ON

Database:
CA

Certificate #: 3-1028-99-
Application Year: 99
Issue Date: 9/10/1999
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: SINGLAND HOLDINGS LTD.
PT.LOTS 16-20/C-5, WESTON RD. VAUGHAN CITY ON

Database:
CA

Certificate #: 3-0456-99-
Application Year: 99
Issue Date: 5/18/1999
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: SINGLAND HOLDINGS LTD.
WESTON RD., PT.LOT 16, CON. 5 VAUGHAN CITY ON

Database:
CA

Certificate #: 3-0420-99-

Application Year: 99
Issue Date: 5/7/1999
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: MAJORSOUTH DEVELOPMENT CORP.
WESTON RD., VELLORE WOODS SUB. VAUGHAN CITY ON

Database:
CA

Certificate #: 3-0419-99-
Application Year: 99
Issue Date: 5/7/1999
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: Lot 16, Concession 5 Vaughan ON

Database:
CA

Certificate #: 5386-52JPV2
Application Year: 01
Issue Date: 9/14/01
Approval Type: Municipal & Private sewage
Status: Approved
Application Type: New Certificate of Approval
Client Name: F&F Realty Holdings Inc.
Client Address: 9625 Yonge Street
Client City: Richmond Hill
Client Postal Code: L4C 5T2
Project Description: Construction of Sanitary and Storm Sewers for Subdivision Development
Contaminants:
Emission Control:

Site: Lot 16, Concession 5 Vaughan ON

Database:
CA

Certificate #: 0130-52HKUK
Application Year: 01
Issue Date: 9/14/01
Approval Type: Municipal & Private water
Status: Approved
Application Type: New Certificate of Approval
Client Name: F&F Realty Holdings Inc.
Client Address: 9625 Yonge Street
Client City: Richmond Hill
Client Postal Code: L4C 5T2
Project Description: Construction of Watermains for Subdivision Development
Contaminants:
Emission Control:

Site: Vellore Village - Phase 3
Part of Lot 17 and 18, Concession 6 Vaughan ON

Database:
CA

Certificate #: 2218-4YXLQ2
Application Year: 01
Issue Date: 8/10/01
Approval Type: Municipal & Private sewage
Status: Approved
Application Type: New Certificate of Approval
Client Name: Mr. Fraser L. Nelson
Client Address: 1700 Langstaff Road
Client City: Vaughan
Client Postal Code: L4K 3S3
Project Description: Sanitary sewers, foundation drain collector sewers, storm sewers and all related appurtenances to be constructed.
Contaminants:
Emission Control:

Site: Vellore Village - Phase 3
Part of Lot 17 and 18, Concession 6 Vaughan ON

Database:
CA

Certificate #: 9143-4YXLGK
Application Year: 01
Issue Date: 8/10/01
Approval Type: Municipal & Private water
Status: Approved
Application Type: New Certificate of Approval
Client Name: Mr. Fraser L. Nelson
Client Address: 1700 Langstaff Road
Client City: Vaughan
Client Postal Code: L4K 3S3
Project Description: Construction of watermain and appurtenances
Contaminants:
Emission Control:

Site: Part of Lot 16 and 17, Concession 5 Vaughan ON

Database:
CA

Certificate #: 4633-4HTS6B
Application Year: 00
Issue Date: 3/30/00
Approval Type: Municipal & Private sewage
Status: Approved
Application Type: New Certificate of Approval
Client Name: Comdel Developments Inc.
Client Address: 270 Chrislea Road
Client City: Woodbridge
Client Postal Code: L4L 8A8
Project Description: Sanitary and storm sewers to be constructed to serve the Comdel Developments Inc. Subdivision, Vellore Woods Community (19T-97V26)
Contaminants:
Emission Control:

Site: Vellore Woods Community
Pt. Lot 16 & Pt. S. half of Lot 17, Con. 5 Vaughan ON

Database:
CA

Certificate #: 4608-4HPLQZ
Application Year: 00
Issue Date: 3/30/00
Approval Type: Municipal & Private sewage
Status: Approved
Application Type: New Certificate of Approval
Client Name: Block 32 Developments Inc.

Client Address: 270 Chrislea Road
Client City: Woodbridge
Client Postal Code: L4L 8A8
Project Description: This application is for the installation of storm & sanitary sewers on Comdel Boulevard, Lichen Court and Moraine Drive
Contaminants:
Emission Control:

Site: *Part of Lot 16 and 17, Concession 5 Vaughan ON* **Database:** [CA](#)

Certificate #: 3150-4HTSJL
Application Year: 00
Issue Date: 3/30/00
Approval Type: Municipal & Private water
Status: Approved
Application Type: New Certificate of Approval
Client Name: Comdel Developments Inc.
Client Address: 270 Chrislea Road
Client City: Woodbridge
Client Postal Code: L4L 8A8
Project Description: Watermains to be constructed to serve the Comdel Developments Inc. Subdivision, Vellore Woods Community (19T-97V26)
Contaminants:
Emission Control:

Site: *Vellore Woods Community
Pt. Lot 16 & Pt. S. half of Lot 17, Con. 5 Vaughan ON* **Database:** [CA](#)

Certificate #: 5364-4HPMBE
Application Year: 00
Issue Date: 3/30/00
Approval Type: Municipal & Private water
Status: Approved
Application Type: New Certificate of Approval
Client Name: Block 32 Developments Inc.
Client Address: 270 Chrislea Road
Client City: Woodbridge
Client Postal Code: L4L 8A8
Project Description: This application is for the installation of watermains on Comdel Boulevard, Lichen Court, and Moraine Drive.
Contaminants:
Emission Control:

Site: *Part of Lot 18, Concession 5 Vaughan ON* **Database:** [CA](#)

Certificate #: 7008-4HNQ9D
Application Year: 00
Issue Date: 3/28/00
Approval Type: Municipal & Private water
Status: Approved
Application Type: New Certificate of Approval
Client Name: Roybridge Holdings Limited
Client Address: 1 Royal Gate Blvd
Client City: Woodbridge
Client Postal Code: L4L 8Z7
Project Description: Watermains to be constructed to serve the Roybridge Holdings Limited Subdivision, Vellore Woods Community (19T-97V33).
Contaminants:
Emission Control:

Site: *St. Magnus Developments Inc.* **Database:** [CA](#)

Vaughan ON

Certificate #: 7396-6PPL5T
Application Year: 2006
Issue Date: 5/19/2006
Approval Type: Municipal and Private Sewage Works
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: YORK CITY WESTON RD.
WESTON RD. YORK CITY ON

Database:
CA

Certificate #: 3-0540-88-
Application Year: 88
Issue Date: 6/30/1988
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: WESTWIL HOLDINGS INC.
WESTON ROAD S.W.M. FAC. VAUGHAN TOWN ON

Database:
CA

Certificate #: 3-0230-94-
Application Year: 94
Issue Date: 3/28/1994
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: BRAMALEA LIMITED WESTPOINTE VILLAGE DEV.
STREET 'A' WESTON RD. YORK CITY ON

Database:
CA

Certificate #: 7-1120-89-
Application Year: 89
Issue Date: 8/28/1989
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:

Contaminants:
Emission Control:

Site: TORONTO STAR NEWSPAPERS LTD. LOTS 2&3
CONC. 5-7271 WESTON ROAD VAUGHAN TOWN ON

Database:
CA

Certificate #: 3-1960-90-
Application Year: 90
Issue Date: 12/18/1991
Approval Type: Municipal sewage
Status: Approved in 1991
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ROYBRIDGE HOLDINGS LTD.
VELLORE WOODS SUBD., WESTON RD VAUGHAN CITY ON

Database:
CA

Certificate #: 7-0261-99-
Application Year: 99
Issue Date: 5/7/1999
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: WESTON/400 BUSINESS PARK
WESTON RD. VAUGHAN TOWN ON

Database:
CA

Certificate #: 3-0653-87-
Application Year: 87
Issue Date: 6/12/1990
Approval Type: Municipal sewage
Status: Cancelled
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: EMPIRE GARDEN CENTRE
R R 1 HIGHWAY #56 YORK ON N0A 1R0

Database:
PES

Detail Licence No:
Licence No:
Status:
Approval Date:
Report Source:

Operator Box:
Operator Class:
Operator No:
Operator Type:
Oper Area Code:

Licence Type: Vendor
Licence Type Code:
Licence Class:
Licence Control:
Latitude:
Longitude:
Lot:
Concession:
Region:
District:
County:
Trade Name:
PDF Link:
PDF Site Location:

Oper Phone No:
Operator Ext:
Operator Lot:
Oper Concession:
Operator Region:
Operator District:
Operator County:
Op Municipality:
Post Office Box:
MOE District:
SWP Area Name:

Site: **EMPIRE GARDEN CENTRE**
R R 1 HIGHWAY #56 YORK ON N0A 1R0

Database:
PES

Detail Licence No: 23-01-08047-0
Licence No: 08047
Status:
Approval Date:
Report Source:
Licence Type: Limited Vendor
Licence Type Code: 23
Licence Class: 01
Licence Control: 0
Latitude:
Longitude:
Lot:
Concession:
Region: 2
District: 1
County: 26
Trade Name:
PDF Link:
PDF Site Location:

Operator Box:
Operator Class:
Operator No:
Operator Type:
Oper Area Code:
Oper Phone No:
Operator Ext:
Operator Lot:
Oper Concession:
Operator Region: 2
Operator District: 1
Operator County: 26
Op Municipality:
Post Office Box:
MOE District:
SWP Area Name:

Site: **Pt. Lot 17, Conc. 6, Designated as Parts 5, 6, 7, Plan 65R-20822, Vaughan ON**

Database:
RSC

RSC ID:
RA No:
RSC Type:
Curr Property Use:
Ministry District: Burlington
Filing Date: 08/12/99
Date Ack:
Date Returned: 08/24/99
Restoration Type:
Soil Type:
Criteria:
CPU Issued Sect
1686:
Asmt Roll No:
Prop ID No (PIN):
Property Municipal Address:
Mailing Address:
Latitude & Longitude:
UTM Coordinates:
Consultant: Frontline Environmental
Legal Desc:
Measurement Method:
Applicable Standards:
RSC PDF:

Cert Date:
Cert Prop Use No:
Intended Prop Use:
Qual Person Name:
Stratified (Y/N):
Audit (Y/N): N
Entire Leg Prop. (Y/N):
Accuracy Estimate:
Telephone:
Fax:
Email:

Site: Lot 18, Concession 5 Vaughan ON **Database:** RSC

RSC ID: **Cert Date:**
RA No: **Cert Prop Use No:**
RSC Type: **Intended Prop Use:**
Curr Property Use: **Qual Person Name:**
Ministry District: York Durham **Stratified (Y/N):**
Filing Date: 09/15/99 **Audit (Y/N):**
Date Ack: **Entire Leg Prop. (Y/N):**
Date Returned: 02/06/01 **Accuracy Estimate:**
Restoration Type: **Telephone:**
Soil Type: **Fax:**
Criteria: **Email:**
CPU Issued Sect
1686:
Asmt Roll No:
Prop ID No (PIN):
Property Municipal Address:
Mailing Address:
Latitude & Latitude:
UTM Coordinates:
Consultant: Soil-Eng Ltd.
Legal Desc:
Measurement Method:
Applicable Standards:
RSC PDF:

Site: Lot 16, Concession 5 Vaughan ON **Database:** RSC

RSC ID: **Cert Date:**
RA No: **Cert Prop Use No:**
RSC Type: **Intended Prop Use:**
Curr Property Use: **Qual Person Name:**
Ministry District: York Durham **Stratified (Y/N):**
Filing Date: 08/25/99 **Audit (Y/N):**
Date Ack: **Entire Leg Prop. (Y/N):**
Date Returned: 02/06/01 **Accuracy Estimate:**
Restoration Type: **Telephone:**
Soil Type: **Fax:**
Criteria: **Email:**
CPU Issued Sect
1686:
Asmt Roll No:
Prop ID No (PIN):
Property Municipal Address:
Mailing Address:
Latitude & Latitude:
UTM Coordinates:
Consultant: Soil-Eng Ltd.
Legal Desc:
Measurement Method:
Applicable Standards:
RSC PDF:

Site: Weston Road E/S Part of Lots 16 & 17, concession 5 Vaughan ON **Database:** RSC

RSC ID: **Cert Date:**
RA No: **Cert Prop Use No:**
RSC Type: **Intended Prop Use:**
Curr Property Use: **Qual Person Name:**
Ministry District: Toronto **Stratified (Y/N):** N
Filing Date: 01/11/00 **Audit (Y/N):**
Date Ack: **Entire Leg Prop. (Y/N):**
Date Returned: 01/11/00 **Accuracy Estimate:**

Restoration Type: Generic
Soil Type: Coarse
Criteria: Res/parkland + potable

Telephone:
Fax:
Email:

CPU Issued Sect
1686:

Asmt Roll No:
Prop ID No (PIN):
Property Municipal Address:
Mailing Address:
Latitude & Latitude:
UTM Coordinates:

Consultant: Comdel Development Inc

Legal Desc:
Measurement Method:
Applicable Standards:
RSC PDF:

Site: Pt. Lot 18, Conc. 6, Designated as Part 9, Plan 65R-20822, Vaughan ON

Database:
RSC

RSC ID:
RA No:
RSC Type:
Curr Property Use:
Ministry District: Toronto
Filing Date: 08/05/99
Date Ack: 08/30/99

Cert Date:
Cert Prop Use No:
Intended Prop Use:
Qual Person Name:
Stratified (Y/N): N
Audit (Y/N):
Entire Leg Prop. (Y/N):
Accuracy Estimate:
Telephone:
Fax:
Email:

Date Returned:
Restoration Type:
Soil Type:
Criteria:
CPU Issued Sect
1686:

Asmt Roll No:
Prop ID No (PIN):
Property Municipal Address:
Mailing Address:
Latitude & Latitude:
UTM Coordinates:

Consultant: Environmental Auditors Limited

Legal Desc:
Measurement Method:
Applicable Standards:
RSC PDF:

Site: Pt. Lot 17, Conc. 6, Designated as Part 8, Plan 65R-20822, Vaughan ON

Database:
RSC

RSC ID:
RA No:
RSC Type:
Curr Property Use:
Ministry District: York Durham
Filing Date: 07/29/99
Date Ack: 08/18/99

Cert Date:
Cert Prop Use No:
Intended Prop Use:
Qual Person Name:
Stratified (Y/N): N
Audit (Y/N): N
Entire Leg Prop. (Y/N):
Accuracy Estimate:
Telephone:
Fax:
Email:

Date Returned:
Restoration Type: Background
Soil Type: Fine
Criteria: Res/parkland + nonpotable
CPU Issued Sect
1686:

Asmt Roll No:
Prop ID No (PIN):
Property Municipal Address:
Mailing Address:
Latitude & Latitude:
UTM Coordinates:
Consultant: Trow Consulting

Legal Desc:
Measurement Method:
Applicable Standards:
RSC PDF:

Site: Pt. Lot 17, Conc. 6, Designated as Parts 5, 6, 7, Plan 65R-20822, Vaughan ON **Database:** RSC

RSC ID:		Cert Date:	
RA No:		Cert Prop Use No:	
RSC Type:		Intended Prop Use:	
Curr Property Use:		Qual Person Name:	
Ministry District:	Sarnia	Stratified (Y/N):	N
Filing Date:	07/30/99	Audit (Y/N):	Y
Date Ack:	09/09/99	Entire Leg Prop. (Y/N):	
Date Returned:		Accuracy Estimate:	
Restoration Type:	Generic	Telephone:	
Soil Type:	Coarse	Fax:	
Criteria:	Res/parkland + nonpotable	Email:	
CPU Issued Sect			
1686:			
Asmt Roll No:			
Prop ID No (PIN):			
Property Municipal Address:			
Mailing Address:			
Latitude & Longitude:			
UTM Coordinates:			
Consultant:	C.T.Soil & Materials Engineering Inc		
Legal Desc:			
Measurement Method:			
Applicable Standards:			
RSC PDF:			

Site: Pt. Lot 18, Conc. 6, Designated as Part 9, Plan 65R-20822, Vaughan ON **Database:** RSC

RSC ID:		Cert Date:	
RA No:		Cert Prop Use No:	
RSC Type:		Intended Prop Use:	
Curr Property Use:		Qual Person Name:	
Ministry District:	Burlington	Stratified (Y/N):	N
Filing Date:	08/19/99	Audit (Y/N):	N
Date Ack:		Entire Leg Prop. (Y/N):	
Date Returned:	08/19/99	Accuracy Estimate:	
Restoration Type:	Generic	Telephone:	
Soil Type:	-	Fax:	
Criteria:	Unknown	Email:	
CPU Issued Sect			
1686:			
Asmt Roll No:			
Prop ID No (PIN):			
Property Municipal Address:			
Mailing Address:			
Latitude & Longitude:			
UTM Coordinates:			
Consultant:	Terrapex Environmental Ltd		
Legal Desc:			
Measurement Method:			
Applicable Standards:			
RSC PDF:			

Site: TRANSPORT TRUCK WESTON RD NORTH OF HWY 407 MOTOR VEHICLE (OPERATING FLUID) VAUGHAN CITY ON **Database:** SPL

Ref No:	226569	Discharger Report:	
Site No:		Material Group:	
Incident Dt:	5/28/2002	Health/Env Conseq:	

Year:		Client Type:	
Incident Cause:	OTHER TRANSPORTATION ACCIDENT	Sector Type:	
Incident Event:		Agency Involved:	
Contaminant Code:		Nearest Watercourse:	
Contaminant Name:		Site Address:	
Contaminant Limit 1:		Site District Office:	
Contam Limit Freq 1:		Site Postal Code:	
Contaminant UN No 1:		Site Region:	
Environment Impact:	POSSIBLE	Site Municipality:	27101
Nature of Impact:	Water course or lake	Site Lot:	
Receiving Medium:	LAND / WATER	Site Conc:	
Receiving Env:		Northing:	
MOE Response:		Easting:	
Dt MOE Arvl on Scn:		Site Geo Ref Accu:	
MOE Reported Dt:	5/28/2002	Site Map Datum:	
Dt Document Closed:		SAC Action Class:	
Incident Reason:	NEGLIGENCE (APPARENT)	Source Type:	
Site Name:			
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	NATIONAL FAST FREIGHT:MVA UKN QTY DIESEL TO RD, REGION IS CLEANING		
Contaminant Qty:			

Appendix: Database Descriptions

*Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. **Note:** Databases denoted with " * " indicates that the database will no longer be updated. See the individual database description for more information.*

Abandoned Aggregate Inventory:

Provincial [AAGR](#)

The MAAP Program maintains a database of abandoned pits and quarries. Please note that the database is only referenced by lot and concession and city/town location. The database provides information regarding the location, type, size, land use, status and general comments.*

Government Publication Date: Sept 2002*

Aggregate Inventory:

Provincial [AGR](#)

The Ontario Ministry of Natural Resources maintains a database of all active pits and quarries. The database provides information regarding the registered owner/operator, location name, operation type, approval type, and maximum annual tonnage.

Government Publication Date: Up to Sep 2020

Abandoned Mine Information System:

Provincial [AMIS](#)

The Abandoned Mines Information System contains data on known abandoned and inactive mines located on both Crown and privately held lands. The information was provided by the Ministry of Northern Development and Mines (MNDM), with the following disclaimer: "the database provided has been compiled from various sources, and the Ministry of Northern Development and Mines makes no representation and takes no responsibility that such information is accurate, current or complete". Reported information includes official mine name, status, background information, mine start/end date, primary commodity, mine features, hazards and remediation.

Government Publication Date: 1800-Oct 2018

Anderson's Waste Disposal Sites:

Private [ANDR](#)

The information provided in this database was collected by examining various historical documents which aimed to characterize the likely position of former waste disposal sites from 1860 to present. The research initiative behind the creation of this database was to identify those sites that are missing from the Ontario MOE Waste Disposal Site Inventory, as well as to provide revisions and corrections to the positions and descriptions of sites currently listed in the MOE inventory. In addition to historic waste disposal facilities, the database also identifies certain auto wreckers and scrap yards that have been extrapolated from documentary sources. Please note that the data is not warranted to be complete, exhaustive or authoritative. The information was collected for research purposes only.

Government Publication Date: 1860s-Present

Aboveground Storage Tanks:

Provincial [AST](#)

Historical listing of aboveground storage tanks made available by the Department of Natural Resources and Forestry. Includes tanks used to hold water or petroleum. This dataset has been retired as of September 25, 2014 and will no longer be updated.

Government Publication Date: May 31, 2014

Automobile Wrecking & Supplies:

Private [AUWR](#)

This database provides an inventory of known locations that are involved in the scrap metal, automobile wrecking/recycling, and automobile parts & supplies industry. Information is provided on the company name, location and business type.

Government Publication Date: 1999-Sep 30, 2021

Borehole:

Provincial [BORE](#)

A borehole is the generalized term for any narrow shaft drilled in the ground, either vertically or horizontally. The information here includes geotechnical investigations or environmental site assessments, mineral exploration, or as a pilot hole for installing piers or underground utilities. Information is from many sources such as the Ministry of Transportation (MTO) boreholes from engineering reports and projects from the 1950 to 1990's in Southern Ontario. Boreholes from the Ontario Geological Survey (OGS) including The Urban Geology Analysis Information System (UGAIS) and the York Peel Durham Toronto (YPDT) database of the Conservation Authority Moraine Coalition. This database will include fields such as location, stratigraphy, depth, elevation, year drilled, etc. For all water well data or oil and gas well data for Ontario please refer to WWIS and OOGW.

Government Publication Date: 1875-Jul 2018

Certificates of Approval:

Provincial CA

This database contains the following types of approvals: Air & Noise, Industrial Sewage, Municipal & Private Sewage, Waste Management Systems and Renewable Energy Approvals. The MOE in Ontario states that any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste, must have a Certificate of Approval before it can operate lawfully. Fields include approval number, business name, address, approval date, approval type and status. This database will no longer be updated, as CofA's have been replaced by either Environmental Activity and Sector Registry (EASR) or Environmental Compliance Approval (ECA). Please refer to those individual databases for any information after Oct.31, 2011.

Government Publication Date: 1985-Oct 30, 2011*

Dry Cleaning Facilities:

Federal CDRY

List of dry cleaning facilities made available by Environment and Climate Change Canada. Environment and Climate Change Canada's Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations (SOR/2003-79) are intended to reduce releases of tetrachloroethylene to the environment from dry cleaning facilities.

Government Publication Date: Jan 2004-Dec 2019

Commercial Fuel Oil Tanks:

Provincial CFOT

Locations of commercial underground fuel oil tanks. This is not a comprehensive or complete inventory of commercial fuel tanks in the province; this listing is a copy of records of registered commercial underground fuel oil tanks obtained under Access to Public Information.

Note that the following types of tanks do not require registration: waste oil tanks in apartments, office buildings, residences, etc.; aboveground gas or diesel tanks. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

Chemical Manufacturers and Distributors:

Private CHEM

This database includes information from both a one time study conducted in 1992 and private source and is a listing of facilities that manufacture or distribute chemicals. The production of these chemical substances may involve one or more chemical reactions and/or chemical separation processes (i.e. fractionation, solvent extraction, crystallization, etc.).

Government Publication Date: 1999-Jan 31, 2020

Chemical Register:

Private CHM

This database includes a listing of locations of facilities within the Province or Territory that either manufacture and/or distributes chemicals.

Government Publication Date: 1999-Sep 30, 2021

Compressed Natural Gas Stations:

Private CNG

Canada has a network of public access compressed natural gas (CNG) refuelling stations. These stations dispense natural gas in compressed form at 3,000 pounds per square inch (psi), the pressure which is allowed within the current Canadian codes and standards. The majority of natural gas refuelling is located at existing retail gasoline that have a separate refuelling island for natural gas. This list of stations is made available by the Canadian Natural Gas Vehicle Alliance.

Government Publication Date: Dec 2012 -Nov 2021

Inventory of Coal Gasification Plants and Coal Tar Sites:

Provincial COAL

This inventory includes both the "Inventory of Coal Gasification Plant Waste Sites in Ontario-April 1987" and the Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario-November 1988) collected by the MOE. It identifies industrial sites that produced and continue to produce or use coal tar and other related tars. Detailed information is available and includes: facility type, size, land use, information on adjoining properties, soil condition, site operators/occupants, site description, potential environmental impacts and historic maps available. This was a one-time inventory.*

Government Publication Date: Apr 1987 and Nov 1988*

Compliance and Convictions:

Provincial CONV

This database summarizes the fines and convictions handed down by the Ontario courts beginning in 1989. Companies and individuals named here have been found guilty of environmental offenses in Ontario courts of law.

Government Publication Date: 1989-Jul 2021

Certificates of Property Use:

Provincial CPU

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all CPU's on the registry such as (EPA s. 168.6) - Certificate of Property Use.

Government Publication Date: 1994 - Oct 31, 2021

Drill Hole Database:

Provincial

[DRL](#)

The Ontario Drill Hole Database contains information on more than 113,000 percussion, overburden, sonic and diamond drill holes from assessment files on record with the department of Mines and Minerals. Please note that limited data is available for southern Ontario, as it was the last area to be completed. The database was created when surveys submitted to the Ministry were converted in the Assessment File Research Image Database (AFRI) project. However, the degree of accuracy (coordinates) as to the exact location of drill holes is dependent upon the source document submitted to the MNDM. Levels of accuracy used to locate holes are: centering on the mining claim; a sketch of the mining claim; a 1:50,000 map; a detailed company map; or from submitted a "Report of Work".

Government Publication Date: 1886 - Sep 2020

Delisted Fuel Tanks:

Provincial

[DTNK](#)

List of fuel storage tank sites that were once found in - and have since been removed from - the list of fuel storage tanks made available by the regulatory agency under Access to Public Information.

Government Publication Date: May 31, 2021

Environmental Activity and Sector Registry:

Provincial

[EASR](#)

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. The EASR allows businesses to register certain activities with the ministry, rather than apply for an approval. The registry is available for common systems and processes, to which preset rules of operation can be applied. The EASR is currently available for: heating systems, standby power systems and automotive refinishing. Businesses whose activities aren't subject to the EASR may apply for an ECA (Environmental Compliance Approval). Please see our ECA database.

Government Publication Date: Oct 2011- Sep 30, 2021

Environmental Registry:

Provincial

[EBR](#)

The Environmental Registry lists proposals, decisions and exceptions regarding policies, Acts, instruments, or regulations that could significantly affect the environment. Through the Registry, thirteen provincial ministries notify the public of upcoming proposals and invite their comments. For example, if a local business is requesting a permit, license, or certificate of approval to release substances into the air or water; these are notified on the registry. Data includes: Approval for discharge into the natural environment other than water (i.e. Air) - EPA s. 9, Approval for sewage works - OWRA s. 53(1), and EPA s. 27 - Approval for a waste disposal site. For information regarding Permit to Take Water (PTTW), Certificate of Property Use (CPU) and (ORD) Orders please refer to those individual databases.

Government Publication Date: 1994- Oct 31, 2021

Environmental Compliance Approval:

Provincial

[ECA](#)

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. In the past, a business had to apply for multiple approvals (known as certificates of approval) for individual processes and pieces of equipment. Today, a business either registers itself, or applies for a single approval, depending on the types of activities it conducts. Businesses whose activities aren't subject to the EASR may apply for an ECA. A single ECA addresses all of a business's emissions, discharges and wastes. Separate approvals for air, noise and waste are no longer required. This database will also include Renewable Energy Approvals. For certificates of approval prior to Nov 1st, 2011, please refer to the CA database. For all Waste Disposal Sites please refer to the WDS database.

Government Publication Date: Oct 2011- Sep 30, 2021

Environmental Effects Monitoring:

Federal

[EEM](#)

The Environmental Effects Monitoring program assesses the effects of effluent from industrial or other sources on fish, fish habitat and human usage of fisheries resources. Since 1992, pulp and paper mills have been required to conduct EEM studies under the Pulp and Paper Effluent Regulations. This database provides information on the mill name, geographical location and sub-lethal toxicity data.

Government Publication Date: 1992-2007*

ERIS Historical Searches:

Private

[EHS](#)

ERIS has compiled a database of all environmental risk reports completed since March 1999. Available fields for this database include: site location, date of report, type of report, and search radius. As per all other databases, the ERIS database can be referenced on both the map and "Statistical Profile" page.

Government Publication Date: 1999-Jun 30, 2021

Environmental Issues Inventory System:

Federal

[EIIS](#)

The Environmental Issues Inventory System was developed through the implementation of the Environmental Issues and Remediation Plan. This plan was established to determine the location and severity of contaminated sites on inhabited First Nation reserves, and where necessary, to remediate those that posed a risk to health and safety; and to prevent future environmental problems. The EIIS provides information on the reserve under investigation, inventory number, name of site, environmental issue, site action (Remediation, Site Assessment), and date investigation completed.

Government Publication Date: 1992-2001*

Emergency Management Historical Event:

Provincial

EMHE

List of locations of historical occurrences of emergency events, including those assigned to the Ministry of Natural Resources by Order-In-Council (OIC) under the Emergency Management and Civil Protection Act, as well as events where MNR provided requested emergency response assistance. Many of these events will have involved community evacuations, significant structural loss, and/or involvement of MNR emergency response staff. These events fall into one of ten (10) type categories: Dam Failure; Drought / Low Water; Erosion; Flood; Forest Fire; Soil and Bedrock Instability; Petroleum Resource Center Event, EMO Requested Assistance, Continuity of Operations Event, Other Requested Assistance. EMHE record details are reproduced by ERIS under License with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2017.

Government Publication Date: Dec 31, 2016

Environmental Penalty Annual Report:

Provincial

EPAR

This database contains data from Ontario's annual environmental penalty report published by the Ministry of the Environment and Climate Change. These reports provide information on environmental penalties for land or water violations issued to companies in one of the nine industrial sectors covered by the Municipal Industrial Strategy for Abatement (MISA) regulations.

Government Publication Date: Jan 1, 2011 - Dec 31, 2020

List of Expired Fuels Safety Facilities:

Provincial

EXP

List of facilities and tanks for which there was once a fuel registration. This is not a comprehensive or complete inventory of expired tanks/tank facilities in the province; this listing is a copy of previously registered tanks and facilities obtained under Access to Public Information. Includes private fuel outlets, bulk plants, fuel oil tanks, gasoline stations, marinas, propane filling stations, liquid fuel tanks, piping systems, etc; includes tanks which have been removed from the ground.

Notes: registration was not required for private fuel underground/aboveground storage tanks prior to January 1990, nor for furnace oil tanks prior to May 1, 2002; registration is not required for waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2020

Federal Convictions:

Federal

FCON

Environment Canada maintains a database referred to as the "Environmental Registry" that details prosecutions under the Canadian Environmental Protection Act (CEPA) and the Fisheries Act (FA). Information is provided on the company name, location, charge date, offence and penalty.

Government Publication Date: 1988-Jun 2007*

Contaminated Sites on Federal Land:

Federal

FCS

The Federal Contaminated Sites Inventory includes information on known federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations as well as those that are being or have been investigated to determine whether they have contamination arising from past use that could pose a risk to human health or the environment. The inventory also includes non-federal contaminated sites for which the Government of Canada has accepted some or all financial responsibility. It does not include sites where contamination has been caused by, and which are under the control of, enterprise Crown corporations, private individuals, firms or other levels of government. Includes fire training sites and sites at which Per- and Polyfluoroalkyl Substances (PFAS) are a concern.

Government Publication Date: Jun 2000-Aug 2021

Fisheries & Oceans Fuel Tanks:

Federal

FOFT

Fisheries & Oceans Canada maintains an inventory of aboveground & underground fuel storage tanks located on Fisheries & Oceans property or controlled by DFO. Our inventory provides information on the site name, location, tank owner, tank operator, facility type, storage tank location, tank contents & capacity, and date of tank installation.

Government Publication Date: 1964-Sep 2019

Federal Identification Registry for Storage Tank Systems (FIRSTS):

Federal

FRST

A list of federally regulated Storage tanks from the Federal Identification Registry for Storage Tank Systems (FIRSTS). FIRSTS is Environment and Climate Change Canada's database of storage tank systems subject to the Storage Tank for Petroleum Products and Allied Petroleum Products Regulations. The main objective of the Regulations is to prevent soil and groundwater contamination from storage tank systems located on federal and aboriginal lands. Storage tank systems that do not have a valid identification number displayed in a readily visible location on or near the storage tank system may be refused product delivery.

Government Publication Date: May 31, 2018

Fuel Storage Tank:

Provincial

FST

List of registered private and retail fuel storage tanks. This is not a comprehensive or complete inventory of private and retail fuel storage tanks in the province; this listing is a copy of registered private and retail fuel storage tanks, obtained under Access to Public Information.

Notes: registration was not required for private fuel underground/aboveground storage tanks prior to January 1990, nor for furnace oil tanks prior to May 1, 2002; registration is not required for waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

Fuel Storage Tank - Historic:

Provincial

FSTH

The Fuels Safety Branch of the Ontario Ministry of Consumer and Commercial Relations maintained a database of all registered private fuel storage tanks. Public records of private fuel storage tanks are only available since the registration became effective in September 1989. This information is now collected by the Technical Standards and Safety Authority.

Government Publication Date: Pre-Jan 2010*

Ontario Regulation 347 Waste Generators Summary:

Provincial

GEN

Regulation 347 of the Ontario EPA defines a waste generation site as any site, equipment and/or operation involved in the production, collection, handling and/or storage of regulated wastes. A generator of regulated waste is required to register the waste generation site and each waste produced, collected, handled, or stored at the site. This database contains the registration number, company name and address of registered generators including the types of hazardous wastes generated. It includes data on waste generating facilities such as: drycleaners, waste treatment and disposal facilities, machine shops, electric power distribution etc. This information is a summary of all years from 1986 including the most currently available data. Some records may contain, within the company name, the phrase "See & Use..." followed by a series of letters and numbers. This occurs when one company is amalgamated with or taken over by another registered company. The number listed as "See & Use", refers to the new ownership and the other identification number refers to the original ownership. This phrase serves as a link between the 2 companies until operations have been fully transferred.

Government Publication Date: 1986-Aug 31, 2021

Greenhouse Gas Emissions from Large Facilities:

Federal

GHG

List of greenhouse gas emissions from large facilities made available by Environment Canada. Greenhouse gas emissions in kilotonnes of carbon dioxide equivalents (kt CO₂ eq).

Government Publication Date: 2013-Dec 2019

TSSA Historic Incidents:

Provincial

HINC

List of historic incidences of spills and leaks of diesel, fuel oil, gasoline, natural gas, propane, and hydrogen recorded by the TSSA in their previous incident tracking system. The TSSA's Fuels Safety Program administers the Technical Standards & Safety Act 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, the TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of historical fuel spills and leaks in the province. This listing is a copy of the data captured at one moment in time and is hence limited by the record date provided here.

Government Publication Date: 2006-June 2009*

Indian & Northern Affairs Fuel Tanks:

Federal

IAFT

The Department of Indian & Northern Affairs Canada (INAC) maintains an inventory of aboveground & underground fuel storage tanks located on both federal and crown land. Our inventory provides information on the reserve name, location, facility type, site/facility name, tank type, material & ID number, tank contents & capacity, and date of tank installation.

Government Publication Date: 1950-Aug 2003*

Fuel Oil Spills and Leaks:

Provincial

INC

Listing of spills and leaks of diesel, fuel oil, gasoline, natural gas, propane, and hydrogen reported to the Spills Action Centre (SAC). This is not a comprehensive or complete inventory of fuel-related leaks, spills, and incidents in the province; this listing is a copy of incidents reported to the SAC, obtained under Access to Public Information. Includes incidents from fuel-related hazards such as spills, fires, and explosions. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

Landfill Inventory Management Ontario:

Provincial

LIMO

The Landfill Inventory Management Ontario (LIMO) database is updated every year, as the Ministry of the Environment, Conservation and Parks compiles new and updated information. Includes small and large landfills currently operating as well as those which are closed and historic. Operators of larger landfills provide landfill information for the previous operating year to the ministry for LIMO including: estimated amount of total waste received, landfill capacity, estimated total remaining landfill capacity, fill rates, engineering designs, reporting and monitoring details, size of location, service area, approved waste types, leachate of site treatment, contaminant attenuation zone and more. The small landfills include information such as site owner, site location and certificate of approval # and status.

Government Publication Date: Feb 28, 2019

Canadian Mine Locations:

Private

MINE

This information is collected from the Canadian & American Mines Handbook. The Mines database is a national database that provides over 290 listings on mines (listed as public companies) dealing primarily with precious metals and hard rocks. Listed are mines that are currently in operation, closed, suspended, or are still being developed (advanced projects). Their locations are provided as geographic coordinates (x, y and/or longitude, latitude). As of 2002, data pertaining to Canadian smelters and refineries has been appended to this database.

Government Publication Date: 1998-2009*

Mineral Occurrences:

Provincial

MNR

In the early 70's, the Ministry of Northern Development and Mines created an inventory of approximately 19,000 mineral occurrences in Ontario, in regard to metallic and industrial minerals, as well as some information on building stones and aggregate deposits. Please note that the "Horizontal Positional Accuracy" is approximately +/- 200 m. Many reference elements for each record were derived from field sketches using pace or chain/tape measurements against claim posts or topographic features in the area. The primary limiting factor for the level of positional accuracy is the scale of the source material. The testing of horizontal accuracy of the source materials was accomplished by comparing the plan metric (X and Y) coordinates of that point with the coordinates of the same point as defined from a source of higher accuracy.

Government Publication Date: 1846-Dec 2020

National Analysis of Trends in Emergencies System (NATES):

Federal

NATE

In 1974 Environment Canada established the National Analysis of Trends in Emergencies System (NATES) database, for the voluntary reporting of significant spill incidents. The data was to be used to assist in directing the work of the emergencies program. NATES ran from 1974 to 1994. Extensive information is available within this database including company names, place where the spill occurred, date of spill, cause, reason and source of spill, damage incurred, and amount, concentration, and volume of materials released.

Government Publication Date: 1974-1994*

Non-Compliance Reports:

Provincial

NCPL

The Ministry of the Environment provides information about non-compliant discharges of contaminants to air and water that exceed legal allowable limits, from regulated industrial and municipal facilities. A reported non-compliance failure may be in regard to a Control Order, Certificate of Approval, Sectoral Regulation or specific regulation/act.

Government Publication Date: Dec 31, 2019

National Defense & Canadian Forces Fuel Tanks:

Federal

NDFT

The Department of National Defense and the Canadian Forces maintains an inventory of all aboveground & underground fuel storage tanks located on DND lands. Our inventory provides information on the base name, location, tank type & capacity, tank contents, tank class, date of tank installation, date tank last used, and status of tank as of May 2001. This database will no longer be updated due to the new National Security protocols which have prohibited any release of this database.

Government Publication Date: Up to May 2001*

National Defense & Canadian Forces Spills:

Federal

NDSP

The Department of National Defense and the Canadian Forces maintains an inventory of spills to land and water. All spill sites have been classified under the "Transportation of Dangerous Goods Act - 1992". Our inventory provides information on the facility name, location, spill ID #, spill date, type of spill, as well as the quantity of substance spilled & recovered.

Government Publication Date: Mar 1999-Apr 2018

National Defence & Canadian Forces Waste Disposal Sites:

Federal

NDWD

The Department of National Defence and the Canadian Forces maintains an inventory of waste disposal sites located on DND lands. Where available, our inventory provides information on the base name, location, type of waste received, area of site, depth of site, year site opened/closed and status.

Government Publication Date: 2001-Apr 2007*

National Energy Board Pipeline Incidents:

Federal

NEBI

Locations of pipeline incidents from 2008 to present, made available by the Canada Energy Regulator (CER) - previously the National Energy Board (NEB). Includes incidents reported under the Onshore Pipeline Regulations and the Processing Plant Regulations related to pipelines under federal jurisdiction, does not include incident data related to pipelines under provincial or territorial jurisdiction.

Government Publication Date: 2008-Jun 30, 2021

National Energy Board Wells:

Federal

NEBP

The NEBW database contains information on onshore & offshore oil and gas wells that are outside provincial jurisdiction(s) and are thereby regulated by the National Energy Board. Data is provided regarding the operator, well name, well ID No./UWI, status, classification, well depth, spud and release date.

Government Publication Date: 1920-Feb 2003*

National Environmental Emergencies System (NEES):

Federal

NEES

In 2000, the Emergencies program implemented NEES, a reporting system for spills of hazardous substances. For the most part, this system only captured data from the Atlantic Provinces, some from Quebec and Ontario and a portion from British Columbia. Data for Alberta, Saskatchewan, Manitoba and the Territories was not captured. However, NEES is also a repository for previous Environment Canada spill datasets. NEES is composed of the historic datasets ' or Trends ' which dates from approximately 1974 to present. NEES Trends is a compilation of historic databases, which were merged and includes data from NATES (National Analysis of Trends in Emergencies System), ARTS (Atlantic Regional Trends System), and NEES. In 2001, the Emergencies Program determined that variations in reporting regimes and requirements between federal and provincial agencies made national spill reporting and trend analysis difficult to achieve. As a consequence, the department has focused efforts on capturing data on spills of substances which fall under its legislative authority only (CEPA and FA). As such, the NEES database will be decommissioned in December 2004.

Government Publication Date: 1974-2003***National PCB Inventory:**

Federal

NPCB

Environment Canada's National PCB inventory includes information on in-use PCB containing equipment in Canada including federal, provincial and private facilities. Federal out-of-service PCB containing equipment and PCB waste owned by the federal government or by federally regulated industries such as airlines, railway companies, broadcasting companies, telephone and telecommunications companies, pipeline companies, etc. are also listed. Although it is not Environment Canada's mandate to collect data on non-federal PCB waste, the National PCB inventory includes some information on provincial and private PCB waste and storage sites. Some addresses provided may be Head Office addresses and are not necessarily the location of where the waste is being used or stored.

Government Publication Date: 1988-2008***National Pollutant Release Inventory:**

Federal

NPRI

Environment Canada has defined the National Pollutant Release Inventory ("NPRI") as a federal government initiative designed to collect comprehensive national data regarding releases to air, water, or land, and waste transfers for recycling for more than 300 listed substances.

Government Publication Date: 1993-May 2017**Oil and Gas Wells:**

Private

OGWE

The Nickle's Energy Group (publisher of the Daily Oil Bulletin) collects information on drilling activity including operator and well statistics. The well information database includes name, location, class, status and depth. The main Nickle's database is updated on a daily basis, however, this database is updated on a monthly basis. More information is available at www.nickles.com.

Government Publication Date: 1988-Nov 30, 2021**Ontario Oil and Gas Wells:**

Provincial

OOGW

In 1998, the MNR handed over to the Ontario Oil, Gas and Salt Resources Corporation, the responsibility of maintaining a database of oil and gas wells drilled in Ontario. The OGSR Library has over 20,000+ wells in their database. Information available for all wells in the ERIS database include well owner/operator, location, permit issue date, and well cap date, license No., status, depth and the primary target (rock unit) of the well being drilled. All geology/stratigraphy table information, plus all water table information is also provide for each well record.

Government Publication Date: 1800-Jan 2021**Inventory of PCB Storage Sites:**

Provincial

OPCB

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of PCB storage sites within the province. Ontario Regulation 11/82 (Waste Management - PCB) and Regulation 347 (Generator Waste Management) under the Ontario EPA requires the registration of inactive PCB storage equipment and/or disposal sites of PCB waste with the Ontario Ministry of Environment. This database contains information on: 1) waste quantities; 2) major and minor sites storing liquid or solid waste; and 3) a waste storage inventory.

Government Publication Date: 1987-Oct 2004; 2012-Dec 2013**Orders:**

Provincial

ORD

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all Orders on the registry such as (EPA s. 17) - Order for remedial work, (EPA s. 18) - Order for preventative measures, (EPA s. 43) - Order for removal of waste and restoration of site, (EPA s. 44) - Order for conformity with Act for waste disposal sites, (EPA s. 136) - Order for performance of environmental measures.

Government Publication Date: 1994-Oct 31, 2021**Canadian Pulp and Paper:**

Private

PAP

This information is part of the Pulp and Paper Canada Directory. The Directory provides a comprehensive listing of the locations of pulp and paper mills and the products that they produce.

Government Publication Date: 1999, 2002, 2004, 2005, 2009-2014**Parks Canada Fuel Storage Tanks:**

Federal

PCFT

Canadian Heritage maintains an inventory of known fuel storage tanks operated by Parks Canada, in both National Parks and at National Historic Sites. The database details information on site name, location, tank install/removal date, capacity, fuel type, facility type, tank design and owner/operator.

Government Publication Date: 1920-Jan 2005*

Pesticide Register:

Provincial PES

The Ontario Ministry of the Environment and Climate Change maintains a database of licensed operators and vendors of registered pesticides.

Government Publication Date: Oct 2011- Sep 30, 2021

Pipeline Incidents:

Provincial PINC

List of pipeline incidents (strikes, leaks, spills). This is not a comprehensive or complete inventory of pipeline incidents in the province; this listing is an historical copy of records previously obtained under Access to Public Information. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

Private and Retail Fuel Storage Tanks:

Provincial PRT

The Fuels Safety Branch of the Ontario Ministry of Consumer and Commercial Relations maintained a database of all registered private fuel storage tanks and licensed retail fuel outlets. This database includes an inventory of locations that have gasoline, oil, waste oil, natural gas and/or propane storage tanks on their property. The MCCR no longer collects this information. This information is now collected by the Technical Standards and Safety Authority (TSSA).

Government Publication Date: 1989-1996*

Permit to Take Water:

Provincial PTTW

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all PTTW's on the registry such as OWRA s. 34 - Permit to take water.

Government Publication Date: 1994 - Oct 31, 2021

Ontario Regulation 347 Waste Receivers Summary:

Provincial REC

Part V of the Ontario Environmental Protection Act ("EPA") regulates the disposal of regulated waste through an operating waste management system or a waste disposal site operated or used pursuant to the terms and conditions of a Certificate of Approval or a Provisional Certificate of Approval. Regulation 347 of the Ontario EPA defines a waste receiving site as any site or facility to which waste is transferred by a waste carrier. A receiver of regulated waste is required to register the waste receiving facility. This database represents registered receivers of regulated wastes, identified by registration number, company name and address, and includes receivers of waste such as: landfills, incinerators, transfer stations, PCB storage sites, sludge farms and water pollution control plants. This information is a summary of all years from 1986 including the most currently available data.

Government Publication Date: 1986-1990, 1992-2019

Record of Site Condition:

Provincial RSC

The Record of Site Condition (RSC) is part of the Ministry of the Environment's Brownfields Environmental Site Registry. Protection from environmental cleanup orders for property owners is contingent upon documentation known as a record of site condition (RSC) being filed in the Environmental Site Registry. In order to file an RSC, the property must have been properly assessed and shown to meet the soil, sediment and groundwater standards appropriate for the use (such as residential) proposed to take place on the property. The Record of Site Condition Regulation (O. Reg. 153/04) details requirements related to site assessment and clean up.

RSCs filed after July 1, 2011 will also be included as part of the new (O.Reg. 511/09).

Government Publication Date: 1997-Sept 2001, Oct 2004-Oct 2021

Retail Fuel Storage Tanks:

Private RST

This database includes an inventory of retail fuel outlet locations (including marinas) that have on their property gasoline, oil, waste oil, natural gas and / or propane storage tanks.

Government Publication Date: 1999-Sep 30, 2021

Scott's Manufacturing Directory:

Private SCT

Scott's Directories is a data bank containing information on over 200,000 manufacturers across Canada. Even though Scott's listings are voluntary, it is the most comprehensive database of Canadian manufacturers available. Information concerning a company's address, plant size, and main products are included in this database.

Government Publication Date: 1992-Mar 2011*

Ontario Spills:

Provincial SPL

List of spills and incidents made available the Ministry of the Environment, Conservation and Parks. This database identifies information such as location (approximate), type and quantity of contaminant, date of spill, environmental impact, cause, nature of impact, etc. Information from 1988-2002 was part of the ORIS (Occurrence Reporting Information System). The SAC (Spills Action Centre) handles all spills reported in Ontario. Regulations for spills in Ontario are part of the MOE's Environmental Protection Act, Part X.

Government Publication Date: 1988-Sep 2020

Wastewater Discharger Registration Database:

Provincial

[SRDS](#)

Information under this heading is combination of the following 2 programs. The Municipal/Industrial Strategy for Abatement (MISA) division of the Ontario Ministry of Environment maintained a database of all direct dischargers of toxic pollutants within nine sectors including: Electric Power Generation; Mining; Petroleum Refining; Organic Chemicals; Inorganic Chemicals; Pulp & Paper; Metal Casting; Iron & Steel; and Quarries. All sampling information is now collected and stored within the Sample Result Data Store (SRDS).

Government Publication Date: 1990-Dec 31, 2018

Anderson's Storage Tanks:

Private

[TANK](#)

The information provided in this database was collected by examining various historical documents, which identified the location of former storage tanks, containing substances such as fuel, water, gas, oil, and other various types of miscellaneous products. Information is available in regard to business operating at tank site, tank location, permit year, permit & installation type, no. of tanks installed & configuration and tank capacity. Data contained within this database pertains only to the city of Toronto and is not warranted to be complete, exhaustive or authoritative. The information was collected for research purposes only.

Government Publication Date: 1915-1953*

Transport Canada Fuel Storage Tanks:

Federal

[TCFT](#)

List of fuel storage tanks currently or previously owned or operated by Transport Canada. This inventory also includes tanks on The Pickering Lands, which refers to 7,530 hectares (18,600 acres) of land in Pickering, Markham, and Uxbridge owned by the Government of Canada since 1972; properties on this land has been leased by the government since 1975, and falls under the Site Management Policy of Transport Canada, but is administered by Public Works and Government Services Canada. This inventory provides information on the site name, location, tank age, capacity and fuel type.

Government Publication Date: 1970 - Dec 2020

Variances for Abandonment of Underground Storage Tanks:

Provincial

[VAR](#)

Listing of variances granted for storage tank abandonment. This is not a comprehensive or complete inventory of tank abandonment variances in the province; this listing is a copy of tank abandonment variance records previously obtained under Access to Public Information. In Ontario, registered underground storage tanks must be removed within two years of disuse; if removal of a tank is not feasible, an application may be sought for a variance from this code requirement.

Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

Waste Disposal Sites - MOE CA Inventory:

Provincial

[WDS](#)

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of known open (active or inactive) and closed disposal sites in the Province of Ontario. Active sites maintain a Certificate of Approval, are approved to receive and are receiving waste. Inactive sites maintain Certificate(s) of Approval but are not receiving waste. Closed sites are not receiving waste. The data contained within this database was compiled from the MOE's Certificate of Approval database. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number. All new Environmental Compliance Approvals handed out after Oct 31, 2011 for Waste Disposal Sites will still be found in this database.

Government Publication Date: Oct 2011- Sep 30, 2021

Waste Disposal Sites - MOE 1991 Historical Approval Inventory:

Provincial

[WDSH](#)

In June 1991, the Ontario Ministry of Environment, Waste Management Branch, published the "June 1991 Waste Disposal Site Inventory", of all known active and closed waste disposal sites as of October 30th, 1990. For each "active" site as of October 31st 1990, information is provided on site location, site/CA number, waste type, site status and site classification. For each "closed" site as of October 31st 1990, information is provided on site location, site/CA number, closure date and site classification. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number.

Government Publication Date: Up to Oct 1990*

Water Well Information System:

Provincial

[WWIS](#)

This database describes locations and characteristics of water wells found within Ontario in accordance with Regulation 903. It includes such information as coordinates, construction date, well depth, primary and secondary use, pump rate, static water level, well status, etc. Also included are detailed stratigraphy information, approximate depth to bedrock and the approximate depth to the water table.

Government Publication Date: Apr 30, 2021

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.



enviroscan



An SCM Company

175 Commerce Valley Drive W
Markham, Ontario L3T 7Z3

T: 905-882-6300
W: www.optaintel.ca

Report Completed By:
Stephanie

Site Address:

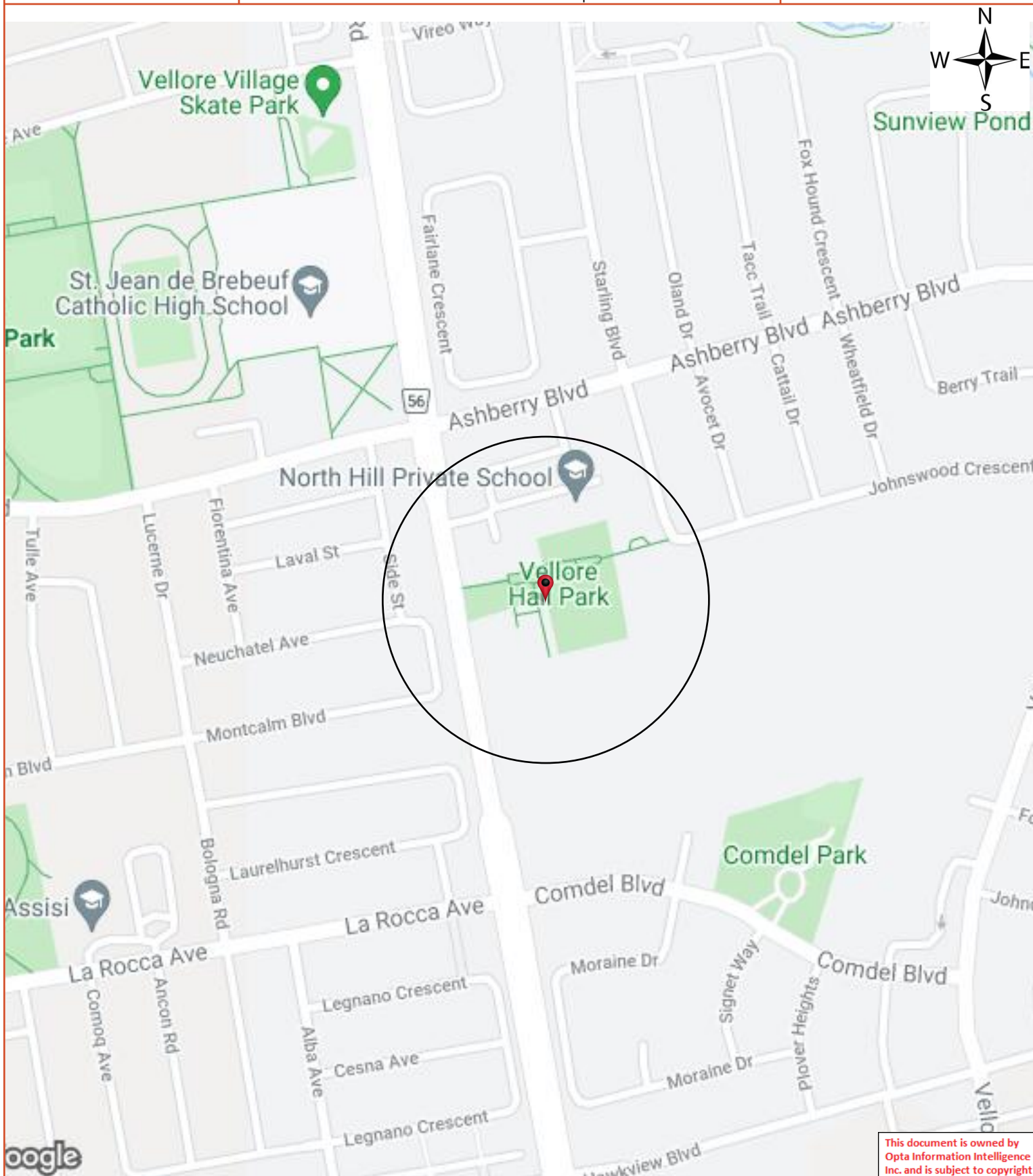
9541 Weston Road Vaughan ON
Project No:

21122001000
Opta Order ID:

101804

Requested by:
**Eleanor Goolab
Ecolog Eris**

Date Completed:
1/5/2022 6:25:05 AM



Opta Historical Environmental Services EnviroscanTM Terms and Conditions

Report

The documents (hereinafter referred to as the "Documents") to be released as part of the report (hereinafter referred to as the "Report") to be delivered to the purchaser as set out above are documents in Opta's records relating to the described property (hereinafter referred to as the "Property"). Opta makes no representations or warranties respecting the Documents whatsoever, including, without limitation, with respect to the completeness, accuracy or usefulness of the Documents, and does not represent or warrant that these are the only plans and reports prepared in association with the Property or in Opta's possession at the time of Report delivery to the purchaser. The Documents are current as of the date(s) indicated on them. Interpretation of the Documents, if any, is by inference based upon the information which is apparent and obvious on the face of the Documents only. Opta does not represent, warrant or guarantee that interpretations other than those referred to do not exist from other sources. The Report will be prepared for use by the purchaser of the services as shown above hereof only.

Disclaimer

Opta disclaims responsibility for any losses or damages of any kind whatsoever, whether consequential or other, however caused, incurred or suffered, arising directly or indirectly as a result of the services (which services include, but are not limited to, the preparation of the Report provided hereunder), including but not limited to, any losses or damages arising directly or indirectly from any breach of contract, fundamental or otherwise, from reliance on Opta Reports or from any tortious acts or omissions of Opta's agents, employees or representatives.

Entire Agreement

The parties hereto acknowledge and agree to be bound by the terms and conditions hereof. The request form constitutes the entire agreement between the parties pertaining to the subject matter hereof and supersedes all prior and contemporaneous agreements, negotiations and discussions, whether oral or written, and there are no representations or warranties, or other agreements between the parties in connection with the subject matter hereof except as specifically set forth herein. No supplement, modification, waiver, or termination of the request shall be binding, unless confirmed in writing by the parties hereto.

Governing Document

In the event of any conflicts or inconsistencies between the provisions hereof and the Reports, the rights and obligations of the parties shall be deemed to be governed by the request form, which shall be the paramount document.

Law

This agreement shall be governed by and construed in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein.

No Records Found

Requested by:
Eleanor Goolab
Date Completed: 01/05/2022 06:25:05



OPTA INFORMATION INTELLIGENCE

No Records Found



ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES



CITY
DIRECTORY

Project Property: *9541 Weston Road, Woodbridge, ON*
Report Type: *City Directory*
Order No: *21122300431*
Information Source: *Polk's York Region, Ontario Criss-Cross Directory*
Date Completed: *11/01/22*

Environmental Risk Information Services

A division of Glacier Media Inc.

1.866.517.5204 | info@erisinfo.com | erisinfo.com

City Directory Information Source
<i>Polk's York Region, Ontario Criss-Cross Directory</i>

PROJECT NUMBER: 21122300431	
Site Address:	9541 Weston Road, Woodbridge, ON
Year: 1999	
Site Listing:	- Vellore Cultural Daycamp Town of Vghn Prks & Rcrtn
Adjacent Properties:	
9465 Weston Road	- Residential (1 Tenant)
9516 Weston Road	-Address Not Listed
9520 Weston Road	-Address Not Listed
9544 Weston Road	-Address Not Listed
9545 Weston Road	-Address Not Listed
9555 Weston Road	-Address Not Listed

9564 Weston Road	-Address Not Listed
9565 Weston Road	-Residential (1 Tenant)
9575 Weston Road	-Residential (1 Tenant)
9585 Weston Road	-Residential (1 Tenant)

PROJECT NUMBER: 21122300431	
Site Address:	9541 Weston Road, Woodbridge, ON
Year: 1994	
Site Listing:	- Address Not Listed
Adjacent Properties:	
9465 Weston Road	- Address Not Listed
9516 Weston Road	-Address Not Listed
9520 Weston Road	-Address Not Listed
9544 Weston Road	-Address Not Listed

9545 Weston Road	-Address Not Listed
9555 Weston Road	-Address Not Listed
9564 Weston Road	-Address Not Listed
9565 Weston Road	-Address Not Listed
9575 Weston Road	-Address Not Listed
9585 Weston Road	-Address Not Listed

PROJECT NUMBER: 21122300431	
Site Address:	9541 Weston Road, Woodbridge, ON
Year: 1989	
Site Listing:	- Address Not Listed
Adjacent Properties:	
9465 Weston Road	- Address Not Listed

9516 Weston Road	-Address Not Listed
9520 Weston Road	-Address Not Listed
9544 Weston Road	-Address Not Listed
9545 Weston Road	-Address Not Listed
9555 Weston Road	-Address Not Listed
9564 Weston Road	-Address Not Listed
9565 Weston Road	-Address Not Listed
9575 Weston Road	-Address Not Listed
9585 Weston Road	-Address Not Listed

PROJECT NUMBER: 21122300431	
Site Address:	9541 Weston Road, Woodbridge, ON
Year: 1983	

Site Listing:	- Address Not Listed
Adjacent Properties:	
9465 Weston Road	- Address Not Listed
9516 Weston Road	-Address Not Listed
9520 Weston Road	-Address Not Listed
9544 Weston Road	-Address Not Listed
9545 Weston Road	-Address Not Listed
9555 Weston Road	-Address Not Listed
9564 Weston Road	-Address Not Listed
9565 Weston Road	-Address Not Listed
9575 Weston Road	-Address Not Listed
9585 Weston Road	-Address Not Listed

PROJECT NUMBER: 21122300431	
Site Address:	9541 Weston Road, Woodbridge, ON
Year: 1977-1978	
Site Listing:	- Address Not Listed
Adjacent Properties:	
9465 Weston Road	- Address Not Listed
9516 Weston Road	-Address Not Listed
9520 Weston Road	-Address Not Listed
9544 Weston Road	-Address Not Listed
9545 Weston Road	-Address Not Listed
9555 Weston Road	-Address Not Listed
9564 Weston Road	-Address Not Listed
9565 Weston Road	-Address Not Listed

9575 Weston Road	-Address Not Listed
9585 Weston Road	-Address Not Listed

PROJECT NUMBER: 21122300431	
Site Address:	9541 Weston Road, Woodbridge, ON
Year: 1972-1973	
Site Listing:	- Street Not Listed
Adjacent Properties:	
9465 Weston Road	- Street Not Listed
9516 Weston Road	- Street Not Listed
9520 Weston Road	- Street Not Listed
9544 Weston Road	- Street Not Listed
9545 Weston Road	- Street Not Listed

9555 Weston Road	- Street Not Listed
9564 Weston Road	- Street Not Listed
9565 Weston Road	- Street Not Listed
9575 Weston Road	- Street Not Listed
9585 Weston Road	- Street Not Listed

PROJECT NUMBER: 21122300431	
Site Address:	9541 Weston Road, Woodbridge, ON
Year: 1966	
Site Listing:	- Street Not Listed
Adjacent Properties:	
9465 Weston Road	- Street Not Listed
9516 Weston Road	- Street Not Listed
9520 Weston Road	- Street Not Listed

9544 Weston Road	- Street Not Listed
9545 Weston Road	- Street Not Listed
9555 Weston Road	- Street Not Listed
9564 Weston Road	- Street Not Listed
9565 Weston Road	- Street Not Listed
9575 Weston Road	- Street Not Listed
9585 Weston Road	- Street Not Listed

PROJECT NUMBER: 21122300431	
Site Address:	9541 Weston Road, Woodbridge, ON
Year: 1960	
Site Listing:	- Street Not Listed
Adjacent Properties:	

9465 Weston Road	- Street Not Listed
9516 Weston Road	- Street Not Listed
9520 Weston Road	- Street Not Listed
9544 Weston Road	- Street Not Listed
9545 Weston Road	- Street Not Listed
9555 Weston Road	- Street Not Listed
9564 Weston Road	- Street Not Listed
9565 Weston Road	- Street Not Listed
9575 Weston Road	- Street Not Listed
9585 Weston Road	- Street Not Listed

-All listings for businesses were listed as they are in the city directory.

-Listings that are residential are listed as “residential” with the number of tenants. The name of the residential tenant is not listed in the above city directory.

Appendix C

Correspondence



Feng Li

From: Public Information Services <publicinformationsservices@tssa.org>
Sent: Friday, February 11, 2022 9:29 AM
To: Feng Li
Subject: RE: 02112512 - 9541 Weston Road, Vaughan, ON

ATTENTION: Assurez-vous que le contenu soit de confiance avant d'ouvrir une pièce jointe ou un hyperlien.
CAUTION: Do not click on links or open attachments you do not trust.

Please refrain from sending documents to head office and only submit your requests electronically via email along with credit card payment. We are all working remotely and mailing in applications with cheques will lengthen the overall processing time.

NO RECORD FOUND

Hello,

Thank you for your request for confirmation of public information.

- We confirm that there are no records in our database of any fuel storage tanks at the subject addresses.

For a further search in our archives please complete our release of public information form found at https://www.tssa.org/en/about-tssa/release-of-public-information.aspx?_mid_=392 and email the completed form to publicinformationsservices@tssa.org along with a fee of \$56.50 (including HST) per location. The fee is payable with credit card (Visa or MasterCard).

Although TSSA believes the information provided pursuant to your request is accurate, please note that TSSA does not warrant this information in any way whatsoever.

Kind regards,

Sherees



Public Information Agent

Facilities and Business Services
345 Carlingview Drive
Toronto, Ontario M9W 6N9

Tel: +1-416-734-6222 | Fax: +1-416-734-3568 | E-Mail: publicinformationsservices@tssa.org
www.tssa.org



From: Feng Li <Feng.Li@englobecorp.com>
Sent: February 10, 2022 11:52 PM
To: Public Information Services <publicinformationsservices@tssa.org>
Subject: 02112512 - 9541 Weston Road, Vaughan, ON

[CAUTION]: This email originated outside the organisation.
Please do not click links or open attachments unless you recognise the source of this email and know the content is safe.

Good morning,

Could you please indicate if the TSSA has any fuel storage records on file for the properties listed below?

9541 Weston Road, Vaughan, ON
9545 Weston Road, Vaughan, ON
9591 Weston Road, Vaughan, ON
9555 Weston Road, Vaughan, ON
9581 Weston Road, Vaughan, ON
9587 Weston Road, Vaughan, ON
9591 Weston Road, Vaughan, ON

Thank you in advance for any information provided.



Feng Li, M.Sc., M.Eng., P.Eng.
Project Manager, Environment GTA / East - ON
T 1.877.300.4800 | M 1.437.991.6210

ENGLOBE

3397 American Drive, Units 14 & 15, Mississauga, ON L4V 1T8
englobecorp.com



AVERTISSEMENT : Le présent courriel et tous les documents qui y sont annexés sont confidentiels et peuvent être assujettis au secret professionnel. Si vous recevez ce courriel par erreur, veuillez nous en informer immédiatement et le détruire intégralement. **NOTICE**: This email and any files transmitted with it are confidential and can be subject to professional secrecy. If you have received this email in error or are not the intended recipient, please notify us immediately and delete it in its entirety.

This electronic message and any attached documents are intended only for the named recipients. This communication from the Technical Standards and Safety Authority may contain information that is privileged, confidential or otherwise protected from disclosure and it must not be disclosed, copied, forwarded or distributed without authorization. If you have received this message in error, please notify the sender immediately and delete the original message.

**Ministry of the Environment,
Conservation and Parks**

Access and Privacy Office

12th Floor
40 St. Clair Avenue West
Toronto ON M4V 1M2
Tel: (416) 314-4075
Fax: (416) 314-4285

**Ministère de l'Environnement, de
la Protection de la nature et des
Parcs**

Bureau de l'accès à l'information et
de la protection de la vie privée

12^e étage
40, avenue St. Clair ouest
Toronto ON M4V 1M2
Tél. : (416) 314-4075
Téléc.: (416) 314-4285



January 17, 2022

Feng Li
DST Consulting Engineers, a Division of Englobe
3397 American Drive, Unit 14 and 15
Mississauga, ON L4V 1T8

Dear Feng Li:

RE: ***Freedom of Information and Protection of Privacy Act Request***
Our File # A-2021-09027, Your Reference 02112512.000

The Ministry is in receipt of your request made pursuant to the *Freedom of Information and Protection of Privacy Act* and has received your payment in the amount of \$5.00 (non-refundable application fee).

The search will be conducted on the following: 9541 Weston Road, Woodbridge. If there is any discrepancy please contact us immediately.

You may expect a reply or additional communication as your request is processed. For your information, the Ministry charges for search and preparation time.

Due to the COVID-19 outbreak, requesters may experience some delays with FOI requests at this time.

This is to advise you, we've gone digital! Requests submitted by fax will no longer be accepted starting August 31, 2021. If you submitted requests by fax before August 31, 2021, we'll process it. Please don't re-submit it using the online form or you might get charged twice. The online form can be found on the central forms repository at the following link

<https://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/FormDetail?OpenForm&ACT=RDR&TAB=PROFILE&SRCH=1&ENV=WWE&TIT=freedom+of+information&NO=012-2146E>.

If you have any questions regarding this matter, please contact Nasreen Salar at or nasreen.salar@ontario.ca.

Yours truly,

Original Signed by

Noel Kent
Manager, Access and Privacy



Phase I/One Environmental Site Assessment – Interview Questionnaire

Name of Company: The City of Vaughan

Name: Alex Sorbara

Position/Title: Supervisor, Facility Management Department

Site address: 9541 Weston Road

Number of Building(s) at Site: 3 When were the building(s) constructed Unknown, suspect late 1800's

The Person's Relation to the Site

How long have you lived/worked at the Site? N/A

Main duties of your role? Facility supervisor of various sites/buildings in Vaughan

Current Activities at the Site and Surrounding Areas

Site Description	Property Uses (Residential/Commercial /Industrial, etc.)	Historical and Current Activities that May Have an Environmental Concern (e.g. manufacturing, chemical uses, waste generation, etc.)
The Site	Recreation / community use	Not applicable / unknown
Properties to the East	Park / residential	Not applicable / unknown
Properties to the South	Woodlot	Not applicable / unknown
Properties to the West	Regional road (Weston Road)	Not applicable / unknown
Properties to the North	Commercial plaza	Not applicable / unknown

Underground or Aboveground Storage Tanks (USTs or ASTs)

Does the property have any USTs? ☐ Yes (Number of USTs____) ☐ NO ☒ Unknown

If Yes,

Please indicate location, year of installation and contents: _____

Leak detection equipment or secondary containment systems installed? ☐ Yes ☐ NO ☐ Unknown

Any record of leak, spill or discharge? ☐ Yes ☐ NO ☐ Unknown

Does the property have any ASTs? ☐ Yes (Number of ASTS____) ☒ NO ☐ Unknown

If Yes,

Please indicate, location, year of installation and contents: _____

Leak detection equipment or secondary containment systems installed? ☐ Yes ☐ NO ☐ Unknown

Any record of leak, spill or discharge? ☐ Yes ☐ NO ☐ Unknown



Other Chemical Storage

Are chemicals other than the USTs/ASTs above stored on the Site? ☐ Yes ☒ NO ☐ Unknown

If Yes,

Please indicate type, volume and container: Only regular cleaning supplies stored in the buildings

Asbestos Containing Materials (ACMs)

Are there any ACMs in the building: ☐ Yes (Location _____) ☒ NO ☐ Unknown

Was ACMs removed from Site: ☐ Yes (Location _____) ☐ NO ☐ Unknown

Has an asbestos survey or audit of the property been conducted? ☒ Yes ☐ NO ☐ Unknown

Note: only survey of the existing buildings

Polychlorinated Biphenyls (PCBs)

Are there any PCBs (transformers and capacitors) at the Site: ☐ Yes ☒ NO ☐ Unknown

Was PCBs removed from Site: ☐ Yes (Location _____) ☐ NO ☐ Unknown

Ureaformaldehyde (UFFI)

Are there any UFFI at the Site? ☐ Yes (Location _____) ☒ NO ☐ Unknown

Was UFFI removed from Site? ☐ Yes (Location _____) ☐ NO ☐ Unknown

Spills

Has there ever been a spill at or near the Site? ☐ Yes ☒ NO ☐ Unknown

If Yes,

Please indicate location, date, amount and actions taken: _____

Industrial/Commercial Use

Has the Site or an adjacent property(s) ever been used for an industrial or commercial use?

☒ Yes ☐ NO ☐ Unknown

If Yes,

Please specify activities and time frames: Adjacent site (north) commercial / plaza use
Developed approx. 1990's

Environmental Violation

Has the Site ever been subject to environmental violations?

☐ Yes ☐ NO ☒ Unknown

If Yes,

Please specify and time frames: _____



Discharge of Wastewater

Does the Site discharge wastewater (not including sanitary waste or storm water) into a sanitary sewer system or onto the Site?

☐ Yes ☒ NO ☐ Unknown

If Yes,

Please specify and time frames: _____

Fill

Has fill material ever been imported to the Site (including illegal dumping)?

☐ Yes ☒ NO ☐ Unknown

If Yes,

Please specify amount, location and time frames: _____

Others

Has the site ever received a notice of Violation? ☐ Yes ☐ NO ☒ Unknown

Has there been any previous environmental assessment at the Site? ☐ Yes ☒ NO ☐ Unknown

Are there any environmental monitoring wells at the Site? ☐ Yes (Number____) ☒ NO ☐ Unknown

Are there any private or public water wells at the Site? ☐ Yes (Number____) ☒ NO ☐ Unknown

Additional Comments and/or Explanations if Any:

I, _____ (Print Name) from _____ (Company Name)
affirms that the above information and facts provided are true and correct, based on my current
knowledge as of the date completed.

Signature

Date Completed (MM-DD-YYYY)

Appendix D

Aerial Photographs



eNGLOBE



1: 4,514
March 30, 2022



Notes

9541 Weston Road, Vaughan



1: 4,514
March 30, 2022



Notes

9541 Weston Road, Vaughan

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March 30, 2022



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Appendix E

Site Photographs



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Photograph 1: View of the Site, standing on parking lot, looking west



Photograph 2: View of the east adjacent property (park), looking east



Photograph 3: View of north adjacent building (hall), looking north



Photograph 4: View of south adjacent property (woodlot), looking south.



Photograph 5: View of west adjacent property (Weston Road), looking west



Photograph 6: View of further north commercial plaza, looking east

Phase Two Environmental Site Assessment

9541 Weston Road, Vaughan, Ontario

City of Vaughan

Final Report

Reference No.: 02112512.000

June 22, 2022

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eNGLOBE

City of Vaughan
Reference No. 02112512.000

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1 Summary

Englobe Corp. (Englobe) was retained by the City of Vaughan (herein referred to as the “Client”) to complete a Phase Two Environmental Site Assessment (ESA) for the property located at 9541 Weston Road in Vaughan, Ontario (herein referred to as the “Site” or “Phase Two Property”). The Site is located in the southeastern quadrant of the intersection of Weston Road and Ashberry Boulevard in the City of Vaughan, Ontario. Compass direction described in this report is referenced to “Project North” which runs parallel to Weston Road, located immediately to the west of the Site. The Site location is shown on Figure 1 in Appendix A.

It is understood that this Phase Two ESA is being completed for due diligence purposes in support of proposed fire station development. Englobe understands that filing a Record of Site Condition (RSC) with the Ministry of Environment, Conservation and Parks (MECP) is not required at this time.

The Phase Two Property is an irregularly-shaped parcel of land with approximately 4,092 m² in area, which is currently occupied with an asphalt paved parking lot and grassed area. It is located adjacent to the east side of Weston Road, in the southeastern quadrant of the intersection of Weston Road and Ashberry Boulevard.

Englobe has completed a Phase One ESA for the Site in 2022. The Phase One ESA identified current and/or historical Potentially Contaminating Activities (PCAs) at the Site and/or surrounding properties, which resulted in Areas of Potential Environmental Concern (APECs) at the Site.

The two (2) APECs, one associated with onsite PCAs and one APEC associated with offsite PCAs, identified on the Site from the Phase One ESA are presented in the table below and provided on the Figure 3 in Appendix A.

Areas of Potential Environmental Concern

APEC	Location of APEC	Potentially Contaminating Activity (PCA)	Location of PCA	Contaminants of Potential Concern*	Media Potentially Impacted
APEC 1	Entire Site	Historical use of fill materials # 30 - Importation of Fill Materials of Unknown Quality	On-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR and pH, PHCs, BTEX, VOCs, PAHs, PCBs, OCPs	Soil
APEC 2	The north portion of the Site	Registered as a waste generator of photo processing wastes and inorganic laboratory chemicals # Undefined PCA No.	Off-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR and pH, PHCs, BTEX, VOCs, PAHs	Soil

Notes:*

- PHCs - Petroleum Hydrocarbon Fractions F1 to F4
- BTEX - Benzene, Toluene, Ethylbenzene and Xylenes
- VOCs - Volatile Organic Compounds
- PAHs - Polycyclic Aromatic Hydrocarbons
- PCBs- Polychlorinated Biphenyl
- OCPs - Organochlorine Pesticides
- B-HWS-Hot Water Soluble Boron
- EC-Electrical Conductivity
- SAR-Sodium Absorption Ratio

Based on the findings of the Phase One ESA, a Phase Two ESA was required and recommended. Consequently, a Phase Two ESA was carried out in order to further investigate soil and groundwater quality at the Site.

This Phase Two ESA was completed in accordance with the Ontario Regulation 153/04 (O. Reg. 153/04), as amended. The Phase Two ESA consisted of drilling 15 boreholes (BH1 to BH13, BH15 and BH16), including eight (8) deep boreholes and seven (7) shallow boreholes. Five (5) boreholes (BH1, BH8, BH9, BH12 and BH15) were instrumented with monitoring wells. Representative soil and groundwater samples were collected and submitted to the laboratory for analysis of Metals and Inorganics (M&I), Petroleum Hydrocarbon Fractions F1 to F4 (PHCs), including benzene, toluene, ethylbenzene and xylenes (BTEX), Volatile Organic Compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs), Polychlorinated Biphenyls (PCBs), Organochlorine pesticides (OCPs), pH and/or grain size.

Based on the results of this Phase Two ESA, the soil stratigraphy at the investigative locations generally comprises fill (sand and gravel) overlying native sand with some silt. The groundwater levels measured from the monitoring wells ranged from 1.18 to 7.76 m bgs. The water table is within the silt layer. The aquifer encountered during this Phase Two ESA appears to be an unconfined aquifer. The estimated thickness of the asphalt layer (except for BH4, BH13, BH15, and BH16 covered by a surficial topsoil layer with an average thickness of 0.2 m) ranged from 0.08 to 0.11 m. The granular base/ subbase material at the borehole locations consisted of sand and gravel that ranged from 0.12 to 0.3 m. The thickness of native sandy silt or silt/silty sand with some clay ranges from 0.3 m to 8.2 m. No bedrock was encountered during the Phase Two ESA drilling.

The soil and groundwater analytical results were compared to the Generic Site Condition Standards presented in the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act," dated April 15, 2011. For the purposes of this assessment, the soil analytical results have been compared to the Table 2: Full Depth Generic Site Condition Standards in a Potable Groundwater Condition (hereinafter referred to as the "MECP Table 2 Standards"). Specifically, the soil analytical results were compared to the Standards listed under Industrial/Commercial/Community (ICC) Property Use and medium to fine textured soils. The groundwater analytical results were compared to the Standards listed under All Types of Property Use.

According to the soil analytical results, concentrations of the EC and SAR from soil samples at various borehole locations were detected at the concentrations greater than the applicable MECP Table 2 ICC Standards. Based on the findings of Phase One ESA and Phase Two ESA Site visit, the Site was historically and currently used as a vehicle parking lot. Thus, de-icing activities and/or substances appear to be applied to surfaces for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both during the winter season. Per Section 49.1 of O.Reg.153/04, the presence of road salt compounds (e.g., sodium, chloride, EC, SAR) is not considered to exceed the Regulation if the application to surfaces is for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both. The analytical results of the remaining soil samples tested for M&I, PHCs, BTEX, VOCs and PCBs and PAHs were either below the laboratory detection limits or met the applicable Table 2 ICC Standards.

According to the groundwater analytical results, concentrations of chloride and sodium parameters from groundwater sample (BHMW15) were detected at the concentrations greater than the applicable MECP Table 2 Standards. Considering the location of BH15 is close to the parking lot and pedestrian sidewalk in the Vellore Hall Park, de-icing activities and/or substances appear to be applied to surfaces for the safety of pedestrian traffic under conditions of snow or ice or both during the winter season. The analytical results of the remaining groundwater samples tested for M&I, PHCs, BTEX, VOCs and PCBs were either below the laboratory detection limits or met the applicable Table 2 Standards.

The statements made in this Executive Summary are subject to the same Property and Confidentiality as contained below and Limitations included in Section 7.1 and should be read in conjunction with the remainder of this report.

Property and Confidentiality

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If tests have been performed, the results of these tests are valid only for the sample described in this report.

Subcontractors of Englobe who may have performed laboratory work are duly evaluated according to the purchasing procedure of our quality system. For further information or details, please contact your project manager.”

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2 Introduction

Englobe Corp. (Englobe) was retained by the City of Vaughan (herein referred to as the “Client”) to complete a Phase Two Environmental Site Assessment (ESA) for the property located at 9541 Weston Road in Vaughan, Ontario (herein referred to as the “Site” or “Phase Two Property”). The Site is located in the southeastern quadrant of the intersection of Weston Road and Ashberry Boulevard in the City of Vaughan, Ontario. The compass direction described in this report is referenced to “Project North”, which runs parallel to Weston Road, located immediately to the west of the Site. The Site location is shown in Figure 1 in Appendix A.

Englobe has also completed a Phase One ESA for the Site in April 2022. The Phase One ESA identified current and/or historical Potentially Contaminating Activities (PCAs) at the Site and/or surrounding properties within the Phase one Study Area, which resulted in Areas of Potential Environmental Concern (APECs) at the Site. Consequently, a Phase Two ESA was recommended in order to further investigate the soil and groundwater quality at the Site in the identified APECs.

Written authorization to proceed with this work was provided by the Client on December 16, 2022. The proposed Phase Two ESA work plan associated with this assessment was implemented between January 13, 2022 to March 16, 2022. It is understood that this Phase Two ESA is being completed for due diligence purposes in support of proposed fire station development. Englobe understands that filing a Record of Site Condition (RSC) with the Ministry of Environment, Conservation and Parks (MECP) is not required at this time.

2.1 Site Description

A summary of the Site details is presented in the following table.

Table 1 Site Details

Property	Detail
Site Area	Approximately 4,092 m ²
Municipal Address	9541 Weston Road, Vaughan, Ontario
PIN(s)	033290297
Legal Description (s)	PT LT 17 CON 5, VAUGHAN, PT 1, 65R10012, VAUGHAN
Geodetic Coordinates to Centroid (approx..)	UTM Zone 17T 616000 m E 4854295 m N 1983 North American Datum

Notes: PIN - Property Identification Number
UTM - Universal Transverse Mercator

The Phase Two Property was vacant with no buildings or structures during the Phase One ESA Site Visit and Phase Two ESA by Englobe. The ground cover comprised of an asphalt paved parking lot and grassed area part of Vellore Hall Park. The Site is accessed through Weston Road at west portion of the Site.

The Phase Two Property is an irregularly shaped parcel of land with approximately 4,092 m² in area. The Site is surrounded by residential/commercial community and institutional buildings to the north and west, woodlands to the south and east. Weston Road runs north-south at west adjacent of the Site. The Study Area and Surrounding Land Use is presented on Figure 2 in Appendix A.

2.2 Property Ownership

Englobe obtained the land parcel information from GeoWarehouse on December 15, 2021, regarding the current and past owners of the land parcels comprising the Site. The results of the land title search are shown in the following table.

Table 2 Property Ownership

Date	Property Owner
Prior to 1999	Unknown
1999-Present	The Corporation of the City of Vaughan

2.3 Current and Proposed Future Uses

At the time of this Phase Two ESA, the Site is currently used as a parking lot with no building structures. Based on the information provided by the Client, it is understood that the Site will be redeveloped as a fire station.

Englobe also understands that filing a Record of Site Condition (RSC) with the Ministry of Environment, Conservation and Parks (MECP) is not required at this time.

2.4 Applicable Site Condition Standard

The soil and groundwater analytical results were compared to the standards as presented in the MECP document entitled “Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act,” dated April 15, 2011 (hereinafter referred to as the MECP Standards).

The MECP Standards provide a number of distinct criteria based on certain parameters, including current/proposed land use of the Site, whether groundwater in the area of the Site is relied upon as a source of potable water, the texture of the soils encountered at the Site, and whether any part of the Site would be classified as an environmentally sensitive area, including consideration of the pH of soils encountered.

Land Use

The Site is currently a parking lot and a portion of the grassed area with no structures for industrial use purposes. According to the information provided by the Client, it is understood that the Site will be redeveloped as a fire station as a future development plan. As a conservative consideration, the Residential/Parkland/Institutional land use Standards are applicable to the Site.

Groundwater Use

Based on a review of the well records presented in the ERIS report and the MECP well record Map (MECP, 2021), domestic water supply wells were existed within the Study Area. Thus, potable groundwater condition standards are applicable to the Site.

Soil Texture

Based on the results of the Geotechnical Investigation Report, Completed by Englobe in March 2022,, the soil stratigraphy at the borehole locations primarily comprises of an asphalt pavement/topsoil, followed by sand and gravel (base/subbase material) overlying native sandy silt/silt and silty sand with some clay to the maximum drilling depth. Based on the grain size analysis from boreholes BH2, BH8

and BH12, the soil was identified 99.1%, 77.2% and 78.5% particles to be medium to fine-textured (less than 75 µm). Thus, the medium to fine-textured soil standards were applied.

Environmentally Sensitive Areas

As per the findings of the Phase One ESA, no Provincially Significant Wetlands (PSWs), Areas of Natural and Scientific Interest (ANSIs) or water bodies were identified at the Site or within a 30 m radius of the Site.

Areas of Natural Significance

As per the findings of the Phase One ESA, no areas of natural significance were identified at the Site or within a 30 m radius of the Site.

Soil pH

Soil samples were collected for both surface and subsurface soils and submitted to the laboratory for pH analysis. The pH values of surface soils from the soil samples (BH1-1, BH8-2, BH9-1, BH12-1 and BH15-1) ranged from 7.51 to 7.76; The pH value of subsurface soil reported for the soil samples (BH3-5 and BH13-6) ranged from 7.52 to 7.57. Therefore, soil pH values are within 5 to 9 for surface soil and 5 to 11 for subsurface soil. Considering the pH values of the soil samples are within the acceptable range, thus, the Site is not considered an environmentally sensitive site.

Shallow Soil/Depth to Groundwater

Bedrock was not encountered at a depth of less than 2.0 m bgs across the Site. In addition, groundwater was recorded at depths ranging between 1.18 m and 7.76 m bgs at the Site based on the water level measurements on March 9, 2022. As such, the shallow soil Standards are not considered applicable for the Site.

Site Condition Standard Determination

Based on the above-noted information, the applicable Site Condition Standards are those listed in Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition (hereinafter referred to as the "MECP Table 2 Standards"). Specifically, the soil analytical results were compared to the Standards listed under Industrial/Commercial/Community (ICC) Property Use and for medium to fine-textured soils. The groundwater analytical results were compared to the Standards listed under All Types of Property Use.

3 Background

3.1 Physical Setting

The Phase Two Property is an irregularly shaped parcel of land with approximately 4,092 m² in area and is currently occupied with a parking lot and grassed area. Based on aerial photographs from Phase One ESA, several buildings/structures were historically located on the property; however, all buildings appear to have been demolished and/or removed from the Site. The Site has been developed as a parking lot since 2002 and has remained the same property use to present.

The Site is currently zoned as open space by the City of Vaughan and is surrounded by a mix of residential, commercial, and agricultural land uses (City of Vaughan Zoning By-law and key Maps, 2021). The Site is bordered by Weston Road to the west, and woodlands/parks to the south and east.

The Site is located within an area with quaternary geology consisting of Halton Till, including predominantly silt to silty clay matrix, high in matrix carbonate content and clast poor Pleistocene. The primary physiographic landform in the area of the Site is Bevelled Till Plains, with surficial geology of clayey silt to sandy silt. The bedrock geology consists of Georgina Bay Formation, Blue Mountain Formation, Billings Formation, Collingwood Member, Eastview Member with shale, limestone, dolostone and siltstone.

During this investigation, no water bodies, streams, ponds, or wetland areas were observed on the Site or within the surrounding area. The nearest water body is observed to be an unnamed creek and/or a water pond, approximately 600 m to the northeast of the Site.

Information provided on the MNRF Natural Heritage online map indicates that there are no local Provincially Significant Wetlands (PSWs) or Areas of Natural Scientific Interest (ANSIs) on or directly adjacent to the Site. Based on the review of MECP's online Source Protection Information Atlas, the Site and surrounding properties are not within the well-head protection areas.

The City of Vaughan obtains its potable water from Lake Ontario. The Phase Two Property is a parking lot land, a municipal drinking water system is not expected to be at the Site. Based on a review of the well records, no potable groundwater wells were identified at the Site. Fifteen (15) well records were identified within the Phase One Study Area, which are used for monitoring/observation wells, test holes purposes, domestic water supply or are abandoned wells.

3.2 Past Investigations

Englobe requested copies of all available previous environmental reports that were completed for the Site.

Englobe also has completed a Phase One ESA for the Site, the report entitled "*Phase One Environmental Site Assessment, 9541 Weston Road, Vaughan, Ontario*", dated April 7, 2022 (hereinafter referred as to the "2022 Englobe Phase One ESA"). The following potentially contaminating activities (PCAs) were identified for the Site and surrounding properties. The PCAs were evaluated to determine Areas of Potential Environmental Concern (APEC) that may affect the Site resulting from these activities. The identified APECs, one associated with onsite PCAs and one APEC associated with off-site PCAs, are listed in the table below.

Table 3 Areas of Potential Environmental Concern

APEC	Location of APEC	Potentially Contaminating Activity (PCA)	Location of PCA	Contaminants of Potential Concern*	Media Potentially Impacted
APEC 1	Entire Site	Historical use of fill materials PCA# 30 - Importation of Fill Materials of Unknown Quality	On-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR and pH, PHCs, BTEX, VOCs, PAHs, PCBs, OCPs	Soil
APEC 2	The north portion of the Site	Registered as a waste generator of photo processing wastes and inorganic laboratory chemicals PCA# Undefined PCA No.	Off-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR and pH, PHCs, BTEX, VOCs, PAHs	Soil

Notes: *

- PHCs - Petroleum Hydrocarbon Fractions F1 to F4
- BTEX - Benzene, Toluene, Ethylbenzene and Xylenes
- VOCs - Volatile Organic Compounds
- PAHs - Polycyclic Aromatic Hydrocarbons
- PCBs- Polychlorinated Biphenyl
- OCPs - Organochlorine Pesticides
- B-HWS-Hot Water Soluble Boron
- EC-Electrical Conductivity
- SAR-Sodium Absorption Ratio

Based on these findings, Englobe recommended that a subsurface environmental investigation (Phase Two ESA) be completed to assess the potential environmental contamination associated with these on-Site and off-site activities and associated environmental concerns.

4 Scope of Investigation

4.1 Overview of Site Investigation

The scope of work completed for this Phase Two ESA was developed in order to investigate the soil and groundwater quality at the Site. The Phase Two ESA consisted of the following tasks:

- Preparation of a Site-specific health and safety plan and work plan;
- Clearance of underground utilities/services at the Site, specifically the proposed borehole/monitoring well locations prior to the drilling activities, through Ontario OneCall for public locations, and retaining a private locator to clear and mark the drilling locations as well;
- Advance five (5) boreholes to a maximum depth of 8.0 meters below ground surface (m bgs); the Phase Two ESA drilling program was conducted concurrently with the geotechnical investigation.
- Oversee the drilling activities and log the subsurface conditions encountered within each borehole. The soil samples were collected at regular depth intervals, visually classified, and screened in the field for headspace vapour concentrations using a portable gas detector (i.e., PID and RKI Eagle).
- Submission of selected soil samples submitted to an accredited and certified laboratory for the chemical analyses for one or more of the following Parameters: Metals and Inorganics, Petroleum Hydrocarbon Fractions F1 to F4 (PHCs), including benzene, toluene, ethylbenzene and xylenes (BTEX), Volatile Organic Compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs), Polychlorinated Biphenyls (PCBs), pH and grain size; the samples were collected at the time of Excess Soil field sampling program.
- Install/develop five (5) groundwater monitoring wells in the advanced boreholes to a maximum depth of 8.0 m bgs, in accordance with Ontario Regulation 903, as amended;
- Collection and submission of groundwater samples from the five (5) monitoring wells for one or more of the following laboratory analyses: M&I, PHCs, BTEX, VOCs, PCBs and/or PAHs. Conduct the elevation survey, monitor the groundwater levels to determine the depth to the groundwater table, and evaluate the presence/absence of phase separated liquids and organic subsurface vapour concentrations in the installed monitoring wells.
- Disposal of soil cuttings and purged groundwater by a certified waste disposal contractor; and
- Preparation of the Phase Two ESA report.

All work performed by Englobe as part of this Phase Two ESA was carried out in accordance with applicable regulations, industry standards, and Ontario Regulation 153/04 (O. Reg. 153/04), as amended.

4.2 Media Investigated

A summary of the investigated media is presented below. Detailed descriptions, including media, chemical parameters, depths, and assessment locations, are provided in the Sampling and Analysis Plan, in Figure 4, Appendix A.

Prior to the initiation of the field activities, a sampling and analysis plan was prepared by Englobe in order to provide a detailed summary of the proposed investigative locations and soil and groundwater analytical program. The sampling and analysis plan is provided in Appendix B.

Englobe investigated soil and groundwater in the APECs identified on the Phase Two Property. As part of this Phase Two ESA, Englobe collected and analyzed soil and groundwater samples via the newly advanced boreholes and newly installed monitoring wells at the Site.

There was no water body or sediment identified on the Phase Two Property, sediment was not sampled and analyzed as part of this Phase Two ESA.

4.3 Phase One Conceptual Site Model

Englobe previously completed a Phase One ESA for the Site. Based on the findings of the Phase One ESA, APECs were identified at the Site. These APECs were associated with the historical and/or current PCAs on the Site and/or surrounding properties.

The mandatory requirements for the Phase One Conceptual Site Model are outlined in “Table 1 of Schedule D, Part VI - Phase One Environmental Site Assessment Report in O. Reg. 153/04 as amended”, and the findings/details from the Phase One ESA completed by Englobe are summarized in the table below.

Table 4 Phase One Conceptual Site Model

O.Reg. 153/04 Schedule D (Part VI) Table 1 Requirement	Phase One ESA Findings / Details
Show any existing buildings and structures	No buildings or structures are located on the Site.
Identify and locate water bodies located in whole or in part on the Study Area	No water bodies were observed on the Site or Study Area.
Identify and locate any areas of natural significance located in whole or in part on the Study Area	There were no ANSIs or PSWs at the Site or within the Study Area.
Locate any drinking water wells at the Site	Based on a review of the well records presented in the ERIS report, no potable water supply well was identified on the Site, while 11 domestic water supply wells were identified on the surrounding properties within the Study Area.
Show roads, including names, within the Study Area	The Site is located to the east of Weston Road. The Phase One Study Area consists of a parking lot in the southeastern quadrant of the intersection of Weston Road and Ashberry Boulevard in the City of Vaughan, Ontario.
Show uses of properties adjacent to the Site	The surrounding and adjacent properties consist of residential, commercial and institutional properties.
Identify and locate any PCA	The following PCAs have been identified within the Phase One Study Area: (PCA number as identified in Column A of Table 2 of Schedule D of O.Reg 153/04, as amended) PCA#NA - Waste generator PCA# 30 - Importation of Fill Material of Unknown Quality The locations of the PCAs are shown in Drawing 4, Appendix A.
Identify and locate any APECs	The following APECs have been identified at, on, or under the Phase One Property: APEC1: Entirety of Site (fill of unknown quality) APEC2: North portion of the Site The locations of the APECs are shown in Drawing 5, Appendix A.
Describe and assess any areas where potentially contaminating activity on or potentially affecting the Phase One Property has occurred.	Based on the PCAs and resulting APECs on the Phase One Property, the media potentially impacted includes soil and groundwater.

O.Reg. 153/04 Schedule D (Part VI) Table 1 Requirement	Phase One ESA Findings / Details
Describe and assess and contaminants of potential environmental concern	Based on the PCAs and identified APECs on the Site, the following contaminants of potential environmental concern have been identified: PHC (Fractions F1-F4), BTEX, PAHs, PCBs, VOCs, OCPs, Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR and pH.
Describe and assess the potential for underground utilities, if any, to affect contaminant distribution and transport	The underground utilities consist of sanitary/storm sewers, water distribution, gas, communication, and/or hydro services. There is potential for these utilities to affect contaminant distribution and transport given that the underground utility corridors can serve as preferential pathways.
Describe and assess available regional or Site specific geological and hydrogeological information	Based on a review of the contour lines from the OBM, the topography of the Site and the surrounding area appears to be relatively flat and gently slopes to the southeast. The Site appears to be at elevations between approximately 225 m and 226 m asl, depending on location. The surficial geology of the Site and Study Area consists of clayey silt to sandy silt. The bedrock geology consists of Georgina Bay Formation, Blue Mountain Formation, Billings Formation, Collingwood Member, Eastview Member with shale, limestone, dolostone and siltstone. Based on aerial photographs, an unnamed creek, which is approximately 600 m northeast of the Site, flows from northwest to southeast. The shallow groundwater in the Site area appears to flow in a south/southeast direction.
Describe and assess how any uncertainty or absence of information obtained in each of the components of the Phase One ESA could affect the validity of the model.	The material in the Phase One ESA report prepared by Englobe reflects the judgment of Englobe in light of the information made available at the time of the Site reconnaissance on the date set out in the report and on information available at the time of preparation of this report. It should be noted that assessments made throughout this environmental assignment rely heavily on information supplied by others. While every effort has been made to use reliable and multiple sources, Englobe makes no guaranty of the accuracy or completeness of this third-party information available to us at the time of preparing this report. Hence, the historical records review is considered to be a potential source of uncertainty during the Phase One ESA. It is Englobe's opinion that the uncertainty or absence of information in the records review, interviews, and site reconnaissance of the Phase One ESA are not anticipated to affect the validity of the conclusions.

4.4 Deviations from Sampling and Analysis Plan

No significant deviations from the sampling and analysis work plan were encountered. Due to the limited amount of water in BH1, BH8, BH9 and BH12, no groundwater samples have been taken from BH1 and BH12. In addition, selected analytical parameters were tested in the groundwater samples from BH8 and BH9.

4.5 Impediments

No significant physical impediments were encountered during the fieldwork of Phase Two ESA. However, the ground within the Site was covered by snow at the time of the investigation which limited visibility at the Site.

5 Investigation Method

5.1 General

The Phase Two ESA was conducted in general accordance with the O. Reg. 153/04, as amended, under the supervision of Sam Voore, P.Eng., QP_{ESA}, with field activities following the MECP Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario, and Englobe Standard Operating Procedures, which are in accordance with O. Reg. 153/04, as amended.

5.2 Drilling and Excavating

Prior to the commencement of the field activities, a Phase Two ESA sampling and analysis plan was prepared by Englobe, as presented in Appendix B.

Following the clearance of public and private utility locates, fifteen (15) boreholes were advanced at the Site (BH1 to BH13, BH15 and BH16) on January 13, 14 and January 21, 2022 to depths of approximately 4.4 m or 8.2 m bgs. Phase Two ESA drilling program was conducted concurrently with the geotechnical investigation, and the soil samples were collected at the time of Excess Soil field sampling program.

Five (5) selected boreholes (BH1, BH8, BH9, BH12, and BH15) were instrumented as monitoring wells. The boreholes were advanced using a CME95 conventional drilling rig, equipped with split spoon sampling rods and 152 mm solid stem augers supplied and operated by Drilltech Drilling Ltd. of Newmarket, Ontario (Drilltech).

Representative soil samples were recovered from the boreholes at a regular interval of 0.6 m using split spoon soil sampling equipment. To minimize the potential for cross-contamination between samples, the split spoon samplers were washed with Alconox detergent and rinsed with potable and distilled water before each use.

The locations of the above-referenced boreholes/monitoring wells are illustrated in the attached Borehole and Monitoring Well Location Plan, Figure 4 in Appendix A.

The fieldwork was observed by a member of our engineering staff who documented the drilling and sampling procedures; recorded the results; documented the soil stratigraphy; monitored the groundwater conditions; directed and recorded the installations of the monitoring wells; carried out headspace vapour testing and cared for the recovered soil samples.

5.3 Soil Sampling

All soil samples collected from the boreholes using split spoon soil sampling equipment were subdivided for chemical analysis and/or soil vapour headspace screening. Selected samples were field preserved using laboratory-prepared methanol extraction kits (to field-preserve volatile parameters), placed in laboratory-supplied containers, packed in coolers with ice, and delivered to the laboratory for chemical analysis.

Based on the observation of soil samples from each borehole, the Site stratigraphy generally consisted of an asphalt pavement/topsoil, followed by the granular base/subbase material (sand and gravel) overlying native sandy silt/silt and silty sand with some clay to the maximum drilling depth.

The borehole logs, presented in Appendix C, include the soil descriptions, stratigraphy, headspace readings, and sample analysis.

5.4 Field Screening Measurements

Combustible Soil Vapour (CSV) headspace (i.e., the entrained air space in the bagged soil) on all soil samples were screened using an RKI Eagle 2 Portable Gas Detector, Type 101 (RKI). The RKI Eagle 2 was equipped with a catalytic combustible gas detector (CCGD), calibrated to hexane (HEX) with a detection limit of 5 parts per million (ppm) for the detection of petroleum hydrocarbon vapor concentrations. Additionally, the unit was equipped with a photoionization detector (PID) calibrated to isobutylene (IBL) to detect VOC vapour concentrations with a detection limit of 1 ppm. The CCGD were operated in methane elimination mode, and the vapour metres were all calibrated using hexane and isobutylene calibration gases prior to each use.

Based on the CSV headspace reading results of the soil samples, visual/olfactory examination of the soil samples for unusual staining, odours, and/or the presence of other deleterious matter, and soil types and water level, selected soil samples from the boreholes were submitted to an accredited laboratory for chemical analysis.

5.5 Groundwater: Monitoring Well Installation

Five (5) boreholes (BH1, BH8, BH9, BH12, and BH15) were instrumented with groundwater monitoring wells. The monitoring wells were installed to collect groundwater levels and representative groundwater samples.

The monitoring wells were constructed using flush-thread 50 mm diameter Trilock Polyvinyl Chloride (PVC) screens and riser pipe equipped with rubber O-ring seals. The monitoring well screen consisted of a 1.5 m or 3 m length of number 10 slot size pipe. The base of the well screen was completed with a solid PVC end cap and the top with a lockable “J” plug. All pipe components were pre-wrapped in plastic, which was removed at the time of well installation to minimize the potential for cross-contamination. The annular space between the well casing and borehole wall was filled with sand pack from the base to 0.3 m above the well screen. The annular space above the sand pack to within approximately 0.2 m of grade was filled with hydrated bentonite as a seal. All monitoring wells were completed with monument protective steel cover and cemented into place. Monument protective steel cover provides a stable and secure protective covering, which is also readily recognizable in the winter season.

Following the completion of monitoring well installations, the wells were developed of a minimum of three (3) well volumes of water or until dry to remove any groundwater potentially impacted by drilling activities and to reduce the amount of sediment within the wells using dedicated Waterra™ tubing and inertial foot valves in January 2022.

The groundwater monitoring well installed by Ace was documented by our engineering staff. A diagram of the newly installed monitoring wells is provided on the respective borehole logs in Appendix C.

5.6 Groundwater: Field Measurement of Water Quality Parameters

Groundwater from all newly-installed monitoring wells was pumped using a peristaltic pump with a low flow (typically less than 200 millilitres per minute [mL/min]) controller, periodically monitoring both groundwater table drawdown and the water quality indicator parameters during the well purge. Groundwater from each well was discharged through a flow-through cell equipped with a Horiba U-52

Multi-parameter Water Quality Meter and probes to measure indicator parameters, i.e., pH, oxidation-reduction potential (ORP), electrical conductivity (EC), dissolved oxygen (DO), turbidity (NTU) and water temperature. After groundwater table drawdown and/or the field indicator parameters had stabilized, indicating that the well was recharging with formation water, groundwater samples can be collected and submitted for laboratory analyses.

5.7 Groundwater: Sampling

Groundwater and potential non-aqueous phase liquid (NAPL) thickness, if any, were measured at the monitoring well locations on March 9, and 16, 2022 using a Solinst Model 122 electronic oil water interface meter. No NAPL was detected on the surface of the water table or at the bottom of the monitoring wells on the respective measurement dates.

Prior to use and between each water level measurement, the interface probe was washed with an Alconox detergent/water mixture and then rinsed with water and distilled water to prevent cross-contamination.

Dedicated Waterra™ low-density polyethylene (LDPE) tubing and Waterra™ inertial lift foot valves were installed in the monitoring wells to facilitate well development. The monitoring wells were purged of a minimum of three to five well volumes of groundwater. Purged and wash water was collected into sealed, labelled drums.

The monitoring wells (BH1, BH8, BH9, BH12, and BH15) were sampled on March 9 and 16, 2022 using a low flow sampling method. The objective of low flow sampling is to maintain a minimum water level drawdown and minimize turbidity releasing disturbances in the water column. Groundwater is sampled upon achieving chemical stabilization of purged water as evaluated from measurements of specific field water quality indicator parameters.

Application of the low flow sampling method involved the use of a peristaltic pump installed at a specified depth to maintain a water table drawdown of less than 10 cm. The peristaltic pump was connected by dedicated LDPE tubing to a flow cell and multi-sensor water quality meter (Horiba U-52). Chemical stabilization of the purged water was monitored by taking field quality parameter measurements of pH, temperature, electrical conductivity (EC), dissolved oxygen (DO), turbidity and oxidation-reduction potential (ORP). Groundwater table drawdown was monitored by a Solinst model 122 oil water interface meter. Prior to sampling, the calibration of the peristaltic pump was set to 200 mL/min and the pumping rate was monitored and adjusted accordingly to maintain a water table drawdown of less than 10 cm. The maximum pumping rate was not to exceed 500 mL/min or fall below 100 mL/min. Chemical stabilization of the purged groundwater was monitored by taking field parameter measurements at 5-minute intervals and comparing the measurements to applicable stabilization criteria. The purged water is considered stabilized, and representative of formation water as evidenced by three consecutive readings within the set stabilization criteria for individual parameters.

The applied stabilization criteria are summarized as follows:

Table 5 Groundwater Quality Parameter Monitoring

Parameter	Stabilization Criteria*
Temperature (°C)	+/- 0.5 C
Electrical Conductivity (mS/cm)	+/- 3%
Dissolved Oxygen (mg/L)	+/- 10%
pH	+/- 0.1
Oxygen Reduction Potential (mV)	+/-10 mV
Turbidity (NTU)	+/- 10% or less than 50

Notes:* Average of three consecutive readings
°C - degrees Celsius

mg/L - milligrams per litre
mS/cm - milliSiemens per centimetre
mv - millivolts
NTU - Nephelometric turbidity units

The groundwater samples were then collected directly from the pump discharge line into the appropriate sample containers supplied by the laboratory. Groundwater samples collected for metals analysis were field filtered. The groundwater samples were packed in coolers with ice in preparation to be delivered directly to the laboratory under chain of custody protocol for chemical analyses.

5.8 Sediment: Sampling

Sediment was not sampled as part of this Phase Two ESA.

5.9 Analytical Testing

All soil and groundwater samples were collected in laboratory supplied containers and were delivered to the Eurofins Environment Testing Canada Inc., Ottawa, Ontario, for environmental chemical analysis, and Englobe Toronto Laboratory for geotechnical analysis within the allowable holding times. “Worst-case” and/or representative soil samples were selected on the basis of field screening tests and visual or olfactory evidence of potential contamination and at locations where contaminants are expected to be present (e.g., fill materials, near the water table, etc.).

The selected soil and groundwater samples were submitted to the laboratory for analysis of one or more of the following parameters:

- Petroleum Hydrocarbon Fractions (PHC) F1 to F4;
- Benzene, Toluene, Ethylbenzene and Xylenes (BTEX);
- Polycyclic Aromatic Hydrocarbons (PAHs);
- Volatile Organic Compounds (VOCs);
- O. Reg. 153/04 Metals and Inorganic Parameters (M&I);
- Polychlorinated Biphenyls (PCBs);
- Organochlorine pesticides (OCPs)
- pH; and/or
- Grain size.

The laboratory analyses carried out for this investigation are summarized in the table below.

Table 6 Soil and Groundwater Analyses Summary

Sample Location	Sample ID	Approximate Depth (m bgs)	Media	Rationale	Laboratory Analyses
Soil Samples					
BH1	BH1-1	0.1-0.7	Soil	Chemical characterization of soil in the vicinity of APECs 1 and 2.	M&I, including EC and SAR, PAHs
	BH1-2	0.8-1.4			Metals, EC, SAR
	BH1-3	1.5-2.1			PHCs, BTEX
	BH1-5	3.1-3.7			VOCs, PHCs, BTEX
BH2	BH2-1	0.1-0.7	Soil		Metals, EC, SAR, PAHs, PHCs, BTEX

Sample Location	Sample ID	Approximate Depth (m bgs)	Media	Rationale	Laboratory Analyses
	BH2-6	3.8-4.4		Chemical characterization of soil in the vicinity of APECs 1 and 2.	VOCs, PHCs, BTEX
	Dup-4 (Duplicate of BH 2-6)	3.8-4.4		Quality Assurance and Quality Control.	VOCs, PHCs, BTEX
BH3	BH3-1	0.1-0.7	Soil	Chemical characterization of soil in the vicinity of APECs 1, and 2.	Metals, EC, SAR, PCBs
	BH3-5	3.1-3.7			PHCs, BTEX
	Dup-7 (Duplicate of BH 3-1)	0.8-1.4		Quality Assurance and Quality Control.	PCBs
BH4	BH4-1	0.1-0.7	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, EC, SAR, PAHs
	BH4-2	0.8-1.4			PHCs, BTEX
	BH4-9	7.6-8.2			PHCs, BTEX
BH5	BH5-1	0.1-0.7	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, EC, SAR, OCPs
	BH5-3	1.5-2.1			PHCs, BTEX
	BH5-9	7.6-8.2			PHCs, BTEX
	Dup-5 (Duplicate of BH 5-1)	0.1-0.7		Quality Assurance and Quality Control.	OCPs
BH6	BH6-1	0.1-0.7	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, EC, SAR, PAHs
	BH6-9	7.6-8.2			PHCs, BTEX
BH7	BH7-1	0.1-0.7	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, EC, SAR, PAHs
	BH7-3	1.5-2.1			PHCs, BTEX
	BH7-6	3.8-4.4			PHCs, BTEX
	Dup-2 (Duplicate of BH 7-1)	0.1-0.7		Quality Assurance and Quality Control	PAHs
	Dup-3 (Duplicate of BH 7-1)	1.5-2.1			PHCs, BTEX
BH8	BH8-1	0.1-0.7	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, EC, SAR,
	B3H8-2	0.8-1.4			M&I, EC, SAR, PAHs
	BH8-7	4.6-5.2			VOCs, PHCs, BTEX
BH9	BH9-1	0.1-0.7	Soil	Chemical characterization of soil in the vicinity of APEC 1.	M&I, EC, SAR
	BH9-2	0.8-1.4			Metals, EC, SAR, PAHs, PCBs
	BH9-3	1.5-2.1			VOCs, PHCs, BTEX
	BH9-9	7.6-8.2			PHCs, BTEX
BH10	BH10-1	0.1-0.7	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, EC, SAR,
	BH10-2	0.8-1.4			PHCs, BTEX
BH11	BH11-1	0.1-0.7	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, EC, SAR,
	BH11-2	0.8-1.4			PHCs, BTEX
	BH11-7	4.6-5.2			VOCs, PHCs, BTEX

Sample Location	Sample ID	Approximate Depth (m bgs)	Media	Rationale	Laboratory Analyses
	Dup-1 (Duplicate of BH 11-1)	0.1-0.7		Quality Assurance and Quality Control	Metals
BH12	BH12-1	0.1-0.7	Soil	Chemical characterization of soil in the vicinity of APEC 1.	M&I, EC, SAR, PAHs
	BH12-2	0.8-1.4			Metals, EC, SAR, PHCs, BTEX
	BH12-8	6.1-6.7			VOCs, PHCs, BTEX
BH13	BH13-1	0.1-0.7	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, EC, SAR
	BH13-6	3.8-4.4			PHCs, BTEX
BH15	BH15-1	0.1-0.7	Soil	Chemical characterization of soil in the vicinity of APEC 1.	M&I, EC, SAR
	BH15-2	0.8-1.4			Metals, EC, SAR
BH16	BH16-1	0.1-0.7	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, EC, SAR, OCPs
	BH16-2	0.8-1.4			PHCs, BTEX
	BH16-6	3.8-4.4			VOCs, PHCs, BTEX
Groundwater Sampling					
BH 1	BH16W1	4.03	Groundwater	Chemical characterization of soil in the vicinity of APECs 1, and 2.	N/A
BH 8	BH16W8	4.81	Groundwater	Chemical characterization of soil in the vicinity of APECs 1, and 2.	VOCs, BTEX
BH 9	BH16W9	7.90	Groundwater	Chemical characterization of soil in the vicinity of APECs 1, and 2.	VOCs, BTEX
BH 12	BH16W12	7.81	Groundwater	Chemical characterization of soil in the vicinity of APECs 1, and 2.	N/A
BH 15	BH16W15	4.14	Groundwater	Chemical characterization of soil in the vicinity of APECs 1, and 2.	M&I, VOCs, PHCs, BTEX, PAHs, PCBs
BH 15	BH16W21 and DUP1 (Duplicate of BH16W15)	4.14	Groundwater	Quality Assurance and Quality Control	M&I, VOCs, PHCs, BTEX, PAHs, PCBs

Notes: N/A - no groundwater sample to the laboratory for chemical analysis due to dry condition in the monitoring well

5.10 Residue Management Procedures

Soil cuttings, wash water, and purged groundwater generated as part of this Phase Two were contained in 205 L steel drums equipped with locking secure lids. Englobe will arrange a licensed subcontractor (Apex Environmental Services Inc.) to pick up and dispose of these drums.

5.11 Elevation Surveying

An elevation survey was conducted to establish the top of pipe and ground surface elevations at the borehole/monitoring well locations. The borehole locations were surveyed by Englobe personnel using Sokkia GRX2 GNSS Receiver GPS connected to MAGNET Enterprise network referenced to UTM

Zone 17T (NAD83). The ground surface elevations at each investigative location are shown on the borehole logs included in Appendix C.

5.12 Quality Assurance and Quality Control Measures

Quality assurance/quality control (QA/QC) measures were incorporated into the field sampling and laboratory analytical programs to provide for the provision of data of accepted accuracy, precision, and representativeness. Related measures consisted of equipment decontamination protocols, equipment calibration, sample collection and handling protocols, field documentation, residuals management, and contractor provision.

Borehole drilling and monitoring well installation was undertaken by an MECP licensed well drilling contractor and overseen by experienced Englobe field personnel. The drilling and monitoring well installation were undertaken using accepted equipment, methodologies and materials as documented by field personnel.

Decontamination procedures were followed during the course of soil and groundwater sampling as follows:

- All drilling and monitoring equipment having potential to come into contact with potentially contaminated soil and groundwater was decontaminated prior to and following each use. Decontamination consisted of washing equipment with a non-phosphate soap/water mixture followed by rinsing with distilled water;
- Prior to installation, well screens and riser pipes were not allowed to come into contact with the ground or any drilling equipment;
- All individual soil and groundwater samples and containers were handled with disposable chemical resistant nitrile gloves to minimize the potential for cross-contamination;
- Soil and groundwater samples were collected into pre-cleaned laboratory supplied containers;
- Specific procedures were followed for the documentation, handling, and transport of the soil and groundwater samples including:
 - Soil and groundwater samples, upon collection, were placed in ice chilled coolers to minimize the potential for chemical activity and sample degradation; and,
 - Upon completion of the sampling, soil and groundwater samples were assigned unique identification numbers and submitted to the contractual laboratory under the proper chain of custody protocols within the test-specific holding times.

Field duplicate samples were collected to evaluate the precision/reproducibility of the sampling programs, including the soil sampled from boreholes BH11-1 (Dup-1), BH7-1 (Dup-2), BH7-3 (Dup-3), BH2-6 (Dup-4), BH5-1 (Dup-5), and BH3-2 (Dup-7) for analyses of metals, PAHs, PHCs, BTEX, VOCs, PCBs, OCPs and the groundwater sampled from monitoring well BHMW15 (Dup1 and BHMW21) for analysis of metals and inorganic parameters, PAHs, PHCs, BTEX, VOCs and PCBs.

The contractual laboratory, Eurofins Environment Testing Canada Inc. performed chemical analysis following written procedures and referenced methods incorporating QA/QC protocols. Chemical analyses for specific analytical test groups were performed in accordance with the “Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act” MECP 2011. Analytical test group specific quality control samples were prepared and analyzed by the contractual laboratory including:

- Duplicates to evaluate method reproducibility and sample homogeneity;
- Method blanks to evaluate potential bias;
- Spike blanks to evaluate method accuracy and bias;

- Matrix spikes to evaluate extraction efficiency and matrix interferences; and,
- Surrogate samples to evaluate extraction efficiency.

Quality control results evaluated by the contractual laboratory were compared to applicable alert and control criteria and are presented in the quality control reports accompanying the certificates of analysis.

6 Review and Evaluation

6.1 Geology

Based on the results of this Phase Two ESA, the soil stratigraphy at the investigative locations generally comprises the granular base/subbase material (sand and gravel) overlying native sandy silt/silt and silty sand with some clay. The groundwater levels measured from the monitoring wells ranged from 1.18 to 7.76 m bgs. The water table is within the silt layer. The aquifer encountered during this Phase Two ESA appears to be an unconfined aquifer. The estimated thickness of the asphalt layer (except for BH4, BH13, BH15, and BH16 covered by a surficial topsoil layer with an average thickness of 0.2 m) ranged from 0.08 to 0.11 m. The granular base/ subbase material at the borehole locations consisted of sand and gravel that ranged from 0.12 to 0.3 m. The thickness of native sandy silt or silt/silty sand with some clay ranges from 0.3 m to 8.2 m. No bedrock was encountered during the Phase Two ESA drilling.

A summary of the soil stratigraphy encountered during this assessment and the corresponding depths and elevations are summarized in the borehole logs provided in Appendix C.

6.2 Groundwater: Elevation and Flow Direction

In general, the monitoring well screens were placed in an attempt to straddle the shallow groundwater table, to allow for groundwater level monitoring and appropriate groundwater quality assessment.

On March 9, 2022, groundwater levels and potential NAPL levels were measured at each monitoring well location by utilizing a Solinst Model 122 oil water interface meter. The water levels were determined by referencing the existing ground surface and/or the surveyed elevation of the monitoring well casing. No evidence of NAPL was detected on the surface of the water table or at the bottom of the monitoring wells during the groundwater level measurement dates.

Groundwater measurements at the monitoring well locations were summarized in Section 9.2. Based on the groundwater level measurements at the monitoring well locations, the groundwater elevations are between approximately 217.4 m and 223.6 m asl.

Based on the groundwater level measurements collected on March 9, 2022, the estimated groundwater flow direction at the Site is in a south/southwest direction, relative to project north, as shown on the Estimated Groundwater Flow Direction Plan, Figure 5 in Appendix A. It should be noted that the groundwater depth and flow direction may be locally influenced by Site drainage conditions and underground structures such as previous excavations, utility conduits, building footing, etc. Seasonal variation should be expected.

6.3 Groundwater: Hydraulic Gradients

Based on the groundwater levels at the Site, the horizontal hydraulic gradient was calculated as 0.1012 m/m (BH9 and BH15). There were no paired monitoring wells installed at the Site, vertical hydraulic gradient was not calculated during this assessment.

6.4 Fine-Medium Soil Texture

Based on the field observations, the predominant soils encountered at the Site were native sandy silt/silty sand with some clay. Based on grain size analysis on soils collected from boreholes BH2, BH8 and BH12, the soil was identified to be medium to fine-textured (with 77.2% and 78.5% particle size less than 75 µm). Therefore, Englobe utilized the medium to fine textured soil standards as per O. Reg. 153/04, as amended.

6.5 Soil: Field Screening

CSV headspace readings were carried out on all soil samples obtained from the borehole locations using an RKI Eagle™ 2 Portable Gas Detector, Type 101 that was set to methane-response elimination mode and calibrated to hexane and isobutylene standards. In general, the headspace vapour readings of all soil samples were measured between 0 and 25 parts per million (ppm) by hexane (HEX) and between 0 and 1 ppm by isobutylene (IBL), which is indicative of non-detectable to elevated concentrations of volatiles in the recovered soil samples.

6.6 Soil Quality

Soil samples were selected based on field screening readings and visual and/or olfactory evidence of potential contamination and at locations where contaminants would be expected to be found (i.e., fill materials, or soil near the water table, etc.).

Soil samples were submitted to the laboratory for chemical analysis for the contaminants of concern including one or more of metals and inorganic parameters, PHCs, BTEX, VOCs, PAHs, PCBs, OCPs, pH and/or grain size.

Based on the analytical results, Electrical conductivity and SAR were identified at concentrations greater than the applicable MECP Table 2 ICC Standards in the soil samples collected from the investigative locations at the Site.

The exceeded parameters in soil samples are summarized in the table below.

Table 7 Soil Exceedances Summary

BH No.	Sample ID	Sampling Depth, (m)	Sampling Date	Contaminants	Results	Table 2 ICC Standards
BH 1	BH 1-1	0.1-0.7	January 14, 2022	EC (Ms/cm) SAR	2.19 37.8	1.4 12
BH 2	BH 2-1	0.1-0.7	January 14, 2022	EC (Ms/cm) SAR	4.18 81.8	1.4 12
BH 3	BH 3-1	0.1-0.7	January 21, 2022	EC (Ms/cm) SAR	3.31 55.8	1.4 12
BH 4	BH 4-1	0.1-0.7	January 14, 2022	EC (Ms/cm) SAR	3.19 68.4	1.4 12
BH 5	BH 5-1	0.1-0.7	January 14, 2022	EC (Ms/cm) SAR	2.03 30.1	1.4 12
BH 6	BH 6-1	0.1-0.7	January 21, 2022	EC (Ms/cm) SAR	3.95 42.6	1.4 12
BH 7	BH 7-1	0.1-0.7	January 14, 2022	EC (Ms/cm) SAR	6.39 111	1.4 12

BH No.	Sample ID	Sampling Depth, (m)	Sampling Date	Contaminants	Results	Table 2 ICC Standards
	BH 8-2	0.8-1.4	January 13, 2022	EC (Ms/cm)	1.66	12
	BH 9-2	0.8-1.4	January 13, 2022	EC (Ms/cm) SAR	5.88 147	1.4 12
BH 10	BH 10-1	0.1-0.7	January 13, 2022	EC (Ms/cm) SAR	2.84 40.0	1.4 12
BH 11	BH 11-1	0.1-0.7	January 13, 2022	EC (Ms/cm) SAR	7.04 162	1.4 12
BH 12	BH 12-1	0.1-0.7	January 13, 2022	EC (Ms/cm) SAR	4.11 58.8	1.4 12

According to the soil analytical results, concentrations of the EC and SAR from soil samples at various borehole locations were detected at the concentrations greater than the applicable MECP Table 2 ICC Standards. Based on the findings of Phase One ESA and Phase Two ESA Site visit, the Site was historically and currently used as a vehicle parking lot. Thus, de-icing activities and/or substances appear to be applied to surfaces for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both during the winter season. Per Section 49.1 of O.Reg.153/04, the presence of road salt compounds (e.g., sodium, chloride, EC, SAR) is not considered to exceed the Regulation if the application to surfaces is for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both. The analytical results of the remaining soil samples tested for M&I, PHCs, BTEX, VOCs and PCBs and PAHs were either below the laboratory detection limits or met the applicable Table 2 ICC Standards.

The analytical data for all the soil samples collected from the Site and submitted for laboratory analysis are provided in Analytical Tables in Appendix D. The Certificates of Analysis for the samples collected and submitted for laboratory analysis as part of this investigation are included in Appendix E.

6.7 Groundwater Quality

Groundwater samples were submitted to the laboratory for chemical analysis for one or more of metals and inorganic parameters, VOCs, PHCs, BTEX, PAHs and PCBs.

Based on the sample analytical results, metals and inorganic parameters (Chloride and Sodium) in groundwater collected from BH15 exceeded the applicable Table 2 Standards, as illustrated in the table below and presented on Figure 23.

Table 8 Groundwater Exceedances Summary

Sample ID	Parameter	Contaminants Concentration (µg/L)	Table 2 SCS Fine (µg/L)
BHMW15	Chloride	4130000	790000
	Sodium	2930000	490000

According to the groundwater analytical results, concentrations of chloride and sodium parameters from groundwater sample (BHMW15) were detected at the concentrations greater than the applicable MECP Table 2 Standards. Considering the location of BH15 is close to the parking lot and pedestrian sidewalk in the Vellore Hall Park, de-icing activities and/or substances appear to be applied to surfaces for the safety of pedestrian traffic under conditions of snow or ice or both during the winter season. The analytical results of the remaining groundwater samples tested for M&I, PHCs, BTEX, VOCs and PCBs were either below the laboratory detection limits or met the applicable Table 2 Standards.

The analytical data for the groundwater samples collected from the Site and submitted for laboratory analysis are presented in Analytical Tables in Appendix D. The Certificates of Analysis for the samples collected and submitted for laboratory analysis as part of this investigation are included in Appendix E.

6.8 Sediment Quality

Sediment was not sampled as part of this Phase Two ESA.

6.9 Quality Assurance and Quality Control Results

All sample containers (with the appropriate preservatives added), including soil field preservation containers, were provided by Eurofins. The samples were kept cold in coolers with ice and delivered to the laboratory within the required timelines to fulfill sample storage and holding time requirements under chain of custody protocols.

Laboratory certificates of analysis have been received for all groundwater samples analyzed as part of this assessment. Copies of the complete laboratory certificates of analysis are presented in Appendix E.

One trip blank was submitted to the laboratory with the groundwater sample submission for chemical analysis of VOC parameters. Additionally, field duplicate soil and groundwater samples were submitted to the laboratory for chemical analysis as part of the QA/QC program. A summary of the field duplicates is provided in the table below.

Table 9 Summary of QA/QC Program

Sample Location	Primary Sample ID	Duplicate Sample ID	Media	Analysis Performed
BH 2	BH 2-6	Dup-4	Soil	VOCs, PHCs, BTEX
BH 3	BH 3-2	Dup-7	Soil	PCBs
BH 5	BH5-1	Dup-5	Soil	OCPs
BH 7	BH7-1	Dup-2	Soil	PAHs
	BH7-3	Dup-3	Soil	PHCs, BTEX
BH 11	BH11-1	Dup-1	Soil	Metals
BH 15	BH15-1	BH15-2	Groundwater	PCBs, PAHs
	BH15-3	BH15-4	Groundwater	M&I, PHCs, BTEX, VOCs

Field duplicate samples were collected to evaluate sample precision related to the analyses of all submitted soil and groundwater samples. One field duplicate sample for both soil and groundwater samples was submitted for laboratory analysis for every ten samples. Relative Percent Difference (RPD) calculations were determined for each compound if it was measured in both the submitted sample and the corresponding duplicate sample at concentrations more than 5 times of the method detection limit for the respective parameter. A summary of the RPD calculations for soil samples is shown in the table below:

Table 10 Soil RPD

Sample ID	Sample Depth	Parameters	Analyzed Concentration (µg/g)	Duplicate Concentration (µg/g)	RPD (%)	Alert Criteria
Dup1 (Duplicate of BH 11-1)	0.1-0.7 mbgs	Chromium	30	20	10.0	40%
		Cobalt	6	7	3.8	
		Copper	16	17	1.5	
		Lead	17	21	5.3	
		Nickel	19	16	4.3	
		Vanadium	26	27	0.9	
		Zinc	56	64	3.3	

The RPD results were compared to the recommended alert criteria used by Eurofins (contractual laboratory) for all calculable parameters for the analyzed soil samples. Seven (7) parameters in the analyzed soil sample and its duplicate pair had detectable concentrations in which the RPDs were calculable. All calculable RPDs for the soil duplicate pairs were within the recommended alert criteria of 40% used by Eurofins Quality Assurance.

A summary of the RPD calculations for groundwater samples is shown in the table below:

Table 11 Groundwater RPD

Sample ID	Parameters	Analyzed Concentration (µg/L)	Duplicate Concentration (µg/L)	RPD (%)	Alert Criteria
GW-DUP1 (Duplicate of BHMW15)	Chloride	4130000	3950000	1.1	20%
	Sodium	2930000	2850000	0.7	
	Electrical Conductivity	11800	11800	5	10%

Three (3) parameters in the analyzed groundwater sample and its duplicate pair had detectable concentrations in which the RPDs were calculable. All calculable RPDs for the groundwater duplicate pairs were within the recommended alert criteria of 20% used by Eurofins Quality Assurance.

Based on the above discussions, it is the opinion of Englobe that the overall objectives of the investigation were met in terms of the quality of the field and laboratory data obtained.

7 Conclusions

This Phase Two ESA was conducted by Mr. Feng Li of Englobe under the guidance and supervision of Mr. Sam Voore, P.Eng., a Qualified Person as defined by O. Reg. 153/04, as amended. Englobe understands that filing a Record of Site Condition (RSC) with the Ministry of Environment, Conservation and Parks (MECP) is not required at this time.

This Phase Two ESA was completed in accordance with the Ontario Regulation 153/04 (O. Reg. 153/04), as amended. The Phase Two ESA consisted of drilling 15 boreholes (BH1 to BH13, BH15 and BH16), including eight (8) deep boreholes and seven (7) shallow boreholes. Five (5) boreholes (BH1, BH8, BH9, BH12 and BH15) were instrumented with monitoring wells. Representative soil and groundwater samples were collected and submitted to the laboratory for analysis of Metals and Inorganics (M&I), Petroleum Hydrocarbon Fractions F1 to F4 (PHCs), including benzene, toluene, ethylbenzene and xylenes (BTEX), Volatile Organic Compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs), Polychlorinated Biphenyls (PCBs), Organochlorine pesticides (OCPs), pH and/or grain size.

Based on the results of this Phase Two ESA, the soil stratigraphy at the investigative locations generally comprises fill (sand and gravel) overlying native sand with some silt. The groundwater levels measured from the monitoring wells ranged from 1.18 to 7.76 m bgs. The water table is within the silt layer. The aquifer encountered during this Phase Two ESA appears to be an unconfined aquifer. The estimated thickness of the asphalt layer (except for BH4, BH13, BH15, and BH16 covered by a surficial topsoil layer with an average thickness of 0.2 m) ranged from 0.08 to 0.11 m. The granular base/ subbase material at the borehole locations consisted of sand and gravel that ranged from 0.12 to 0.3 m. The thickness of native sandy silt or silt/silty sand with some clay ranges from 0.3 m to 8.2 m. No bedrock was encountered during the Phase Two ESA drilling.

According to the soil analytical results, concentrations of the EC and SAR from soil samples at various borehole locations were detected at the concentrations greater than the applicable MECP Table 2 ICC Standards. Based on the findings of Phase One ESA and Phase Two ESA Site visit, the Site was historically and currently used as a vehicle parking lot. Thus, de-icing activities and/or substances appear to be applied to surfaces for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both during the winter season. Per Section 49.1 of O.Reg.153/04, the presence of road salt compounds (e.g., sodium, chloride, EC, SAR) is not considered to exceed the Regulation if the application to surfaces is for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both. The analytical results of the remaining soil samples tested for M&I, PHCs, BTEX, VOCs and PCBs and PAHs were either below the laboratory detection limits or met the applicable Table 2 ICC Standards.

According to the groundwater analytical results, concentrations of chloride and sodium parameters from groundwater sample (BHMW15) were detected at the concentrations greater than the applicable MECP Table 2 Standards. Considering the location of BH15 is close to the parking lot and pedestrian sidewalk in the Vellore Hall Park, de-icing activities and/or substances appear to be applied to surfaces for the safety of pedestrian traffic under conditions of snow or ice or both during the winter season. The analytical results of the remaining groundwater samples tested for M&I, PHCs, BTEX, VOCs and PCBs were either below the laboratory detection limits or met the applicable Table 2 Standards.

8 Statement of Limitations

This report (hereinafter, the “Report”) was prepared by Englobe Corp. (hereinafter the “Company”) and is provided for the sole and exclusive use and benefit of the City of Vaughan (the “Client”). Ownership in and copyright for the contents of the Report belong to the Company.

No other person is authorized to rely on, use, copy, duplicate, reproduce or disseminate this Report, in whole or in part and for any reason whatsoever, without the express prior written consent of the Company. Any person using this Report, other than the person(s) to whom it is directly addressed, does so entirely at its own risk. The Company assumes no responsibility or liability in connection with decisions made or actions taken based on the Report, or the observations and/or comments contained within the Report. Others with interest in the Site and/or subject matter of this Report should undertake their own investigations and studies to determine how or if they or their plans could be affected.

This Report should be considered in its entirety; selecting specific portions of the Report may result in the misinterpretation of the content.

The work performed by the Company was carried out in accordance with the terms and conditions specified in the Professional Services Agreement between the Company and the Client, in accordance with currently accepted engineering standards and practices and in a manner consistent with the level of skill, care and competence ordinarily exercised by members of the same profession currently practicing under similar conditions and like circumstances in the same jurisdiction in which the services were provided. Standards, guidelines and practices may change over time; those which were applied to produce this Report may be obsolete or unacceptable at a later date.

The findings, recommendations, suggestions, or opinions expressed in this Report reflect the Company’s best professional judgement based on observations and/or information reasonably available at the time the work was performed, as appropriate for the scope, work schedule and budgetary constraints established by the Client. No other warranty or representation, expressed or implied, is included in this Report including, but not limited to, that the Report deals with all issues potentially applicable to the Site and/or that the Report deals with any and all of the important features of the Site, except as expressly provided in the scope of work.

This Report has been prepared for the specific Site, development, building, design or building assessment objectives and/or purposes that were described to the Company by the Client. The applicability and reliability of the content of this Report, subject to the limitations provided herein, are only valid to the extent that there has been no material alteration or variation thereto, and the Company expressly disclaims any obligation to update the Report. However, the Company reserves the right to amend or supplement this Report based on additional information, documentation or evidence made available to it.

The Company makes no representation concerning the legal significance of its findings, nor as to the present or future value of the property, or its fitness for a particular purpose and hereby disclaims any responsibility or liability for consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

Since the passage of time, natural occurrences, and direct or indirect human intervention may affect the views, conclusions and recommendations (if any) provided in this Report, it is intended for immediate use.

In preparing this Report, the Company has relied in good faith on information provided by others and has assumed that such information is factual, accurate and complete. The Company accepts no responsibility or liability for any deficiency, misstatement or inaccuracy in this Report resulting from the information provided, concealed or not fully disclosed by those individuals.

The conclusions presented herein are based on information gathered from a limited historical review of readily available geological, historical and regulatory information and a field inspection program. Sampling and analysis of soil, groundwater or any other material were not carried out as part of this assessment. Consequently, the presence and/or extent of any adverse environmental impact cannot be verified. The potential for environmental liability and/or environmental impact is an opinion that has been arrived at within the scope of this assessment.

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

Any description of the Site and its physical setting documented in this Report is presented for informational purposes only, to provide the reader a better understanding of the Site and scope of work. Any topographic benchmarks and elevations are primarily to establish relative elevation differences between sampling locations and should not be used for other purposes such as grading, excavation, planning, development, or similar purposes.

Any results from laboratory or other subcontractors reported herein have been carried out by others, and the Company cannot warrant their accuracy.

This Statement of Limitations forms an integral part of this report.

9 References

City of Vaughan Zoning By-law and key Maps, 2021

https://www.vaughan.ca/services/business/zoning_by_law_and_opas/Pages/default.aspx

Ontario Geological Survey. 2011. Bedrock Geology of Ontario. Miscellaneous Release - Data 126-Revision 1, Scale 1:250 000.

Ontario Geological Survey. 2010. Surficial Geology of Southern Ontario. Miscellaneous Release - Data 128-Revised.

Ontario Ministry of Natural Resources, 2010 Ontario Base Map, scale 1:22,000.

Ontario Ministry of Environment Regulation 153/04.

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

Phase One Environmental Site Assessment, 9541 Weston Road, Vaughan, Ontario, dated April 2022, prepared by Englobe Corp.

10 Tables

10.1 Monitoring Well Installation

Table 12: Monitoring Well Installation Details

Groundwater Monitoring Well	Monitoring Well Depth (m bgs)	Monitoring Well Screen Length (m)	Elevation of Ground Surface (m asl)	Elevation of Well Riser (m asl)
BHMW1	4.03	1.5	225.6	113.8
BHMW8	7.81	3	225.2	116.6
BHMW9	7.90	3	225.2	109.8
BHMW12	7.81	3	225	108.0
BHMW15	4.14	1.5	224.8	107.6

10.2 Water Levels

Table 13 - Groundwater Elevations

Groundwater Monitoring Well	Monitoring Well Depth (m bgs)	Depth to Water (m bgs) March 9-22	Elevation of Ground Surface (m asl)	Groundwater Elevation (m asl)
BHMW1	4.03	4.01	225.6	221.6
BHMW8	7.81	7.62	225.2	217.6
BHMW9	7.90	7.76	225.2	217.4
BHMW12	7.81	Dry	225	N/A
BHMW15	4.14	1.18	224.8	223.6

10.3 LNAPLs and DNAPLs

LNAPLs/DNAPLs were not encountered in the boreholes during drilling on (January 13,14 and 21, 2022). Evidence of LNAPLs/DNAPLs were not encountered during groundwater sampling of the monitoring wells on March 9, and 16, 2022.

10.4 Soil Data

The soil data summary table is provided in Table 13 in Appendix D.

10.5 Groundwater Data

The groundwater data summary table is provided in Table 14 in Appendix D.

10.6 Sediment Data

No sediment samples were collected and submitted for laboratory analysis as part of this Phase Two ESA.

10.7 Soil: Maximum Concentration Data

The soil maximum concentration data is provided in Table 15 in Appendix D.

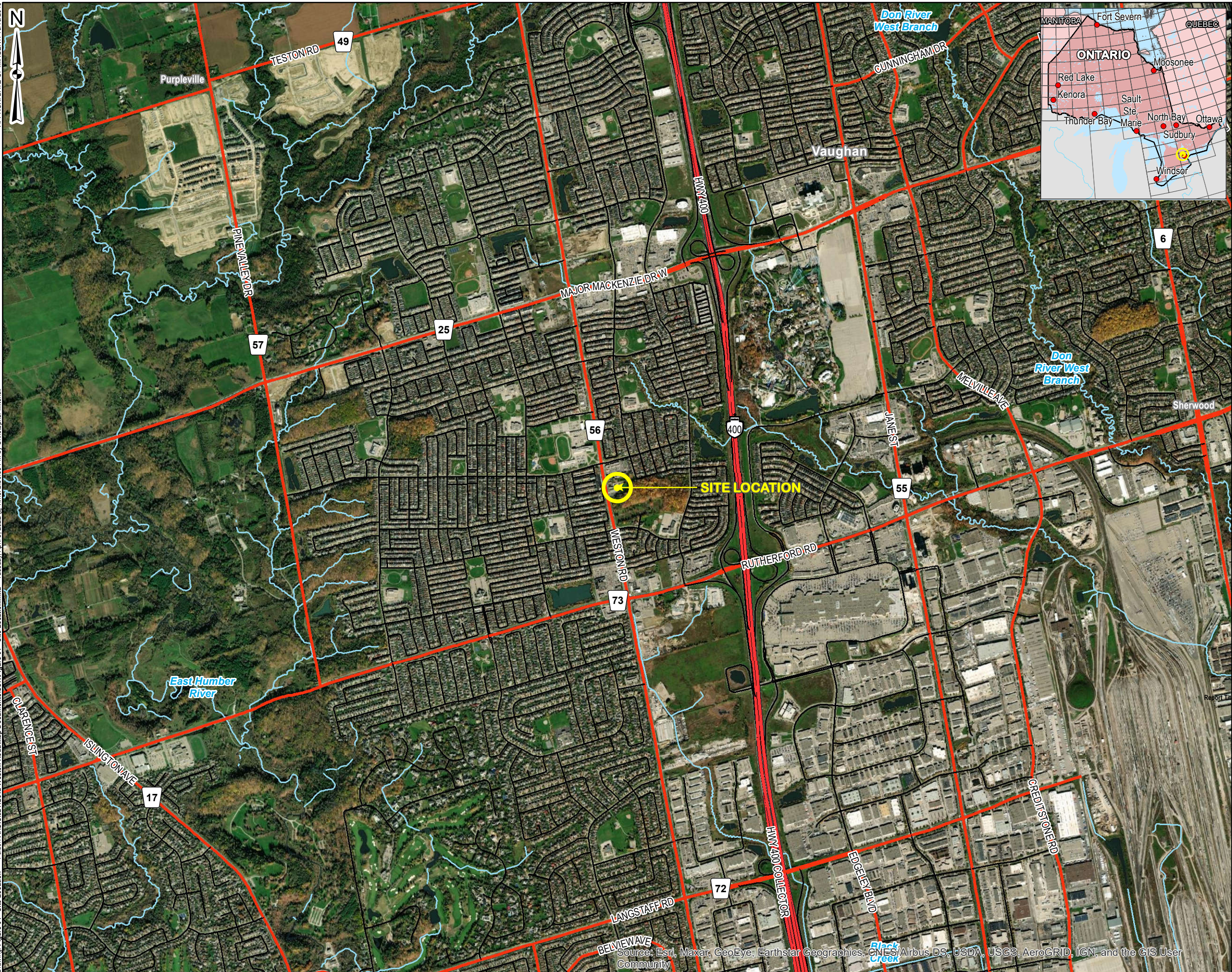
10.8 Groundwater: Maximum Concentration Data

The groundwater maximum concentration data is provided in Table 16 in Appendix D.

Appendix A

Figures










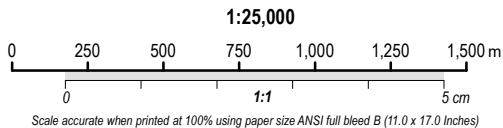
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1. This drawing shall be read in conjunction with the associated technical report.
2. Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

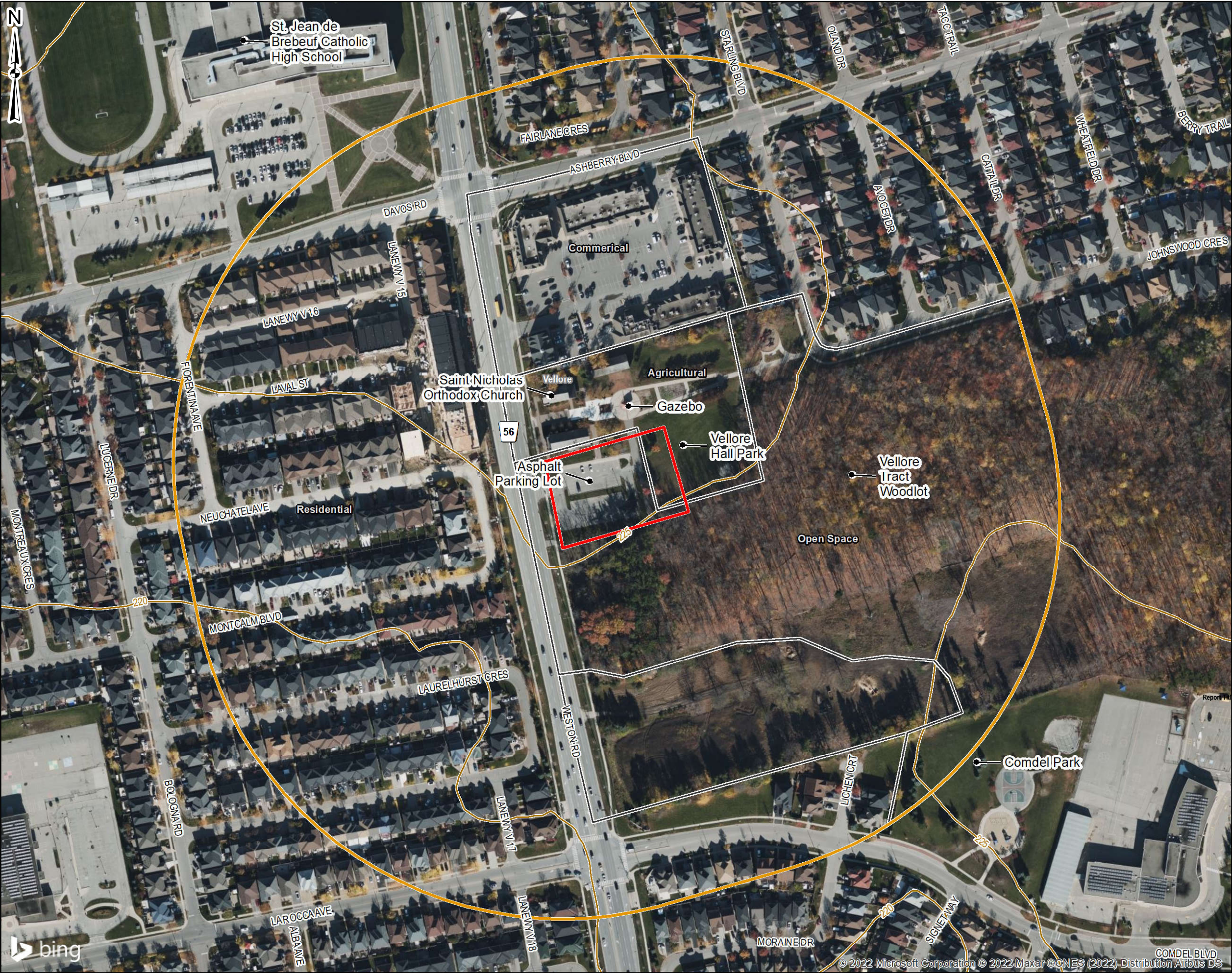
Legend



-  Expressway / Highway
-  Major Road
-  Minor Road
-  Railway
-  Watercourse



A	2022-04-05	-	02112512
Revision	Date	Issue	GIS #
Client			
City of Vaughan			
Site			
9541 Weston Road, Vaughan, Ontario			
e			
Phase Two Environmental Site Assessment			
Drawing Title			
Site Location Plan			
Designed By		Scale	
S.W.		1:25,000	
Drawn By		Date	
C.M.		April, 2022	
Approved By		Project No.	
W.J.		02112512.000	
Figure No.			
1			

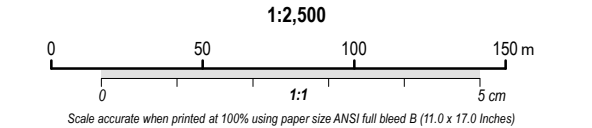


Notes

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

2. Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

- Legend**
- Site Boundary
 - 250 m Study Area
 - City of Vaughn Zoning
 - Contour (5 m Interval)



A	2022-04-05	-	02112512
Revision	Date	Issue	GIS #

Client
City of Vaughan

Site
9541 Weston Road, Vaughan, Ontario

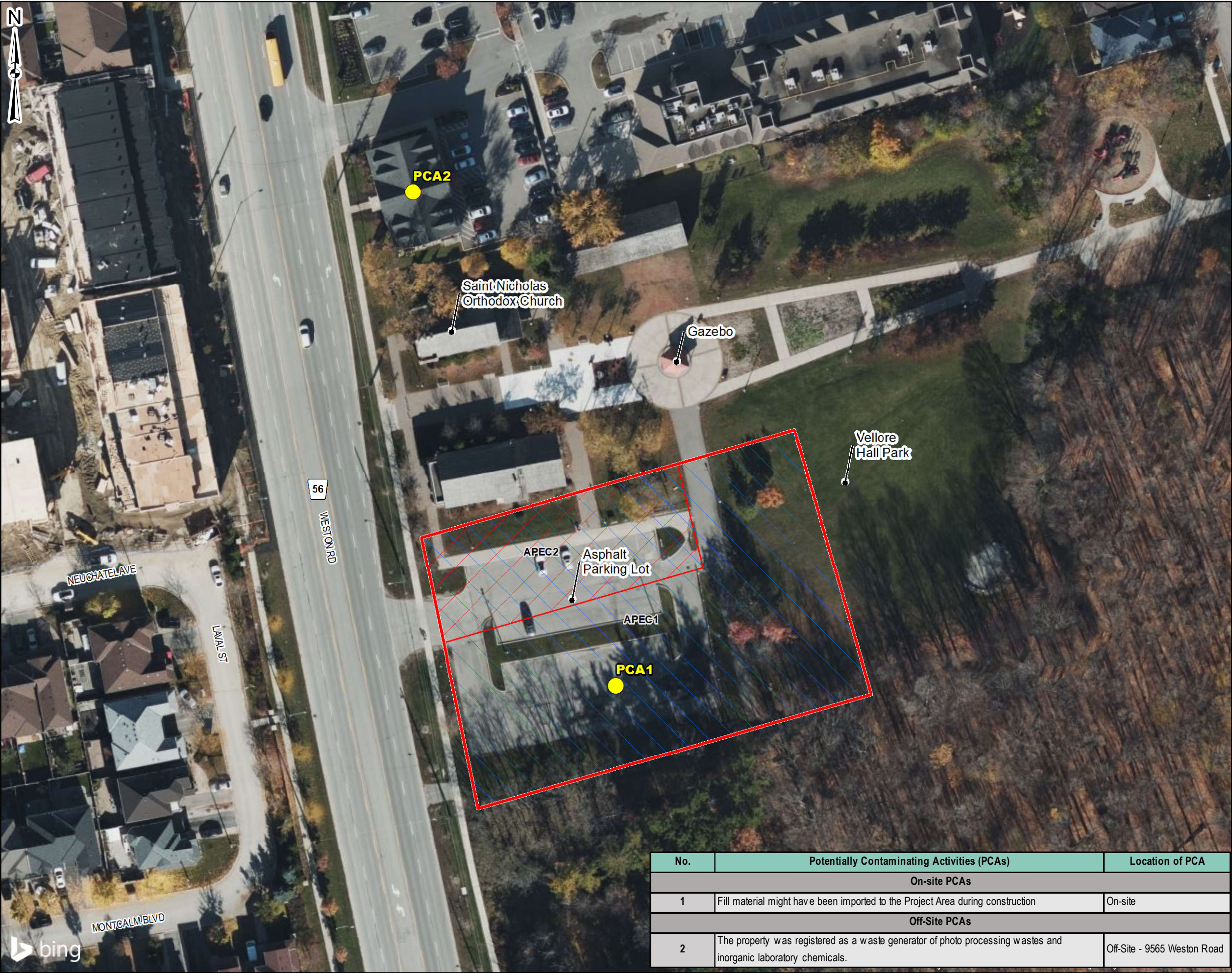
Phase Two Environmental Site Assessment

Drawing Title
Study Area and Surrounding Land Use Plan

Designed By	S.W.	Scale	1:2,500
Drawn By	C.M.	Date	April, 2022
Approved By	W.J.	Project No.	02112512.000

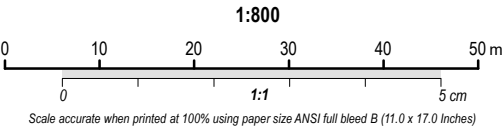
Figure No.
2





- Notes**
1. This drawing shall be read in conjunction with the associated technical report.
 2. Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

- Legend**
- Potentially Contaminating Activity (PCA)
 - Site Boundary
 - Area of Potential Environmental Concern (APEC)**
 - APEC1
 - APEC2



A	2022-04-19	-	02112512
Revision	Date	Issue	GIS #

Client
City of Vaughan

Site
9541 Weston Road, Vaughan, Ontario

Report Title
Phase Two Environmental Site Assessment

Drawing Title
Site Plan

Designed By	S.W.	Scale	1:800
Drawn By	C.M.	Date	April, 2022
Approved By	W.J.	Project No.	02112512.000

Figure No.
3

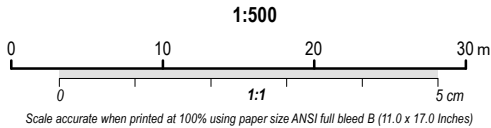
No.	Potentially Contaminating Activities (PCAs)	Location of PCA
On-site PCAs		
1	Fill material might have been imported to the Project Area during construction	On-site
Off-Site PCAs		
2	The property was registered as a waste generator of photo processing wastes and inorganic laboratory chemicals.	Off-Site - 9565 Weston Road

Drawing: Figure 04 - Borehole Location Plan Folder: A:\GIS\02112512 Weston Road\Map Documents\Phase II\Figure 04 - Borehole Location Plan.mxd Tuesday, April 19, 2022 @ Time: 3:33:02 PM by Christopher Mitchell

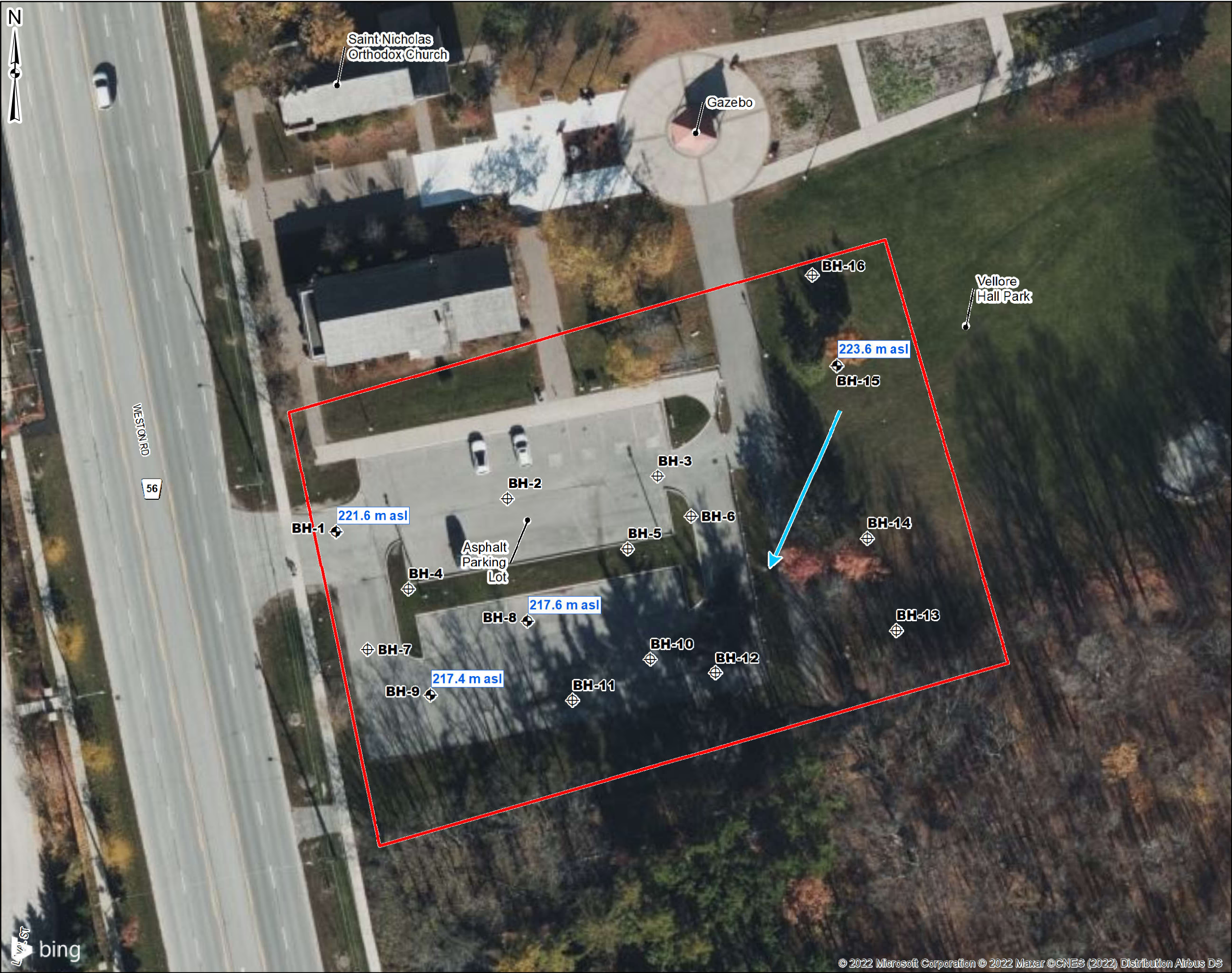


- Notes**
- 1. This drawing shall be read in conjunction with the associated technical report.
 - 2. Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

- Legend**
- Borehole
 - Site Boundary

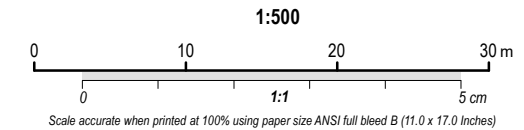


A	2022-04-19	-	02112512
Revision	Date	Issue	GIS #
Client			
City of Vaughan			
Site			
9541 Weston Road, Vaughan, Ontario			
Report Title			
Phase Two Environmental Site Assessment			
Drawing Title			
Borehole Location Plan			
Designed By		Scale	1:500
S.W.		Date	April, 2022
Drawn By		C.M.	
Approved By		W.J.	
Figure No.		Project No.	
		02112512.000	
		4	



- Notes**
1. This drawing shall be read in conjunction with the associated technical report.
 2. Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

- Legend**
- Borehole
 - Borehole / Groundwater Monitoring Well
 - Interpreted Groundwater Flow Direction
 - Site Boundary



A	2022-04-19	-	02112512
Revision	Date	Issue	GIS #

Client
City of Vaughan

Site
9541 Weston Road, Vaughan, Ontario

Report Title
Phase Two Environmental Site Assessment

Drawing Title
Groundwater Elevations & Estimated Groundwater Flow Direction

Designed By	S.W.	Scale	1:500
Drawn By	C.M.	Date	April, 2022
Approved By	W.J.	Project No.	02112512.000

Figure No.
5

Appendix B

Sampling and Analysis Plan



eNGLOBE



January 10, 2022

Ms. Adriana Tantalo
Project Manager
City of Vaughan
2141 Major Mackenzie Drive
Vaughan, Ontario L5A 1T1

Subject: **Sampling and Analysis Plan**
Phase Two Environmental Site Assessment
9541 Weston Road
Vaughan, Ontario
Project Reference: 02112512.000

1 INTRODUCTION

Englobe Corp. (Englobe) was retained by City of Vaughan (hereinafter referred to as the “Client”) to complete a Phase One Environmental Site Assessment (ESA) for a property located at 9541 Weston Road, Vaughan, Ontario (hereinafter referred to as the “Site”, “Phase One Property” or “Phase Two Property”), the findings of the Phase One ESA are presented under separate cover:

- “Phase One Environmental Site Assessment, 9541 Weston Road, Vaughan, Ontario” prepared by Englobe for City of Vaughan (Englobe Reference No.02112512.000)

Based on the findings of this Phase One ESA, potentially contaminating activities (PCAs) on the Site and the surrounding properties within the Phase One Study Area were identified, and areas of potential environmental concern (APECs) on the Phase One Property were identified as presented below:

Table 1 Areas of Potential Environmental Concern

APEC	Location of APEC	Potentially Contaminating Activity (PCA)	Location of PCA	Contaminants of Potential Concern*	Media Potentially Impacted
APEC 1	Entire Site	Historical use of fill materials # 30 - Importation of Fill Materials of Unknown Quality	On-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR and pH, PHCs, BTEX, VOCs, PAHs, PCBs, OCPs	Soil

APEC	Location of APEC	Potentially Contaminating Activity (PCA)	Location of PCA	Contaminants of Potential Concern*	Media Potentially Impacted
APEC 2	The north portion of the Site	Registered as a waste generator of photo processing wastes and inorganic laboratory chemicals # Undefined PCA No.	Off-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, VOCs	Soil and Groundwater

Notes: *

- PHCs - Petroleum Hydrocarbon Fractions F1 to F4
- BTEX - Benzene, Toluene, Ethylbenzene and Xylenes
- VOCs - Volatile Organic Compounds
- PAHs - Polycyclic Aromatic Hydrocarbons
- PCBs- Polychlorinated Biphenyl
- OCPs - Organochlorine Pesticides
- B-HWS-Hot Water Soluble Boron
- EC-Electrical Conductivity
- SAR-Sodium Absorption Ratio

The purpose of the Phase Two ESA is to investigate soil and groundwater environmental quality at the Site at the aforementioned areas of potential environmental concerns.

2 Phase Two ESA Sampling and Analysis Plan

The Phase Two ESA sampling and analysis plan has been prepared to identify possible soil and groundwater contamination at the Site. The sampling and analysis plan will consist of advancement of 15 boreholes, installation of seven (7) boreholes as groundwater monitoring wells. All monitoring wells will be instrumented with a 1.5 m or 3 m screen length of number 10 slot size pipe. The soil and groundwater samples will be collected and submitted to accredited laboratory for chemical analysis. The Sampling and Analysis Plan is presented in Table 1, hereafter.

Table 2 Sampling and Analysis Plan

Sample Location	Sample ID	Approximate Depth	Media	Rationale	Laboratory Analyses
BH1	Sample No.1	Worst-case (fill)	Soil	Chemical characterization of soil in the vicinity of APECs 1 and 2.	Metals and inorganics, PAHs
	Sample No.2	Worst-case	Soil		VOCs, PHCs, BTEX
BH2	Sample No.1	Surface (fill)	Soil	Chemical characterization of soil in the vicinity of APECs 1 and 2.	Metals, EC, SAR, PAHs
	Sample No.2	Worst-case (fill)	Soil		VOCs, PHCs, BTEX
	Duplicate	Depends	Soil	Quality Assurance and Quality Control	VOCs, PHCs, BTEX
BH3	Sample No.1	Worst-case (fill)	Soil	Chemical characterization of soil in the vicinity of APECs 1 and 2.	Metals, EC, SAR, PCBs
	Sample No.2	Worst-case	Soil		PHCs, BTEX

Sample Location	Sample ID	Approximate Depth	Media	Rationale	Laboratory Analyses
	Duplicates	Depends	Soil	Quality Assurance and Quality Control	PCBs
BH4	Sample No.1	Worst-case (fill)	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, EC, SAR, PAHs
	Sample No.2	Worst-case	Soil		PHCs, BTEX
BH5	Sample No.1	Worst-case (fill)	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, EC, SAR, OCPs
	Sample No.2	Worst-case	Soil		PHCs, BTEX
	Duplicate	Depends	Soil	Quality Assurance and Quality Control	OCPs
BH6	Sample No.1	Worst-case (fill)	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, EC, SAR, PAHs
	Sample No.2	Worst-case	Soil		PHCs, BTEX
BH7	Sample No.1	Worst-case (fill)	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, EC, SAR, PAHs
	Sample No.2	Worst-case	Soil		PHCs, BTEX
	Duplicate	Depends	Soil	Quality Assurance and Quality Control	PAHs
BH8	Sample No.1	Surface (fill)	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals and inorganics, PAHs
	Sample No.2	Worst-case	Soil		VOCs, PHCs, BTEX
BH9	Sample No.1	Surface (fill)	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, EC, SAR, PAHs, PCBs
	Sample No.2	Worst-case	Soil		PHCs, BTEX
BH10	Sample No.1	Surface (fill)	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, EC, SAR,
	Sample No.2	Worst-case	Soil		PHCs, BTEX
BH11	Sample No.1	Surface (fill)	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, EC, SAR,
	Sample No.2	Worst-case	Soil		VOCs, PHCs, BTEX

Sample Location	Sample ID	Approximate Depth	Media	Rationale	Laboratory Analyses
	Duplicates	Depends	Soil	Quality Assurance and Quality Control	Metals
BH12	Sample No.1	Surface (fill)	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, inorganics, PAHs
	Sample No.2	Worst-case	Soil		VOCs, PHCs, BTEX
BH13	Sample No.1	Surface (fill)	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, EC, SAR
	Sample No.2	Worst-case	Soil		PHCs, BTEX
BH15	Sample No.1	Surface (fill)	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, inorganics
	Sample No.2	Surface (fill)	Soil		Metals, EC, SAR
BH16	Sample No.1	Surface (fill)	Soil	Chemical characterization of soil in the vicinity of APEC 1.	Metals, EC, SAR, OCPs
	Sample No.2	Worst-case	Soil		VOCs, PHCs, BTEX
BH1	BHMW1	Depends	Groundwater	Chemical characterization of soil in the vicinity of APECs 1, and 2.	Metals, inorganics, PAHs, PHCs, BTEX, VOCs and/or PCBs
BH8	BHMW2	Depends	Groundwater	Chemical characterization of soil in the vicinity of APECs 1, and 2.	Metals, inorganics, PAHs, PHCs, BTEX, VOCs and/or PCBs
BH9	BHMW3	Depends	Groundwater	Chemical characterization of soil in the vicinity of APECs 1, and 2.	Metals, inorganics, PAHs, PHCs, BTEX, VOCs and/or PCBs
BH12	BHMW4	Depends	Groundwater	Chemical characterization of soil in the vicinity of APECs 1, and 2.	Metals, inorganics, PAHs, PHCs, BTEX, VOCs and/or PCBs
BH15	BHMW5	Depends	Groundwater	Chemical characterization of soil in the vicinity of APECs 1, and 2.	Metals, inorganics, PAHs, PHCs, BTEX, VOCs and/or PCBs
BH15	BHMW15	Depends	Groundwater	Quality Assurance and Quality Control	Metals, inorganics, PAHs, PHCs, BTEX, VOCs and/or PCBs

Notes:

*Chemical analysis program may change based on field conditions encountered.
Field preserve any and all locations of staining/odour, etc.*

Waste Management: Soil cuttings, wash water, and purged groundwater generated as part of this Phase Two ESA will be contained in 205 L steel drums equipped with locking secure lids. Englobe can arrange a licensed subcontractor to pick up and dispose of these drums upon the request from the Client.

Monitoring Well Installation, Development and Groundwater Sampling: Five boreholes will be equipped with groundwater monitoring wells for environmental sampling and analysis purposes. Therefore, the screens will be placed in an attempt to intercept the water table. These will require development and sampling following the drilling activities. Please refer to Table 1 for the analytical program.

QA/QC: The soil and groundwater analysis program will include the submission of one duplicate soil sample and one duplicate groundwater sample for analysis of metals and inorganic parameters, PHCs, BTEX, PAHs, VOCs, PCBs and OCPs. Please note that the samples will be collected at random and submitted for identical chemical analysis. The duplicate samples are to be collected in “lifts,” where the original sample container and the duplicate sample container are filled half-way and alternated during sampling to ensure that the field duplicate is representative of the original field sample.

Appendix C

Borehole Log



eNGLOBE

LOG OF BOREHOLE No. BH03

Englobe

Project No. 02112512.000

DRAWING No. BH3

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,305.111 E 616,028.716

Date Drilled: 2022-1-14

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

% Strain at Failure



Shear Strength by

Penetrometer Test



0

15

10

GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value				Natural Moisture Content %				SAMPLES	Sample No	Natural Unit Weight kN/m³	Percent of Fines %
					Shear Strength				Atterberg Limits (% Dry Weight)							
					40	80	120	160	20 40 60							
		ASPHALT CONCRETE (90 mm)	224.9	0												
		SAND AND GRAVEL (Granular Base/Subbase, 120 mm)	224.8													
		SANDY SILT: trace clay, brown, moist, compact to dense	224.7													
				1												
				2												
				3												
				4												
		SILTY SAND: brown, moist, dense to very dense	222.0													
				3												
				4												
		Terminated at 4.4 m	220.5													
		Borehole advanced using continuous flight solid stem augering equipment on January 14, 2022 by DrillTech Drilling LTD.														

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

Checked By: A. Rahman

Logged By: P. Jin

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

LOG OF BOREHOLE No. BH04

Englobe

Project No. 02112512.000

DRAWING No. BH4

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,288.738 E 615,980.069

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

% Strain at Failure



Shear Strength by

Penetrometer Test



0
15
10

GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLES	SPT NO	Natural Unit Weight kN/m ³	Percent of Fines, %
					40	80	120	160			
		TOPSOIL (160 mm)	225.4	0							
		SAND AND GRAVEL (Granular Base/Subbase, 150 mm)	225.2	0.2	17				11.3		
		SANDY SILT: trace to some clay, brown, moist, loose to dense	225.1								
				1	7				15.4		
				2	34				10.8		
			2.2								
		SILTY SAND: brown, moist to wet, compact to very dense	223.2								
				3	63				12.9		
				4	73				19.2		
				5	59				11.9		
				6	63				21.0		
				7							
				8	50				21.0		
			218.1								
				9	22				10.3		
		Terminated at 8.2 m	217.2								
		Borehole advanced using continuous flight solid stem augering equipment on January 13, 2022 by DrillTech Drilling LTD.									

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	7.3	none

Checked By: A. Rahman

Logged By: P. Jin

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

LOG OF BOREHOLE No. BH05

Englobe

Project No. 02112512.000

DRAWING No. BH5

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,296.052 E 616,010.286

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

% Strain at Failure



Shear Strength by

Penetrometer Test



LOG OF BOREHOLE No. BH06

Englobe

Project No. 02112512.000

DRAWING No. BH6

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,299.182 E 616,019.578

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

% Strain at Failure



Shear Strength by

Penetrometer Test



0
15
10



GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLES	SPT No.	Natural Unit Weight kN/m³	Percent of Fines, %
					40	80					
		ASPHALT CONCRETE (100 mm)	225.0	0.1							
		SAND AND GRAVEL (Granular Base/Subbase, 150 mm)	224.9								
		SANDY SILT: trace clay, brown, moist, compact	224.7								
				0	27		17.8		SS1		
				1	13		10.5		SS2		
				2	22		11.4		SS3		
				3	25		14.7		SS4		
		SILTY SAND: brown, moist, dense	222.1								
				4	33		16.6		SS5		
				5	42		12.8		SS6		
				6	40		14.8		SS7		
				7	33		18.6		SS8		
		CLAYEY SILT: trace gravel, grey, wet, very stiff	218.3								
				8	17		115.7.3		SS9		
		Terminated at 8.2 m	216.7								
		Borehole advanced using continuous flight solid stem augering equipment on January 13, 2022 by DrillTech Drilling LTD.									

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02 GDT 22-3-1

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

LOG OF BOREHOLE No. BH07

Englobe

Project No. 02112512.000

DRAWING No. BH7

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,281.299 E 615,973.690

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

% Strain at Failure



Shear Strength by

Penetrometer Test



GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value				Natural Moisture Content %				SAMPLES	Samp e No	Natural Unit Weight kN/m³	Percent of Fines, %
					Shear Strength				Atterberg Limits (% Dry Weight)							
					40	80	120	160								
					50	100	150	200	20	40	60					
		ASPHALT CONCRETE (110 mm)	225.3	0												
		SAND AND GRAVEL (Granular Base/Subbase, 150 mm)	225.2													
		SANDY SILT: trace to some clay, brown, moist, loose to compact	225.0													
				1												
				2												
			2.2													
		SILTY SAND: brown, moist, dense to very dense	223.1													
				3												
				4												
			4.4													
		Terminated at 4.4 m	220.9													
		Borehole advanced using continuous flight solid stem augering equipment on January 13, 2022 by DrillTech Drilling LTD.														

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

LOG OF BOREHOLE No. BH08

Englobe

Project No. 02112512.000

DRAWING No. BH8

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,284.188 E 615,997.335

Date Drilled: 2022-1-13

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content



Atterberg Limits



Undrained Triaxial at

% Strain at Failure



Shear Strength by

Penetrometer Test



0
15
10

GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value		Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLES	SPT No.	Natural Unit Weight kN/m³	Percent of Fines %		
					Shear Strength kPa								
					40	80						120	160
		ASPHALT CONCRETE (80 mm)	225.2	0									
		SAND AND GRAVEL (Granular Base/Subbase, 250 mm)	225.1	0.1		50		7.8		SS1			
		SANDY SILT: trace gravel, brown, moist, loose	224.8	0.3									
				1	7			15.0		SS2			
		SILT: some sand, trace clay, brown, moist, compact to very dense Gr: 0%, Sa: 13.8%, Si: 78.3%, Cl: 7.9%	223.8	1.4									
				2	28			9.0		SS3			
				3		52		18.6		SS4			
				4		61		16.6		SS5			
				5		59		19.5		SS6			
				6		43		19.6		SS7			
				7									
				8		71		20.0		SS8			
		SANDY CLAYEY SILT: trace gravel, grey, moist, hard Gr: 1.3%, Sa: 21.5%, Si: 46.7%, Cl: 30.5%	218.5	6.7									
				7									
			217.6			32		12, 120.8		SS9			
		Terminated at 8.2 m	216.9	8.2									
		Borehole advanced using continuous flight solid stem augering equipment on January 13, 2022 by DrillTech Drilling LTD.											

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	7.6	none
Feb 14, 2022	7.6	
Feb 24, 2022	Dry	

Project No. 02112512.000

DRAWING No. BH10

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,285.523 E 616,013.237

Date Drilled: 2022-1-14

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test

Natural Moisture Content



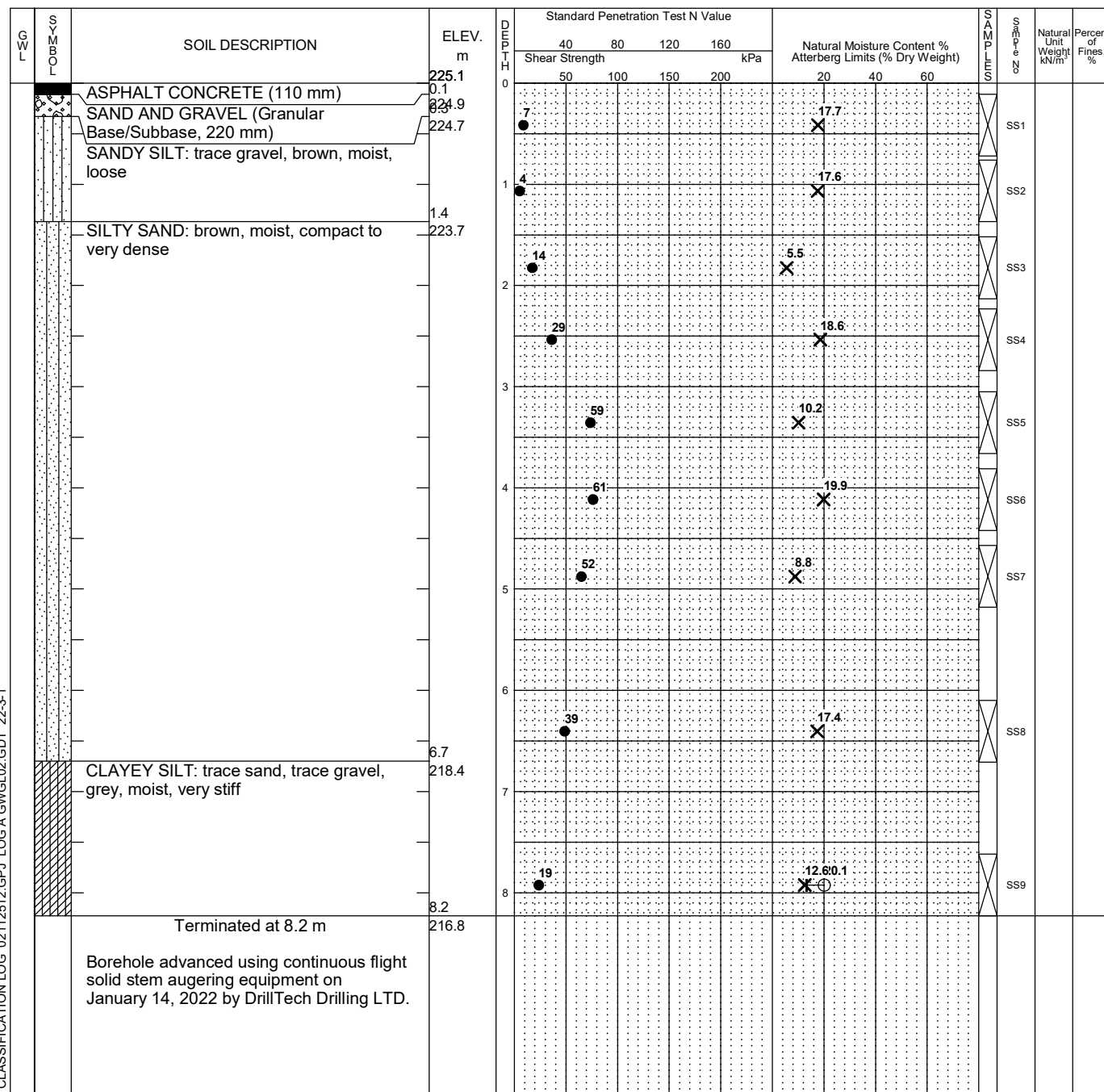
Atterberg Limits



Undrained Triaxial at

% Strain at Failure

Shear Strength by



Checked By: A.Rahman

Logged By: P.Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

LOG OF BOREHOLE No. BH12

Englobe

Project No. 02112512.000

DRAWING No. BH12

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,275.874 E 616,022.481

Date Drilled: 2022-1-21

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content

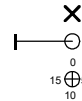
Atterberg Limits

Undrained Triaxial at

% Strain at Failure

Shear Strength by

Penetrometer Test



GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value				Natural Moisture Content % Atterberg Limits (% Dry Weight)	SAMPLE NO.	Sample No.	Natural Unit Weight kN/m³	Percent of Fines %
					Shear Strength kPa								
					40	80	120	160					
		ASPHALT CONCRETE (110 mm)	225.0	0.1									
		SAND AND GRAVEL (Granular Base/Subbase, 150 mm)	224.9	0.1									
		CLAYEY SILT: trace gravel, brown, moist, very loose to compact	224.8		14				16.6		SS1		
				1	6				19.8		SS2		
				2	12				8.6		SS3		
		SANDY SILT: brown, moist, loose	222.8		25				11.7		SS4		
		SILTY SAND: trace clay, brown, moist, compact to dense Gr: 0%, Sa: 68.9%, Si: 23.8%, Cl: 7.3%	222.1		46				14.9		SS5		
				4	35				12.2		SS6		
				5	30				8.5		SS7		
				6									
				7	35				13.6		SS8		
		CLAYEY SILT: some sand, trace gravel, grey, moist, very stiff Gr: 1.1%, Sa: 20.4%, Si: 50.4%, Cl: 28.1%	218.3										
				8	21				6.7/2.18.8		SS9		
		Terminated at 8.2 m	216.8										
		Borehole advanced using continuous flight solid stem augering equipment on January 21, 2022 by DrillTech Drilling LTD.											

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none
Feb 14, 2022	Dry	
Feb 24, 2022	7.6	

LOG OF BOREHOLE No. BH13

Englobe

Project No. 02112512.000

DRAWING No. BH13

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,286.170 E 616,050.535

Date Drilled: 2022-1-21

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content

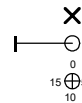
Atterberg Limits










Undrained Triaxial at

% Strain at Failure

Shear Strength by

Penetrometer Test



GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value				Natural Moisture Content % Atterberg Limits (% Dry Weight)				SAMPLES	SPT No	Natural Unit Weight kN/m³	Percent of Fines %
					Shear Strength kPa											
					40	80	120	160	20	40	60					
		TOPSOIL (200 mm)	225.8	0												
		SAND AND GRAVEL (Granular Base/Subbase, 150 mm)	225.6	0.2	15					25.9				SS1		
		CLAYEY SANDY SILT: trace gravel, brown, moist, firm to hard Gr: 0.3%, Sa: 25.2%, Si: 43.7%, Cl: 30.8%	225.4	0.4												
				1	7					20.0				SS2		
				2	12					12.0				SS3		
				3	21					11.8				SS4		
				4	30					12.3				SS5		
				5	40					13.4				SS6		
				6												
		Terminated at 4.4 m	221.4	4.4												
		Borehole advanced using continuous flight solid stem augering equipment on January 21, 2022 by DrillTech Drilling LTD.														

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

Checked By: A. Rahman

Logged By: P. Jin

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

LOG OF BOREHOLE No. BH15

Englobe

Project No. 02112512.000

DRAWING No. BH15

Project: City of Vaughan Fire Station - 9541 Weston Road, Woodbridge, Ontario

Sheet No. 1 of 1

Location: Refer to Borehole Location Plan

N 4,854,317.902 E 616,043.569

Date Drilled: 2022-1-21

Drill Type: Solid Stem Augers

Datum: Geodetic

Split Spoon Sample



Auger Sample



SPT (N) Value



Dynamic Cone Test



Shelby Tube



Shear Strength by

Vane Test



Natural Moisture Content

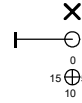
Atterberg Limits

Undrained Triaxial at

% Strain at Failure

Shear Strength by

Penetrometer Test



GWL	SYMBOL	SOIL DESCRIPTION	ELEV. m	DEPTH m	Standard Penetration Test N Value				Natural Moisture Content % Atterberg Limits (% Dry Weight)				SAMPLES	SAMPLE NO	Natural Unit Weight kN/m³	Percent of Fines, %
					Shear Strength kPa											
					40	80	120	160	20	40	60					
		TOPSOIL (210 mm)	224.8	0												
		SILTY CLAY: some sand, trace gravel, brown, moist, firm to very stiff Gr: 2.7%, Sa: 18.2%, Si: 37.0%, Cl: 42.1%	224.6	0.2	25					18.2				SS1		
				1	10					11.8				SS2		
				2	17					11.9				SS3		
			222.2	3	17					11.2				SS4		
				4	23					14.2				SS5		
			4.4	4	8					113.523.1				SS6		
		Terminated at 4.4 m	220.4													
		Borehole advanced using continuous flight solid stem augering equipment on January 21, 2022 by DrillTech Drilling LTD.														

CLASSIFICATION LOG 02112512.GPJ LOG A GWGL02.GDT 22-3-1

Checked By: A. Rahman

Logged By: P. Jin

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	2.7	none
Feb 14, 2022	2.7	
Feb 24, 2022	1.3	

Englobe

Time	Water Level (m)	Depth to Cave (m)
Upon Completion	Dry	none

Appendix D

Analytical Tables



eNGLOBE

Table 14
Soil Analytical Results
Metals and Inorganics

Parameters	Units	RDL	Guideline SOIL MECP Table 2 ICC Med-Fine	Sample ID Laboratory ID Sample Depth (metres below ground surface) Sample Collection Date (m/d/y)																				
				BH 1-1	BH 1-2	BH 2-1	BH 3-1	BH 4-1	BH 5-1	BH 6-1	BH 7-1	BH 8-1	BH 8-2	BH 9-1	BH 9-2	BH 10-1	BH 11-1	DUP-1	BH 12-1	BH 12-2	BH 13-1	BH 15-1	BH 15-2	BH 16-1
				1606024	1606025	1606028	1606834	1606031	1606034	1606837	1606038	1606043	1606044	1606046	1606047	1606050	1606052	1606053	1606056	1606057	1606839	1606841	1606842	1606843
				@ 0.1-0.7 1/14/2022	@ 0.8-1.4 1/14/2022	@ 0.1-0.7 1/14/2022	@ 0.1-0.7 1/21/2022	@ 0.1-0.7 1/14/2022	@ 0.1-0.7 1/14/2022	@ 0.1-0.7 1/21/2022	@ 0.1-0.7 1/14/2022	@ 0.1-0.7 1/13/2022	@ 0.8-1.4 1/13/2022	@ 0.1-0.7 1/13/2022	@ 0.8-1.4 1/13/2022	@ 0.1-0.7 1/13/2022	@ 0.1-0.7 1/13/2022	Duplication of BH 11-1	@ 0.1-0.7 1/13/2022	@ 0.8-1.4 1/13/2022	@ 0.1-0.7 1/21/2022	@ 0.1-0.7 1/21/2022	@ 0.8-1.4 1/21/2022	@ 0.1-0.7 1/21/2022
Metals and Inorganics																								
Antimony	ug/g	1	50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Arsenic	ug/g	1	18	2	4	2	4	2	3	4	3	3	2	2	3	3	3	4	4	4	2	2	3	
Barium	ug/g	1	670	46	65	57	94	29	51	59	63	39	20	21	38	63	53	75	84	65	23	46	54	59
Beryllium	ug/g	1	10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Boron	ug/g	5	120	<5	<5	15	<5	<5	<5	<5	5	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	5	<5	
Boron (Hot Water Soluble)	ug/g	0.5	2	<0.5	-	-	-	-	-	-	-	-	<0.5	<0.5	-	-	-	-	<0.5	-	-	<0.5	-	-
Cadmium	ug/g	0.4	1.9	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	
Chromium	ug/g	1	160	20	28	12	25	18	20	27	20	16	11	10	14	21	30	20	27	22	14	16	16	20
Cobalt	ug/g	1	100	5	8	2	8	4	6	6	7	7	4	3	6	7	6	7	8	9	3	4	6	5
Copper	ug/g	1	300	16	20	5	19	14	16	14	18	16	11	12	15	17	16	17	21	21	5	12	12	14
Cyanide (Free)	ug/g	0.005	0.051	<0.005	-	-	-	-	-	-	-	-	<0.005	<0.005	-	-	-	-	<0.005	-	-	<0.005	-	-
Chromium VI	ug/g	0.2	10	<0.20	-	-	-	-	-	-	-	-	<0.20	<0.20	-	-	-	-	<0.20	-	-	0.21	-	-
Lead	ug/g	1	120	14	12	8	8	15	14	9	11	9	4	115	6	13	17	21	46	10	6	11	5	13
Mercury	ug/g	0.1	20	<0.1	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	<0.1	-	-	<0.1	-	-
Molybdenum	ug/g	1	40	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Nickel	ug/g	1	340	14	23	5	18	12	15	18	17	16	9	8	14	16	19	16	20	21	8	10	12	13
Selenium	ug/g	0.5	5.5	<0.5	0.7	<0.5	0.5	<0.5	0.6	<0.5	<0.5	0.6	0.6	<0.5	0.6	0.7	0.6	0.6	0.9	0.9	<0.5	<0.5	<0.5	<0.5
Silver	ug/g	0.2	50	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Thallium	ug/g	1	3.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Uranium	ug/g	0.5	33	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Vanadium	ug/g	2	86	20	31	8	35	20	24	29	28	24	18	14	21	27	26	27	33	29	17	21	24	25
Zinc	ug/g	2	340	44	62	10	42	44	52	42	48	47	21	56	31	58	56	64	63	47	18	34	26	48
Other Parameters																								
Moisture (%)	%	0.1	NV	-	-	9.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
pH (pH Units)	-	2	NV	7.76	-	-	-	-	-	-	-	-	7.69	7.75	-	-	-	-	-	-	-	7.51	-	
Electrical Conductivity	mS/cm	0.05	1.4	2.19	3.32	4.18	3.31	3.19	2.03	3.95	6.39	3.38	1.66	3.76	5.88	2.81	7.04	-	4.11	8.5	0.34	0.42	0.42	0.40
Sodium Absorption Ratio (SAR)	-	0.01	12	37.8	17.0	81.8	55.8	68.4	30.1	42.6	111	12.2	6.36	79.4	147	40.0	162	-	58.8	126	1.18	1.35	6.11	0.89

Notes		
RDL	Reportable Detection Limit	
NV	No Criteria/RDL Value	
NA	Not Applicable	
<	Values is less than the RDL	
MECP	Soil, ground water and sediment standards for use under Part XV.1 of the Environmental Protection Act (MOE 2011), Table 2. Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Industrial/Commercial/Community Property Use for medium and fine textured soils.	
Yellow Highlight	Exceeds Table 2 ICC Standard	

Table 14
Soil Analytical Results
Organochlorinated Pesticides (OCPs)

Parameters	Units	RDL	Guideline SOIL MECP Table 2 ICC Med-Fine	Sample ID Laboratory ID Sample Depth (m bgs) Sample Collection Date (m/d/y)		
				BH 5-1	DUP-5	BH 16-1
				1606034	1606035	1606843
				@ 0.1-0.7 1/14/2022	Duplication of BH 5-1	@ 0.1-0.7 1/21/2022
OPCs						
Aldrin	ug/g	0.006	0.11	<0.006	<0.006	<0.002
Chlordane	ug/g	0.018	0.05	<0.018	<0.018	<0.006
Dieldrin	ug/g	0.006	0.11	<0.006	<0.006	<0.002
Endosulfan I + Endosulfan II	ug/g	0.006	0.38	<0.012	<0.012	<0.004
Endrin	ug/g	0.006	0.04	<0.006	<0.006	<0.002
gamma-BHC	ug/g	0.006	NV	<0.006	<0.006	<0.002
Heptachlor	ug/g	0.006	0.19	<0.006	<0.006	<0.002
Heptachlor epoxide	ug/g	0.006	0.05	<0.006	<0.006	<0.002
Hexachlorobenzene	ug/g	0.006	0.66	<0.006	<0.006	<0.002
Hexachlorobutadiene	ug/g	0.006	0.095	<0.006	<0.006	<0.002
Hexachloroethane	ug/g	0.006	0.043	<0.006	<0.006	<0.002
Methoxychlor	ug/g	0.006	1.6	<0.006	<0.006	<0.002
p,p'-DDD	ug/g	0.006	4.6	<0.006	<0.006	<0.002
p,p'-DDE	ug/g	0.006	0.65	<0.006	<0.006	<0.002
p,p'-DDT	ug/g	0.006	1.4	<0.006	<0.006	<0.002

Notes

RDL	Reportable Detection Limit
NV	No Criteria/RDL Value
NA	Not Applicable
'<'	Values is less than the RDL
MECP	Soil, ground water and sediment standards for use under Part XV.1 of the Environmental Protection Act (MOE 2011), Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Industrial/Commercial/Community Property Use for medium and fine textured soils.
Yellow Highlight	Exceeds Table 2 ICC Standard

Table 14
Soil Analytical Results
PAHs

April 2022

Parameters	Units	RDL	Guideline SOIL MECP Table 2 ICC Med-Fine	Sample ID Laboratory ID Sample Depth (metres below ground surface) Sample Collection Date (m/d/y)								
				BH 1-1	BH 2-1	BH 4-1	BH 6-1	BH 7-1	DUP-2	BH 8-2	BH 9-2	BH 12-1
				1606024	1606028	1606031	1606837	1606038	1606039	1606044	1606047	1606056
				@ 0.1-0.7 1/14/2022	@ 0.1-0.7 1/14/2022	@ 0.1-0.7 1/14/2022	@ 0.1-0.7 1/21/2022	@ 0.1-0.7 1/14/2022	Duplication of BH 7-1	@ 0.8-1.4 1/13/2022	@ 0.8-1.4 1/13/2022	@ 0.1-0.7 1/13/2022
Semi-VOCs /PAHs												
Acenaphthene	ug/g	0.05	29	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	ug/g	0.05	0.17	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	ug/g	0.05	0.74	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	ug/g	0.05	0.96	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	ug/g	0.05	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	ug/g	0.05	0.96	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	ug/g	0.05	9.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	ug/g	0.05	0.96	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	ug/g	0.05	9.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	ug/g	0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	ug/g	0.05	9.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	ug/g	0.05	69	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	ug/g	0.05	0.95	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylnapthalene, 1-	ug/g	0.05	42	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylnapthalene, 2-	ug/g	0.05	42	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	ug/g	0.013	28	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013
Phenanthrene	ug/g	0.05	16	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	ug/g	0.05	9.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Notes

RDL	Reportable Detection Limit
NV	No Criteria/RDL Value
NA	Not Applicable
<	Values is less than the RDL
MECP	Soil, ground water and sediment standards for use under Part XV.1 of the Environmental Protection Act (MOE 2011), Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Industrial/Commercial/Community Property Use for medium and fine textured soils.
Yellow Highlight	Exceeds Table 2 ICC Standard

Table 14
Soil Analytical Results
PCBs

Parameters	Units	RDL	Guideline SOIL MECP Table 2 ICC Med-Fine	Sample ID Laboratory ID Sample Depth (m bgs) Sample Collection Date (m/d/y)		
				BH 3-1	DUP-7	BH 9-2
				1606834	1606835	1606047
				@ 0.1-0.7 1/21/2022	Duplication of BH 3-2	@ 0.8-1.4 1/13/2022
PCBs						
Polychlorinated Biphenyls	ug/g	0.02	1.1	<0.02	<0.02	<0.02
Aroclor 1242	ug/g	0.02	NV	<0.02	<0.02	<0.02
Aroclor 1248	ug/g	0.02	NV	<0.02	<0.02	<0.02
Aroclor 1254	ug/g	0.02	NV	<0.02	<0.02	<0.02
Aroclor 1260	ug/g	0.02	NV	<0.02	<0.02	<0.02

Notes

RDL	Reportable Detection Limit
NV	No Criteria/RDL Value
NA	Not Applicable
'<'	Values is less than the RDL
MECP	Soil, ground water and sediment standards for use under Part XV.1 of the Environmental Protection Act (MOE 2011), Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Industrial/Commercial/Community Property Use for medium and fine textured soils.
Yellow Highlight	Exceeds Table 2 ICC Standard

Table 14
Soil Analytical Results
Petroleum Hydrocarbons (PHCs, F1 to F4) and BTEX

Parameters	Units	RDL	Guideline SOIL MECP Table 2 ICC Med-Fine	Sample ID Laboratory ID Sample Depth (m bgs) Sample Collection Date (m/d/y)																								
				BH 1-3	BH 1-5	BH 2-1	BH 2-6	DUP-4	BH 3-5	BH 4-2	BH 4-9	BH 5-3	BH 5-9	BH 6-9	BH 7-3	DUP-3	BH 7-4	BH 8-7	BH 9-3	BH 9-9	BH 10-2	BH 11-2	BH 11-7	BH 12-2	BH 12-9	BH 13-6	BH 16-2	BH 16-8
				1606028	1606027	1606028	1606029	1606030	1606836	1606032	1606033	1606036	1606037	1606838	1606040	1606041	1606042	1606045	1606048	1606049	1606051	1606054	1606055	1606057	1606058	1606840	1606844	1606845
				@ 1.5-2.1 1/14/2022	@ 3.1-3.7 1/14/2022	@ 0.1-0.7 1/14/2022	@ 3.8-4.4 1/14/2022	Duplication of BH 2-6	@ 3.1-3.7 1/21/2022	@ 0.8-1.4 1/14/2022	@ 7.6-8.2 1/14/2022	@ 1.5-2.1 1/14/2022	@ 7.6-8.2 1/14/2022	@ 7.6-8.2 1/21/2022	@ 1.5-2.1 1/14/2022	Duplication of BH 7-3	@ 3.8-4.4 1/14/2022	@ 4.6-5.2 1/13/2022	@ 1.5-2.1 1/13/2022	@ 7.6-8.2 1/13/2022	@ 0.8-1.4 1/13/2022	@ 0.8-1.4 1/13/2022	@ 4.6-5.2 1/13/2022	@ 0.8-1.4 1/13/2022	@ 6.1-6.7 1/13/2022	@ 3.8-4.4 1/21/2022	@ 0.8-1.4 1/21/2022	
				BTEX & Petroleum Hydrocarbons																								
Benzene	ug/g	0.0068	0.4	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068		
Ethylbenzene	ug/g	0.018	1.6	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018		
F1 (C6 to C10)	ug/g	10	65	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		
F1-BTEX	ug/g	10	NV	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		
F2 (C10 to C16)	ug/g	2	250	<2	<2	<2	<2	<2	3	<2	<2	<2	<2	7	<2	<2	<2	2	<2	<2	<2	<2	4	5	7			
F3 (C16 to C34)	ug/g	20	2500	<20	<20	20	<20	<20	<20	<20	<20	<20	<20	60	<20	<20	<20	<20	100	<20	<20	<20	<20	<20	<20	30		
F4 (C34 to C50)	ug/g	20	6600	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20		
Toluene	ug/g	0.08	9	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08		
Xylene (Total)	ug/g	0.05	30	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		
Xylene, m/p-	ug/g	0.05	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		
Xylene, o-	ug/g	0.05	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		
Notes																												
RDL		Reportable Detection Limit																										
NV		No Criteria/RDL Value																										
NA		Not Applicable																										
<		Values is less than the RDL																										
MECP		Soil, ground water and sediment standards for use under Part XV.1 of the Environmental Protection Act (MOE 2011), Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Industrial/Commercial/Community (ICC) Property Use for medium and fine textured soils.																										
Yellow Highlight		Exceeds Table 2 ICC Standard																										

Table 14
Soil Analytical Results
Volatile Organic Compounds (VOCs)

Parameters	Units	RDL	Guideline SOIL MECP Table 2 ICC Med-Fine	Sample ID Laboratory ID Sample Depth (m bgs) Sample Collection Date (m/d/y)							
				BH 1-5	BH 2-6	DUP-4	BH 8-7	BH 9-3	BH 11-7	BH 12-8	BH 16-6
				1606027	1606029	1606030	1606045	1606048	1606055	1606058	1606845
				@ 3.1-3.7 1/14/2022	@ 3.8-4.4 1/14/2022	Duplication of BH 2-6	@ 4.6-5.2 1/13/2022	@ 1.5-2.1 1/13/2022	@ 4.6-5.2 1/13/2022	@ 6.1-6.7 1/13/2022	@ 3.8-4.4 1/21/2022
VOCs											
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	ug/g	0.05	12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.094	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	ug/g	0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethene	ug/g	0.05	0.48	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	1.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichloropropane	ug/g	0.05	0.68	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene, cis + trans	ug/g	0.05	0.081	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.57	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.05	28	<0.50	<0.50	<0.50	<0.50	<0.50	<0.05	<0.05	<0.50
Bromodichloromethane	ug/g	0.05	1.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	ug/g	0.05	1.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.71	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chloroform	ug/g	0.05	0.18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethene	ug/g	0.05	2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	2.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichlorodifluoromethane	ug/g	0.05	25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloroethylene, trans-1,2-	ug/g	0.05	2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloromethane	ug/g	0.05	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hexane	ug/g	0.05	88	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl ethyl ketone (MEK)	ug/g	0.5	88	0.81	0.72	1.2	1.1	0.87	1.1	1.3	<0.50
Methyl isobutyl ketone (MIBK)	ug/g	0.5	210	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl tert-butyl ether (MTBE)	ug/g	0.05	2.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Monochlorobenzene	ug/g	0.05	2.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	43	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	ug/g	0.05	2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	ug/g	0.01	0.61	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Trichlorofluoromethane	ug/g	0.05	5.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.25	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Notes

RDL	Reportable Detection Limit
NV	No Criteria/RDL Value
NA	Not Applicable
'<'	Values is less than the RDL
MECP	Soil, ground water and sediment standards for use under Part XV.1 of the Environmental Protection Act (MOE 2011), Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Industrial/Commercial/Community Property Use for medium and fine textured soils.
Yellow Highlight	Exceeds Table 2 ICC Standard

Table 15
Groundwater Analytical Results
Metals and Inorganics

March 2022

Parameters	Units	RDL	MECP Table 2 GW	Sample ID Laboratory ID Sample Collection Date			
				BHMW8	BHMW9	BHMW15	DUP1
				1614023	1614024	1614025	1614026
				9-Mar-2022	9-Mar-2022	9-Mar-2022	Duplication of BHMW15
Metals and Inorganics							
Antimony	ug/L	2	6			<2	<2
Arsenic	ug/L	5	25			<5	<5
Barium	ug/L	50	1000			220	210
Beryllium	ug/L	2	4			<2	<2
Boron	ug/L	50	5000			<50	<50
Cadmium	ug/L	0.5	2.7			<0.5	<0.5
Chloride	ug/L	1000	790000			4130000	3950000
Chromium	ug/L	5	50			<5	<5
Cobalt	ug/L	1	3.8			<1	<1
Copper	ug/L	5	87			<5	<5
Cyanide (Free)	ug/L	5	66			6	8
Hexavalent Chromium	ug/L	10	25			<10	<10
Lead	ug/L	5	10			<5	<5
Mercury	ug/L	0.1	1			<0.1	<0.1
Molybdenum	ug/L	20	70			<20	<20
Nickel	ug/L	20	100			<20	<20
Selenium	ug/L	5	10			<5	<5
Silver	ug/L	0.5	1.5			<0.5	<0.5
Sodium	ug/L	1000	490000			2930000	2850000
Thallium	ug/L	0.5	2			<0.5	<0.5
Uranium	ug/L	5	20			<5	<5
Vanadium	ug/L	5	6.2			<5	<5
Zinc	ug/L	50	1100			<50	<50
Other Parameters							
pH (pH Units)	-	1	NA			7.61	7.65
Electrical Conductivity	mS/cm	5	NA			11800	11800

Notes

RDL	Reportable Detection Limit
NV	No Criteria/RDL Value
NA	Not Applicable
'<'	Values is less than the RDL

MECP Soil, ground water and sediment standards for use under Part XV.1 of the Environmental Protection Act (MOE 2011), Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for all types of Property Use for medium and fine textured soils.

Yellow Highlight	Exceeds Table 2 Groundwater standard
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Table 15
Groundwater Analytical Results
PAHS

Parameters	Units	RDL	MECP Table 2 GW	Sample ID Laboratory ID Collection Date	
				BHMW15	BHMW21
				1614700	1614701
				16-Mar-2022	Duplication of BHMW15
Semi-VOCs /PAHs					
Acenaphthene	ug/L	0.1	4.1	<0.1	<0.1
Acenaphthylene	ug/L	0.1	1	<0.1	<0.1
Anthracene	ug/L	0.1	2.4	<0.1	<0.1
Benzo(a)anthracene	ug/L	0.1	1	<0.1	<0.1
Benzo(a)pyrene	ug/L	0.1	0.01	<0.01	<0.01
Benzo(b)fluoranthene	ug/L	0.1	0.1	<0.05	<0.05
Benzo(g,h,i)perylene	ug/L	0.1	0.2	<0.1	<0.1
Benzo(k)fluoranthene	ug/L	0.1	0.1	<0.05	<0.05
Chrysene	ug/L	0.1	0.1	<0.05	<0.05
Dibenzo(a,h)anthracene	ug/L	0.1	0.2	<0.1	<0.1
Fluoranthene	ug/L	0.1	0.41	<0.1	<0.1
Fluorene	ug/L	0.1	120	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	ug/L	0.1	0.2	<0.1	<0.1
Methylnapthalene, 1-	ug/L	0.1	3.2	<0.1	<0.1
Methylnapthalene, 2-	ug/L	0.1	3.2	<0.1	<0.1
Naphthalene	ug/L	0.1	11	<0.1	<0.1
Phenanthrene	ug/L	0.1	1	<0.1	<0.1
Pyrene	ug/L	0.1	4.1	<0.1	<0.1

Notes

RDL	Reportable Detection Limit
NV	No Criteria/RDL Value
NA	Not Applicable
'<'	Values is less than the RDL
MECP	Soil, ground water and sediment standards for use under Part XV.1 of the Environmental Protection Act (MOE 2011), Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for all types of Property Use for medium and.....
Yellow Highlight	Exceeds Table 2 Groundwater standard

Table 15
Groundwater Analytical Results
PCBs

Parameters	Units	RDL	MECP Table 2 GW	Sample ID Laboratory ID Collection Date	
				BHMW15	BHMW21
				1614700	1614701
				16-Mar-2022	Duplication of BHMW15
PCBs					
Polychlorinated Biphenyls	ug/L	0.1	3	<0.1	<0.1
Aroclor 1016	ug/L	0.1	NV	<0.1	<0.1
Aroclor 1242	ug/L	0.1	NV	<0.1	<0.1
Aroclor 1248	ug/L	0.1	NV	<0.1	<0.1
Aroclor 1254	ug/L	0.1	NV	<0.1	<0.1
Aroclor 1260	ug/L	0.1	NV	<0.1	<0.1

Notes

RDL	Reportable Detection Limit
NV	No Criteria/RDL Value
NA	Not Applicable
'<'	Values is less than the RDL
MECP	Soil, ground water and sediment standards for use under Part XV.1 of the Environmental Protection Act (MOE 2011), Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for all types of Property Use for medium and fine textured soils.
Yellow Highlight	Exceeds Table 2 Groundwater standard

Table 15
Groundwater Analytical Results
Petroleum Hydrocarbons (PHCs, F1 to F4) and BTEX

Parameters	Units	RDL	MECP Table 2 GW	Sample ID Laboratory ID Sample Collection Date						
				BHMW8	BHMW9	BHMW15	DUP1	Trip Blank	BHMW15	BHMW16
				1614023	1614024	1614025	1614026	1614027	1606034	1606837
				9-Mar-2022	9-Mar-2022	9-Mar-2022	Duplication of BHMW15	9-Mar-2022	9-Mar-2022	9-Mar-2022
BTEX & Petroleum Hydrocarbons										
Benzene	ug/L	0.5000	5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
Ethylbenzene	ug/L	0.5	2.4	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
F1 (C6 to C10)	ug/L	20	750	-	-	<20	<20	-	-	-
F1-BTEX	ug/L	20	NV	-	-	<20	<20	-	-	-
F2 (C10 to C16)	ug/L	20	150	-	-	<20	<20	-	-	-
F3 (C16 to C34)	ug/L	50	500	-	-	<50	<50	-	-	-
F4 (C34 to C50)	ug/L	50	500	-	-	<50	<50	-	-	-
Toluene	ug/L	0.4	24	<0.4	<0.4	<0.4	<0.4	<0.4	-	-
Xylene (Total)	ug/L	0.5	300	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
Xylene, m/p-	ug/L	0.4	NV	<0.4	<0.4	<0.4	<0.4	<0.4	-	-
Xylene, o-	ug/L	0.4	NV	<0.4	<0.4	<0.4	<0.4	<0.4	-	-

Notes

RDL	Reportable Detection Limit
NV	No Value
NA	Not Applicable
'<'	Values is less than the RDL
MECP	Soil, ground water and sediment standards for use under Part XV.1 of the Environmental Protection Act (MOE 2011), Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for all types of Property Use for medium and fine textured soils.
Yellow Highlight	Exceeds Table 2 Groundwater standard

Table 15
Groundwater Analytical Results
Volatile Organic Compounds

Parameters	Units	RDL	MECP Table 2 GW	Sample ID Laboratory ID Sample Collection Date						
				BHMW8	BHMW9	BHMW15	DUP1	Trip Blank	BHMW15	BHMW16
				1614023	1614024	1614025	1614026	1614027	1606034	1606837
				9-Mar-2022	9-Mar-2022	9-Mar-2022	Duplication of BHMW15	9-Mar-2022	9-Mar-2022	9-Mar-2022
VOCs										
1,1,1,2-Tetrachloroethane	ug/L	0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5		
1,1,1-Trichloroethane	ug/L	0.4	200	<0.4	<0.4	<0.4	<0.4	<0.4		
1,1,2,2-Tetrachloroethane	ug/L	0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5		
1,1,2-Trichloroethane	ug/L	0.4	5	<0.4	<0.4	<0.4	<0.4	<0.4		
1,1-Dichloroethane	ug/L	0.4	5	<0.4	<0.4	<0.4	<0.4	<0.4		
1,1-Dichloroethene	ug/L	0.5	14	<0.5	<0.5	<0.5	<0.5	<0.5		
1,2-Dichlorobenzene	ug/L	0.4	3	<0.4	<0.4	<0.4	<0.4	<0.4		
1,2-Dichloroethane	ug/L	0.2	5	<0.2	<0.2	<0.2	<0.2	<0.2		
1,2-Dichloropropane	ug/L	0.5	5	<0.5	<0.5	<0.5	<0.5	<0.5		
1,3-Dichlorobenzene	ug/L	0.4	59	<0.4	<0.4	<0.4	<0.4	<0.4		
1,3-Dichloropropene, cis + trans	ug/L	0.3	0.5	<0.3	<0.3	<0.3	<0.3	<0.3		
1,3,5-trimethylbenzene	ug/L	0.3	0.3	<0.3	<0.3	-	-	<0.3		
1,4-Dichlorobenzene	ug/L	0.4	1	<0.4	<0.4	<0.4	<0.4	<0.4		
Acetone	ug/L	30	2700	<30	<30	<30	<30	<30		
Bromodichloromethane	ug/L	0.3	16	<0.3	<0.3	<0.3	<0.3	<0.3		
Bromoform	ug/L	0.4	25	<0.4	<0.4	<0.4	<0.4	<0.4		
Bromomethane	ug/L	0.5	0.89	<0.5	<0.5	<0.5	<0.5	<0.5		
Carbon Tetrachloride	ug/L	0.2	5	<0.2	<0.2	<0.2	<0.2	<0.2		
Chlorobenzene	ug/L	0.5	30	<0.5	<0.5	<0.5	<0.5	<0.5		
Chloroethane	ug/L	0.2	NV	<0.2	<0.2	-	-	<0.2		
Chloroform	ug/L	0.5	22	<0.5	1.3	<0.5	<0.5	<0.5		
cis-1,2-Dichloroethene	ug/L	0.4	17	<0.4	<0.4	<0.4	<0.4	<0.4		
Dibromochloromethane	ug/L	0.3	25	<0.3	<0.3	<0.3	<0.3	<0.3		
Dichlorodifluoromethane	ug/L	0.5	590	<0.5	<0.5	<0.5	<0.5	<0.5		
Dichloroethylene, 1,2-cis-	ug/L	0.4	17	<0.4	<0.4	<0.4	<0.4	<0.4		
Dichloroethylene, trans-1,2-	ug/L	0.4	17	<0.4	<0.4	<0.4	<0.4	<0.4		
Dichloropropylene, 1,3-cis-	ug/L	0.2	NV	<0.2	<0.2	<0.2	<0.2	<0.2		
Dichloropropylene, 1,3-trans-	ug/L	0.2	NV	<0.2	<0.2	<0.2	<0.2	<0.2		
Dichloromethane	ug/L	0.4	50	<4.0	<4.0	<4.0	<4.0	<4.0		
Ethylene Dibromide	ug/L	0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2		
Hexane	ug/L	5	520	<5	<5	<5	<5	<5		
Methyl ethyl ketone (MEK)	ug/L	10	1800	<10	<10	<10	<10	<10		
Methyl isobutyl ketone (MIBK)	ug/L	10	640	<10	<10	<10	<10	<10		
Methyl tert-butyl ether (MTBE)	ug/L	2	15	<2	<2	<2	<2	<2		
Monochlorobenzene	ug/L	0.5	30	<0.5	<0.5	<0.5	<0.5	<0.5		
Styrene	ug/L	0.5	5.4	<0.5	<0.5	<0.5	<0.5	<0.5		
Tetrachloroethylene	ug/L	0.3	17	<0.3	<0.3	<0.3	<0.3	<0.3		
Trichloroethylene	ug/L	0.3	5	<0.3	<0.3	<0.3	<0.3	<0.3		
Trichlorofluoromethane	ug/L	0.5	150	<0.5	<0.5	<0.5	<0.5	<0.5		
Vinyl Chloride	ug/L	0.2	1.7	<0.2	<0.2	<0.2	<0.2	<0.2		

Notes

RDL	Reportable Detection Limit
NV	No Criteria/RDL Value
NA	Not Applicable
<	Values is less than the RDL
MECP	Soil, ground water and sediment standards for use under Part XV.1 of the Environmental Protection Act (MOE 2011), Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for all types of Property Use for medium and fine textured soils.
Yellow Highlight	Exceeds Table 2 Groundwater standard

Table 16- Soil Maximum Values Summary Table

Sample ID	Depth	Sampling Date	Site	Parameter	Matrix	Criteria ¹	Result	Units
Metals and Inorganics								
N/A	N/A	Jan 14-2022	9541 Weston Rd	Acid Extractable Antimony (Sb)	Soil	50	<1	ug/g
Multiple Samples	N/A	Jan 14-2022	9541 Weston Rd	Acid Extractable Arsenic (As)	Soil	18	4	ug/g
BH3-1	0.1-0.7	Jan 21-2022	9541 Weston Rd	Acid Extractable Barium (Ba)	Soil	670	94	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Acid Extractable Beryllium (Be)	Soil	10	<1	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Acid Extractable Boron (B)	Soil	120	<5	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Boron (Hot Water Soluble)	Soil	2	<0.5	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Acid Extractable Cadmium (Cd)	Soil	1.9	<0.4	ug/g
BH11-1	0.1-0.7	Jan 13-2022	9541 Weston Rd	Acid Extractable Chromium (Cr)	Soil	160	30	ug/g
BH12-2	0.8-1.4	Jan 13-2022	9541 Weston Rd	Acid Extractable Cobalt (Co)	Soil	100	9	ug/g
BH12-1	0.1-0.7	Jan 13-2022	9541 Weston Rd	Acid Extractable Copper (Cu)	Soil	300	21	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Cyanide (Free)	Soil	0.051	<0.005	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Acid Extractable ChromiumVI (Cr6+)	Soil	10	<0.20	ug/g
BH9-1	0.1-0.7	Jan 13-2022	9541 Weston Rd	Acid Extractable Lead (Pb)	Soil	120	115	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Acid Extractable Mercury (Hg)	Soil	20	<0.1	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Acid Extractable Molybdenum (Mo)	Soil	40	<1	ug/g
BH1-2	0.8-1.4	Jan 14-2022	9541 Weston Rd	Acid Extractable Nickel (Ni)	Soil	340	23	ug/g
BH12-1	0.1-0.7	Jan 13-2022	9541 Weston Rd	Acid Extractable Selenium (Se)	Soil	5.5	0.9	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Acid Extractable Silver (Ag)	Soil	50	<0.2	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Acid Extractable Thallium (Tl)	Soil	3.3	<1	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Uranium	Soil	33	<0.5	ug/g
BH3-1	0.1-0.7	Jan 21-2022	9541 Weston Rd	Acid Extractable Vanadium (V)	Soil	86	35	ug/g
BH12-1	0.1-0.7	Jan 13-2022	9541 Weston Rd	Acid Extractable Zinc (Zn)	Soil	340	63	ug/g
BH12-2	0.8-1.4	Jan 13-2022	9541 Weston Rd	Electrical Conductivity	Soil	1.4	8.5	mS/cm
BH11-1	0.1-0.7	Jan 13-2022	9541 Weston Rd	Sodium Absorption Ratio (SAR)	Soil	12	262	-
Semi-VOCs								
N/A	N/A	Jan 14-2022	9541 Weston Rd	Acenaphthene	Soil	29	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Acenaphthylene	Soil	0.17	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Anthracene	Soil	0.74	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Benzo(a)anthracene	Soil	0.96	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Benzo(a)pyrene	Soil	0.3	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Benzo(b)fluoranthene	Soil	0.96	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Benzo(g,h,i)perylene	Soil	9.6	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Benzo(k)fluoranthene	Soil	0.96	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Biphenylene	Soil	9.6	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Dibenz(a,h)anthracene	Soil	0.1	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Fluoranthene	Soil	9.6	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Fluorene	Soil	69	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Indeno(1,2,3-c,d)pyrene	Soil	0.95	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Methylnaphthalene, 1-	Soil	42	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Methylnaphthalene, 2-	Soil	42	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Naphthalene	Soil	28	<0.013	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Phenanthrene	Soil	16	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Pyrene	Soil	9.4	<0.05	ug/g
PHCS & BTEX								
N/A	N/A	Jan 14-2022	9541 Weston Rd	Benzene	Soil	0.4	<0.0068	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Ethylbenzene	Soil	1.6	<0.018	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Toluene	Soil	9	<0.08	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Xylene (Total)	Soil	30	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Xylene, m/p-	Soil	NV	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	Xylene, o-	Soil	NV	<0.05	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	F1 (C6 to C10)	Soil	65	<10	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	F1-BTEX	Soil	NV	<10	ug/g
Multiple Samples	N/A	Jan 14-2022	9541 Weston Rd	F2 (C10 to C16)	Soil	250	7	ug/g
BH9-9	7.6-8.2	Jan 13-2022	9541 Weston Rd	F3 (C16 to C34)	Soil	2500	100	ug/g
N/A	N/A	Jan 14-2022	9541 Weston Rd	F4 (C34 to C50)	Soil	6600	<20	ug/g
VOCs								
N/A	N/A	Jan 14-2022	9541 Weston Rd	1,1,1,2-Tetrachloroethane	Soil	0.11	<0.05	ug/g
N/A	N/A	Jan 14-2022	9542 Weston Rd	1,1,1-Trichloroethane	Soil	12	<0.05	ug/g
N/A	N/A	Jan 14-2022	9543 Weston Rd	1,1,2,2-Tetrachloroethane	Soil	0.094	<0.05	ug/g
N/A	N/A	Jan 14-2022	9544 Weston Rd	1,1,2-Trichloroethane	Soil	0.11	<0.05	ug/g
N/A	N/A	Jan 14-2022	9545 Weston Rd	1,1-Dichloroethane	Soil	0.6	<0.05	ug/g
N/A	N/A	Jan 14-2022	9546 Weston Rd	1,1-Dichloroethene	Soil	0.48	<0.05	ug/g
N/A	N/A	Jan 14-2022	9547 Weston Rd	1,2-Dichlorobenzene	Soil	1.7	<0.05	ug/g
N/A	N/A	Jan 14-2022	9548 Weston Rd	1,2-Dichloroethane	Soil	0.05	<0.05	ug/g
N/A	N/A	Jan 14-2022	9549 Weston Rd	1,2-Dichloropropane	Soil	0.68	<0.05	ug/g
N/A	N/A	Jan 14-2022	9550 Weston Rd	1,3-Dichlorobenzene	Soil	12	<0.05	ug/g
N/A	N/A	Jan 14-2022	9551 Weston Rd	1,3-Dichloropropene, cis + trans	Soil	0.081	<0.05	ug/g
N/A	N/A	Jan 14-2022	9552 Weston Rd	1,4-Dichlorobenzene	Soil	0.57	<0.05	ug/g
N/A	N/A	Jan 14-2022	9553 Weston Rd	Acetone	Soil	28	<0.05	ug/g
N/A	N/A	Jan 14-2022	9554 Weston Rd	Bromodichloromethane	Soil	1.9	<0.05	ug/g
N/A	N/A	Jan 14-2022	9555 Weston Rd	Bromomethane	Soil	1.7	<0.05	ug/g
N/A	N/A	Jan 14-2022	9556 Weston Rd	Bromomethane	Soil	0.05	<0.05	ug/g
N/A	N/A	Jan 14-2022	9557 Weston Rd	Carbon Tetrachloride	Soil	0.71	<0.05	ug/g
N/A	N/A	Jan 14-2022	9558 Weston Rd	Chloroform	Soil	0.08	<0.05	ug/g
N/A	N/A	Jan 14-2022	9559 Weston Rd	cis-1,2-Dichloroethene	Soil	2.5	<0.05	ug/g
N/A	N/A	Jan 14-2022	9560 Weston Rd	Dibromochloromethane	Soil	2.9	<0.05	ug/g
N/A	N/A	Jan 14-2022	9561 Weston Rd	Dichlorodifluoromethane	Soil	25	<0.05	ug/g
N/A	N/A	Jan 14-2022	9562 Weston Rd	Dichloroethylene, trans-1,2-	Soil	2.5	<0.05	ug/g
N/A	N/A	Jan 14-2022	9563 Weston Rd	Dichloromethane	Soil	2	<0.05	ug/g
N/A	N/A	Jan 14-2022	9564 Weston Rd	Ethylene Dibromide	Soil	0.05	<0.05	ug/g
N/A	N/A	Jan 14-2022	9565 Weston Rd	Hexane	Soil	88	<0.05	ug/g
BH12-8	6.1-6.7	Jan 13-2022	9566 Weston Rd	Methyl ethyl ketone (MEK)	Soil	88	1.3	ug/g
N/A	N/A	Jan 14-2022	9567 Weston Rd	Methyl isobutyl ketone (MIBK)	Soil	210	<0.50	ug/g
N/A	N/A	Jan 14-2022	9568 Weston Rd	Methyl tert-butyl ether (MTBE)	Soil	2.3	<0.05	ug/g
N/A	N/A	Jan 14-2022	9569 Weston Rd	Monochlorobenzene	Soil	2.7	<0.05	ug/g
N/A	N/A	Jan 14-2022	9570 Weston Rd	Styrene	Soil	43	<0.05	ug/g
N/A	N/A	Jan 14-2022	9571 Weston Rd	Tetrachloroethylene	Soil	2.5	<0.05	ug/g
N/A	N/A	Jan 14-2022	9572 Weston Rd	Trichloroethylene	Soil	0.61	<0.01	ug/g
N/A	N/A	Jan 14-2022	9573 Weston Rd	Trichlorofluoromethane	Soil	5.8	<0.05	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	Vinyl Chloride	Soil	0.25	<0.02	ug/g
OPCs								
N/A	N/A	Jan 14-2022	9574 Weston Rd	Aldrin	Soil	0.11	<0.006	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	Chlordane	Soil	0.05	<0.018	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	Dieldrin	Soil	0.11	<0.006	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	Endosulfan I + Endosulfan II	Soil	0.38	<0.012	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	Endrin	Soil	0.04	<0.006	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	gamma-BHC	Soil	NV	<0.006	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	Heptachlor	Soil	0.19	<0.006	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	Heptachlor epoxide	Soil	0.05	<0.006	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	Hexachlorobenzene	Soil	0.66	<0.006	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	Hexachlorobutadiene	Soil	0.095	<0.006	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	Hexachloroethane	Soil	0.043	<0.006	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	Methoxychlor	Soil	1.6	<0.006	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	p,p'-DDE	Soil	4.6	<0.006	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	p,p'-DDE	Soil	0.65	<0.006	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	p,p'-DDT	Soil	1.4	<0.006	ug/g
PCBs								
N/A	N/A	Jan 14-2022	9574 Weston Rd	Polychlorinated Biphenyls	Soil	1.1	<0.02	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	Aroclor 1242	Soil	NV	<0.02	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	Aroclor 1248	Soil	NV	<0.02	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	Aroclor 1254	Soil	NV	<0.02	ug/g
N/A	N/A	Jan 14-2022	9574 Weston Rd	Aroclor 1260	Soil	NV	<0.02	ug/g

Legend	
Exceeds one Criteria	
DL > Criteria	
Criteria 1	Table 2 ICC Standards-Medium to Fine Textured

Table 17-Groundwater Maximum Values Summary Table

Sample ID	Sampling Date	Site	Parameter	Matrix	Criteria ¹	Result	Units
Metals & Inorg							
N/A	Mar 9-2022	9541 Weston Rd	Antimony	Groundwater	6	<2	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Arsenic	Groundwater	25	<5	ug/l
BHWMW15	Mar 9-2022	9541 Weston Rd	Barium	Groundwater	1000	220	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Beryllium	Groundwater	4	<2	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Boron	Groundwater	5000	<50	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Cadmium	Groundwater	2.7	<0.5	ug/l
BHWMW15	Mar 9-2022	9541 Weston Rd	Chloride	Groundwater	790000	4130000	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Chromium	Groundwater	50	<5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Cobalt	Groundwater	3.8	<1	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Copper	Groundwater	87	<5	ug/l
BHWMW15	Mar 9-2022	9541 Weston Rd	Cyanide (Free)	Groundwater	66	6	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Hexavalent Chromium	Groundwater	25	<10	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Lead	Groundwater	10	<5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Mercury	Groundwater	1	<0.1	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Molybdenum	Groundwater	70	<20	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Nickel	Groundwater	100	<20	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Selenium	Groundwater	10	<5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Silver	Groundwater	1.5	<0.5	ug/l
BHWMW15	Mar 9-2022	9541 Weston Rd	Sodium	Groundwater	490000	2990000	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Thallium	Groundwater	2	<0.5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Uranium	Groundwater	20	<5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Vanadium	Groundwater	6.2	<5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Zinc	Groundwater	1100	<50	ug/l
BHWMW15	Mar 9-2022	9542 Weston Rd	Electrical Conductivity	Groundwater	NA	11800	mS/cm
PHCs & BTEX							
N/A	Mar 9-2022	9541 Weston Rd	Benzene	Groundwater	5	<0.5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Ethylbenzene	Groundwater	2.4	<0.5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Toluene	Groundwater	24	<0.4	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Xylene (Total)	Groundwater	300	<0.5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Xylene, m/p	Groundwater	NV	<0.4	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Xylene, o-	Groundwater	NV	<0.4	ug/l
N/A	Mar 9-2022	9541 Weston Rd	F1 (C6 to C10)	Groundwater	750	<20	ug/l
N/A	Mar 9-2022	9541 Weston Rd	F1-BTEX	Groundwater	NV	<20	ug/l
N/A	Mar 9-2022	9541 Weston Rd	F2 (C10 to C16)	Groundwater	150	<20	ug/l
N/A	Mar 9-2022	9541 Weston Rd	F3 (C16 to C34)	Groundwater	500	<50	ug/l
N/A	Mar 9-2022	9541 Weston Rd	F4 (C34 to C50)	Groundwater	500	<50	ug/l
VOCs							
N/A	Mar 9-2022	9541 Weston Rd	1,1,1,2-Tetrachloroethane	Groundwater	1.1	<0.5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	1,1,1-Trichloroethane	Groundwater	200	<0.4	ug/l
N/A	Mar 9-2022	9541 Weston Rd	1,1,2,2-Tetrachloroethane	Groundwater	1	<0.5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	1,1,2-Trichloroethane	Groundwater	5	<0.4	ug/l
N/A	Mar 9-2022	9541 Weston Rd	1,1-Dichloroethane	Groundwater	5	<0.4	ug/l
N/A	Mar 9-2022	9541 Weston Rd	1,1-Dichloroethene	Groundwater	14	<0.5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	1,2-Dichlorobenzene	Groundwater	3	<0.4	ug/l
N/A	Mar 9-2022	9541 Weston Rd	1,2-Dichloroethane	Groundwater	5	<0.2	ug/l
N/A	Mar 9-2022	9541 Weston Rd	1,2-Dichloropropane	Groundwater	5	<0.5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	1,3-Dichlorobenzene	Groundwater	59	<0.4	ug/l
N/A	Mar 9-2022	9541 Weston Rd	1,3-Dichloropropene, cis + trans	Groundwater	0.5	<0.3	ug/l
N/A	Mar 9-2022	9541 Weston Rd	1,3,5-trimethylbenzene	Groundwater	0.3	<0.3	ug/l
N/A	Mar 9-2022	9541 Weston Rd	1,4-Dichlorobenzene	Groundwater	1	<0.4	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Acetone	Groundwater	2700	<30	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Bromodichloromethane	Groundwater	16	<0.3	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Bromoform	Groundwater	25	<0.4	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Bromomethane	Groundwater	0.89	<0.5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Carbon Tetrachloride	Groundwater	5	<0.2	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Chlorobenzene	Groundwater	30	<0.5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Chloroethane	Groundwater	NV	<0.2	ug/l
BHWMW9	Mar 9-2022	9541 Weston Rd	Chloroform	Groundwater	22	1.3	ug/l
N/A	Mar 9-2022	9541 Weston Rd	cis-1,2-Dichloroethene	Groundwater	17	<0.4	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Dibromochloromethane	Groundwater	25	<0.3	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Dichlorodifluoromethane	Groundwater	590	<0.5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Dichloroethylene, 1,2-cis-	Groundwater	17	<0.4	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Dichloroethylene, trans-1,2-	Groundwater	17	<0.4	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Dichloropropylene, 1,3-cis-	Groundwater	NV	<0.2	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Dichloropropylene, 1,3-trans-	Groundwater	NV	<0.2	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Dichloromethane	Groundwater	50	<4.0	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Ethylene Dibromide	Groundwater	0.2	<0.2	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Hexane	Groundwater	520	<5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Methyl ethyl ketone (MEK)	Groundwater	1800	<10	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Methyl isobutyl ketone (MIBK)	Groundwater	640	<10	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Methyl tert-butyl ether (MTBE)	Groundwater	15	<2	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Monochlorobenzene	Groundwater	30	<0.5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Styrene	Groundwater	5.4	<0.5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Tetrachloroethylene	Groundwater	17	<0.3	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Trichloroethylene	Groundwater	5	<0.3	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Trichlorofluoromethane	Groundwater	150	<0.5	ug/l
N/A	Mar 9-2022	9541 Weston Rd	Vinyl Chloride	Groundwater		<0.2	ug/l
Semi-VOCs / PAHs							
N/A	Mar 16-2022	9541 Weston Rd	Acenaphthene	Groundwater	4.1	<0.1	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Acenaphthylene	Groundwater	1	<0.1	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Anthracene	Groundwater	2.4	<0.1	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Benzo(a)anthracene	Groundwater	1	<0.1	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Benzo(a)pyrene	Groundwater	0.01	<0.01	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Benzo(b)fluoranthene	Groundwater	0.1	<0.05	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Benzo(g,h,i)perylene	Groundwater	0.2	<0.1	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Benzo(k)fluoranthene	Groundwater	0.1	<0.05	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Chrysene	Groundwater	0.1	<0.05	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Dibenzo(a,h)anthracene	Groundwater	0.2	<0.1	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Fluoranthene	Groundwater	0.41	<0.1	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Fluorene	Groundwater	120	<0.1	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Indeno(1,2,3-c,d)pyrene	Groundwater	0.2	<0.1	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Methylnaphthalene, 1-	Groundwater	3.2	<0.1	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Methylnaphthalene, 2-	Groundwater	3.2	<0.1	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Naphthalene	Groundwater	11	<0.1	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Phenanthrene	Groundwater	1	<0.1	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Pyrene	Groundwater	4.1	<0.1	ug/l
PCBs							
N/A	Mar 16-2022	9541 Weston Rd	Polychlorinated Biphenyls	Groundwater	3	<0.1	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Aroclor 1016	Groundwater	NV	<0.1	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Aroclor 1242	Groundwater	NV	<0.1	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Aroclor 1248	Groundwater	NV	<0.1	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Aroclor 1254	Groundwater	NV	<0.1	ug/l
N/A	Mar 16-2022	9541 Weston Rd	Aroclor 1260	Groundwater	NV	<0.1	ug/l

Legend	
Exceeds one Criteria	
DL > Criteria	
Criteria 1	Table 7 Residential, coarse textured

Appendix E

Laboratory Certificates of Analysis



eNGLOBE

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
Invoice to: EnGlobe Corp.
PO#:

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644
Temperature (C): 16
Custody Seal:

Page 1 of 56

Dear Nan Du:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Sample Comment Summary

Sample ID: 1606034	BH5-1	OCPs surrogate recovery is unavailable due to matrix interference.
Sample ID: 1606035	Dup-5	OCPs surrogate recovery is unavailable due to matrix interference.

Report Comments:

Addrine Thomas, Inorganics Supervisor

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise stated

Eurofins Environment Testing Canada Inc. is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at <http://www.cala.ca/scopes/2602.pdf>

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline or regulatory limits listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official guideline or regulation as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

O.Reg 153-T1-All Other Soils

Exceedence Summary

Sample I.D.	Analyte	Result	Units	Criteria
Inorganics				
BH10-1	Electrical Conductivity	2.81	mS/cm	STD 0.57
BH10-1	Sodium Adsorption Ratio	40.0		STD 2.4
BH1-1	Electrical Conductivity	2.19	mS/cm	STD 0.57
BH1-1	Sodium Adsorption Ratio	37.8		STD 2.4
BH11-1	Electrical Conductivity	7.04	mS/cm	STD 0.57
BH11-1	Sodium Adsorption Ratio	162		STD 2.4
BH1-2	Electrical Conductivity	3.32	mS/cm	STD 0.57
BH1-2	Sodium Adsorption Ratio	17.0		STD 2.4
BH12-1	Electrical Conductivity	4.11	mS/cm	STD 0.57
BH12-1	Sodium Adsorption Ratio	58.8		STD 2.4
BH12-2	Electrical Conductivity	8.50	mS/cm	STD 0.57
BH12-2	Sodium Adsorption Ratio	126		STD 2.4
BH2-1	Electrical Conductivity	4.18	mS/cm	STD 0.57
BH2-1	Sodium Adsorption Ratio	81.8		STD 2.4
BH4-1	Electrical Conductivity	3.19	mS/cm	STD 0.57
BH4-1	Sodium Adsorption Ratio	68.4		STD 2.4
BH5-1	Electrical Conductivity	2.03	mS/cm	STD 0.57
BH5-1	Sodium Adsorption Ratio	30.1		STD 2.4
BH7-1	Electrical Conductivity	6.39	mS/cm	STD 0.57
BH7-1	Sodium Adsorption Ratio	111		STD 2.4
BH8-1	Electrical Conductivity	3.38	mS/cm	STD 0.57
BH8-1	Sodium Adsorption Ratio	12.2		STD 2.4
BH8-2	Electrical Conductivity	1.66	mS/cm	STD 0.57
BH8-2	Sodium Adsorption Ratio	6.36		STD 2.4
BH9-1	Electrical Conductivity	3.76	mS/cm	STD 0.57
BH9-1	Sodium Adsorption Ratio	79.4		STD 2.4
BH9-2	Electrical Conductivity	5.88	mS/cm	STD 0.57
BH9-2	Sodium Adsorption Ratio	147		STD 2.4
Volatiles				
BH11-7	Methyl Ethyl Ketone	1.1	ug/g	STD 0.5
BH12-8	Methyl Ethyl Ketone	1.3	ug/g	STD 0.5
BH1-5	Methyl Ethyl Ketone	0.81	ug/g	STD 0.5
BH2-6	Methyl Ethyl Ketone	0.72	ug/g	STD 0.5
BH8-7	Methyl Ethyl Ketone	1.1	ug/g	STD 0.5
BH9-3	Methyl Ethyl Ketone	0.87	ug/g	STD 0.5
Dup-4	Methyl Ethyl Ketone	1.2	ug/g	STD 0.5

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606026	Soil153	1606027	Soil153	1606028	Soil153
PHC's F1	415896	10	ug/g	STD 25	2022-01-14	BH1-3	2022-01-14	BH1-5	2022-01-14	BH2-1
PHC's F1-BTEX	415903	10	ug/g		<10	<10	<10	<10	<10	<10
PHC's F2	415889	2	ug/g	STD 10	<2	<2	<2	<2	<2	<2
	416046	2	ug/g	STD 10						<2
PHC's F2-Naph	416051	2	ug/g							<2
PHC's F3	415889	20	ug/g	STD 240	<20	<20	<20	<20	<20	<20
	416046	20	ug/g	STD 240						20
PHC's F3-PAH	416052	20	ug/g							20
PHC's F4	415889	20	ug/g	STD 120	<20	<20	<20	<20	<20	<20
	416046	20	ug/g	STD 120						<20

Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606029	Soil153	1606030	Soil153	1606032	Soil153
PHC's F1	415896	10	ug/g	STD 25	2022-01-14	BH2-6	2022-01-14	Dup-4	2022-01-14	BH4-2
PHC's F1-BTEX	415903	10	ug/g		<10	<10	<10	<10	<10	<10
PHC's F2	415889	2	ug/g	STD 10	<2	<2	<2	<2	<2	<2
PHC's F3	415889	20	ug/g	STD 240	<20	<20	<20	<20	<20	<20
PHC's F4	415889	20	ug/g	STD 120	<20	<20	<20	<20	<20	<20

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MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606036	Soil153		2022-01-14		BH5-3
PHC's F1	415896	10	ug/g	STD 25						
PHC's F1-BTEX	415903	10	ug/g							
PHC's F2	415889	2	ug/g	STD 10						
PHC's F3	415889	20	ug/g	STD 240						
PHC's F4	415889	20	ug/g	STD 120						

Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606040	Soil153		2022-01-14		BH7-3
PHC's F1	415896	10	ug/g	STD 25						
PHC's F1-BTEX	415903	10	ug/g							
PHC's F2	415889	2	ug/g	STD 10						
PHC's F3	415889	20	ug/g	STD 240						
PHC's F4	415889	20	ug/g	STD 120						

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Hydrocarbons

					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606045 Soil153 2022-01-13 BH8-7	1606048 Soil153 2022-01-13 BH9-3
Analyte	Batch No	MRL	Units	Guideline			
PHC's F1	415896	10	ug/g	STD 25		<10	<10
PHC's F1-BTEX	415903	10	ug/g			<10	<10
PHC's F2	415996	2	ug/g	STD 10		<2	<2
PHC's F3	415996	20	ug/g	STD 240		<20	<20
PHC's F4	415996	20	ug/g	STD 120		<20	<20

Hydrocarbons

					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606049 Soil153 2022-01-13 BH9-9	1606051 Soil153 2022-01-13 BH10-2
Analyte	Batch No	MRL	Units	Guideline			
PHC's F1	415896	10	ug/g	STD 25		<10	<10
PHC's F1-BTEX	415903	10	ug/g			<10	<10
PHC's F2	415959	2	ug/g	STD 10			<2
	416045	2	ug/g	STD 10		2	
PHC's F3	415959	20	ug/g	STD 240			<20
	416045	20	ug/g	STD 240		100	
PHC's F4	415959	20	ug/g	STD 120			<20
	416045	20	ug/g	STD 120		<20	

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Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606054	Soil153	1606055	Soil153	1606057	Soil153
					2022-01-13		2022-01-13		2022-01-13	2022-01-13
					BH11-2		BH11-7		BH12-2	BH12-8
PHC's F1	415896	10	ug/g	STD 25	<10		<10		<10	<10
PHC's F1-BTEX	415903	10	ug/g		<10		<10		<10	<10
PHC's F2	415959	2	ug/g	STD 10	<2		<2		<2	<2
PHC's F3	415959	20	ug/g	STD 240	30		<20		<20	<20
PHC's F4	415959	20	ug/g	STD 120	<20		<20		<20	<20

Metals

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606024	Soil153	1606025	Soil153	1606028	Soil153
					2022-01-14		2022-01-14		2022-01-14	
					BH1-1		BH1-2		BH2-1	
Antimony	415846	1	ug/g	STD 1.3	<1		<1			
	416113	1	ug/g	STD 1.3					<1	
Arsenic	415846	1	ug/g	STD 18	2		4			
	416113	1	ug/g	STD 18					2	
Barium	415846	1	ug/g	STD 220	46		65			
	416113	1	ug/g	STD 220					57	
Beryllium	415846	1	ug/g	STD 2.5	<1		<1			
	416113	1	ug/g	STD 2.5					<1	
Boron (Hot Water Soluble)	415918	0.5	ug/g		<0.5					
Boron (total)	415846	5	ug/g	STD 36	<5		<5			
	416113	5	ug/g	STD 36					15	
Cadmium	415846	0.4	ug/g	STD 1.2	<0.4		<0.4			
	416113	0.4	ug/g	STD 1.2					<0.4	

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Metals

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606024
Soil153
2022-01-14
BH1-1
1606025
Soil153
2022-01-14
BH1-2
1606028
Soil153
2022-01-14
BH2-1

Analyte	Batch No	MRL	Units	Guideline			
Chromium Total	415846	1	ug/g	STD 70	20	28	
	416113	1	ug/g	STD 70			12
Chromium VI	415899	0.20	ug/g	STD 0.66	<0.20		
Cobalt	415846	1	ug/g	STD 21	5	8	
	416113	1	ug/g	STD 21			2
Copper	415846	1	ug/g	STD 92	16	20	
	416113	1	ug/g	STD 92			5
Lead	415846	1	ug/g	STD 120	14	12	
	416113	1	ug/g	STD 120			8
Mercury	415846	0.1	ug/g	STD 0.27	<0.1		
Molybdenum	415846	1	ug/g	STD 2	<1	<1	
	416113	1	ug/g	STD 2			<1
Nickel	415846	1	ug/g	STD 82	14	23	
	416113	1	ug/g	STD 82			5
Selenium	415895	0.5	ug/g	STD 1.5	<0.5	0.7	
	416113	0.5	ug/g	STD 1.5			<0.5
Silver	415846	0.2	ug/g	STD 0.5	<0.2	<0.2	
	416113	0.2	ug/g	STD 0.5			<0.2
Thallium	415846	1	ug/g	STD 1	<1	<1	
	416113	1	ug/g	STD 1			<1
Uranium	415846	0.5	ug/g	STD 2.5	<0.5	<0.5	
	416113	0.5	ug/g	STD 2.5			<0.5
Vanadium	415846	2	ug/g	STD 86	20	31	

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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Metals

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606024
Soil153
2022-01-14
BH1-1

1606025
Soil153
2022-01-14
BH1-2

1606028
Soil153
2022-01-14
BH2-1

Analyte Batch No MRL Units Guideline

Vanadium	416113	2	ug/g	STD 86			8
Zinc	415846	2	ug/g	STD 290	44	62	
	416113	2	ug/g	STD 290			10

Metals

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606031
Soil153
2022-01-14
BH4-1

Analyte Batch No MRL Units Guideline

Antimony	415846	1	ug/g	STD 1.3	<1
Arsenic	415846	1	ug/g	STD 18	2
Barium	415846	1	ug/g	STD 220	29
Beryllium	415846	1	ug/g	STD 2.5	<1
Boron (total)	415846	5	ug/g	STD 36	<5
Cadmium	415846	0.4	ug/g	STD 1.2	<0.4
Chromium Total	415846	1	ug/g	STD 70	18
Cobalt	415846	1	ug/g	STD 21	4
Copper	415846	1	ug/g	STD 92	14
Lead	415846	1	ug/g	STD 120	15
Molybdenum	415846	1	ug/g	STD 2	<1
Nickel	415846	1	ug/g	STD 82	12
Selenium	415895	0.5	ug/g	STD 1.5	<0.5
Silver	415846	0.2	ug/g	STD 0.5	<0.2
Thallium	415846	1	ug/g	STD 1	<1
Uranium	415846	0.5	ug/g	STD 2.5	<0.5

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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Metals

Lab I.D. 1606031
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-14
Sampling Time
Sample I.D. BH4-1

Analyte Batch No MRL Units Guideline

Vanadium	415846	2	ug/g	STD 86	20
Zinc	415846	2	ug/g	STD 290	44

Metals

Lab I.D. 1606034
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-14
Sampling Time
Sample I.D. BH5-1

Analyte Batch No MRL Units Guideline

Antimony	415846	1	ug/g	STD 1.3	<1	<1
Arsenic	415846	1	ug/g	STD 18	3	3
Barium	415846	1	ug/g	STD 220	51	63
Beryllium	415846	1	ug/g	STD 2.5	<1	<1
Boron (total)	415846	5	ug/g	STD 36	<5	5
Cadmium	415846	0.4	ug/g	STD 1.2	<0.4	<0.4
Chromium Total	415846	1	ug/g	STD 70	20	20
Cobalt	415846	1	ug/g	STD 21	6	7
Copper	415846	1	ug/g	STD 92	16	18
Lead	415846	1	ug/g	STD 120	14	11
Molybdenum	415846	1	ug/g	STD 2	<1	<1
Nickel	415846	1	ug/g	STD 82	15	17
Selenium	415895	0.5	ug/g	STD 1.5	0.6	<0.5
Silver	415846	0.2	ug/g	STD 0.5	<0.2	<0.2
Thallium	415846	1	ug/g	STD 1	<1	<1
Uranium	415846	0.5	ug/g	STD 2.5	<0.5	<0.5
Vanadium	415846	2	ug/g	STD 86	24	28

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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Metals

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606034
Soil153
2022-01-14
BH5-1

1606038
Soil153
2022-01-14
BH7-1

Analyte Batch No MRL Units Guideline

Zinc 415846 2 ug/g STD 290

52 48

Metals

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606043
Soil153
2022-01-13
BH8-1

Analyte Batch No MRL Units Guideline

Antimony	415846	1	ug/g	STD 1.3	<1
Arsenic	415846	1	ug/g	STD 18	3
Barium	415846	1	ug/g	STD 220	39
Beryllium	415846	1	ug/g	STD 2.5	<1
Boron (total)	415846	5	ug/g	STD 36	5
Cadmium	415846	0.4	ug/g	STD 1.2	<0.4
Chromium Total	415846	1	ug/g	STD 70	16
Cobalt	415846	1	ug/g	STD 21	7
Copper	415846	1	ug/g	STD 92	16
Lead	415846	1	ug/g	STD 120	9
Molybdenum	415846	1	ug/g	STD 2	<1
Nickel	415846	1	ug/g	STD 82	16
Selenium	415895	0.5	ug/g	STD 1.5	0.6
Silver	415846	0.2	ug/g	STD 0.5	<0.2
Thallium	415846	1	ug/g	STD 1	<1
Uranium	415846	0.5	ug/g	STD 2.5	<0.5
Vanadium	415846	2	ug/g	STD 86	24
Zinc	415846	2	ug/g	STD 290	47

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Metals

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606044 Soil153	1606046 Soil153	1606047 Soil153
2022-01-13	2022-01-13	2022-01-13
BH8-2	BH9-1	BH9-2

Analyte	Batch No	MRL	Units	Guideline
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Antimony	415846	1	ug/g	STD 1.3	<1	<1	<1
Arsenic	415846	1	ug/g	STD 18	2	2	3
Barium	415846	1	ug/g	STD 220	20	21	38
Beryllium	415846	1	ug/g	STD 2.5	<1	<1	<1
Boron (Hot Water Soluble)	415918	0.5	ug/g		<0.5	<0.5	
Boron (total)	415846	5	ug/g	STD 36	<5	<5	<5
Cadmium	415846	0.4	ug/g	STD 1.2	<0.4	<0.4	<0.4
Chromium Total	415846	1	ug/g	STD 70	11	10	14
Chromium VI	415899	0.20	ug/g	STD 0.66	<0.20	<0.20	
Cobalt	415846	1	ug/g	STD 21	4	3	6
Copper	415846	1	ug/g	STD 92	11	12	15
Lead	415846	1	ug/g	STD 120	4	115	6
Mercury	415846	0.1	ug/g	STD 0.27	<0.1	<0.1	
Molybdenum	415846	1	ug/g	STD 2	<1	<1	<1
Nickel	415846	1	ug/g	STD 82	9	8	14
Selenium	415895	0.5	ug/g	STD 1.5	0.6	<0.5	0.6
Silver	415846	0.2	ug/g	STD 0.5	<0.2	<0.2	<0.2
Thallium	415846	1	ug/g	STD 1	<1	<1	<1
Uranium	415846	0.5	ug/g	STD 2.5	<0.5	<0.5	<0.5
Vanadium	415846	2	ug/g	STD 86	18	14	21
Zinc	415846	2	ug/g	STD 290	21	56	31

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Metals

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606050 Soil153	1606052 Soil153	1606053 Soil153
2022-01-13	2022-01-13	2022-01-13
BH10-1	BH11-1	Dup-1

Analyte	Batch No	MRL	Units	Guideline
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Antimony	415846	1	ug/g	STD 1.3	<1	<1	<1
Arsenic	415846	1	ug/g	STD 18	3	3	4
Barium	415846	1	ug/g	STD 220	63	53	75
Beryllium	415846	1	ug/g	STD 2.5	<1	<1	<1
Boron (total)	415846	5	ug/g	STD 36	<5	<5	<5
Cadmium	415846	0.4	ug/g	STD 1.2	<0.4	<0.4	<0.4
Chromium Total	415846	1	ug/g	STD 70	21	30	20
Cobalt	415846	1	ug/g	STD 21	7	6	7
Copper	415846	1	ug/g	STD 92	17	16	17
Lead	415846	1	ug/g	STD 120	13	17	21
Molybdenum	415846	1	ug/g	STD 2	<1	<1	<1
Nickel	415846	1	ug/g	STD 82	16	19	16
Selenium	415895	0.5	ug/g	STD 1.5	0.7	0.6	0.6
Silver	415846	0.2	ug/g	STD 0.5	<0.2	<0.2	<0.2
Thallium	415846	1	ug/g	STD 1	<1	<1	<1
Uranium	415846	0.5	ug/g	STD 2.5	0.6	<0.5	<0.5
Vanadium	415846	2	ug/g	STD 86	27	26	27
Zinc	415846	2	ug/g	STD 290	58	56	64

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Metals

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606056
Soil153
2022-01-13
BH12-1

1606057
Soil153
2022-01-13
BH12-2

Analyte	Batch No	MRL	Units	Guideline		
Antimony	415846	1	ug/g	STD 1.3	<1	<1
Arsenic	415846	1	ug/g	STD 18	4	4
Barium	415846	1	ug/g	STD 220	84	65
Beryllium	415846	1	ug/g	STD 2.5	<1	<1
Boron (Hot Water Soluble)	415918	0.5	ug/g		<0.5	
Boron (total)	415846	5	ug/g	STD 36	<5	<5
Cadmium	415846	0.4	ug/g	STD 1.2	<0.4	<0.4
Chromium Total	415846	1	ug/g	STD 70	27	22
Chromium VI	415899	0.20	ug/g	STD 0.66	<0.20	
Cobalt	415846	1	ug/g	STD 21	8	9
Copper	415846	1	ug/g	STD 92	21	21
Lead	415846	1	ug/g	STD 120	46	10
Mercury	415846	0.1	ug/g	STD 0.27	<0.1	
Molybdenum	415846	1	ug/g	STD 2	<1	<1
Nickel	415846	1	ug/g	STD 82	20	21
Selenium	415895	0.5	ug/g	STD 1.5	0.9	0.9
Silver	415846	0.2	ug/g	STD 0.5	<0.2	<0.2
Thallium	415846	1	ug/g	STD 1	<1	<1
Uranium	415846	0.5	ug/g	STD 2.5	<0.5	<0.5
Vanadium	415846	2	ug/g	STD 86	33	29
Zinc	415846	2	ug/g	STD 290	63	47

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

OCP/PCB

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606034
Soil153

2022-01-14

BH5-1

1606035
Soil153

2022-01-14

Dup-5

Analyte **Batch No** **MRL** **Units** **Guideline**

Aldrin	415986	0.006	ug/g	STD 0.05	<0.006	<0.006
Chlordane	415987	0.018	ug/g	STD 0.05	<0.018	<0.018
Chlordane, alpha-	415986	0.006	ug/g		<0.006	<0.006
Chlordane, gamma-	415986	0.006	ug/g		<0.006	<0.006
DDD	415986	0.006	ug/g	STD 0.05	<0.006	<0.006
DDE	415986	0.006	ug/g	STD 0.05	<0.006	<0.006
DDT	415986	0.006	ug/g	STD 1.4	<0.006	<0.006
Dieldrin	415986	0.006	ug/g	STD 0.05	<0.006	<0.006
Endosulfan	415987	0.012	ug/g	STD 0.04	<0.012	<0.012
Endosulfan I	415986	0.006	ug/g		<0.006	<0.006
Endosulfan II	415986	0.006	ug/g		<0.006	<0.006
Endrin	415986	0.006	ug/g	STD 0.04	<0.006	<0.006
Heptachlor	415986	0.006	ug/g	STD 0.05	<0.006	<0.006
Heptachlor Epoxide	415986	0.006	ug/g	STD 0.05	<0.006	<0.006
Hexachlorobenzene	415987	0.006	ug/g	STD 0.01	<0.006	<0.006
Hexachlorobutadiene	415987	0.006	ug/g	STD 0.01	<0.006	<0.006
Hexachlorocyclohexane Gamma-	415986	0.006	ug/g	STD 0.01	<0.006	<0.006
Hexachloroethane	415987	0.006	ug/g	STD 0.01	<0.006	<0.006
Methoxychlor	415986	0.006	ug/g	STD 0.05	<0.006	<0.006

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PAH

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606024
Soil153
2022-01-14
BH1-1

1606028
Soil153
2022-01-14
BH2-1

Analyte	Batch No	MRL	Units	Guideline		
1+2-methylnaphthalene	415964	0.05	ug/g		<0.05	<0.05
Acenaphthene	415963	0.05	ug/g	STD 0.072	<0.05	<0.05
Acenaphthylene	415963	0.05	ug/g	STD 0.093	<0.05	<0.05
Anthracene	415963	0.05	ug/g	STD 0.16	<0.05	<0.05
Benz[a]anthracene	415963	0.05	ug/g	STD 0.36	<0.05	<0.05
Benzo[a]pyrene	415963	0.05	ug/g	STD 0.3	<0.05	<0.05
Benzo[b]fluoranthene	415963	0.05	ug/g	STD 0.47	<0.05	<0.05
Benzo[ghi]perylene	415963	0.05	ug/g	STD 0.68	<0.05	<0.05
Benzo[k]fluoranthene	415963	0.05	ug/g	STD 0.48	<0.05	<0.05
Chrysene	415963	0.05	ug/g	STD 2.8	<0.05	<0.05
Dibenz[a h]anthracene	415963	0.05	ug/g	STD 0.1	<0.05	<0.05
Fluoranthene	415963	0.05	ug/g	STD 0.56	<0.05	<0.05
Fluorene	415963	0.05	ug/g	STD 0.12	<0.05	<0.05
Indeno[1 2 3-cd]pyrene	415963	0.05	ug/g	STD 0.23	<0.05	<0.05
Methylnaphthalene, 1-	415963	0.05	ug/g	STD 0.59	<0.05	<0.05
Methylnaphthalene, 2-	415963	0.05	ug/g	STD 0.59	<0.05	<0.05
Naphthalene	415963	0.013	ug/g	STD 0.09	<0.013	<0.013
Phenanthrene	415963	0.05	ug/g	STD 0.69	<0.05	0.05
Pyrene	415963	0.05	ug/g	STD 1	<0.05	<0.05

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PAH

Lab I.D. 1606031
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-14
Sampling Time
Sample I.D. BH4-1

Analyte	Batch No	MRL	Units	Guideline	
1+2-methylnaphthalene	415964	0.05	ug/g		<0.05
Acenaphthene	415963	0.05	ug/g	STD 0.072	<0.05
Acenaphthylene	415963	0.05	ug/g	STD 0.093	<0.05
Anthracene	415963	0.05	ug/g	STD 0.16	<0.05
Benz[a]anthracene	415963	0.05	ug/g	STD 0.36	<0.05
Benzo[a]pyrene	415963	0.05	ug/g	STD 0.3	<0.05
Benzo[b]fluoranthene	415963	0.05	ug/g	STD 0.47	<0.05
Benzo[ghi]perylene	415963	0.05	ug/g	STD 0.68	<0.05
Benzo[k]fluoranthene	415963	0.05	ug/g	STD 0.48	<0.05
Chrysene	415963	0.05	ug/g	STD 2.8	<0.05
Dibenz[a h]anthracene	415963	0.05	ug/g	STD 0.1	<0.05
Fluoranthene	415963	0.05	ug/g	STD 0.56	<0.05
Fluorene	415963	0.05	ug/g	STD 0.12	<0.05
Indeno[1 2 3-cd]pyrene	415963	0.05	ug/g	STD 0.23	<0.05
Methylnaphthalene, 1-	415963	0.05	ug/g	STD 0.59	<0.05
Methylnaphthalene, 2-	415963	0.05	ug/g	STD 0.59	<0.05
Naphthalene	415963	0.013	ug/g	STD 0.09	<0.013
Phenanthrene	415963	0.05	ug/g	STD 0.69	<0.05
Pyrene	415963	0.05	ug/g	STD 1	<0.05

Results relate only to the parameters tested on the samples submitted.
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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PAH

Lab I.D. 1606038
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-14
Sampling Time
Sample I.D. BH7-1

Analyte	Batch No	MRL	Units	Guideline	
1+2-methylnaphthalene	415964	0.05	ug/g		<0.05
Acenaphthene	415963	0.05	ug/g	STD 0.072	<0.05
Acenaphthylene	415963	0.05	ug/g	STD 0.093	<0.05
Anthracene	415963	0.05	ug/g	STD 0.16	<0.05
Benz[a]anthracene	415963	0.05	ug/g	STD 0.36	<0.05
Benzo[a]pyrene	415963	0.05	ug/g	STD 0.3	<0.05
Benzo[b]fluoranthene	415963	0.05	ug/g	STD 0.47	<0.05
Benzo[ghi]perylene	415963	0.05	ug/g	STD 0.68	<0.05
Benzo[k]fluoranthene	415963	0.05	ug/g	STD 0.48	<0.05
Chrysene	415963	0.05	ug/g	STD 2.8	<0.05
Dibenz[a h]anthracene	415963	0.05	ug/g	STD 0.1	<0.05
Fluoranthene	415963	0.05	ug/g	STD 0.56	<0.05
Fluorene	415963	0.05	ug/g	STD 0.12	<0.05
Indeno[1 2 3-cd]pyrene	415963	0.05	ug/g	STD 0.23	<0.05
Methylnaphthalene, 1-	415963	0.05	ug/g	STD 0.59	<0.05
Methylnaphthalene, 2-	415963	0.05	ug/g	STD 0.59	<0.05
Naphthalene	415963	0.013	ug/g	STD 0.09	<0.013
Phenanthrene	415963	0.05	ug/g	STD 0.69	<0.05
Pyrene	415963	0.05	ug/g	STD 1	<0.05

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PAH

Lab I.D. 1606039
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-14
Sampling Time
Sample I.D. Dup-2

Analyte	Batch No	MRL	Units	Guideline	
1+2-methylnaphthalene	415964	0.05	ug/g		<0.05
Acenaphthene	415963	0.05	ug/g	STD 0.072	<0.05
Acenaphthylene	415963	0.05	ug/g	STD 0.093	<0.05
Anthracene	415963	0.05	ug/g	STD 0.16	<0.05
Benz[a]anthracene	415963	0.05	ug/g	STD 0.36	<0.05
Benzo[a]pyrene	415963	0.05	ug/g	STD 0.3	<0.05
Benzo[b]fluoranthene	415963	0.05	ug/g	STD 0.47	<0.05
Benzo[ghi]perylene	415963	0.05	ug/g	STD 0.68	<0.05
Benzo[k]fluoranthene	415963	0.05	ug/g	STD 0.48	<0.05
Chrysene	415963	0.05	ug/g	STD 2.8	<0.05
Dibenz[a h]anthracene	415963	0.05	ug/g	STD 0.1	<0.05
Fluoranthene	415963	0.05	ug/g	STD 0.56	<0.05
Fluorene	415963	0.05	ug/g	STD 0.12	<0.05
Indeno[1 2 3-cd]pyrene	415963	0.05	ug/g	STD 0.23	<0.05
Methylnaphthalene, 1-	415963	0.05	ug/g	STD 0.59	<0.05
Methylnaphthalene, 2-	415963	0.05	ug/g	STD 0.59	<0.05
Naphthalene	415963	0.013	ug/g	STD 0.09	<0.013
Phenanthrene	415963	0.05	ug/g	STD 0.69	<0.05
Pyrene	415963	0.05	ug/g	STD 1	<0.05

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PAH

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606044
Soil153
2022-01-13
BH8-2

1606047
Soil153
2022-01-13
BH9-2

Analyte Batch No MRL Units Guideline

1+2-methylnaphthalene	415964	0.05	ug/g		<0.05	<0.05
Acenaphthene	415963	0.05	ug/g	STD 0.072	<0.05	<0.05
Acenaphthylene	415963	0.05	ug/g	STD 0.093	<0.05	<0.05
Anthracene	415963	0.05	ug/g	STD 0.16	<0.05	<0.05
Benz[a]anthracene	415963	0.05	ug/g	STD 0.36	<0.05	<0.05
Benzo[a]pyrene	415963	0.05	ug/g	STD 0.3	<0.05	<0.05
Benzo[b]fluoranthene	415963	0.05	ug/g	STD 0.47	<0.05	<0.05
Benzo[ghi]perylene	415963	0.05	ug/g	STD 0.68	<0.05	<0.05
Benzo[k]fluoranthene	415963	0.05	ug/g	STD 0.48	<0.05	<0.05
Chrysene	415963	0.05	ug/g	STD 2.8	<0.05	<0.05
Dibenz[a h]anthracene	415963	0.05	ug/g	STD 0.1	<0.05	<0.05
Fluoranthene	415963	0.05	ug/g	STD 0.56	<0.05	<0.05
Fluorene	415963	0.05	ug/g	STD 0.12	<0.05	<0.05
Indeno[1 2 3-cd]pyrene	415963	0.05	ug/g	STD 0.23	<0.05	<0.05
Methylnaphthalene, 1-	415963	0.05	ug/g	STD 0.59	<0.05	<0.05
Methylnaphthalene, 2-	415963	0.05	ug/g	STD 0.59	<0.05	<0.05
Naphthalene	415963	0.013	ug/g	STD 0.09	<0.013	<0.013
Phenanthrene	415963	0.05	ug/g	STD 0.69	<0.05	<0.05
Pyrene	415963	0.05	ug/g	STD 1	<0.05	<0.05

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PAH

Lab I.D. 1606056
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-13
Sampling Time
Sample I.D. BH12-1

Analyte	Batch No	MRL	Units	Guideline	
1+2-methylnaphthalene	415964	0.05	ug/g		<0.05
Acenaphthene	415963	0.05	ug/g	STD 0.072	<0.05
Acenaphthylene	415963	0.05	ug/g	STD 0.093	<0.05
Anthracene	415963	0.05	ug/g	STD 0.16	<0.05
Benz[a]anthracene	415963	0.05	ug/g	STD 0.36	<0.05
Benzo[a]pyrene	415963	0.05	ug/g	STD 0.3	<0.05
Benzo[b]fluoranthene	415963	0.05	ug/g	STD 0.47	<0.05
Benzo[ghi]perylene	415963	0.05	ug/g	STD 0.68	<0.05
Benzo[k]fluoranthene	415963	0.05	ug/g	STD 0.48	<0.05
Chrysene	415963	0.05	ug/g	STD 2.8	<0.05
Dibenz[a h]anthracene	415963	0.05	ug/g	STD 0.1	<0.05
Fluoranthene	415963	0.05	ug/g	STD 0.56	<0.05
Fluorene	415963	0.05	ug/g	STD 0.12	<0.05
Indeno[1 2 3-cd]pyrene	415963	0.05	ug/g	STD 0.23	<0.05
Methylnaphthalene, 1-	415963	0.05	ug/g	STD 0.59	<0.05
Methylnaphthalene, 2-	415963	0.05	ug/g	STD 0.59	<0.05
Naphthalene	415963	0.013	ug/g	STD 0.09	<0.013
Phenanthrene	415963	0.05	ug/g	STD 0.69	<0.05
Pyrene	415963	0.05	ug/g	STD 1	<0.05

Results relate only to the parameters tested on the samples submitted.
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Environment Testing

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606026 Soil153	1606027 Soil153	1606028 Soil153
2022-01-14	2022-01-14	2022-01-14
BH1-3	BH1-5	BH2-1

Analyte	Batch No	MRL	Units	Guideline
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Acetone	415831	0.50	ug/g	STD 0.5		<0.50	
Benzene	415831	0.0068	ug/g	STD 0.02	<0.0068	<0.0068	<0.0068
Bromodichloromethane	415831	0.05	ug/g	STD 0.05		<0.05	
Bromoform	415831	0.05	ug/g	STD 0.05		<0.05	
Bromomethane	415831	0.05	ug/g	STD 0.05		<0.05	
Carbon Tetrachloride	415831	0.05	ug/g	STD 0.05		<0.05	
Chlorobenzene	415831	0.05	ug/g	STD 0.05		<0.05	
Chloroform	415831	0.05	ug/g	STD 0.05		<0.05	
Dibromochloromethane	415831	0.05	ug/g	STD 0.05		<0.05	
Dichlorobenzene, 1,2-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichlorobenzene, 1,3-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichlorobenzene, 1,4-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichlorodifluoromethane	415831	0.05	ug/g	STD 0.05		<0.05	
Dichloroethane, 1,1-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichloroethane, 1,2-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichloroethylene, 1,1-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichloroethylene, 1,2-cis-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichloroethylene, 1,2-trans-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichloropropane, 1,2-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichloropropene,1,3-	415831	0.05	ug/g	STD 0.05		<0.05	
Dichloropropene,1,3-cis-	415831	0.05	ug/g			<0.05	
Dichloropropene,1,3-trans-	415831	0.05	ug/g			<0.05	
Ethylbenzene	415831	0.018	ug/g	STD 0.05	<0.018	<0.018	<0.018

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MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606026 Soil153	1606027 Soil153	1606028 Soil153
2022-01-14	2022-01-14	2022-01-14
BH1-3	BH1-5	BH2-1

Analyte	Batch No	MRL	Units	Guideline
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Ethylene dibromide	415831	0.05	ug/g	STD 0.05		<0.05	
Hexane (n)	415831	0.05	ug/g	STD 0.05		<0.05	
Methyl Ethyl Ketone	415831	0.50	ug/g	STD 0.5		0.81*	
Methyl Isobutyl Ketone	415831	0.50	ug/g	STD 0.5		<0.50	
Methyl tert-Butyl Ether (MTBE)	415831	0.05	ug/g	STD 0.05		<0.05	
Methylene Chloride	415831	0.05	ug/g	STD 0.05		<0.05	
Styrene	415831	0.05	ug/g	STD 0.05		<0.05	
Tetrachloroethane, 1,1,1,2-	415831	0.05	ug/g	STD 0.05		<0.05	
Tetrachloroethane, 1,1,2,2-	415831	0.05	ug/g	STD 0.05		<0.05	
Tetrachloroethylene	415831	0.05	ug/g	STD 0.05		<0.05	
Toluene	415831	0.08	ug/g	STD 0.2	<0.08	<0.08	<0.08
Trichloroethane, 1,1,1-	415831	0.05	ug/g	STD 0.05		<0.05	
Trichloroethane, 1,1,2-	415831	0.05	ug/g	STD 0.05		<0.05	
Trichloroethylene	415831	0.01	ug/g	STD 0.05		<0.01	
Trichlorofluoromethane	415831	0.05	ug/g	STD 0.25		<0.05	
Vinyl Chloride	415831	0.02	ug/g	STD 0.02		<0.02	
Xylene Mixture	415902	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05
Xylene, m/p-	415831	0.05	ug/g		<0.05	<0.05	<0.05
Xylene, o-	415831	0.05	ug/g		<0.05	<0.05	<0.05

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1821 Albion Road, Unit 7
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Attention: Mr. Nan Du
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Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606029 Soil153	1606030 Soil153	1606032 Soil153	1606033 Soil153
2022-01-14	2022-01-14	2022-01-14	2022-01-14
BH2-6	Dup-4	BH4-2	BH4-9

Analyte Batch No MRL Units Guideline

Acetone	415831	0.50	ug/g	STD 0.5	<0.50	<0.50		
Benzene	415831	0.0068	ug/g	STD 0.02	<0.0068	<0.0068	<0.0068	<0.0068
Bromodichloromethane	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Bromoform	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Bromomethane	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Carbon Tetrachloride	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Chlorobenzene	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Chloroform	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dibromochloromethane	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichlorobenzene, 1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichlorobenzene, 1,3-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichlorobenzene, 1,4-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichlorodifluoromethane	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichloroethane, 1,1-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichloroethane, 1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichloroethylene, 1,1-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichloroethylene, 1,2-cis-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichloroethylene, 1,2-trans-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichloropropane, 1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichloropropene, 1,3-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Dichloropropene, 1,3-cis-	415831	0.05	ug/g		<0.05	<0.05		
Dichloropropene, 1,3-trans-	415831	0.05	ug/g		<0.05	<0.05		
Ethylbenzene	415831	0.018	ug/g	STD 0.05	<0.018	<0.018	<0.018	<0.018

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Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606029 Soil153	1606030 Soil153	1606032 Soil153	1606033 Soil153
2022-01-14	2022-01-14	2022-01-14	2022-01-14
BH2-6	Dup-4	BH4-2	BH4-9

Analyte	Batch No	MRL	Units	Guideline
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Ethylene dibromide	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Hexane (n)	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Methyl Ethyl Ketone	415831	0.50	ug/g	STD 0.5	0.72*	1.2*		
Methyl Isobutyl Ketone	415831	0.50	ug/g	STD 0.5	<0.50	<0.50		
Methyl tert-Butyl Ether (MTBE)	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Methylene Chloride	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Styrene	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Tetrachloroethane, 1,1,1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Tetrachloroethane, 1,1,2,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Tetrachloroethylene	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Toluene	415831	0.08	ug/g	STD 0.2	<0.08	<0.08	<0.08	<0.08
Trichloroethane, 1,1,1-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Trichloroethane, 1,1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05		
Trichloroethylene	415831	0.01	ug/g	STD 0.05	<0.01	<0.01		
Trichlorofluoromethane	415831	0.05	ug/g	STD 0.25	<0.05	<0.05		
Vinyl Chloride	415831	0.02	ug/g	STD 0.02	<0.02	<0.02		
Xylene Mixture	415902	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05
Xylene, m/p-	415831	0.05	ug/g		<0.05	<0.05	<0.05	<0.05
Xylene, o-	415831	0.05	ug/g		<0.05	<0.05	<0.05	<0.05

Results relate only to the parameters tested on the samples submitted.
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COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	1606036
					Sample Matrix	Soil153
					Sample Type	1606037
					Sample Date	Soil153
					Sampling Time	2022-01-14
					Sample I.D.	2022-01-14
						BH5-3
						BH5-9
Benzene	415831	0.0068	ug/g	STD 0.02	<0.0068	<0.0068
Ethylbenzene	415831	0.018	ug/g	STD 0.05	<0.018	<0.018
Toluene	415831	0.08	ug/g	STD 0.2	<0.08	<0.08
Xylene Mixture	415902	0.05	ug/g	STD 0.05	<0.05	<0.05
Xylene, m/p-	415831	0.05	ug/g		<0.05	<0.05
Xylene, o-	415831	0.05	ug/g		<0.05	<0.05

Volatiles

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	1606040	1606041	1606042
					Sample Matrix	Soil153	Soil153	Soil153
					Sample Type	2022-01-14	2022-01-14	2022-01-14
					Sample Date	2022-01-14	2022-01-14	2022-01-14
					Sampling Time	BH7-3	Dup-3	BH7-6
					Sample I.D.			
Benzene	415831	0.0068	ug/g	STD 0.02	<0.0068	<0.0068	<0.0068	<0.0068
Ethylbenzene	415831	0.018	ug/g	STD 0.05	<0.018	<0.018	<0.018	<0.018
Toluene	415831	0.08	ug/g	STD 0.2	<0.08	<0.08	<0.08	<0.08
Xylene Mixture	415902	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05
Xylene, m/p-	415831	0.05	ug/g		<0.05	<0.05	<0.05	<0.05
Xylene, o-	415831	0.05	ug/g		<0.05	<0.05	<0.05	<0.05

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
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Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
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Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606045
Soil153

2022-01-13

BH8-7

1606048
Soil153

2022-01-13

BH9-3

Analyte Batch No MRL Units Guideline

Acetone	415831	0.50	ug/g	STD 0.5	<0.50	<0.50
Benzene	415831	0.0068	ug/g	STD 0.02	<0.0068	<0.0068
Bromodichloromethane	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Bromoform	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Bromomethane	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Carbon Tetrachloride	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Chlorobenzene	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Chloroform	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dibromochloromethane	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichlorobenzene, 1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichlorobenzene, 1,3-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichlorobenzene, 1,4-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichlorodifluoromethane	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichloroethane, 1,1-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichloroethane, 1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichloroethylene, 1,1-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichloroethylene, 1,2-cis-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichloroethylene, 1,2-trans-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichloropropane, 1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichloropropene, 1,3-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichloropropene, 1,3-cis-	415831	0.05	ug/g		<0.05	<0.05
Dichloropropene, 1,3-trans-	415831	0.05	ug/g		<0.05	<0.05
Ethylbenzene	415831	0.018	ug/g	STD 0.05	<0.018	<0.018

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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Lab I.D.	1606045	1606048
Sample Matrix	Soil153	Soil153
Sample Type		
Sample Date	2022-01-13	2022-01-13
Sampling Time		
Sample I.D.	BH8-7	BH9-3

Analyte	Batch No	MRL	Units	Guideline		
Ethylene dibromide	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Hexane (n)	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Methyl Ethyl Ketone	415831	0.50	ug/g	STD 0.5	1.1*	0.87*
Methyl Isobutyl Ketone	415831	0.50	ug/g	STD 0.5	<0.50	<0.50
Methyl tert-Butyl Ether (MTBE)	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Methylene Chloride	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Styrene	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Tetrachloroethane, 1,1,1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Tetrachloroethane, 1,1,2,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Tetrachloroethylene	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Toluene	415831	0.08	ug/g	STD 0.2	<0.08	<0.08
Trichloroethane, 1,1,1-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Trichloroethane, 1,1,2-	415831	0.05	ug/g	STD 0.05	<0.05	<0.05
Trichloroethylene	415831	0.01	ug/g	STD 0.05	<0.01	<0.01
Trichlorofluoromethane	415831	0.05	ug/g	STD 0.25	<0.05	<0.05
Vinyl Chloride	415831	0.02	ug/g	STD 0.02	<0.02	<0.02
Xylene Mixture	415902	0.05	ug/g	STD 0.05	<0.05	<0.05
Xylene, m/p-	415831	0.05	ug/g		<0.05	<0.05
Xylene, o-	415831	0.05	ug/g		<0.05	<0.05

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Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606049	Soil153		2022-01-13		BH9-9
Benzene	415831	0.0068	ug/g	STD 0.02	1606051	Soil153		2022-01-13		BH10-2
Ethylbenzene	415831	0.018	ug/g	STD 0.05						
Toluene	415831	0.08	ug/g	STD 0.2						
Xylene Mixture	415902	0.05	ug/g	STD 0.05						
Xylene, m/p-	415831	0.05	ug/g							
Xylene, o-	415831	0.05	ug/g							

Volatiles

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606054	Soil153		2022-01-13		BH11-2
Acetone	415831	0.50	ug/g	STD 0.5	1606055	Soil153		2022-01-13		BH11-7
Benzene	415831	0.0068	ug/g	STD 0.02	1606057	Soil153		2022-01-13		BH12-2
Bromodichloromethane	415831	0.05	ug/g	STD 0.05	1606058	Soil153		2022-01-13		BH12-8
Bromoform	415831	0.05	ug/g	STD 0.05						
Bromomethane	415831	0.05	ug/g	STD 0.05						
Carbon Tetrachloride	415831	0.05	ug/g	STD 0.05						
Chlorobenzene	415831	0.05	ug/g	STD 0.05						
Chloroform	415831	0.05	ug/g	STD 0.05						
Dibromochloromethane	415831	0.05	ug/g	STD 0.05						
Dichlorobenzene, 1,2-	415831	0.05	ug/g	STD 0.05						
Dichlorobenzene, 1,3-	415831	0.05	ug/g	STD 0.05						
Dichlorobenzene, 1,4-	415831	0.05	ug/g	STD 0.05						
Dichlorodifluoromethane	415831	0.05	ug/g	STD 0.05						

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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606054 Soil153	1606055 Soil153	1606057 Soil153	1606058 Soil153
2022-01-13	2022-01-13	2022-01-13	2022-01-13
BH11-2	BH11-7	BH12-2	BH12-8

Analyte	Batch No	MRL	Units	Guideline
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Dichloroethane, 1,1-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Dichloroethane, 1,2-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Dichloroethylene, 1,1-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Dichloroethylene, 1,2-cis-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Dichloroethylene, 1,2-trans-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Dichloropropane, 1,2-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Dichloropropene, 1,3-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Dichloropropene, 1,3-cis-	415831	0.05	ug/g			<0.05		<0.05
Dichloropropene, 1,3-trans-	415831	0.05	ug/g			<0.05		<0.05
Ethylbenzene	415831	0.018	ug/g	STD 0.05	<0.018	<0.018	<0.018	<0.018
Ethylene dibromide	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Hexane (n)	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Methyl Ethyl Ketone	415831	0.50	ug/g	STD 0.5		1.1*		1.3*
Methyl Isobutyl Ketone	415831	0.50	ug/g	STD 0.5		<0.50		<0.50
Methyl tert-Butyl Ether (MTBE)	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Methylene Chloride	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Styrene	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Tetrachloroethane, 1,1,1,2-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Tetrachloroethane, 1,1,2,2-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Tetrachloroethylene	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Toluene	415831	0.08	ug/g	STD 0.2	<0.08	<0.08	<0.08	<0.08
Trichloroethane, 1,1,1-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05
Trichloroethane, 1,1,2-	415831	0.05	ug/g	STD 0.05		<0.05		<0.05

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PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Volatiles

					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606054 Soil153	1606055 Soil153	1606057 Soil153	1606058 Soil153
						2022-01-13	2022-01-13	2022-01-13	2022-01-13
						BH11-2	BH11-7	BH12-2	BH12-8
Analyte	Batch No	MRL	Units	Guideline					
Trichloroethylene	415831	0.01	ug/g	STD 0.05			<0.01		<0.01
Trichlorofluoromethane	415831	0.05	ug/g	STD 0.25			<0.05		<0.05
Vinyl Chloride	415831	0.02	ug/g	STD 0.02			<0.02		<0.02
Xylene Mixture	415902	0.05	ug/g	STD 0.05		<0.05	<0.05	<0.05	<0.05
Xylene, m/p-	415831	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
Xylene, o-	415831	0.05	ug/g			<0.05	<0.05	<0.05	<0.05

Inorganics

					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606024 Soil153	1606025 Soil153	1606028 Soil153
						2022-01-14	2022-01-14	2022-01-14
						BH1-1	BH1-2	BH2-1
Analyte	Batch No	MRL	Units	Guideline				
Cyanide (CN-)	415841	0.005	ug/g	STD 0.051		<0.005		
Electrical Conductivity	415909	0.05	mS/cm	STD 0.57		2.19*	3.32*	4.18*
pH - CaCl2	415894	2.00				7.76		
Sodium Adsorption Ratio	415914	0.01		STD 2.4		37.8*	17.0*	81.8*

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Inorganics

Lab I.D. 1606031
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-14
Sampling Time
Sample I.D. BH4-1

Analyte Batch No MRL Units Guideline

Electrical Conductivity	415909	0.05	mS/cm	STD 0.57	3.19*
Sodium Adsorption Ratio	415914	0.01		STD 2.4	68.4*

Inorganics

Lab I.D. 1606034
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-14
Sampling Time
Sample I.D. BH5-1

Analyte Batch No MRL Units Guideline

Electrical Conductivity	415909	0.05	mS/cm	STD 0.57		6.39*
	416102	0.05	mS/cm	STD 0.57	2.03*	
Sodium Adsorption Ratio	415914	0.01		STD 2.4		111*
	416111	0.01		STD 2.4	30.1*	

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Inorganics

Lab I.D. 1606043
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-13
Sampling Time
Sample I.D. BH8-1

Analyte Batch No MRL Units Guideline

Electrical Conductivity	415909	0.05	mS/cm	STD 0.57	3.38*
Sodium Adsorption Ratio	415914	0.01		STD 2.4	12.2*

Inorganics

Lab I.D. 1606044 1606046 1606047
Sample Matrix Soil153 Soil153 Soil153
Sample Type
Sample Date 2022-01-13 2022-01-13 2022-01-13
Sampling Time
Sample I.D. BH8-2 BH9-1 BH9-2

Analyte Batch No MRL Units Guideline

Cyanide (CN-)	415841	0.005	ug/g	STD 0.051	<0.005	<0.005	
Electrical Conductivity	415909	0.05	mS/cm	STD 0.57	1.66*	3.76*	5.88*
pH - CaCl2	415894	2.00			7.69	7.75	
Sodium Adsorption Ratio	415914	0.01		STD 2.4	6.36*	79.4*	147*

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Inorganics

Lab I.D.	1606050	1606052
Sample Matrix	Soil153	Soil153
Sample Type		
Sample Date	2022-01-13	2022-01-13
Sampling Time		
Sample I.D.	BH10-1	BH11-1

Analyte	Batch No	MRL	Units	Guideline
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Electrical Conductivity	415909	0.05	mS/cm	STD 0.57	2.81*	7.04*
Sodium Adsorption Ratio	415914	0.01		STD 2.4	40.0*	162*

Inorganics

Lab I.D.	1606056	1606057
Sample Matrix	Soil153	Soil153
Sample Type		
Sample Date	2022-01-13	2022-01-13
Sampling Time		
Sample I.D.	BH12-1	BH12-2

Analyte	Batch No	MRL	Units	Guideline
---------	----------	-----	-------	-----------

Cyanide (CN-)	415841	0.005	ug/g	STD 0.051	<0.005	
Electrical Conductivity	415909	0.05	mS/cm	STD 0.57	4.11*	8.50*
pH - CaCl2	415894	2.00			7.68	
Sodium Adsorption Ratio	415914	0.01		STD 2.4	58.8*	126*

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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Moisture

Analyte

Batch No

MRL

Units

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

Guideline

1606026

Soil153

1606027

Soil153

1606028

Soil153

2022-01-14

2022-01-14

2022-01-14

BH1-3

BH1-5

BH2-1

Moisture-Humidite

415889

0.1

%

14.4

14.2

416046

0.1

%

9.9

Moisture

Analyte

Batch No

MRL

Units

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

Guideline

1606029

Soil153

1606030

Soil153

1606032

Soil153

1606033

Soil153

2022-01-14

2022-01-14

2022-01-14

2022-01-14

BH2-6

Dup-4

BH4-2

BH4-9

Moisture-Humidite

415889

0.1

%

16.2

15.8

11.5

16.3

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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Moisture

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606036
Soil153
2022-01-14
BH5-3

1606037
Soil153
2022-01-14
BH5-9

Analyte Batch No MRL Units Guideline

Moisture-Humidite	415889	0.1	%		14.6	13.8
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Moisture

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606040 Soil153 2022-01-14 BH7-3	1606041 Soil153 2022-01-14 Dup-3	1606042 Soil153 2022-01-14 BH7-6
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Analyte Batch No MRL Units Guideline

Moisture-Humidite	415889	0.1	%		12.4	12.8	15.5
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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Moisture

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606045
Soil153
2022-01-13
2022-01-13
BH8-7
BH9-3

1606048
Soil153
2022-01-13
2022-01-13
BH9-3

Analyte Batch No MRL Units Guideline

Moisture-Humidite	415996	0.1	%		14.0	9.7
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Moisture

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606049
Soil153
2022-01-13
2022-01-13
BH9-9
BH10-2

1606051
Soil153
2022-01-13
2022-01-13
BH10-2

Analyte Batch No MRL Units Guideline

Moisture-Humidite	415959	0.1	%			17.3
	416045	0.1	%		16.1	

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COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Moisture

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606054 Soil153	1606055 Soil153	1606057 Soil153	1606058 Soil153
2022-01-13	2022-01-13	2022-01-13	2022-01-13
BH11-2	BH11-7	BH12-2	BH12-8

Analyte	Batch No	MRL	Units	Guideline
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Moisture-Humidite	415959	0.1	%	14.1	11.8	15.9	9.7
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PCBs

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606047 Soil153
2022-01-13
BH9-2

Analyte	Batch No	MRL	Units	Guideline
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Aroclor 1242	416122	0.02	ug/g	<0.02
Aroclor 1248	416122	0.02	ug/g	<0.02
Aroclor 1254	416122	0.02	ug/g	<0.02
Aroclor 1260	416122	0.02	ug/g	<0.02
Polychlorinated Biphenyls	416122	0.02	ug/g	STD 0.3

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COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PCB Surrogate

Lab I.D.	1606034	1606035
Sample Matrix	Soil153	Soil153
Sample Type		
Sample Date	2022-01-14	2022-01-14
Sampling Time		
Sample I.D.	BH5-1	Dup-5

Analyte	Batch No	MRL	Units	Guideline
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Decachlorobiphenyl	416010	0	%	N/A	N/A
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PCB Surrogate

Lab I.D.	1606047
Sample Matrix	Soil153
Sample Type	
Sample Date	2022-01-13
Sampling Time	
Sample I.D.	BH9-2

Analyte	Batch No	MRL	Units	Guideline
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Decachlorobiphenyl	416124	0	%	84
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PHC Surrogate

<u>PHC Surrogate</u>					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606026 Soil153 2022-01-14 BH1-3	1606027 Soil153 2022-01-14 BH1-5	1606028 Soil153 2022-01-14 BH2-1
Analyte	Batch No	MRL	Units	Guideline				
Alpha-androstrane	415889	0	%		82	61		
	416046	0	%					83

PHC Surrogate

<u>PHC Surrogate</u>					Lab I.D.	1606029	1606030	1606032	1606033
					Sample Matrix	Soil153	Soil153	Soil153	Soil153
					Sample Type	2022-01-14	2022-01-14	2022-01-14	2022-01-14
					Sample Date				
					Sampling Time				
					Sample I.D.	BH2-6	Dup-4	BH4-2	BH4-9
Analyte	Batch No	MRL	Units	Guideline					
Alpha-androstrane	415889	0	%			89	73	68	99

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PHC Surrogate

					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606036 Soil153 2022-01-14 BH5-3	1606037 Soil153 2022-01-14 BH5-9
Analyte	Batch No	MRL	Units	Guideline			
Alpha-androstrane	415889	0	%			71	67

PHC Surrogate

					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606040 Soil153 2022-01-14 BH7-3	1606041 Soil153 2022-01-14 Dup-3	1606042 Soil153 2022-01-14 BH7-6
Analyte	Batch No	MRL	Units	Guideline				
Alpha-androstrane	415889	0	%			91	81	81

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PHC Surrogate

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606045
Soil153
2022-01-13
BH8-7

1606048
Soil153
2022-01-13
BH9-3

Analyte Batch No MRL Units Guideline

Alpha-androstrane	415996	0	%		87	80
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PHC Surrogate

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606049
Soil153
2022-01-13
BH9-9

1606051
Soil153
2022-01-13
BH10-2

Analyte Batch No MRL Units Guideline

Alpha-androstrane	415959	0	%			81
	416045	0	%		78	

Environment Testing

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PHC Surrogate

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606054 Soil153	1606055 Soil153	1606057 Soil153	1606058 Soil153
2022-01-13	2022-01-13	2022-01-13	2022-01-13
BH11-2	BH11-7	BH12-2	BH12-8

Analyte Batch No MRL Units Guideline

Alpha-androstrane	415959	0	%		79	64	77	74
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VOCs Surrogates

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606026 Soil153	1606027 Soil153	1606028 Soil153
2022-01-14	2022-01-14	2022-01-14
BH1-3	BH1-5	BH2-1

Analyte Batch No MRL Units Guideline

1,2-dichloroethane-d4	415831	0	%			113	
4-bromofluorobenzene	415831	0	%			76	
Toluene-d8	415831	0	%		100	117	104

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

VOCs Surrogates

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606029	Soil153	1606030	Soil153	1606032	Soil153
1,2-dichloroethane-d4	415831	0	%		2022-01-14		2022-01-14		2022-01-14	
4-bromofluorobenzene	415831	0	%		BH2-6		Dup-4		BH4-2	
Toluene-d8	415831	0	%		111		111		104	
					76		77		99	
					115		120		104	

VOCs Surrogates

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606036	Soil153	1606037	Soil153		
Toluene-d8	415831	0	%		2022-01-14		2022-01-14			
					BH5-3		BH5-9			
					102		104			

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VOCs Surrogates

<u>Surrogates</u>					Lab I.D.	1606040	1606041	1606042
Analyte	Batch No	MRL	Units	Guideline	Sample Matrix	Soil153	Soil153	Soil153
					Sample Type			
					Sample Date	2022-01-14	2022-01-14	2022-01-14
					Sampling Time			
					Sample I.D.	BH7-3	Dup-3	BH7-6
Toluene-d8	415831	0	%		103	99	105	

VOCs Surrogates

<u>Surrogates</u>					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606045 Soil153 2022-01-13 BH8-7	1606048 Soil153 2022-01-13 BH9-3
Analyte	Batch No	MRL	Units	Guideline			
dichloroethane-d4	415831	0	%		123	110	
omofluorobenzene	415831	0	%		91	79	
Toluene-d8	415831	0	%		126	123	

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VOCs Surrogates

<u>Surrogates</u>					Lab I.D.	1606049	1606051
Analyte	Batch No	MRL	Units	Guideline	Sample Matrix	Soil153	Soil153
					Sample Type		
					Sample Date	2022-01-13	2022-01-13
					Sampling Time		
					Sample I.D.	BH9-9	BH10-2
Toluene-d8	415831	0	%			107	103

VOCs Surrogates

<u>Surrogates</u>					Lab I.D.	1606054	1606055	1606057	1606058
					Sample Matrix	Soil153	Soil153	Soil153	Soil153
					Sample Type				
					Sample Date	2022-01-13	2022-01-13	2022-01-13	2022-01-13
					Sampling Time				
					Sample I.D.	BH11-2	BH11-7	BH12-2	BH12-8
Analyte	Batch No	MRL	Units	Guideline					
dichloroethane-d4	415831	0	%				125		125
omofluorobenzene	415831	0	%				79		77
Toluene-d8	415831	0	%			104	117	104	122

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Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
415831	Tetrachloroethane, 1,1,1,2-	<0.05 ug/g	89	60-130	90	50-140	0	0-50
415831	Trichloroethane, 1,1,1-	<0.05 ug/g	93	60-130	98	50-140	0	0-50
415831	Tetrachloroethane, 1,1,2,2-	<0.05 ug/g	97	60-130	91	50-140	0	0-30
415831	Trichloroethane, 1,1,2-	<0.05 ug/g	94	60-130	90	50-140	0	0-50
415831	Dichloroethane, 1,1-	<0.05 ug/g	95	60-130	101	50-140	0	0-50
415831	Dichloroethylene, 1,1-	<0.05 ug/g	96	60-130	101	50-140	0	0-50
415831	Dichlorobenzene, 1,2-	<0.05 ug/g	90	60-130	93	50-140	0	0-50
415831	Dichloroethane, 1,2-	<0.05 ug/g	98	60-130	95	50-140	0	0-50
415831	Dichloropropane, 1,2-	<0.05 ug/g	92	60-130	95	50-140	0	0-50
415831	Dichlorobenzene, 1,3-	<0.05 ug/g	89	60-130	94	50-140	0	0-50
415831	Dichloropropene, 1,3-	<0.05 ug/g						
415831	Dichlorobenzene, 1,4-	<0.05 ug/g	90	60-130	95	50-140	0	0-50
415831	Acetone	<0.50 ug/g	104	60-130	108	50-140	0	0-50
415831	Benzene	<0.0068	94	60-130	100	50-140	0	0-50
415831	Bromodichloromethane	<0.05 ug/g	92	60-130	92	50-140	0	0-50
415831	Bromoform	<0.05 ug/g	88	60-130	80	50-140	0	0-50
415831	Bromomethane	<0.05 ug/g	109	60-130	99	50-140	0	0-50
415831	Dichloroethylene, 1,2-cis-	<0.05 ug/g	93	60-130	98	50-140	0	0-50
415831	Dichloropropene, 1,3-cis-	<0.05 ug/g	84	60-130	89	50-140	0	0-50
415831	Carbon Tetrachloride	<0.05 ug/g	91	60-130	94	50-140	0	0-50
415831	Chloroform	<0.05 ug/g	94	60-130	97	50-140	0	0-50
415831	Dibromochloromethane	<0.05 ug/g	90	60-130	86	50-140	0	0-50
415831	Dichlorodifluoromethane	<0.05 ug/g	108	60-130	113	50-140	0	0-50
415831	Methylene Chloride	<0.05 ug/g	112	60-130	117	50-140	0	0-50
415831	Ethylbenzene	<0.018 ug/g	95	60-130	101	50-140	0	0-50
415831	Ethylene dibromide	<0.05 ug/g	90	60-130	86	50-140	0	0-50
415831	Hexane (n)	<0.05 ug/g	101	60-130	103	50-140	0	0-50
415831	Xylene, m/p-	<0.05 ug/g	98	60-130	105	50-140	0	0-50
415831	Methyl Ethyl Ketone	<0.50 ug/g	82	60-130	118	50-140	0	0-50
415831	Methyl Isobutyl Ketone	<0.50 ug/g	84	60-130	90	50-140	0	0-50
415831	Methyl tert-Butyl Ether (MTBE)	<0.05 ug/g	96	60-130	95	50-140	0	0-50
415831	Chlorobenzene	<0.05 ug/g	91	60-130	95	50-140	0	0-50

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Project: 02112512.000
COC #: 883644

Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
415831	Xylene, o-	<0.05 ug/g	92	60-130	98	50-140	0	0-50
415831	Styrene	<0.05 ug/g	90	60-130	93	50-140	0	0-50
415831	Dichloroethylene, 1,2-trans-	<0.05 ug/g	95	60-130	102	50-140	0	0-50
415831	Dichloropropene, 1,3-trans-	<0.05 ug/g	87	60-130	84	50-140	0	0-50
415831	Tetrachloroethylene	<0.05 ug/g	85	60-130	90	50-140	0	0-50
415831	Toluene	<0.08 ug/g	94	60-130	100	50-140	0	0-50
415831	Trichloroethylene	<0.01 ug/g	89	60-130	96	50-140	0	0-50
415831	Trichlorofluoromethane	<0.05 ug/g	96	60-130	90	50-140	0	0-50
415831	Vinyl Chloride	<0.02 ug/g	96	60-130	110	50-140	0	0-50
415841	Cyanide (CN-)	<0.005 ug/g	103	75-125	106	70-130	0	0-20
415846	Silver	<0.2 ug/g	95	70-130	97	70-130	0	0-20
415846	Arsenic	<1 ug/g	93	70-130	98	70-130	0	0-20
415846	Boron (total)	<5 ug/g	102	70-130	83	70-130	0	0-20
415846	Barium	<1 ug/g	92	70-130		70-130	15	0-20
415846	Beryllium	<1 ug/g	103	70-130	95	70-130	0	0-20
415846	Cadmium	<0.4 ug/g	101	70-130	102	70-130	0	0-20
415846	Cobalt	<1 ug/g	99	70-130	100	70-130	1	0-20
415846	Chromium Total	<1 ug/g	99	70-130	133	70-130	4	0-20
415846	Copper	<1 ug/g	105	70-130	106	70-130	2	0-20
415846	Mercury	<0.1 ug/g	100	70-130	82	70-130	0	0-20
415846	Molybdenum	<1 ug/g	94	70-130	95	70-130	0	0-20
415846	Nickel	<1 ug/g	103	70-130	111	70-130	1	0-20
415846	Lead	<1 ug/g	95	70-130	88	70-130	5	0-20
415846	Antimony	<1 ug/g	75	70-130	95	70-130	0	0-20
415846	Thallium	<1 ug/g	93	70-130	85	70-130	0	0-20
415846	Uranium	<0.5 ug/g	99	70-130	96	70-130	0	0-20
415846	Vanadium	<2 ug/g	97	70-130	142	70-130	1	0-20
415846	Zinc	<2 ug/g	107	70-130	120	70-130	2	0-20
415889	PHC's F2	<2 ug/g	96	80-120	108	60-140		0-30
415889	PHC's F3	<20 ug/g	96	80-120	108	60-140		0-30
415889	PHC's F4	<20 ug/g	96	80-120	108	60-140		0-30
415889	Moisture-Humidite	<0.1 %	100	80-120				
415894	pH - CaCl2	6.30	100	90-110			0	

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Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
415895	Selenium	<0.5 ug/g	112	70-130	117	70-130	0	0-20
415896	PHC's F1	<10 ug/g	100	80-120	104	60-140	0	0-30
415899	Chromium VI	<0.20 ug/g	104	80-120	92	70-130	0	0-35
415902	Xylene Mixture							
415903	PHC's F1-BTEX							
415909	Electrical Conductivity	<0.05	97	90-110			4	0-10
415914	Sodium Adsorption Ratio	<0.01					1	
415918	Boron (Hot Water Soluble)	<0.5 ug/g	96	70-130	95	75-125	0	0-30
415959	PHC's F2	<2 ug/g	94	80-120	98	60-140	0	0-30
415959	PHC's F3	<20 ug/g	92	80-120	98	60-140	0	0-30
415959	PHC's F4	<20 ug/g	92	80-120	98	60-140	0	0-30
415959	Moisture-Humidite	<0.1 %	100	80-120			1	
415963	Methylnaphthalene, 1-	<0.05 ug/g	105	50-140	79	50-140	0	0-40
415963	Methylnaphthalene, 2-	<0.05 ug/g	115	50-140	80	50-140	0	0-40
415963	Acenaphthene	<0.05 ug/g	106	50-140	82	50-140	0	0-40
415963	Acenaphthylene	0.07 ug/g	101	50-140	84	50-140	0	0-40
415963	Anthracene	<0.05 ug/g	111	50-140	86	50-140	0	0-40
415963	Benz[a]anthracene	<0.05 ug/g	118	50-140	89	50-140	0	0-40
415963	Benzo[a]pyrene	<0.05 ug/g	102	50-140	88	50-140	0	0-40
415963	Benzo[b]fluoranthene	<0.05 ug/g	116	50-140	93	50-140	0	0-40
415963	Benzo[ghi]perylene	<0.05 ug/g	90	50-140	85	50-140	0	0-40
415963	Benzo[k]fluoranthene	<0.05 ug/g	106	50-140	78		0	0-40
415963	Chrysene	<0.05 ug/g	119	50-140	88	50-140	0	0-40
415963	Dibenz[a h]anthracene	<0.05 ug/g	86	50-140	90	50-140	0	0-40
415963	Fluoranthene	<0.05 ug/g	118	50-140	102	50-140	0	0-40
415963	Fluorene	<0.05 ug/g	110	50-140	81	50-140	0	0-40
415963	Indeno[1 2 3-cd]pyrene	<0.05 ug/g	85	50-140	83	50-140	0	0-40
415963	Naphthalene	0.020 ug/g	90	50-140	68	50-140	0	0-40
415963	Phenanthrene	<0.05 ug/g	112	50-140	92	50-140	0	0-40
415963	Pyrene	<0.05 ug/g	118	50-140	103	50-140	0	0-40
415964	1+2-methylnaphthalene							
415986	Chlordane, alpha-	<0.006 ug/g	64	50-140		50-140		0-30
415986	Aldrin	<0.006 ug/g	63	50-140		50-140		0-30

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415986	Dieldrin	<0.006 ug/g	63	50-140		50-140		0-30
415986	Endosulfan I	<0.006 ug/g	64	50-140		50-140		0-30
415986	Endosulfan II	<0.006 ug/g	64	50-140		50-140		0-30
415986	Endrin	<0.006 ug/g	64	50-140		50-140		0-30
415986	Hexachlorocyclohexane Gamma-	<0.006 ug/g	62	50-140		50-140		0-30
415986	Chlordane, gamma-	<0.006 ug/g	65	50-140		50-140		0-30
415986	Heptachlor	<0.006 ug/g	63	50-140		50-140		0-30
415986	Heptachlor Epoxide	<0.006 ug/g	65	50-140		50-140		0-30
415986	Methoxychlor	<0.006 ug/g	68	50-140		50-140		0-30
415986	DDD	<0.006 ug/g	64	50-140		50-140		0-30
415986	DDE	<0.006 ug/g	66	50-140		50-140		0-30
415986	DDT	<0.006 ug/g	65	50-140		50-140		0-30
415987	Chlordane	<0.018 ug/g						
415987	Endosulfan	<0.012 ug/g						
415987	Hexachlorobenzene	<0.006 ug/g	102	50-140		50-140		0-30
415987	Hexachlorobutadiene	<0.006 ug/g	95	50-140		50-140		0-30
415987	Hexachloroethane	<0.006 ug/g	93	50-140		50-140		0-30
415996	PHC's F2	<2 ug/g	87	80-120	74	60-140	0	0-30
415996	PHC's F3	<20 ug/g	88	80-120	74	60-140	0	0-30
415996	PHC's F4	<20 ug/g	88	80-120	74	60-140	0	0-30
415996	Moisture-Humidite	<0.1 %	100	80-120			11	
416045	PHC's F2	<2 ug/g	109	80-120	106	60-140	0	0-30
416045	PHC's F3	<20 ug/g	108	80-120	106	60-140	0	0-30
416045	PHC's F4	<20 ug/g	108	80-120	106	60-140	0	0-30
416045	Moisture-Humidite	<0.1 %	100	80-120			2	
416046	PHC's F2	<2 ug/g	101	80-120	84	60-140	0	0-30
416046	PHC's F3	<20 ug/g	100	80-120	84	60-140	0	0-30
416046	PHC's F4	<20 ug/g	100	80-120	84	60-140	0	0-30
416046	Moisture-Humidite	<0.1 %	100	80-120			7	
416051	PHC's F2-Napth							
416052	PHC's F3-PAH							
416102	Electrical Conductivity	<0.05	98	90-110			0	0-10
416111	Sodium Adsorption Ratio	<0.01					1	

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416113	Silver	<0.2 ug/g	106	70-130	111	70-130	0	0-20
416113	Arsenic	<1 ug/g	100	70-130	113	70-130	0	0-20
416113	Boron (total)	<5 ug/g	99	70-130	150	70-130	0	0-20
416113	Barium	<1 ug/g	99	70-130	146	70-130	9	0-20
416113	Beryllium	<1 ug/g	102	70-130	99	70-130	0	0-20
416113	Cadmium	<0.4 ug/g	108	70-130	112	70-130	0	0-20
416113	Cobalt	<1 ug/g	101	70-130	111	70-130	0	0-20
416113	Chromium Total	<1 ug/g	103	70-130	175	70-130	15	0-20
416113	Copper	<1 ug/g	99	70-130	102	70-130	7	0-20
416113	Molybdenum	<1 ug/g	97	70-130	109	70-130	0	0-20
416113	Nickel	<1 ug/g	99	70-130	108	70-130	12	0-20
416113	Lead	<1 ug/g	98	70-130	103	70-130	0	0-20
416113	Antimony	<1 ug/g	84	70-130	118	70-130	0	0-20
416113	Selenium	<0.5 ug/g	106	70-130	105	70-130	0	0-20
416113	Thallium	<1 ug/g	98	70-130	99	70-130	0	0-20
416113	Uranium	<0.5 ug/g	102	70-130	111	70-130	0	0-20
416113	Vanadium	<2 ug/g	101	70-130	159	70-130	10	0-20
416113	Zinc	<2 ug/g	103	70-130	107	70-130	12	0-20
416122	Aroclor 1242	<0.02 ug/g	86	60-140	72	60-140	0	0-40
416122	Aroclor 1248	<0.02 ug/g	86	60-140	72	60-140	0	0-40
416122	Aroclor 1254	<0.02 ug/g	86	60-140	72	60-140	0	0-40
416122	Aroclor 1260	<0.02 ug/g	86	60-140	72	60-140	0	0-40
416122	Polychlorinated Biphenyls	<0.02 ug/g	86	60-140	72	60-140	0	0-40

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
415831	Tetrachloroethane, 1,1,1,2-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Trichloroethane, 1,1,1-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Tetrachloroethane, 1,1,2,2-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Trichloroethane, 1,1,2-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichloroethane, 1,1-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichloroethylene, 1,1-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichlorobenzene, 1,2-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichloroethane, 1,2-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichloropropane, 1,2-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichlorobenzene, 1,3-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichloropropene, 1,3-	GC-MS	2022-01-21	2022-01-21	YH	V 8260B
415831	Dichlorobenzene, 1,4-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Acetone	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Benzene	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Bromodichloromethane	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Bromoform	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Bromomethane	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichloroethylene, 1,2-cis-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichloropropene, 1,3-cis-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Carbon Tetrachloride	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Chloroform	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dibromochloromethane	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichlorodifluoromethane	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Methylene Chloride	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Ethylbenzene	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Ethylene dibromide	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Hexane (n)	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Xylene, m/p-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Methyl Ethyl Ketone	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Methyl Isobutyl Ketone	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Methyl tert-Butyl Ether (MTBE)	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Chlorobenzene	GC-MS	2022-01-20	2022-01-21	YH	V 8260B

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Report Number: 1970181
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Project: 02112512.000
COC #: 883644

Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
415831	Xylene, o-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Styrene	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichloroethylene, 1,2-trans-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Dichloropropene, 1,3-trans-	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Tetrachloroethylene	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Toluene	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Trichloroethylene	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Trichlorofluoromethane	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415831	Vinyl Chloride	GC-MS	2022-01-20	2022-01-21	YH	V 8260B
415841	Cyanide (CN-)	Skalar CN Analyzer	2022-01-21	2022-01-21	Z_S	MOECC E3015
415846	Silver	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Arsenic	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Boron (total)	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Barium	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Beryllium	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Cadmium	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Cobalt	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Chromium Total	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Copper	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Mercury	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Molybdenum	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Nickel	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Lead	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Antimony	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Thallium	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Uranium	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Vanadium	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415846	Zinc	ICAPQ-MS	2022-01-21	2022-01-21	SD	EPA 200.8/6020
415889	PHC's F2	GC/FID	2022-01-20	2022-01-24	R_G	CCME
415889	PHC's F3	GC/FID	2022-01-20	2022-01-24	R_G	CCME
415889	PHC's F4	GC/FID	2022-01-20	2022-01-24	R_G	CCME
415889	Moisture-Humidite	Oven	2022-01-20	2022-01-24	R_G	ASTM 2216
415894	pH - CaCl2	pH Meter	2022-01-24	2022-01-24	MW	Ag Soil

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Attention: Mr. Nan Du
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Report Number: 1970181
Date Submitted: 2022-01-17
Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
415895	Selenium	ICAPQ-MS	2022-01-24	2022-01-24	AaN	EPA 200.8/6020
415896	PHC's F1	GC/FID	2022-01-24	2022-01-24	YH	CCME
415899	Chromium VI	FAA	2022-01-21	2022-01-24	MW	M US EPA 3060A
415902	Xylene Mixture	GC-MS	2022-01-24	2022-01-24	YH	V 8260B
415903	PHC's F1-BTEX	GC/FID	2022-01-24	2022-01-24	YH	CCME
415909	Electrical Conductivity	Electrical Conductivity Meter	2022-01-24	2022-01-24	Z_S	Cond-Soil
415914	Sodium Adsorption Ratio	iCAP OES	2022-01-24	2022-01-24	Z_S	Ag Soil
415918	Boron (Hot Water Soluble)	iCAP OES	2022-01-24	2022-01-24	Z_S	MOECC E3470
415959	PHC's F2	GC/FID	2022-01-24	2022-01-25	R_G	CCME
415959	PHC's F3	GC/FID	2022-01-24	2022-01-25	R_G	CCME
415959	PHC's F4	GC/FID	2022-01-24	2022-01-25	R_G	CCME
415959	Moisture-Humidity	Oven	2022-01-24	2022-01-25	R_G	ASTM 2216
415963	Methylnaphthalene, 1-	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Methylnaphthalene, 2-	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Acenaphthene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Acenaphthylene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Anthracene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Benz[a]anthracene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Benzo[a]pyrene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Benzo[b]fluoranthene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Benzo[ghi]perylene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Benzo[k]fluoranthene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Chrysene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Dibenz[a,h]anthracene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Fluoranthene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Fluorene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Indeno[1,2,3-cd]pyrene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Naphthalene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Phenanthrene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415963	Pyrene	GC-MS	2022-01-24	2022-01-24	C_M	P 8270
415964	1+2-methylnaphthalene	GC-MS	2022-01-25	2022-01-25	C_M	P 8270
415986	Chlordane, alpha-	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	Aldrin	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B

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Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
415986	Dieldrin	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	Endosulfan I	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	Endosulfan II	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	Endrin	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	Hexachlorocyclohexane Gamma-	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	Chlordane, gamma-	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	Heptachlor	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	Heptachlor Epoxide	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	Methoxychlor	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	DDD	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	DDE	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415986	DDT	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415987	Chlordane	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415987	Endosulfan	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415987	Hexachlorobenzene	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415987	Hexachlorobutadiene	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415987	Hexachloroethane	GC/ECD	2022-01-23	2022-01-25	QL	EPA 8081B
415996	PHC's F2	GC/FID	2022-01-24	2022-01-25	R_G	CCME
415996	PHC's F3	GC/FID	2022-01-24	2022-01-25	R_G	CCME
415996	PHC's F4	GC/FID	2022-01-24	2022-01-25	R_G	CCME
415996	Moisture-Humidite	Oven	2022-01-24	2022-01-25	R_G	ASTM 2216
416045	PHC's F2	GC/FID	2022-01-24	2022-01-26	R_G	CCME
416045	PHC's F3	GC/FID	2022-01-24	2022-01-26	R_G	CCME
416045	PHC's F4	GC/FID	2022-01-24	2022-01-26	R_G	CCME
416045	Moisture-Humidite	Oven	2022-01-24	2022-01-26	R_G	ASTM 2216
416046	PHC's F2	GC/FID	2022-01-24	2022-01-26	R_G	CCME
416046	PHC's F3	GC/FID	2022-01-24	2022-01-26	R_G	CCME
416046	PHC's F4	GC/FID	2022-01-24	2022-01-26	R_G	CCME
416046	Moisture-Humidite	Oven	2022-01-24	2022-01-26	R_G	ASTM 2216
416051	PHC's F2-Napth	GC/FID	2022-01-26	2022-01-26	R_G	CCME
416052	PHC's F3-PAH	GC/FID	2022-01-26	2022-01-26	R_G	CCME
416102	Electrical Conductivity	Electrical Conductivity Meter	2022-01-26	2022-01-26	Z_S	Cond-Soil
416111	Sodium Adsorption Ratio	iCAP OES	2022-01-26	2022-01-26	Z_S	Ag Soil

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Project: 02112512.000
COC #: 883644

Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
416113	Silver	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Arsenic	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Boron (total)	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Barium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Beryllium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Cadmium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Cobalt	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Chromium Total	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Copper	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Molybdenum	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Nickel	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Lead	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Antimony	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Selenium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Thallium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Uranium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Vanadium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Zinc	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416122	Aroclor 1242	GC/ECD	2022-01-24	2022-01-25	QL	EPA 8081B/8082A
416122	Aroclor 1248	GC/ECD	2022-01-24	2022-01-25	QL	EPA 8081B/8082A
416122	Aroclor 1254	GC/ECD	2022-01-24	2022-01-25	QL	EPA 8081B/8082A
416122	Aroclor 1260	GC/ECD	2022-01-24	2022-01-25	QL	EPA 8081B/8082A
416122	Polychlorinated Biphenyls	GC/ECD	2022-01-24	2022-01-25	QL	EPA 8081B/8082A

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Environment Testing

Client: EnGlobe Corp. (Toronto)
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Date Reported: 2022-01-26
Project: 02112512.000
COC #: 883644

CWS for Petroleum Hydrocarbons in Soil - Tier 1**Notes:**

1. The laboratory method complies with CCME Tier 1 reference method for PHC in soil. It is validated for laboratory use.
2. Where the F1 fraction (C6 to C10) and BTEX are both measured, F1-BTEX is reported.
3. Where the F2 fraction (C10 to C16) and naphthalene are both measured, F2-naphthalene is reported.
4. Where the F3 fraction (C16 to C34) and PAHs* are both measured, F3-PAH is reported.
5. F4G is analyzed if the chromatogram does not descend to baseline before C50. Where F4 (C34 to C50) and F4G are both reported, the higher result is compared to the standard.
6. Unless otherwise stated in the sample comments, the following criteria have been met where applicable:
 - nC6 and nC10 response factors within 30% of response factor for toluene;
 - nC10, nC16, and nC34 response factors within 10% of each other;
 - C50 response factors within 70% of nC10 + nC16 + nC34 average; and,
 - Linearity is within 15%.
7. Unless otherwise stated in the sample comments, sampling requirements and analytical holding times have been met.
8. Gravimetric heavy hydrocarbons (F4G) cannot be added to the C6 and C50 hydrocarbons.
9. *PAHs = phenanthrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene and pyrene.

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
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M9W 5W8
Attention: Mr. Nan Du
Invoice to: EnGlobe Corp.
PO#:

Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363
Temperature (C): 2
Custody Seal:

Page 1 of 27

Dear Nan Du:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Sample Comment Summary

Sample ID: 1606843 BH16-1 OCPs surrogate recovery is unavailable due to matrix interference.
--

Report Comments:

Long Qu, Organics Supervisor

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise stated

Eurofins Environment Testing Canada Inc. is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at <http://www.cala.ca/scopes/2602.pdf>

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline or regulatory limits listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official guideline or regulation as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

O.Reg 153-T1-All Other Soils

Exceedence Summary

Sample I.D.	Analyte	Result	Units	Criteria
Inorganics				
BH15-2	Sodium Adsorption Ratio	6.11		STD 2.4
BH3-1	Electrical Conductivity	3.31	mS/cm	STD 0.57
BH3-1	Sodium Adsorption Ratio	55.8		STD 2.4
BH6-1	Electrical Conductivity	3.95	mS/cm	STD 0.57
BH6-1	Sodium Adsorption Ratio	42.6		STD 2.4

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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Hydrocarbons

Lab I.D. 1606836
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH3-5

1606838
Soil153
2022-01-21
BH6-9

Analyte Batch No MRL Units Guideline

PHC's F1	416120	10	ug/g	STD 25	<10	<10
PHC's F1-BTEX	416121	10	ug/g		<10	<10
PHC's F2	416160	2	ug/g	STD 10	3	7
PHC's F3	416160	20	ug/g	STD 240	<20	60
PHC's F4	416160	20	ug/g	STD 120	<20	<20

Hydrocarbons

Lab I.D. 1606840
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH13-6

Analyte Batch No MRL Units Guideline

PHC's F1	416120	10	ug/g	STD 25	<10
PHC's F1-BTEX	416121	10	ug/g		<10
PHC's F2	416160	2	ug/g	STD 10	4
PHC's F3	416160	20	ug/g	STD 240	<20
PHC's F4	416160	20	ug/g	STD 120	<20

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Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	1606844
					Sample Matrix	Soil153
					Sample Type	1606845
					Sample Date	Soil153
					Sampling Time	2022-01-21
					Sample I.D.	2022-01-21
						BH16-2
						BH16-6
PHC's F1	416120	10	ug/g	STD 25	<10	<10
PHC's F1-BTEX	416121	10	ug/g		<10	<10
PHC's F2	416160	2	ug/g	STD 10	5	7
PHC's F3	416160	20	ug/g	STD 240	<20	30
PHC's F4	416160	20	ug/g	STD 120	<20	<20

Metals

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	1606834
					Sample Matrix	Soil153
					Sample Type	1606837
					Sample Date	Soil153
					Sampling Time	2022-01-21
					Sample I.D.	2022-01-21
						BH3-1
						BH6-1
Antimony	416113	1	ug/g	STD 1.3	<1	<1
Arsenic	416113	1	ug/g	STD 18	4	4
Barium	416113	1	ug/g	STD 220	94	59
Beryllium	416113	1	ug/g	STD 2.5	<1	<1
Boron (total)	416113	5	ug/g	STD 36	<5	<5
Cadmium	416113	0.4	ug/g	STD 1.2	<0.4	<0.4
Chromium Total	416113	1	ug/g	STD 70	25	27
Cobalt	416113	1	ug/g	STD 21	8	6
Copper	416113	1	ug/g	STD 92	19	14
Lead	416113	1	ug/g	STD 120	8	9
Molybdenum	416113	1	ug/g	STD 2	<1	<1
Nickel	416113	1	ug/g	STD 82	18	18
Selenium	416113	0.5	ug/g	STD 1.5	0.5	<0.5

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Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial
Water Quality Guideline, IPWQO = Interim Provincial Water Quality
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Metals

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop					1606834 Soil153 2022-01-21 BH3-1	1606837 Soil153 2022-01-21 BH6-1	
<u>Metals</u>	Analyte	Batch No	MRL	Units			Guideline
	Silver	416113	0.2	ug/g	STD 0.5	<0.2	<0.2
	Thallium	416113	1	ug/g	STD 1	<1	<1
	Uranium	416113	0.5	ug/g	STD 2.5	<0.5	<0.5
	Vanadium	416113	2	ug/g	STD 86	35	29
	Zinc	416113	2	ug/g	STD 290	42	42

Metals

<u>Metals</u>					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606839 Soil153 2022-01-21 BH13-1	1606841 Soil153 2022-01-21 BH15-1	1606842 Soil153 2022-01-21 BH15-2	1606843 Soil153 2022-01-21 BH16-1
Analyte	Batch No	MRL	Units	Guideline					
Antimony	416113	1	ug/g	STD 1.3	<1	<1	<1	<1	
Arsenic	416113	1	ug/g	STD 18	2	2	2	3	
Barium	416113	1	ug/g	STD 220	23	46	54	59	
Beryllium	416113	1	ug/g	STD 2.5	<1	<1	<1	<1	
Boron (Hot Water Soluble)	416128	0.5	ug/g			<0.5			
Boron (total)	416113	5	ug/g	STD 36	<5	<5	5	<5	
Cadmium	416113	0.4	ug/g	STD 1.2	<0.4	<0.4	<0.4	<0.4	
Chromium Total	416113	1	ug/g	STD 70	14	16	16	20	
Chromium VI	416275	0.20	ug/g	STD 0.66		0.21			
Cobalt	416113	1	ug/g	STD 21	3	4	6	5	
Copper	416113	1	ug/g	STD 92	5	12	12	14	
Lead	416113	1	ug/g	STD 120	6	11	5	13	
Mercury	416113	0.1	ug/g	STD 0.27		<0.1			
Molybdenum	416113	1	ug/g	STD 2	<1	<1	<1	<1	

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Metals

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606839	Soil153	1606841	1606842	1606843	1606843
					2022-01-21		2022-01-21	2022-01-21	2022-01-21	
					BH13-1		BH15-1	BH15-2	BH16-1	
Nickel	416113	1	ug/g	STD 82	8		10	12	13	
Selenium	416113	0.5	ug/g	STD 1.5	<0.5		<0.5	<0.5	<0.5	
Silver	416113	0.2	ug/g	STD 0.5	<0.2		<0.2	<0.2	<0.2	
Thallium	416113	1	ug/g	STD 1	<1		<1	<1	<1	
Uranium	416113	0.5	ug/g	STD 2.5	<0.5		<0.5	<0.5	<0.5	
Vanadium	416113	2	ug/g	STD 86	17		21	24	25	
Zinc	416113	2	ug/g	STD 290	18		34	26	48	

OCP/PCB

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606843	Soil153	1606843	1606843	1606843	1606843
					2022-01-21		2022-01-21	2022-01-21	2022-01-21	
					BH16-1					
Aldrin	416232	0.002	ug/g	STD 0.05	<0.002					
Chlordane	416232	0.006	ug/g	STD 0.05	<0.006					
Chlordane, alpha-	416232	0.002	ug/g		<0.002					
Chlordane, gamma-	416232	0.002	ug/g		<0.002					
DDD	416232	0.002	ug/g	STD 0.05	<0.002					
DDE	416232	0.002	ug/g	STD 0.05	<0.002					
DDT	416232	0.002	ug/g	STD 1.4	<0.002					
Dieldrin	416232	0.002	ug/g	STD 0.05	<0.002					
Endosulfan	416232	0.004	ug/g	STD 0.04	<0.004					
Endosulfan I	416232	0.002	ug/g		<0.002					
Endosulfan II	416232	0.002	ug/g		<0.002					
Endrin	416232	0.002	ug/g	STD 0.04	<0.002					

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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

OCP/PCB

Lab I.D. 1606843
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH16-1

Analyte	Batch No	MRL	Units	Guideline	
Heptachlor	416232	0.002	ug/g	STD 0.05	<0.002
Heptachlor Epoxide	416232	0.002	ug/g	STD 0.05	<0.002
Hexachlorobenzene	416232	0.002	ug/g	STD 0.01	<0.002
Hexachlorobutadiene	416232	0.002	ug/g	STD 0.01	<0.002
Hexachlorocyclohexane Gamma-	416232	0.002	ug/g	STD 0.01	<0.002
Hexachloroethane	416232	0.002	ug/g	STD 0.01	<0.002
Methoxychlor	416232	0.002	ug/g	STD 0.05	<0.002

PAH

Lab I.D. 1606837
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH6-1

Analyte	Batch No	MRL	Units	Guideline	
1+2-methylnaphthalene	416170	0.05	ug/g		<0.05
Acenaphthene	415963	0.05	ug/g	STD 0.072	<0.05
Acenaphthylene	415963	0.05	ug/g	STD 0.093	<0.05
Anthracene	415963	0.05	ug/g	STD 0.16	<0.05
Benz[a]anthracene	415963	0.05	ug/g	STD 0.36	<0.05
Benzo[a]pyrene	415963	0.05	ug/g	STD 0.3	<0.05
Benzo[b]fluoranthene	415963	0.05	ug/g	STD 0.47	<0.05
Benzo[ghi]perylene	415963	0.05	ug/g	STD 0.68	<0.05
Benzo[k]fluoranthene	415963	0.05	ug/g	STD 0.48	<0.05
Chrysene	415963	0.05	ug/g	STD 2.8	<0.05
Dibenz[a h]anthracene	415963	0.05	ug/g	STD 0.1	<0.05
Fluoranthene	415963	0.05	ug/g	STD 0.56	<0.05

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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PAH

Lab I.D. 1606837
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH6-1

Analyte Batch No MRL Units Guideline

Fluorene	415963	0.05	ug/g	STD 0.12	<0.05
Indeno[1 2 3-cd]pyrene	415963	0.05	ug/g	STD 0.23	<0.05
Methlynaphthalene, 1-	415963	0.05	ug/g	STD 0.59	<0.05
Methlynaphthalene, 2-	415963	0.05	ug/g	STD 0.59	<0.05
Naphthalene	415963	0.013	ug/g	STD 0.09	<0.013
Phenanthrene	415963	0.05	ug/g	STD 0.69	<0.05
Pyrene	415963	0.05	ug/g	STD 1	<0.05

Volatiles

Lab I.D. 1606836
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH3-5

Analyte Batch No MRL Units Guideline

Benzene	416116	0.0068	ug/g	STD 0.02	<0.0068	<0.0068
Ethylbenzene	416116	0.018	ug/g	STD 0.05	<0.018	<0.018
Toluene	416116	0.08	ug/g	STD 0.2	<0.08	<0.08
Xylene Mixture	416119	0.05	ug/g	STD 0.05	<0.05	<0.05
Xylene, m/p-	416116	0.05	ug/g		<0.05	<0.05
Xylene, o-	416116	0.05	ug/g		<0.05	<0.05

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Volatiles

Lab I.D. 1606840
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH13-6

Analyte	Batch No	MRL	Units	Guideline	
Benzene	416116	0.0068	ug/g	STD 0.02	<0.0068
Ethylbenzene	416116	0.018	ug/g	STD 0.05	<0.018
Toluene	416116	0.08	ug/g	STD 0.2	<0.08
Xylene Mixture	416119	0.05	ug/g	STD 0.05	<0.05
Xylene, m/p-	416116	0.05	ug/g		<0.05
Xylene, o-	416116	0.05	ug/g		<0.05

Volatiles

Lab I.D. 1606844
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH16-2

Analyte	Batch No	MRL	Units	Guideline	1606845 Soil153 2022-01-21 BH16-6	1606845 Soil153 2022-01-21 BH16-6
Acetone	416116	0.50	ug/g	STD 0.5		<0.50
Benzene	416116	0.0068	ug/g	STD 0.02	<0.0068	<0.0068
Bromodichloromethane	416116	0.05	ug/g	STD 0.05		<0.05
Bromoform	416116	0.05	ug/g	STD 0.05		<0.05
Bromomethane	416116	0.05	ug/g	STD 0.05		<0.05
Carbon Tetrachloride	416116	0.05	ug/g	STD 0.05		<0.05
Chlorobenzene	416116	0.05	ug/g	STD 0.05		<0.05
Chloroform	416116	0.05	ug/g	STD 0.05		<0.05
Dibromochloromethane	416116	0.05	ug/g	STD 0.05		<0.05
Dichlorobenzene, 1,2-	416116	0.05	ug/g	STD 0.05		<0.05
Dichlorobenzene, 1,3-	416116	0.05	ug/g	STD 0.05		<0.05
Dichlorobenzene, 1,4-	416116	0.05	ug/g	STD 0.05		<0.05
Dichlorodifluoromethane	416116	0.05	ug/g	STD 0.05		<0.05

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Volatiles

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606844
Soil153
2022-01-21
BH16-2

1606845
Soil153
2022-01-21
BH16-6

Analyte	Batch No	MRL	Units	Guideline		
Dichloroethane, 1,1-	416116	0.05	ug/g	STD 0.05		<0.05
Dichloroethane, 1,2-	416116	0.05	ug/g	STD 0.05		<0.05
Dichloroethylene, 1,1-	416116	0.05	ug/g	STD 0.05		<0.05
Dichloroethylene, 1,2-cis-	416116	0.05	ug/g	STD 0.05		<0.05
Dichloroethylene, 1,2-trans-	416116	0.05	ug/g	STD 0.05		<0.05
Dichloropropane, 1,2-	416116	0.05	ug/g	STD 0.05		<0.05
Dichloropropene,1,3-	416116	0.05	ug/g	STD 0.05		<0.05
Dichloropropene,1,3-cis-	416116	0.05	ug/g			<0.05
Dichloropropene,1,3-trans-	416116	0.05	ug/g			<0.05
Ethylbenzene	416116	0.018	ug/g	STD 0.05	<0.018	<0.018
Ethylene dibromide	416116	0.05	ug/g	STD 0.05		<0.05
Hexane (n)	416116	0.05	ug/g	STD 0.05		<0.05
Methyl Ethyl Ketone	416116	0.50	ug/g	STD 0.5		<0.50
Methyl Isobutyl Ketone	416116	0.50	ug/g	STD 0.5		<0.50
Methyl tert-Butyl Ether (MTBE)	416116	0.05	ug/g	STD 0.05		<0.05
Methylene Chloride	416116	0.05	ug/g	STD 0.05		<0.05
Styrene	416116	0.05	ug/g	STD 0.05		<0.05
Tetrachloroethane, 1,1,1,2-	416116	0.05	ug/g	STD 0.05		<0.05
Tetrachloroethane, 1,1,2,2-	416116	0.05	ug/g	STD 0.05		<0.05
Tetrachloroethylene	416116	0.05	ug/g	STD 0.05		<0.05
Toluene	416116	0.08	ug/g	STD 0.2	<0.08	<0.08
Trichloroethane, 1,1,1-	416116	0.05	ug/g	STD 0.05		<0.05
Trichloroethane, 1,1,2-	416116	0.05	ug/g	STD 0.05		<0.05

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Environment Testing

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Volatiles

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606844
Soil153
2022-01-21
BH16-2

1606845
Soil153
2022-01-21
BH16-6

Analyte Batch No MRL Units Guideline

Trichloroethylene	416116	0.01	ug/g	STD 0.05		<0.01
Trichlorofluoromethane	416116	0.05	ug/g	STD 0.25		<0.05
Vinyl Chloride	416116	0.02	ug/g	STD 0.02		<0.02
Xylene Mixture	416119	0.05	ug/g	STD 0.05	<0.05	<0.05
Xylene, m/p-	416116	0.05	ug/g		<0.05	<0.05
Xylene, o-	416116	0.05	ug/g		<0.05	<0.05

Inorganics

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1606834
Soil153
2022-01-21
BH3-1

1606836
Soil153
2022-01-21
BH3-5

1606837
Soil153
2022-01-21
BH6-1

Analyte Batch No MRL Units Guideline

Electrical Conductivity	416272	0.05	mS/cm	STD 0.57	3.31*		3.95*
pH - CaCl2	416090	2.00				7.52	
Sodium Adsorption Ratio	416286	0.01		STD 2.4	55.8*		42.6*

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Inorganics

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606839	Soil153	1606840	1606841	1606842	1606843
					Soil153		Soil153	Soil153	Soil153	Soil153
					2022-01-21		2022-01-21	2022-01-21	2022-01-21	2022-01-21
					BH13-1		BH13-6	BH15-1	BH15-2	BH16-1
Cyanide (CN-)	416131	0.005	ug/g	STD 0.051				<0.005		
Electrical Conductivity	416272	0.05	mS/cm	STD 0.57	0.34			0.42	0.42	0.40
pH - CaCl2	416090	2.00					7.57	7.51		
Sodium Adsorption Ratio	416286	0.01		STD 2.4	1.18			1.35	6.11*	0.89

Moisture

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sample Date	Sampling Time	Sample I.D.
					1606836	Soil153	1606838	Soil153		
					2022-01-21		2022-01-21			
					BH3-5		BH6-9			
Moisture-Humidite	416160	0.1	%		5.0		12.2			

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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

Moisture

Lab I.D. 1606840
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH13-6

Analyte Batch No MRL Units Guideline

Moisture-Humidite	416160	0.1	%		4.6
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Moisture

Lab I.D.	1606844	1606845
Sample Matrix	Soil153	Soil153
Sample Type		
Sample Date	2022-01-21	2022-01-21
Sampling Time		
Sample I.D.	BH16-2	BH16-6

Analyte Batch No MRL Units Guideline

Moisture-Humidite	416160	0.1	%		13.9	9.1
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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PCBs

					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606834 Soil153 2022-01-21 BH3-1	1606835 Soil153 2022-01-21 Dup-7
Analyte	Batch No	MRL	Units	Guideline			
Aroclor 1242	416206	0.02	ug/g			<0.02	<0.02
Aroclor 1248	416206	0.02	ug/g			<0.02	<0.02
Aroclor 1254	416206	0.02	ug/g			<0.02	<0.02
Aroclor 1260	416206	0.02	ug/g			<0.02	<0.02
Polychlorinated Biphenyls	416206	0.02	ug/g	STD 0.3		<0.02	<0.02

PCB Surrogate

					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1606834 Soil153 2022-01-21 BH3-1	1606835 Soil153 2022-01-21 Dup-7
Analyte	Batch No	MRL	Units	Guideline			
Decachlorobiphenyl	416211	0	%			61	50

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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PCB Surrogate

Lab I.D. 1606843
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH16-1

Analyte Batch No MRL Units Guideline

Decachlorobiphenyl	416232	0	%		N/A
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PHC Surrogate

Lab I.D. 1606836	1606838
Sample Matrix Soil153	Soil153
Sample Type	
Sample Date 2022-01-21	2022-01-21
Sampling Time	
Sample I.D. BH3-5	BH6-9

Analyte Batch No MRL Units Guideline

Alpha-androstrane	416160	0	%		64	91
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Guideline = O.Reg 153-T1-All Other Soils - Res/Par/Ins/Ind/Com/Prop

PHC Surrogate

Lab I.D. 1606840
Sample Matrix Soil153
Sample Type
Sample Date 2022-01-21
Sampling Time
Sample I.D. BH13-6

Analyte Batch No MRL Units Guideline

Alpha-androstrane	416160	0	%	67
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PHC Surrogate

Lab I.D. 1606844	1606845
Sample Matrix Soil153	Soil153
Sample Type	
Sample Date 2022-01-21	2022-01-21
Sampling Time	
Sample I.D. BH16-2	BH16-6

Analyte Batch No MRL Units Guideline

Alpha-androstrane	416160	0	%	77	98
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VOCs Surrogates

Lab I.D.	1606836	1606838
Sample Matrix	Soil153	Soil153
Sample Type		
Sample Date	2022-01-21	2022-01-21
Sampling Time		
Sample I.D.	BH3-5	BH6-9

Analyte	Batch No	MRL	Units	Guideline
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Toluene-d8	416116	0	%	99	98
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VOCs Surrogates

Lab I.D.	1606840
Sample Matrix	Soil153
Sample Type	
Sample Date	2022-01-21
Sampling Time	
Sample I.D.	BH13-6

Analyte	Batch No	MRL	Units	Guideline
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Toluene-d8	416116	0	%	98
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VOCs Surrogates

Lab I.D.	1606844	1606845
Sample Matrix	Soil153	Soil153
Sample Type		
Sample Date	2022-01-21	2022-01-21
Sampling Time		
Sample I.D.	BH16-2	BH16-6

Analyte	Batch No	MRL	Units	Guideline
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1,2-dichloroethane-d4	416116	0	%		127
4-bromofluorobenzene	416116	0	%		81
Toluene-d8	416116	0	%	103	116

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Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
415963	Methlynaphthalene, 1-	<0.05 ug/g	105	50-140	79	50-140	0	0-40
415963	Methlynaphthalene, 2-	<0.05 ug/g	115	50-140	80	50-140	0	0-40
415963	Acenaphthene	<0.05 ug/g	106	50-140	82	50-140	0	0-40
415963	Acenaphthylene	0.07 ug/g	101	50-140	84	50-140	0	0-40
415963	Anthracene	<0.05 ug/g	111	50-140	86	50-140	0	0-40
415963	Benz[a]anthracene	<0.05 ug/g	118	50-140	89	50-140	0	0-40
415963	Benzo[a]pyrene	<0.05 ug/g	102	50-140	88	50-140	0	0-40
415963	Benzo[b]fluoranthene	<0.05 ug/g	116	50-140	93	50-140	0	0-40
415963	Benzo[ghi]perylene	<0.05 ug/g	90	50-140	85	50-140	0	0-40
415963	Benzo[k]fluoranthene	<0.05 ug/g	106	50-140	78		0	0-40
415963	Chrysene	<0.05 ug/g	119	50-140	88	50-140	0	0-40
415963	Dibenz[a h]anthracene	<0.05 ug/g	86	50-140	90	50-140	0	0-40
415963	Fluoranthene	<0.05 ug/g	118	50-140	102	50-140	0	0-40
415963	Fluorene	<0.05 ug/g	110	50-140	81	50-140	0	0-40
415963	Indeno[1 2 3-cd]pyrene	<0.05 ug/g	85	50-140	83	50-140	0	0-40
415963	Naphthalene	0.020 ug/g	90	50-140	68	50-140	0	0-40
415963	Phenanthrene	<0.05 ug/g	112	50-140	92	50-140	0	0-40
415963	Pyrene	<0.05 ug/g	118	50-140	103	50-140	0	0-40
416090	pH - CaCl2	5.93	100	90-110			0	
416113	Silver	<0.2 ug/g	106	70-130	107	70-130	0	0-20
416113	Arsenic	<1 ug/g	100	70-130	101	70-130	0	0-20
416113	Boron (total)	<5 ug/g	99	70-130	109	70-130	0	0-20
416113	Barium	<1 ug/g	99	70-130	351	70-130	9	0-20
416113	Beryllium	<1 ug/g	102	70-130	90	70-130	0	0-20
416113	Cadmium	<0.4 ug/g	108	70-130	111	70-130	0	0-20
416113	Cobalt	<1 ug/g	101	70-130	104	70-130	0	0-20
416113	Chromium Total	<1 ug/g	103	70-130	195	70-130	15	0-20
416113	Copper	<1 ug/g	99	70-130	111	70-130	7	0-20
416113	Mercury	<0.1 ug/g	90	70-130	84	70-130	0	0-20
416113	Molybdenum	<1 ug/g	97	70-130	97	70-130	0	0-20
416113	Nickel	<1 ug/g	99	70-130	124	70-130	12	0-20
416113	Lead	<1 ug/g	98	70-130	91	70-130	0	0-20

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Date Submitted: 2022-01-21
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Project: 02112512.000
COC #: 885363

Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
416113	Antimony	<1 ug/g	84	70-130	88	70-130	0	0-20
416113	Selenium	<0.5 ug/g	106	70-130	104	70-130	0	0-20
416113	Thallium	<1 ug/g	98	70-130	89	70-130	0	0-20
416113	Uranium	<0.5 ug/g	102	70-130	99	70-130	0	0-20
416113	Vanadium	<2 ug/g	101	70-130	181	70-130	10	0-20
416113	Zinc	<2 ug/g	103	70-130	152	70-130	12	0-20
416116	Tetrachloroethane, 1,1,1,2-	<0.05 ug/g	89	60-130	90	50-140	0	0-50
416116	Trichloroethane, 1,1,1-	<0.05 ug/g	93	60-130	98	50-140	0	0-50
416116	Tetrachloroethane, 1,1,2,2-	<0.05 ug/g	97	60-130	91	50-140	0	0-30
416116	Trichloroethane, 1,1,2-	<0.05 ug/g	94	60-130	90	50-140	0	0-50
416116	Dichloroethane, 1,1-	<0.05 ug/g	95	60-130	101	50-140	0	0-50
416116	Dichloroethylene, 1,1-	<0.05 ug/g	96	60-130	101	50-140	0	0-50
416116	Dichlorobenzene, 1,2-	<0.05 ug/g	90	60-130	93	50-140	0	0-50
416116	Dichloroethane, 1,2-	<0.05 ug/g	98	60-130	95	50-140	0	0-50
416116	Dichloropropane, 1,2-	<0.05 ug/g	92	60-130	95	50-140	0	0-50
416116	Dichlorobenzene, 1,3-	<0.05 ug/g	89	60-130	94	50-140	0	0-50
416116	Dichloropropene, 1,3-	<0.05 ug/g						
416116	Dichlorobenzene, 1,4-	<0.05 ug/g	90	60-130	95	50-140	0	0-50
416116	Acetone	<0.50 ug/g	104	60-130	108	50-140	0	0-50
416116	Benzene	<0.0068	94	60-130	100	50-140	0	0-50
416116	Bromodichloromethane	<0.05 ug/g	92	60-130	92	50-140	0	0-50
416116	Bromoform	<0.05 ug/g	88	60-130	80	50-140	0	0-50
416116	Bromomethane	<0.05 ug/g	109	60-130	99	50-140	0	0-50
416116	Dichloroethylene, 1,2-cis-	<0.05 ug/g	93	60-130	98	50-140	0	0-50
416116	Dichloropropene, 1,3-cis-	<0.05 ug/g	84	60-130	89	50-140	0	0-50
416116	Carbon Tetrachloride	<0.05 ug/g	91	60-130	94	50-140	0	0-50
416116	Chloroform	<0.05 ug/g	94	60-130	97	50-140	0	0-50
416116	Dibromochloromethane	<0.05 ug/g	90	60-130	86	50-140	0	0-50
416116	Dichlorodifluoromethane	<0.05 ug/g	108	60-130	113	50-140	0	0-50
416116	Methylene Chloride	<0.05 ug/g	112	60-130	117	50-140	0	0-50
416116	Ethylbenzene	<0.018 ug/g	95	60-130	101	50-140	0	0-50
416116	Ethylene dibromide	<0.05 ug/g	90	60-130	86	50-140	0	0-50
416116	Hexane (n)	<0.05 ug/g	101	60-130	103	50-140	0	0-50

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Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
416116	Xylene, m/p-	<0.05 ug/g	98	60-130	105	50-140	0	0-50
416116	Methyl Ethyl Ketone	<0.50 ug/g	82	60-130	118	50-140	0	0-50
416116	Methyl Isobutyl Ketone	<0.50 ug/g	84	60-130	90	50-140	0	0-50
416116	Methyl tert-Butyl Ether (MTBE)	<0.05 ug/g	96	60-130	95	50-140	0	0-50
416116	Chlorobenzene	<0.05 ug/g	91	60-130	95	50-140	0	0-50
416116	Xylene, o-	<0.05 ug/g	92	60-130	98	50-140	0	0-50
416116	Styrene	<0.05 ug/g	90	60-130	93	50-140	0	0-50
416116	Dichloroethylene, 1,2-trans-	<0.05 ug/g	95	60-130	102	50-140	0	0-50
416116	Dichloropropene, 1,3-trans-	<0.05 ug/g	87	60-130	84	50-140	0	0-50
416116	Tetrachloroethylene	<0.05 ug/g	85	60-130	90	50-140	0	0-50
416116	Toluene	<0.08 ug/g	94	60-130	100	50-140	0	0-50
416116	Trichloroethylene	<0.01 ug/g	89	60-130	96	50-140	0	0-50
416116	Trichlorofluoromethane	<0.05 ug/g	96	60-130	90	50-140	0	0-50
416116	Vinyl Chloride	<0.02 ug/g	96	60-130	110	50-140	0	0-50
416119	Xylene Mixture							
416120	PHC's F1	<10 ug/g	100	80-120	104	60-140	0	0-30
416121	PHC's F1-BTEX							
416128	Boron (Hot Water Soluble)	<0.5 ug/g	85	70-130	96	75-125	0	0-30
416131	Cyanide (CN-)	<0.005 ug/g	110	75-125	103	70-130	0	0-20
416160	PHC's F2	<2 ug/g	112	80-120	75	60-140	0	0-30
416160	PHC's F3	<20 ug/g	112	80-120	75	60-140	0	0-30
416160	PHC's F4	<20 ug/g	112	80-120	75	60-140	0	0-30
416160	Moisture-Humidite	<0.1 %	100	80-120			7	
416170	1+2-methylnaphthalene							
416206	Aroclor 1242	<0.02 ug/g	86	60-140	72	60-140	0	0-40
416206	Aroclor 1248	<0.02 ug/g	86	60-140	72	60-140	0	0-40
416206	Aroclor 1254	<0.02 ug/g	86	60-140	72	60-140	0	0-40
416206	Aroclor 1260	<0.02 ug/g	86	60-140	72	60-140	0	0-40
416206	Polychlorinated Biphenyls	<0.02 ug/g	86	60-140	72	60-140	0	0-40
416232	Chlordane, alpha-	<0.002 ug/g	64	50-140		50-140		0-40
416232	Aldrin	<0.002 ug/g	63	50-140		50-140		0-40
416232	Chlordane	<0.006 ug/g						
416232	Dieldrin	<0.002 ug/g	63	50-140		50-140		0-40

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Quality Assurance Summary

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416232	Endosulfan	<0.004 ug/g						
416232	Endosulfan I	<0.002 ug/g	64	50-140		50-140		0-40
416232	Endosulfan II	<0.002 ug/g	64	50-140		50-140		0-40
416232	Endrin	<0.002 ug/g	64	50-140		50-140		0-40
416232	Hexachlorocyclohexane Gamma-	<0.002 ug/g	62	50-140		50-140		0-40
416232	Chlordane, gamma-	<0.002 ug/g	65	50-140		50-140		0-40
416232	Heptachlor	<0.002 ug/g	63	50-140		50-140		0-40
416232	Heptachlor Epoxide	<0.002 ug/g	65	50-140		50-140		0-40
416232	Hexachlorobenzene	<0.002 ug/g	102	50-140		50-140		0-40
416232	Hexachlorobutadiene	<0.002 ug/g	95					
416232	Hexachloroethane	<0.002 ug/g	93					
416232	Methoxychlor	<0.002 ug/g	68	50-140		50-140		0-40
416232	DDD	<0.002 ug/g	64	50-140		50-140		0-40
416232	DDE	<0.002 ug/g	66	50-140		50-140		0-40
416232	DDT	<0.002 ug/g	65	50-140		50-140		0-40
416272	Electrical Conductivity	<0.05	99	90-110			1	0-10
416275	Chromium VI	<0.20 ug/g	102	80-120	88	70-130	0	0-35
416286	Sodium Adsorption Ratio	<0.01					2	

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
415963	Methlynaphthalene, 1-	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Methlynaphthalene, 2-	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Acenaphthene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Acenaphthylene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Anthracene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Benz[a]anthracene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Benzo[a]pyrene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Benzo[b]fluoranthene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Benzo[ghi]perylene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Benzo[k]fluoranthene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Chrysene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Dibenz[a h]anthracene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Fluoranthene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Fluorene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Indeno[1 2 3-cd]pyrene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Naphthalene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Phenanthrene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
415963	Pyrene	GC-MS	2022-01-26	2022-01-26	C_M	P 8270
416090	pH - CaCl2	pH Meter	2022-01-26	2022-01-26	IP	Ag Soil
416113	Silver	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Arsenic	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Boron (total)	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Barium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Beryllium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Cadmium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Cobalt	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Chromium Total	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Copper	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Mercury	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Molybdenum	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Nickel	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Lead	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020

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M9W 5W8
Attention: Mr. Nan Du
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
416113	Antimony	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Selenium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Thallium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Uranium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Vanadium	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416113	Zinc	ICAPQ-MS	2022-01-26	2022-01-26	SD	EPA 200.8/6020
416116	Tetrachloroethane, 1,1,1,2-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Trichloroethane, 1,1,1-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Tetrachloroethane, 1,1,2,2-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Trichloroethane, 1,1,2-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichloroethane, 1,1-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichloroethylene, 1,1-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichlorobenzene, 1,2-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichloroethane, 1,2-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichloropropane, 1,2-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichlorobenzene, 1,3-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichloropropene, 1,3-	GC-MS	2022-01-26	2022-01-26	YH	V 8260B
416116	Dichlorobenzene, 1,4-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Acetone	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Benzene	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Bromodichloromethane	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Bromoform	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Bromomethane	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichloroethylene, 1,2-cis-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichloropropene, 1,3-cis-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Carbon Tetrachloride	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Chloroform	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dibromochloromethane	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichlorodifluoromethane	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Methylene Chloride	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Ethylbenzene	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Ethylene dibromide	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Hexane (n)	GC-MS	2022-01-25	2022-01-26	YH	V 8260B

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Attention: Mr. Nan Du
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Report Number: 1970461
Date Submitted: 2022-01-21
Date Reported: 2022-01-28
Project: 02112512.000
COC #: 885363

Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
416116	Xylene, m/p-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Methyl Ethyl Ketone	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Methyl Isobutyl Ketone	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Methyl tert-Butyl Ether (MTBE)	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Chlorobenzene	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Xylene, o-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Styrene	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichloroethylene, 1,2-trans-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Dichloropropene, 1,3-trans-	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Tetrachloroethylene	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Toluene	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Trichloroethylene	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Trichlorofluoromethane	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416116	Vinyl Chloride	GC-MS	2022-01-25	2022-01-26	YH	V 8260B
416119	Xylene Mixture	GC-MS	2022-01-26	2022-01-26	YH	V 8260B
416120	PHC's F1	GC/FID	2022-01-26	2022-01-26	YH	CCME
416121	PHC's F1-BTEX	GC/FID	2022-01-26	2022-01-26	YH	CCME
416128	Boron (Hot Water Soluble)	iCAP OES	2022-01-26	2022-01-26	Z_S	MOECC E3470
416131	Cyanide (CN-)	Skalar CN Analyzer	2022-01-26	2022-01-26	Z_S	MOECC E3015
416160	PHC's F2	GC/FID	2022-01-24	2022-01-27	R_G	CCME
416160	PHC's F3	GC/FID	2022-01-24	2022-01-27	R_G	CCME
416160	PHC's F4	GC/FID	2022-01-24	2022-01-27	R_G	CCME
416160	Moisture-Humidity	Oven	2022-01-24	2022-01-27	R_G	ASTM 2216
416170	1+2-methylnaphthalene	GC-MS	2022-01-27	2022-01-27	C_M	P 8270
416206	Aroclor 1242	GC/ECD	2022-01-25	2022-01-26	QL	EPA 8081B/8082A
416206	Aroclor 1248	GC/ECD	2022-01-25	2022-01-26	QL	EPA 8081B/8082A
416206	Aroclor 1254	GC/ECD	2022-01-25	2022-01-26	QL	EPA 8081B/8082A
416206	Aroclor 1260	GC/ECD	2022-01-25	2022-01-26	QL	EPA 8081B/8082A
416206	Polychlorinated Biphenyls	GC/ECD	2022-01-25	2022-01-26	QL	EPA 8081B/8082A
416232	Chlordane, alpha-	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Aldrin	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Chlordane	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Dieldrin	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A

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COC #: 885363

Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
416232	Endosulfan	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Endosulfan I	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Endosulfan II	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Endrin	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Hexachlorocyclohexane Gamma-	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Chlordane, gamma-	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Heptachlor	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Heptachlor Epoxide	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Hexachlorobenzene	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Hexachlorobutadiene	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Hexachloroethane	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	Methoxychlor	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	DDD	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	DDE	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416232	DDT	GC/ECD	2022-01-27	2022-01-28	QL	EPA 8081B/8082A
416272	Electrical Conductivity	Electrical Conductivity Meter	2022-01-28	2022-01-28	Z_S	Cond-Soil
416275	Chromium VI	FAA	2022-01-28	2022-01-28	MW	M US EPA 3060A
416286	Sodium Adsorption Ratio	iCAP OES	2022-01-28	2022-01-28	Z_S	Ag Soil

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Environment Testing

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M9W 5W8
Attention: Mr. Nan Du
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Report Number: 1970461
Date Submitted: 2022-01-21
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COC #: 885363

CWS for Petroleum Hydrocarbons in Soil - Tier 1**Notes:**

1. The laboratory method complies with CCME Tier 1 reference method for PHC in soil. It is validated for laboratory use.
2. Where the F1 fraction (C6 to C10) and BTEX are both measured, F1-BTEX is reported.
3. Where the F2 fraction (C10 to C16) and naphthalene are both measured, F2-naphthalene is reported.
4. Where the F3 fraction (C16 to C34) and PAHs* are both measured, F3-PAH is reported.
5. F4G is analyzed if the chromatogram does not descend to baseline before C50. Where F4 (C34 to C50) and F4G are both reported, the higher result is compared to the standard.
6. Unless otherwise stated in the sample comments, the following criteria have been met where applicable:
 - nC6 and nC10 response factors within 30% of response factor for toluene;
 - nC10, nC16, and nC34 response factors within 10% of each other;
 - C50 response factors within 70% of nC10 + nC16 + nC34 average; and,
 - Linearity is within 15%.
7. Unless otherwise stated in the sample comments, sampling requirements and analytical holding times have been met.
8. Gravimetric heavy hydrocarbons (F4G) cannot be added to the C6 and C50 hydrocarbons.
9. *PAHs = phenanthrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene and pyrene.

CLIENT INFORMATION				INVOICE INFORMATION (SAME AS CLIENT INFORMATION: YES <input type="checkbox"/> NO <input type="checkbox"/>)														
Company: Englobe				Company: Englobe				Fax:										
Contact: FENG LZ				Contact: Atiqur Rahman				Email: #1: Atiqur.Rahman@englobecorp.com										
Address: 3397 American Drive, Mississauga, ON				Address: 1821 Albion Road, Toronto				Email: #2: Nan.Du@englobecorp.com										
Telephone: 877-300-4800		Cell: 437-991-6210		Telephone: 674-203-3219				PO #:										
Email: #1: FENG.LZ@Englobecorp.com				REGULATION/GUIDELINE REQUIRED <input type="checkbox"/> Sanitary Sewer, City: _____ <input type="checkbox"/> Storm Sewer, City: _____ <input type="checkbox"/> ODWSOG (Use DW CoC if analyzing drinking water) <input type="checkbox"/> PWQO <input checked="" type="checkbox"/> O.Reg 347 <input checked="" type="checkbox"/> Other: 153/04 and 406/19														
Email: #2: Nan.Du@Englobecorp.com																		
Project: 02112512-000		Quote #:		<input checked="" type="checkbox"/> O. Reg 153 The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04. Analysis of full parameter list only Yes <input type="checkbox"/> No <input type="checkbox"/> Table # 1~3 Coarse / Fine / Subsurface Type: Com-Ind / Res-Park / Agri / GW / All Other / Sediment <input checked="" type="checkbox"/> O. Reg 406 Excess Soils Table # 1~3 Full depth/Strat/Ceiling/MSLPL Leachate Type: Com-Ind / Res-Park / Agri / All Other Category: Surface / Subsurface														
TURN-AROUND TIME (Business Days)																		
<input type="checkbox"/> 1 Day* (100%) <input type="checkbox"/> 2 Day** (50%) <input type="checkbox"/> 3-5 Days (25%) <input checked="" type="checkbox"/> 5-7 Days (Standard)																		
Please contact Lab in advance to determine rush availability.																		
*For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%.																		
**For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.																		
The optimal temperature conditions during transport should be less than 10°C. Sample(s) cannot be frozen, unless otherwise indicated or agreed upon with the Laboratory. Note that this COC is not to be used for drinking water samples. The COC must be complete upon submission of the samples, there will be a \$25 surcharge if required information is missing (required fields are shaded in grey).				Sample Details														
				Field Filtered --> _____ O.Reg.153 parameters Sample Matrix # of Containers PHC F1 - F4 BTEX VOCs PAHs PCBs Metals + Inorganics Metals only FC&SAR pH & Sieve T ₆₀ mSPLP - Metals mSPLP - VOCs mSPLP - SVOCs TCLP OCPs														
Sample ID	Date/Time Collected	Sample Matrix	# of Containers	PHC F1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganics	Metals only	FC&SAR	pH & Sieve T ₆₀	mSPLP - Metals	mSPLP - VOCs	mSPLP - SVOCs	TCLP	OCPs	RN# (Lab Use Only)
BH1-1	Jan. 14, 2022	S	3				✓		✓				✓	✓	✓			1606024
BH1-2			1							✓	✓							25
BH1-3			3	✓	✓													26
BH1-5			3	✓	✓	✓												27
BH2-1			4	✓	✓		✓				✓							28
BH2-6			3	✓	✓	✓												29
Dup-4			3	✓	✓	✓												30
BH4-1			1				✓		✓	✓								31
BH4-2			3	✓	✓													32
BH4-9			3	✓	✓													33
PRINT				SIGN				DATE/TIME				TEMP (°C)		COMMENTS:				
Sampled By: FENG LZ				[Signature]				Jan. 14, 2022 20:00				15.5		TCLP: Metals, VOCs, benzo(a)pyrene Ignitability.				
Relinquished By: [Signature]				[Signature]				1/17/22 2:20 pm						CUSTODY SEAL: <input type="checkbox"/> YES <input type="checkbox"/> NO Ice packs submit <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
Received By: [Signature]																		

CLIENT INFORMATION				INVOICE INFORMATION (SAME AS CLIENT INFORMATION: YES <input type="checkbox"/> NO <input 4"="" type="checkbox/>)</th> </tr> </thead> <tbody> <tr> <td colspan="/> Company: Englobe <td colspan="8">Company:</td> <td colspan="8">Fax:</td>																Company:								Fax:							
Contact: FEAGLZ				Contact:								Email: #1:																							
Address: 3397 American Dr.				Address:								Email: #2:																							
Telephone:		Cell: 437-991-6210		Telephone:								PO #:																							
Email: #1: FEAG.LZ@Englobecorp.com				REGULATION/GUIDELINE REQUIRED																															
Email: #2:																																			
Project:		Quote #:		<input type="checkbox"/> Sanitary Sewer, City: _____ <input type="checkbox"/> Storm Sewer, City: _____ <input type="checkbox"/> ODWSOG (Use DW CoC if analyzing drinking water) <input type="checkbox"/> PWQO <input checked="" type="checkbox"/> O.Reg 347 <input type="checkbox"/> Other: _____																															
TURN-AROUND TIME (Business Days)																																			
<input type="checkbox"/> 1 Day* (100%) <input type="checkbox"/> 2 Day** (50%) <input type="checkbox"/> 3-5 Days (25%) <input checked="" type="checkbox"/> 5-7 Days (Standard)				<input checked="" type="checkbox"/> O. Reg 153 <small>The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04. Analysis of full parameter list only</small> Yes <input type="checkbox"/> No <input type="checkbox"/>																															
<small>Please contact Lab in advance to determine rush availability.</small> <small>*For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%.</small> <small>**For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.</small>																																			
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				Field Filtered --> _____ <div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">Sample Matrix</div> <div style="width: 15%;"># of Containers</div> <div style="width: 40%; text-align: center;">O.Reg.153 parameters</div> <div style="width: 10%; text-align: center;">EC & SAR</div> <div style="width: 10%; text-align: center;">PHQ SiwaTS</div> <div style="width: 10%; text-align: center;">msplp-mwds</div> <div style="width: 10%; text-align: center;">msplp-Vocs</div> <div style="width: 10%; text-align: center;">msplp-SiwaS</div> <div style="width: 10%; text-align: center;">Tclp</div> <div style="width: 10%; text-align: center;">OCps</div> <div style="width: 10%; text-align: center;">[Handwritten]</div> </div>																															
Sample ID		Date/Time Collected		RN# (Lab Use Only)																															
B45-1		Jan. 14, 2022		1606034																															
Dup-5		↓		35																															
B45-3				36																															
B45-9				37																															
B47-1				38																															
Dup-2				39																															
B47-3				40																															
Dup-3				41																															
B47-6				42																															
PRINT				SIGN				DATE/TIME				TEMP (°C)				COMMENTS: <div style="display: flex; justify-content: space-between;"> <div>CUSTODY SEAL: <input type="checkbox"/> YES <input type="checkbox"/> NO</div> <div>Ice packs submit <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</div> </div>																			
Sampled By: FEAGLZ		↓		[Signature]				Jan 14, 2022 / 20-00				15-5																							
Relinquished By: Malissa																																			
Received By:																																			

CLIENT INFORMATION				INVOICE INFORMATION (SAME AS CLIENT INFORMATION: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>)															
Company: Englobe				Company:								Fax:							
Contact: FENGLZ				Contact:								Email: #1:							
Address:				Address:								Email: #2:							
Telephone:		Cell:		Telephone:								PO #:							
Email: #1:				<div style="text-align: center; background-color: #e6f2ff; padding: 5px;">REGULATION/GUIDELINE REQUIRED</div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> Sanitary Sewer, City: _____ <input type="checkbox"/> Storm Sewer, City: _____ <input type="checkbox"/> ODWSOG (Use DW CoC if analyzing drinking water) <input type="checkbox"/> PWQO <input checked="" type="checkbox"/> O.Reg 347 <input type="checkbox"/> Other: _____ </div> <div style="width: 50%;"> <input checked="" type="checkbox"/> O. Reg 153 <small>The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04. Analysis of full parameter list only.</small> Yes <input type="checkbox"/> No <input type="checkbox"/> <input checked="" type="checkbox"/> O. Reg 406 Excess Soils <small>Table # 123-1 Full depth/Strat/Ceiling/mSLP Leachate Type: Com-Infl / Res-Park / Agri/All Other Category: Surface / Subsurface</small> </div> </div>															
Project:		Quote #:																	
TURN-AROUND TIME (Business Days)																			
<input type="checkbox"/> 1 Day* (100%)		<input type="checkbox"/> 2 Day** (50%)																	
<input type="checkbox"/> 3-5 Days (25%)		<input checked="" type="checkbox"/> 5-7 Days (Standard)																	
Please contact Lab in advance to determine rush availability. *For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%. **For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.																			
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				Field Filtered -->															
Sample ID		Date/Time Collected	Sample Matrix	# of Containers	PHC F1 - E4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganic	Metals only	EC & SAR	MSPGP-Metals	MSPGP-VOCs	MSPGP-SVOCs	TCLP	DGRs	RN# (Lab Use Only)	
BH 8-1		Jan-13-2022	S	2								✓	✓			✓		1606043	
BH 8-2		↓		4				✓		✓			✓					44	
BH 8-7				3	✓	✓	✓											45	
BH 9-1				1						✓								46	
BH 9-2				2				✓	✓		✓	✓						47	
BH 9-3				4B	✓	✓	✓							✓	✓	✓		48	
BH 9-9				3	✓	✓												49	
BH 10-1				2							✓	✓	✓					50	
BH 10-2				3	✓	✓												51	
PRINT			SIGN				DATE/TIME				TEMP (°C)		COMMENTS:						
Sampled By: FENGLZ			[Signature]				Jan 19, 2012 / 20100												
Relinquished By: [Signature]							1/17/22 2:29pm				15.5								
Received By: Malissa			[Signature]										CUSTODY SEAL: YES <input type="checkbox"/> NO <input type="checkbox"/> Ice packs submit <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>						

CLIENT INFORMATION				INVOICE INFORMATION (SAME AS CLIENT INFORMATION: YES <input type="checkbox"/> NO <input 4"="" type="checkbox/>)</th> </tr> </thead> <tbody> <tr> <td colspan="/> Company: Englobe <td colspan="6">Company:</td> <td colspan="6">Fax:</td>												Company:						Fax:					
Contact: FENG L2				Contact:						Email: #1:																	
Address:				Address:						Email: #2:																	
Telephone:		Cell:		Telephone:						PO #:																	
Email: #1:				<div style="text-align: center; background-color: #4a7ebb; color: white; padding: 5px;">REGULATION/GUIDELINE REQUIRED</div> <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <input type="checkbox"/> Sanitary Sewer, City: _____ <input type="checkbox"/> Storm Sewer, City: _____ <input type="checkbox"/> ODWSOG (Use DW CoC if analyzing drinking water) <input type="checkbox"/> PWQO <input checked="" type="checkbox"/> O.Reg 347 <input type="checkbox"/> Other: _____ </div> <div style="width: 35%;"> <input checked="" type="checkbox"/> O. Reg 153 <small>The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04. Analysis of full parameter list only</small> Yes <input type="checkbox"/> No <input type="checkbox"/> </div> </div> <div style="margin-top: 10px;"> <input checked="" type="checkbox"/> O. Reg 406 Excess Soils <small>Table # 1-3-1 Full Depth/Strat/Sealing/mSPLP Leachate</small> Type: Corn-Ind / Res-Park / Agri / All Other Category: Surface / Subsurface </div>																							
Email: #2:																											
Project:		Quote #:																									
TURN-AROUND TIME (Business Days)																											
<input type="checkbox"/> 1 Day* (100%) <input type="checkbox"/> 2 Day** (50%) <input type="checkbox"/> 3-5 Days (25%) <input checked="" type="checkbox"/> 5-7 Days (Standard)																											
<small>Please contact Lab in advance to determine rush availability. *For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%. **For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.</small>																											
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				Field Filtered -->																							
				Sample Matrix	# of Containers	O.Reg.153 parameters																					
Sample ID	Date/Time Collected			PHC F1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganic	Metals only	TCC SAR	mSPLP-metals	mSPLP-VOCs	mSPLP-SVOCs	TCLP	OCPS											
BH11-1	Jan. 13, 2022	5	1								✓	✓							1606052								
Dup-1			1								✓								53								
BH11-2			3	✓	✓														54								
BH11-7			3	✓	✓	✓													55								
BH12-1			2				✓		✓						✓				56								
BH12-2			3	✓	✓					✓	✓								57								
BH12-8			3	✓	✓	✓													58								
PRINT				SIGN				DATE/TIME				TEMP (°C)		COMMENTS:													
Sampled By: FENG L2				[Signature]				Jan. 14, 2022/2022																			
Relinquished By: Malina				[Signature]				1/17/22 2:29 pm				15.5															
Received By:														CUSTODY SEAL: <input type="checkbox"/> YES <input type="checkbox"/> NO Ice packs submit <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No													

CLIENT INFORMATION				INVOICE INFORMATION (SAME AS CLIENT INFORMATION: YES <input type="checkbox"/> NO <input 4"="" type="checkbox/>)</th> </tr> </thead> <tbody> <tr> <td colspan="/> Company: Englobe <td colspan="2">Company:</td> <td colspan="2">Fax:</td>				Company:		Fax:														
Contact: FENG LZ				Contact:		Email: #1:																		
Address: 3397 American Drive				Address:		Email: #2:																		
Telephone: 437-991-6210		Cell:		Telephone:		PO #:																		
Email: #1: FENG.Li@Englobecorp.com				REGULATION/GUIDELINE REQUIRED																				
Email: #2: Nan.Du@Englobecorp.com																								
Project: 02112512.000		Quote #: 191077																						
TURN-AROUND TIME (Business Days)																								
<input type="checkbox"/> 1 Day* (100%) <input type="checkbox"/> 2 Day** (50%) <input type="checkbox"/> 3-5 Days (25%) <input checked="" type="checkbox"/> 5-7 Days (Standard)				<input type="checkbox"/> Sanitary Sewer, City: _____ <input type="checkbox"/> Storm Sewer, City: _____ <input type="checkbox"/> ODWSOG (Use DW CoC if analyzing drinking water) <input type="checkbox"/> PWQO <input checked="" type="checkbox"/> O.Reg 347 <input type="checkbox"/> Other: _____																				
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				Sample Details Field Filtered -->																				
Sample ID		Date/Time Collected		Sample Matrix		# of Containers		O.Reg.153 parameters										RN# (Lab Use Only)						
								PHC F1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganic	Metals only	EC & SAR	msp-p-metals	msp-p-vocs	msp-p-svocs	TCLP	PH				
B43-1		Jan-21-2022		S		2																		1606834
B43-2				S		1																		35
Dup-7				S		1																		35
B43-5				S		3																		36
B46-1				S		2																		37
B46-9				S		3																		38
B413-1				S		1																		39
B413-6				S		3																		40
B415-1				S		2																		41
B415-2				S		1																		42
PRINT				SIGN				DATE/TIME				TEMP (°C)				COMMENTS: Run out of jars/vials. Call lab confirm to use other jars/vials. CUSTODY SEAL: <input type="checkbox"/> YES <input type="checkbox"/> NO Ice packs submit <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No								
Sampled By: FENG LZ				[Signature]				Jan-21-2022/17:00				1.5°C												
Relinquished By:				[Signature]				01/21/22 5:08pm																
Received By: Victor Gallant				[Signature]																				

CLIENT INFORMATION

INVOICE INFORMATION (SAME AS CLIENT INFORMATION: YES ☐ NO ☐)

Company: Englobe
 Contact: FENG L2
 Address: 3387 American Drive
 Telephone: 437-891-6210
 Email: #1: FENG.LI@englobe.com
 Email: #2: Nan.du@englobe.com
 Project: 02112512.000

Company:
 Contact:
 Address:
 Telephone:
 Fax:
 Email: #1:
 Email: #2:
 PO #:

TURN-AROUND TIME (Business Days)

☐ 1 Day* (100%) ☐ 2 Day** (50%) ☐ 3-5 Days (25%) ☒ 5-7 Days (Standard)

Please contact Lab in advance to determine rush availability.

*For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%.

**For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.

REGULATION/GUIDELINE REQUIRED

☐ Sanitary Sewer, City:
☐ Storm Sewer, City:
☐ ODWSOG (Use DW CoC if analyzing drinking water)
☐ PWQO
☒ O.Reg 347
☐ Other:

☒ O. Reg 153

The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04. Analysis of full parameter list only
 Yes ☐ No ☐

Table # 1-3
 Coarse / Fine / Surface / Subsurface
 Type: Com Ind / Res Park / Agri / GW / All Other / Sediment

☒ O. Reg 406 Excess Soils

Table # 1-3-1
 Full depth / Strat / Chilling / mSPLP Leachate
 Type: Com Ind / Res Park / Agri / All Other
 Category: Surface / Subsurface

The optimal temperature conditions during transport should be less than 10°C. Sample(s) cannot be frozen, unless otherwise indicated or agreed upon with the Laboratory. Note that this COC is not to be used for drinking water samples. The COC must be complete upon submission of the samples, there will be a \$25 surcharge if required information is missing (required fields are shaded in grey).

Sample Details

Field Filtered →

O.Reg.153 parameters

Sample Matrix	# of Containers	PHCF1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganic	Metals only	TEC & SAR	mspup-metals	mspup-VOCs	mspup-SVOCs	TECP	mspup-OCs	OCs
BH16-1	3								✓	✓				✓	✓
BH16-2	3	✓	✓												
BH16-6	3	✓	✓	✓											

RN#
 (Lab Use Only)

1606843
 44
 45

PRINT

SIGN

DATE/TIME

TEMP (°C)

COMMENTS:

Sampled By: FENG L2
 Relinquished By: Victor Gallant
 Received By: N.B.

Jan-21-2022/17:00
 01/21/22 5:08pm 1.5°C

CUSTODY SEAL: ☐ YES ☐ NO Ice packs submit ☒ Yes ☐ No

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Feng Li
Invoice to: EnGlobe Corp.
PO#:

Report Number: 1973148
Date Submitted: 2022-03-09
Date Reported: 2022-03-16
Project: 02112512
COC #: 216297
Temperature (C): 7
Custody Seal:

Page 1 of 14

Dear Feng Li:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Sample Comment Summary

Sample ID: 1614025	BHMW15	CI	MRL elevated due to matrix interference (dilution was done). Metals MRLs raised because of matrix interference, sample was diluted.
Sample ID: 1614026	DUP-1	CI	MRL elevated due to matrix interference (dilution was done). Metals MRLs raised because of matrix interference, sample was diluted.

Report Comments:

Addrine Thomas, Inorganics Supervisor

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise stated

Eurofins Environment Testing Canada Inc. is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at <http://www.cala.ca/scopes/2602.pdf>

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline or regulatory limits listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official guideline or regulation as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Feng Li
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1973148
Date Submitted: 2022-03-09
Date Reported: 2022-03-16
Project: 02112512
COC #: 216297

O.Reg 153-T2-Groundwater-Coarse

Exceedence Summary

Sample I.D.	Analyte	Result	Units	Criteria
Inorganics				
BHMW15	Chloride	4130000	ug/L	STD 790000
DUP-1	Chloride	3950000	ug/L	STD 790000
Metals				
BHMW15	Sodium	2930000	ug/L	STD 490000
DUP-1	Sodium	2850000	ug/L	STD 490000

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Feng Li
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1973148
Date Submitted: 2022-03-09
Date Reported: 2022-03-16
Project: 02112512
COC #: 216297

Guideline = O.Reg 153-T2-Groundwater-Coarse

Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix
					Sample Type	Sample Date
PHC's F1	418438	20	ug/L	STD 750	1614025	GW153
PHC's F1-BTEX	418441	20	ug/L		2022-03-09	2022-03-09
PHC's F2	418507	20	ug/L	STD 150	BHWM15	DUP-1
PHC's F3	418507	50	ug/L	STD 500		
PHC's F4	418507	50	ug/L	STD 500		

Metals

Analyte	Batch No	MRL	Units	Guideline	Lab I.D.	Sample Matrix
					Sample Type	Sample Date
Antimony	418547	2	ug/L	STD 6	1614025	GW153
Arsenic	418547	5	ug/L	STD 25	2022-03-09	2022-03-09
Barium	418547	50	ug/L	STD 1000	BHWM15	DUP-1
Beryllium	418547	2	ug/L	STD 4		
Boron (total)	418547	50	ug/L	STD 5000		
Cadmium	418547	0.5	ug/L	STD 2.7		
Chromium Total	418547	5	ug/L	STD 50		
Chromium VI	418597	10	ug/L	STD 25		
Cobalt	418547	1	ug/L	STD 3.8		
Copper	418547	5	ug/L	STD 87		
Lead	418547	5	ug/L	STD 10		
Mercury	418548	0.1	ug/L	STD 0.29		
Molybdenum	418547	20	ug/L	STD 70		

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Feng Li
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1973148
Date Submitted: 2022-03-09
Date Reported: 2022-03-16
Project: 02112512
COC #: 216297

Guideline = O.Reg 153-T2-Groundwater-Coarse

Metals

Guideline = O.Reg 153-T2-Groundwater-Coarse					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1614025	1614026
<u>Metals</u>						GW153	GW153
						2022-03-09	2022-03-09
						BHMW15	DUP-1
Analyte	Batch No	MRL	Units	Guideline			
Nickel	418547	20	ug/L	STD 100	<20	<20	
Selenium	418547	5	ug/L	STD 10	<5	<5	
Silver	418547	0.5	ug/L	STD 1.5	<0.5	<0.5	
Sodium	418389	1000	ug/L	STD 490000	2930000*	2850000*	
Thallium	418547	0.5	ug/L	STD 2	<0.5	<0.5	
Uranium	418547	5	ug/L	STD 20	<5	<5	
Vanadium	418547	5	ug/L	STD 6.2	<5	<5	
Zinc	418547	50	ug/L	STD 1100	<50	<50	

Volatiles

<u>Volatiles</u>					Lab I.D. Sample Matrix Sample Type Sample Date Sampling Time Sample I.D.	1614023 GW153 2022-03-09 BHMW8	1614024 GW153 2022-03-09 BHMW9	1614025 GW153 2022-03-09 BHMW15	1614026 GW153 2022-03-09 DUP-1	1614027 GW153 2022-03-09 Trip Blank
Analyte	Batch No	MRL	Units	Guideline						
1,3,5-trimethylbenzene	418435	0.3	ug/L		<0.3	<0.3				<0.3
Acetone	418435	30	ug/L	STD 2700	<30	<30	<30	<30	<30	<30
Benzene	418435	0.5	ug/L	STD 5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	418435	0.3	ug/L	STD 16	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Bromoform	418435	0.4	ug/L	STD 25	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromomethane	418435	0.5	ug/L	STD 0.89	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	418435	0.2	ug/L	STD 0.79	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	418435	0.5	ug/L	STD 30	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	418435	0.2	ug/L		<0.2	<0.2				<0.2
Chloroform	418435	0.5	ug/L	STD 2.4	<0.5	1.3	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	418435	0.3	ug/L	STD 25	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3

Results relate only to the parameters tested on the samples submitted.
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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Feng Li
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1973148
Date Submitted: 2022-03-09
Date Reported: 2022-03-16
Project: 02112512
COC #: 216297

Guideline = O.Reg 153-T2-Groundwater-Coarse

Volatiles

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1614023 GW153	1614024 GW153	1614025 GW153	1614026 GW153	1614027 GW153
2022-03-09	2022-03-09	2022-03-09	2022-03-09	2022-03-09
BHWM8	BHWM9	BHWM15	DUP-1	Trip Blank

Analyte	Batch No	MRL	Units	Guideline
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Dichlorobenzene, 1,2-	418435	0.4	ug/L	STD 3	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorobenzene, 1,3-	418435	0.4	ug/L	STD 59	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorobenzene, 1,4-	418435	0.4	ug/L	STD 1	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	418435	0.5	ug/L	STD 590	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloroethane, 1,1-	418435	0.4	ug/L	STD 5	<0.4	<0.4	<0.4	<0.4	<0.4
Dichloroethane, 1,2-	418435	0.2	ug/L	STD 1.6	<0.2	<0.2	<0.2	<0.2	<0.2
Dichloroethylene, 1,1-	418435	0.5	ug/L	STD 1.6	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloroethylene, 1,2-cis-	418435	0.4	ug/L	STD 1.6	<0.4	<0.4	<0.4	<0.4	<0.4
Dichloroethylene, 1,2-trans-	418435	0.4	ug/L	STD 1.6	<0.4	<0.4	<0.4	<0.4	<0.4
Dichloropropane, 1,2-	418435	0.5	ug/L	STD 5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloropropene, 1,3-	418435	0.3	ug/L	STD 0.5	<0.3	<0.3	<0.3	<0.3	<0.3
Dichloropropene, 1,3-cis-	418435	0.2	ug/L		<0.2	<0.2	<0.2	<0.2	<0.2
Dichloropropene, 1,3-trans-	418435	0.2	ug/L		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	418435	0.5	ug/L	STD 2.4	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylene dibromide	418435	0.2	ug/L	STD 0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Hexane (n)	418435	5	ug/L	STD 51	<5	<5	<5	<5	<5
Methyl Ethyl Ketone	418435	10	ug/L	STD 1800	<10	<10	<10	<10	<10
Methyl Isobutyl Ketone	418435	10	ug/L	STD 640	<10	<10	<10	<10	<10
Methyl tert-Butyl Ether (MTBE)	418435	2	ug/L	STD 15	<2	<2	<2	<2	<2
Methylene Chloride	418435	4.0	ug/L	STD 50	<4.0	<4.0	<4.0	<4.0	<4.0
Styrene	418435	0.5	ug/L	STD 5.4	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethane, 1,1,1,2-	418435	0.5	ug/L	STD 1.1	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethane, 1,1,2,2-	418435	0.5	ug/L	STD 1	<0.5	<0.5	<0.5	<0.5	<0.5

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Guideline = O.Reg 153-T2-Groundwater-Coarse

Volatiles

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1614023 GW153	1614024 GW153	1614025 GW153	1614026 GW153	1614027 GW153
2022-03-09	2022-03-09	2022-03-09	2022-03-09	2022-03-09
BHWM8	BHWM9	BHWM15	DUP-1	Trip Blank

Analyte	Batch No	MRL	Units	Guideline
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Tetrachloroethylene	418435	0.3	ug/L	STD 1.6	<0.3	<0.3	<0.3	<0.3	<0.3
Toluene	418435	0.4	ug/L	STD 24	<0.4	<0.4	<0.4	<0.4	<0.4
Trichloroethane, 1,1,1-	418435	0.4	ug/L	STD 200	<0.4	<0.4	<0.4	<0.4	<0.4
Trichloroethane, 1,1,2-	418435	0.4	ug/L	STD 4.7	<0.4	<0.4	<0.4	<0.4	<0.4
Trichloroethylene	418435	0.3	ug/L	STD 1.6	<0.3	<0.3	<0.3	<0.3	<0.3
Trichlorofluoromethane	418435	0.5	ug/L	STD 150	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride	418435	0.2	ug/L	STD 0.5	<0.2	<0.2	<0.2	<0.2	<0.2
Xylene Mixture	418437	0.5	ug/L	STD 300	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, m/p-	418435	0.4	ug/L		<0.4	<0.4	<0.4	<0.4	<0.4
Xylene, o-	418435	0.4	ug/L		<0.4	<0.4	<0.4	<0.4	<0.4

Inorganics

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1614025 GW153	1614026 GW153
2022-03-09	2022-03-09
BHWM15	DUP-1

Analyte	Batch No	MRL	Units	Guideline
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Chloride	418426	1000	ug/L	STD 790000	4130000*	
	418481	1000	ug/L	STD 790000		3950000*
Conductivity	418559	5	uS/cm		11800	11800
Cyanide (CN-)	418471	5	ug/L	STD 66	6	8
pH	418559	1.00			7.61	7.65

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PHC Surrogate

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1614025 GW153	1614026 GW153
2022-03-09	2022-03-09
BHWM15	DUP-1

Analyte	Batch No	MRL	Units	Guideline
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Alpha-androstrane	418507	0	%	78	82
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VOCs Surrogates

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1614023 GW153	1614024 GW153	1614025 GW153	1614026 GW153	1614027 GW153
2022-03-09	2022-03-09	2022-03-09	2022-03-09	2022-03-09
BHWM8	BHWM9	BHWM15	DUP-1	Trip Blank

Analyte	Batch No	MRL	Units	Guideline
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1,2-dichloroethane-d4	418435	0	%	129	116	112	113	122
4-bromofluorobenzene	418435	0	%	87	87	87	89	92
Toluene-d8	418435	0	%	96	100	95	98	98

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Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
418389	Sodium	<1000 ug/L	105	82-118	100	80-120	1	0-20
418426	Chloride	<50000 ug/L		90-110		80-120	2	0-20
418435	Tetrachloroethane, 1,1,1,2-	<0.5 ug/L	102	60-130	112	50-140	0	0-30
418435	Trichloroethane, 1,1,1-	<0.4 ug/L	94	60-130	113	50-140	0	0-30
418435	Tetrachloroethane, 1,1,2,2-	<0.5 ug/L	104	60-130	111	50-140	0	0-30
418435	Trichloroethane, 1,1,2-	<0.4 ug/L	94	60-130	119	50-140	0	0-30
418435	Dichloroethane, 1,1-	<0.4 ug/L	104	60-130	111	50-140	0	0-30
418435	Dichloroethylene, 1,1-	<0.5 ug/L	89	60-130	101	50-140	0	0-30
418435	Dichlorobenzene, 1,2-	<0.4 ug/L	102	60-130	116	50-140	0	0-30
418435	Dichloroethane, 1,2-	<0.2 ug/L	96	60-130	119	50-140	0	0-30
418435	Dichloropropane, 1,2-	<0.5 ug/L	98	60-130	118	50-140	0	0-30
418435	1,3,5-trimethylbenzene	<0.3 ug/L	104	60-130	107	50-140	0	0-30
418435	Dichlorobenzene, 1,3-	<0.4 ug/L	103	60-130	108	50-140	0	0-30
418435	Dichloropropene, 1,3-	<0.3 ug/L						
418435	Dichlorobenzene, 1,4-	<0.4 ug/L	105	60-130	112	50-140	0	0-30
418435	Acetone	<30 ug/L		60-130	116	50-140	0	0-30
418435	Benzene	<0.5 ug/L	98	60-130	115	50-140	0	0-30
418435	Bromodichloromethane	<0.3 ug/L	91	60-130	117	50-140	0	0-30
418435	Bromoform	<0.4 ug/L	91	60-130	114	50-140	0	0-30
418435	Bromomethane	<0.5 ug/L	118	60-130	100	50-140	0	0-30
418435	Dichloroethylene, 1,2-cis-	<0.4 ug/L	93	60-130	114	50-140	0	0-30
418435	Dichloropropene, 1,3-cis-	<0.2 ug/L	82	60-130	111	50-140	0	0-30
418435	Carbon Tetrachloride	<0.2 ug/L	98	60-130	114	50-140	0	0-30
418435	Chloroethane	<0.2 ug/L	92	60-130	88	50-140	0	0-30
418435	Chloroform	<0.5 ug/L	100	60-130	114	50-140	0	0-30
418435	Dibromochloromethane	<0.3 ug/L	83	60-130	108	50-140	0	0-30
418435	Dichlorodifluoromethane	<0.5 ug/L	115	60-130	100	50-140	0	0-30
418435	Methylene Chloride	<4.0 ug/L	115	60-130	110	50-140	0	0-30
418435	Ethylbenzene	<0.5 ug/L	100	60-130	105	50-140	0	0-30
418435	Ethylene dibromide	<0.2 ug/L	83	60-130	110	50-140	0	0-30
418435	Hexane (n)	<5 ug/L	110	60-130	104	50-140	0	0-30
418435	Xylene, m/p-	<0.4 ug/L	105	60-130	107	50-140	0	0-30

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Project: 02112512
COC #: 216297

Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
418435	Methyl Ethyl Ketone	<10 ug/L		60-130	118	50-140	0	0-30
418435	Methyl Isobutyl Ketone	<10 ug/L		60-130	100	50-140	0	0-30
418435	Methyl tert-Butyl Ether (MTBE)	<2 ug/L	100	60-130	116	50-140	0	0-30
418435	Chlorobenzene	<0.5 ug/L	96	60-130	112	50-140	0	0-30
418435	Xylene, o-	<0.4 ug/L	94	60-130	98	50-140	0	0-30
418435	Styrene	<0.5 ug/L	92	60-130	106	50-140	0	0-30
418435	Dichloroethylene, 1,2-trans-	<0.4 ug/L	114	60-130	111	50-140	0	0-30
418435	Dichloropropene, 1,3-trans-	<0.2 ug/L	86	60-130	116	50-140	0	0-30
418435	Tetrachloroethylene	<0.3 ug/L	91	60-130	108	50-140	0	0-30
418435	Toluene	<0.4 ug/L	95	60-130	115	50-140	0	0-30
418435	Trichloroethylene	<0.3 ug/L	92	60-130	117	50-140	0	0-30
418435	Trichlorofluoromethane	<0.5 ug/L	101	60-130	108	50-140	0	0-30
418435	Vinyl Chloride	<0.2 ug/L	91	60-130	83	50-140	0	0-30
418437	Xylene Mixture							
418438	PHC's F1	<20 ug/L	106	60-140	101	60-140	0	0-30
418441	PHC's F1-BTEX							
418471	Cyanide (CN-)	<5 ug/L	82	75-125	102	80-120	0	0-20
418481	Chloride	<50000 ug/L		90-110	99	80-120	0	0-20
418507	PHC's F2	<20 ug/L	100	60-140		60-140		0-30
418507	PHC's F3	<50 ug/L	100	60-140		60-140		0-30
418507	PHC's F4	<50 ug/L	100	60-140		60-140		0-30
418547	Silver	<0.5 ug/L	106	80-120	84	70-130	0	0-20
418547	Arsenic	<5 ug/L	98	80-120	101	70-130	0	0-20
418547	Boron (total)	<50 ug/L	106	80-120		80-120	0	0-20
418547	Barium	<50 ug/L	100	80-120		70-130	1	0-20
418547	Beryllium	<2 ug/L	106	80-120	99	70-130	0	0-20
418547	Cadmium	<0.5 ug/L	104	80-120	101	70-130	0	0-20
418547	Cobalt	<1 ug/L	102	80-120	92	70-130	0	0-20
418547	Chromium Total	<5 ug/L	104	80-120	93	70-130	0	0-20
418547	Copper	<5 ug/L	105	80-120	91	70-130	0	0-20
418547	Molybdenum	<20 ug/L	98	80-120	91	70-130	0	0-20
418547	Nickel	<20 ug/L	106	80-120	92	70-130	0	0-20
418547	Lead	<5 ug/L	101	80-120	90	70-130	0	0-20

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Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
418547	Antimony	<2 ug/L	101	80-120	83	70-130	0	0-20
418547	Selenium	<5 ug/L	103	80-120	112	70-130	0	0-20
418547	Thallium	<0.5 ug/L	101	80-120	90	70-130	0	0-20
418547	Uranium	<5 ug/L	99	80-120	92	70-130	0	0-20
418547	Vanadium	<5 ug/L	101	80-120	93	70-130	0	0-20
418547	Zinc	<50 ug/L	107	80-120	109	70-130	0	0-20
418548	Mercury	<0.1 ug/L	104	76-123	104	70-130	0	0-20
418559	Conductivity	<5 uS/cm	99	90-110			1	0-5
418559	pH		98	90-110			0	0-5
418597	Chromium VI	<10 ug/L	99	80-120	100	70-130	0	0-35

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Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
418389	Sodium	ICP-OES	2022-03-11	2022-03-11	Z_S	M SM3120B-3500C
418426	Chloride	IC	2022-03-11	2022-03-14	AaN	SM 4110
418435	Tetrachloroethane, 1,1,1,2-	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Trichloroethane, 1,1,1-	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Tetrachloroethane, 1,1,2,2-	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Trichloroethane, 1,1,2-	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Dichloroethane, 1,1-	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Dichloroethylene, 1,1-	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Dichlorobenzene, 1,2-	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Dichloroethane, 1,2-	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Dichloropropane, 1,2-	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	1,3,5-trimethylbenzene	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Dichlorobenzene, 1,3-	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Dichloropropene, 1,3-	GC-MS	2022-03-14	2022-03-14	YH	EPA 8260
418435	Dichlorobenzene, 1,4-	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Acetone	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Benzene	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Bromodichloromethane	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Bromoform	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Bromomethane	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Dichloroethylene, 1,2-cis-	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Dichloropropene, 1,3-cis-	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Carbon Tetrachloride	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Chloroethane	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Chloroform	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Dibromochloromethane	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Dichlorodifluoromethane	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Methylene Chloride	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Ethylbenzene	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Ethylene dibromide	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Hexane (n)	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Xylene, m/p-	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260

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Methods references and/or additional QA/QC information available on request.

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Feng Li
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1973148
Date Submitted: 2022-03-09
Date Reported: 2022-03-16
Project: 02112512
COC #: 216297

Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
418435	Methyl Ethyl Ketone	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Methyl Isobutyl Ketone	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Methyl tert-Butyl Ether (MTBE)	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Chlorobenzene	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Xylene, o-	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Styrene	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Dichloroethylene, 1,2-trans-	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Dichloropropene, 1,3-trans-	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Tetrachloroethylene	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Toluene	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Trichloroethylene	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Trichlorofluoromethane	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418435	Vinyl Chloride	GC-MS	2022-03-11	2022-03-12	YH	EPA 8260
418437	Xylene Mixture	GC-MS	2022-03-14	2022-03-14	YH	EPA 8260
418438	PHC's F1	GC/FID	2022-03-14	2022-03-14	YH	CCME O.Reg 153/04
418441	PHC's F1-BTEX	GC/FID	2022-03-14	2022-03-14	YH	CCME O.Reg 153/04
418471	Cyanide (CN-)	Skalar CN Analyzer	2022-03-14	2022-03-14	Z_S	SM4500-CNC/MOE E3015
418481	Chloride	IC	2022-03-14	2022-03-14	AaN	SM 4110
418507	PHC's F2	GC/FID	2022-03-15	2022-03-15	R_G	CCME O.Reg 153/04
418507	PHC's F3	GC/FID	2022-03-15	2022-03-15	R_G	CCME O.Reg 153/04
418507	PHC's F4	GC/FID	2022-03-15	2022-03-15	R_G	CCME O.Reg 153/04
418547	Silver	ICAPQ-MS	2022-03-15	2022-03-15	SD	EPA 200.8
418547	Arsenic	ICAPQ-MS	2022-03-15	2022-03-15	SD	EPA 200.8
418547	Boron (total)	ICAPQ-MS	2022-03-15	2022-03-15	SD	EPA 200.8
418547	Barium	ICAPQ-MS	2022-03-15	2022-03-15	SD	EPA 200.8
418547	Beryllium	ICAPQ-MS	2022-03-15	2022-03-15	SD	EPA 200.8
418547	Cadmium	ICAPQ-MS	2022-03-15	2022-03-15	SD	EPA 200.8
418547	Cobalt	ICAPQ-MS	2022-03-15	2022-03-15	SD	EPA 200.8
418547	Chromium Total	ICAPQ-MS	2022-03-15	2022-03-15	SD	EPA 200.8
418547	Copper	ICAPQ-MS	2022-03-15	2022-03-15	SD	EPA 200.8
418547	Molybdenum	ICAPQ-MS	2022-03-15	2022-03-15	SD	EPA 200.8
418547	Nickel	ICAPQ-MS	2022-03-15	2022-03-15	SD	EPA 200.8
418547	Lead	ICAPQ-MS	2022-03-15	2022-03-15	SD	EPA 200.8

Results relate only to the parameters tested on the samples submitted.
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MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Feng Li
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1973148
Date Submitted: 2022-03-09
Date Reported: 2022-03-16
Project: 02112512
COC #: 216297

Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
418547	Antimony	ICAPQ-MS	2022-03-15	2022-03-15	SD	EPA 200.8
418547	Selenium	ICAPQ-MS	2022-03-15	2022-03-15	SD	EPA 200.8
418547	Thallium	ICAPQ-MS	2022-03-15	2022-03-15	SD	EPA 200.8
418547	Uranium	ICAPQ-MS	2022-03-15	2022-03-15	SD	EPA 200.8
418547	Vanadium	ICAPQ-MS	2022-03-15	2022-03-15	SD	EPA 200.8
418547	Zinc	ICAPQ-MS	2022-03-15	2022-03-15	SD	EPA 200.8
418548	Mercury	CV AA	2022-03-15	2022-03-15	AaN	M SM3112B-3500B
418559	Conductivity	Auto Titrator	2022-03-15	2022-03-15	AsA	SM2320,2510,4500H/F
418559	pH	Auto Titrator	2022-03-15	2022-03-15	AsA	SM2320,2510,4500H/F
418597	Chromium VI		2022-03-16	2022-03-16	SKH	SM 3500-Cr B

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Environment Testing

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
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M9W 5W8
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Report Number: 1973148
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Project: 02112512
COC #: 216297

CWS for Petroleum Hydrocarbons in Soil - Tier 1**Notes:**

1. The laboratory method complies with CCME Tier 1 reference method for PHC in soil. It is validated for laboratory use.
2. Where the F1 fraction (C6 to C10) and BTEX are both measured, F1-BTEX is reported.
3. Where the F2 fraction (C10 to C16) and naphthalene are both measured, F2-naphthalene is reported.
4. Where the F3 fraction (C16 to C34) and PAHs* are both measured, F3-PAH is reported.
5. F4G is analyzed if the chromatogram does not descend to baseline before C50. Where F4 (C34 to C50) and F4G are both reported, the higher result is compared to the standard.
6. Unless otherwise stated in the sample comments, the following criteria have been met where applicable:
 - nC6 and nC10 response factors within 30% of response factor for toluene;
 - nC10, nC16, and nC34 response factors within 10% of each other;
 - C50 response factors within 70% of nC10 + nC16 + nC34 average; and,
 - Linearity is within 15%.
7. Unless otherwise stated in the sample comments, sampling requirements and analytical holding times have been met.
8. Gravimetric heavy hydrocarbons (F4G) cannot be added to the C6 and C50 hydrocarbons.
9. *PAHs = phenanthrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene and pyrene.

401 Magnetic Drive, Unit #1, North York, ON, M3J 3H9 - Telephone: 416-661-5287 • 380 Vansickle Road, Unit #630, St. Catharines, ON, L2S 0B5 - Telephone: 905-680-8887 • 608 Norris Court, Kingston, ON, K7P 2R9 - Telephone: 613-634-9307

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Feng Li
Invoice to: EnGlobe Corp.
PO#:

Report Number: 1973411
Date Submitted: 2022-03-16
Date Reported: 2022-03-23
Project: 02112512.000
COC #: 216831
Temperature (C): 7
Custody Seal:

Page 1 of 7

Dear Feng Li:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

Long Qu, Organics Supervisor

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise stated

Eurofins Environment Testing Canada Inc. is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at <http://www.cala.ca/scopes/2602.pdf>

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline or regulatory limits listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official guideline or regulation as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

Environment Testing

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Feng Li
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1973411
Date Submitted: 2022-03-16
Date Reported: 2022-03-23
Project: 02112512.000
COC #: 216831

Exceedence Summary

Sample I.D.	Analyte	Result	Units	Criteria

Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
Toronto, ON
M9W 5W8
Attention: Mr. Feng Li
PO#:
Invoice to: EnGlobe Corp.

Report Number: 1973411
Date Submitted: 2022-03-16
Date Reported: 2022-03-23
Project: 02112512.000
COC #: 216831

Guideline = O.Reg 153-T2-Groundwater-Coarse

PAH

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1614700
GW153
2022-03-16
BHMW15

1614701
GW153
2022-03-16
BHMW21

Analyte	Batch No	MRL	Units	Guideline		
1+2-methylnaphthalene	418927	0.1	ug/L		<0.1	<0.1
Acenaphthene	418725	0.1	ug/L	STD 4.1	<0.1	<0.1
Acenaphthylene	418725	0.1	ug/L	STD 1	<0.1	<0.1
Anthracene	418725	0.1	ug/L	STD 2.4	<0.1	<0.1
Benz[a]anthracene	418725	0.1	ug/L	STD 1	<0.1	<0.1
Benzo[a]pyrene	418725	0.01	ug/L	STD 0.01	<0.01	<0.01
Benzo[b]fluoranthene	418725	0.05	ug/L	STD 0.1	<0.05	<0.05
Benzo[ghi]perylene	418725	0.1	ug/L	STD 0.2	<0.1	<0.1
Benzo[k]fluoranthene	418725	0.05	ug/L	STD 0.1	<0.05	<0.05
Chrysene	418725	0.05	ug/L	STD 0.1	<0.05	<0.05
Dibenz[a h]anthracene	418725	0.1	ug/L	STD 0.2	<0.1	<0.1
Fluoranthene	418725	0.1	ug/L	STD 0.41	<0.1	<0.1
Fluorene	418725	0.1	ug/L	STD 120	<0.1	<0.1
Indeno[1 2 3-cd]pyrene	418725	0.1	ug/L	STD 0.2	<0.1	<0.1
Methylnaphthalene, 1-	418725	0.1	ug/L	STD 3.2	<0.1	<0.1
Methylnaphthalene, 2-	418725	0.1	ug/L	STD 3.2	<0.1	<0.1
Naphthalene	418725	0.1	ug/L	STD 11	<0.1	<0.1
Phenanthrene	418725	0.1	ug/L	STD 1	<0.1	<0.1
Pyrene	418725	0.1	ug/L	STD 4.1	<0.1	<0.1

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Client: EnGlobe Corp. (Toronto)
1821 Albion Road, Unit 7
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M9W 5W8
Attention: Mr. Feng Li
PO#:
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Report Number: 1973411
Date Submitted: 2022-03-16
Date Reported: 2022-03-23
Project: 02112512.000
COC #: 216831

Guideline = O.Reg 153-T2-Groundwater-Coarse

PCBs

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1614700
GW153
2022-03-16
BHMW15

1614701
GW153
2022-03-16
BHMW21

Analyte Batch No MRL Units Guideline

Aroclor 1016	418932	0.1	ug/L		<0.1	<0.1
Aroclor 1242	418932	0.1	ug/L		<0.1	<0.1
Aroclor 1248	418932	0.1	ug/L		<0.1	<0.1
Aroclor 1254	418932	0.1	ug/L		<0.1	<0.1
Aroclor 1260	418932	0.1	ug/L		<0.1	<0.1
Polychlorinated Biphenyls	418932	0.1	ug/L	STD 3	<0.1	<0.1

PCB Surrogate

Lab I.D.
Sample Matrix
Sample Type
Sample Date
Sampling Time
Sample I.D.

1614700
GW153
2022-03-16
BHMW15

1614701
GW153
2022-03-16
BHMW21

Analyte Batch No MRL Units Guideline

Decachlorobiphenyl	418937	0	%		65	66
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1821 Albion Road, Unit 7
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M9W 5W8
Attention: Mr. Feng Li
PO#:
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Report Number: 1973411
Date Submitted: 2022-03-16
Date Reported: 2022-03-23
Project: 02112512.000
COC #: 216831

Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
418725	Methlynaphthalene, 1-	<0.1 ug/L	80	50-140		50-140		0-30
418725	Methlynaphthalene, 2-	<0.1 ug/L	80	50-140		50-140		0-30
418725	Acenaphthene	<0.1 ug/L	80	50-140		50-140		0-30
418725	Acenaphthylene	<0.1 ug/L	78	50-140		50-140		0-30
418725	Anthracene	<0.1 ug/L	78	50-140		50-140		0-30
418725	Benz[a]anthracene	<0.1 ug/L	82	50-140		50-140		0-30
418725	Benzo[a]pyrene	<0.01 ug/L	79	50-140		50-140		0-30
418725	Benzo[b]fluoranthene	<0.05 ug/L	77	50-140		50-140		0-30
418725	Benzo[ghi]perylene	<0.1 ug/L	78	50-140		50-140		0-30
418725	Benzo[k]fluoranthene	<0.05 ug/L	68	50-140		50-140		0-30
418725	Chrysene	<0.05 ug/L	83	50-140		50-140		0-30
418725	Dibenz[a h]anthracene	<0.1 ug/L	74	50-140		50-140		0-30
418725	Fluoranthene	<0.1 ug/L	80	50-140		50-140		0-30
418725	Fluorene	<0.1 ug/L	80	50-140		50-140		0-30
418725	Indeno[1 2 3-cd]pyrene	<0.1 ug/L	78	50-140		50-140		0-30
418725	Naphthalene	<0.1 ug/L	78	50-140		50-140		0-30
418725	Phenanthrene	<0.1 ug/L	82	50-140		50-140		0-30
418725	Pyrene	<0.1 ug/L	80	50-140		50-140		0-30
418927	1+2-methylnaphthalene							
418932	Aroclor 1016	<0.1 ug/L	103		N/A		N/A	
418932	Aroclor 1242	<0.1 ug/L	103	60-140	N/A	60-140	N/A	0-30
418932	Aroclor 1248	<0.1 ug/L	103	60-140	N/A	60-140	N/A	0-30
418932	Aroclor 1254	<0.1 ug/L	103	60-140	N/A	60-140	N/A	0-30
418932	Aroclor 1260	<0.1 ug/L	103	60-140	N/A	60-140	N/A	0-30
418932	Polychlorinated Biphenyls	<0.1 ug/L	103	60-140		60-140		0-30

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1821 Albion Road, Unit 7
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Attention: Mr. Feng Li
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Invoice to: EnGlobe Corp.

Report Number: 1973411
Date Submitted: 2022-03-16
Date Reported: 2022-03-23
Project: 02112512.000
COC #: 216831

Test Summary

Batch No	Analyte	Instrument	Preparation Date	Analysis Date	Analyst	Method
418725	Methylnaphthalene, 1-	GC-MS	2022-03-18	2022-03-18	C_M	P 8270
418725	Methylnaphthalene, 2-	GC-MS	2022-03-18	2022-03-18	C_M	P 8270
418725	Acenaphthene	GC-MS	2022-03-18	2022-03-18	C_M	P 8270
418725	Acenaphthylene	GC-MS	2022-03-18	2022-03-18	C_M	P 8270
418725	Anthracene	GC-MS	2022-03-18	2022-03-18	C_M	P 8270
418725	Benz[a]anthracene	GC-MS	2022-03-18	2022-03-18	C_M	P 8270
418725	Benzo[a]pyrene	GC-MS	2022-03-18	2022-03-18	C_M	P 8270
418725	Benzo[b]fluoranthene	GC-MS	2022-03-18	2022-03-18	C_M	P 8270
418725	Benzo[ghi]perylene	GC-MS	2022-03-18	2022-03-18	C_M	P 8270
418725	Benzo[k]fluoranthene	GC-MS	2022-03-18	2022-03-18	C_M	P 8270
418725	Chrysene	GC-MS	2022-03-18	2022-03-18	C_M	P 8270
418725	Dibenz[a,h]anthracene	GC-MS	2022-03-18	2022-03-18	C_M	P 8270
418725	Fluoranthene	GC-MS	2022-03-18	2022-03-18	C_M	P 8270
418725	Fluorene	GC-MS	2022-03-18	2022-03-18	C_M	P 8270
418725	Indeno[1,2,3-cd]pyrene	GC-MS	2022-03-18	2022-03-18	C_M	P 8270
418725	Naphthalene	GC-MS	2022-03-18	2022-03-18	C_M	P 8270
418725	Phenanthrene	GC-MS	2022-03-18	2022-03-18	C_M	P 8270
418725	Pyrene	GC-MS	2022-03-18	2022-03-18	C_M	P 8270
418927	1+2-methylnaphthalene	GC-MS	2022-03-23	2022-03-23	C_M	P 8270
418932	Aroclor 1016	GC/ECD	2022-03-23	2022-03-23	R_G	EPA 8081B
418932	Aroclor 1242	GC/ECD	2022-03-23	2022-03-23	R_G	EPA 8081B
418932	Aroclor 1248	GC/ECD	2022-03-23	2022-03-23	R_G	EPA 8081B
418932	Aroclor 1254	GC/ECD	2022-03-23	2022-03-23	R_G	EPA 8081B
418932	Aroclor 1260	GC/ECD	2022-03-23	2022-03-23	R_G	EPA 8081B
418932	Polychlorinated Biphenyls	GC/ECD	2022-03-23	2022-03-23	R_G	EPA 8081B

Results relate only to the parameters tested on the samples submitted.
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Environment Testing

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Attention: Mr. Feng Li
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Invoice to: EnGlobe Corp.

Report Number: 1973411
Date Submitted: 2022-03-16
Date Reported: 2022-03-23
Project: 02112512.000
COC #: 216831

CWS for Petroleum Hydrocarbons in Soil - Tier 1**Notes:**

1. The laboratory method complies with CCME Tier 1 reference method for PHC in soil. It is validated for laboratory use.
2. Where the F1 fraction (C6 to C10) and BTEX are both measured, F1-BTEX is reported.
3. Where the F2 fraction (C10 to C16) and naphthalene are both measured, F2-naphthalene is reported.
4. Where the F3 fraction (C16 to C34) and PAHs* are both measured, F3-PAH is reported.
5. F4G is analyzed if the chromatogram does not descend to baseline before C50. Where F4 (C34 to C50) and F4G are both reported, the higher result is compared to the standard.
6. Unless otherwise stated in the sample comments, the following criteria have been met where applicable:
 - nC6 and nC10 response factors within 30% of response factor for toluene;
 - nC10, nC16, and nC34 response factors within 10% of each other;
 - C50 response factors within 70% of nC10 + nC16 + nC34 average; and,
 - Linearity is within 15%.
7. Unless otherwise stated in the sample comments, sampling requirements and analytical holding times have been met.
8. Gravimetric heavy hydrocarbons (F4G) cannot be added to the C6 and C50 hydrocarbons.
9. *PAHs = phenanthrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene and pyrene.

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[illegible]

Assessment of Past Uses

9541 Weston Road, Vaughan, Ontario

City of Vaughan
Final Report
Reference No.02112512.000

June 22, 2022
01-02112512.000-0100-EN-001-00



eNGLOBE

City of Vaughan
Reference No. 02112512.000

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Summary

Englobe Corp. (Englobe) was retained by the City of Vaughan (hereinafter referred to as the “Client”) to complete an Assessment of Past Uses for the property located at 9541 Weston Road in Vaughan, Ontario (hereinafter referred to as “Site” or “Project Area”). The Site is located on the east side of Weston Road, approximately 200 meters (m) south of the intersection of Weston Road and Ashberry Boulevard in the City of Vaughan, Ontario. It is an irregularly shaped parcel of land with approximately 4,092 m² in area, which is currently occupied with an asphalt paved parking lot and grassed area. The Site is surrounded by residential, commercial community and institutional buildings to the north and west, and woodlands to the south and east. Weston Road is adjacent to the west of the Site. The location of the Site is shown in the Site Location Plan, Figure 1 in Appendix A.

The Assessment of Past Uses is being completed for the Client in preparation of proposed fire station development work of the Site and the work described herein is to be completed in general accordance with the Ontario Regulation (O. Reg.) 406/19, On-Site and Excess Soil Management. Englobe understands that the filing of a Record of Site Condition (RSC) with the Ontario Ministry of the Environment, Conservation and Parks (MECP) is not required at this time.

The purpose of the Assessment of Past Uses is to identify any Potentially Contaminating Activities (PCAs) associated with the Site and surrounding properties within the Study Area to determine any Areas of Potential Environmental Concern (APECs) which may have affected the soil quality within the areas where soil is to be excavated as part of the proposed fire station development activities on the Site.

This assessment included a review of historic archival information for the Site and surrounding properties within the Study Area, interviews with the Site representative(s) and regulatory personnel if available, reconnaissance of the Site, and a report on the findings of the assessment. Since neighbouring properties may affect or be affected by the Site being assessed, the historical review also included surrounding properties within a 250 m radius from the boundary of the Site.

Based on the findings of this Assessment of Past Uses, APECs resulted from the PCAs which were identified at the Site and surrounding properties, are summarized in the table below.

Areas of Potential Environmental Concern

APEC	Location of APEC	Potentially Contaminating Activity (PCA)	Location of PCA	Contaminants of Potential Concern*	Media Potentially Impacted
APEC 1	Entire Site	Historical use of fill materials PCA# 30 - Importation of Fill Materials of Unknown Quality	On-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR and pH, PHCs, BTEX, VOCs, PAHs, PCBs, OCPs	Soil
APEC 2	The north portion of the Site	Registered as a waste generator of photo processing wastes and inorganic laboratory chemicals PCA# Undefined PCA No.	Off-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, and VOCs	Soil

Notes: *
 PHCs - Petroleum Hydrocarbon Fractions F1 to F4
 BTEX - Benzene, Toluene, Ethylbenzene and Xylenes
 VOCs - Volatile Organic Compounds
 PAHs - Polycyclic Aromatic Hydrocarbons
 PCBs- Polychlorinated Biphenyl

OCPs - Organochlorine Pesticides
B-HWS-Hot Water Soluble Boron
EC-Electrical Conductivity
SAR-Sodium Absorption Ratio

Based on the information obtained as part of this Assessment of Past Uses conducted under the supervision of Sam Voore, P.Eng., QP_{ESA}, two (2) APECs associated with one (1) on-site PCAs and one (1) off-site PCAs were identified at the Project Area.

Due to current and historical PCAs are identified on the Site and surrounding properties within the Study Area, a Soil Characterization will be required and is recommended in order to assess the environmental quality of the soil on the Site based on the requirements of the O. Reg. 406/19.

Accordingly, a Sampling and Analysis Plan is required to be developed prior to the commencement of the Soil Characterization. The Sampling and Analysis Plan should be designed to meet the requirements of the O. Reg 406/19 and provide a soil quality investigation of the APECs identified on the Site.

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1 Introduction

Englobe Corp. (Englobe) was retained by the City of Vaughan (hereinafter referred to as the “Client”) to complete an Assessment of Past Uses for the property located at 9541 Weston Road in Vaughan, Ontario (hereinafter referred to as “Site” or “Project Area”). The Site is located on the east side of Weston Road, approximately 200 m south of the intersection of Weston Road and Ashberry Boulevard in the City of Vaughan, Ontario. It is an irregularly shaped parcel of land with a total of approximately 4,092 m² in area, which is currently occupied with an asphalt paved parking lot and grassed area. The Site is surrounded by residential, commercial community and institutional buildings to the north and west, and woodlands to the south and east. Weston Road is adjacent to the west of the Site. The location of the Site is shown on the Site Location Plan, Figure 1 in Appendix A.

The Assessment of Past Uses is being completed for the Client in preparation of proposed fire station development work of the Site and the work described herein is to be completed in general accordance with the Ontario Regulation (O. Reg.) 406/19, On-Site and Excess Soil Management. Englobe understands that the filing of a Record of Site Condition (RSC) with the Ontario Ministry of the Environment, Conservation and Parks (MECP) is not required at this time.

The purpose of the Assessment of Past Uses is to identify any Potentially Contaminating Activities (PCAs) associated with the Site and surrounding properties within the Study Area to determine any Areas of Potential Environmental Concern (APECs) which may have affected the soil quality within the areas where soil is to be excavated as part of the proposed fire station development activities on the Site.

The work described herein was carried out in general accordance with the Englobe’s scope of work and cost estimation in correspondence with the Client and authorized via email on December 14, 2021.

Information gathered from discussions and correspondence during this assessment include the following individuals and/or organizations:

- Environmental Risk Information Services (ERIS), a division of Glacier Media Inc.;
- Ontario Ministry of Natural Resources and Forestry (MNRF);
- Public Information Services, Technical Standards and Safety Authority (TSSA); and
- Freedom of Information and Protection of Privacy Act, Ontario Ministry of the Environment Conservation and Parks (MECP).

2 Scope of Investigation

This assessment included a review of historical archival information for the Site and surrounding properties within the Study Area, information requests and review of relevant documents, a Site reconnaissance, and a final report on the findings of the assessment. No intrusive investigation or chemical testing (i.e. sampling or testing of air, soil, groundwater, surface water or building materials) was carried out during the assessment period. In addition, this Assessment of Past Uses did not include an assessment of biological features or related aspects of the natural environment.

Since neighbouring properties may affect or be affected by the property being assessed, the historical review also included the adjoining and surrounding properties within 250 m of the Site boundary, including the following:

The information review for the Site and surrounding properties included the following sources of information:

- Current and historical land use of the Site and neighbouring properties;
- Known or suspected contamination on the Site and the neighbouring properties; and
- Site topography and groundwater flow directions which would influence the migration of contaminants onto or away from the Site.

The information review for the Site and surrounding properties included the following sources of information:

- Interviews with the Site representative, and regulatory and municipal personnel;
- Environmental source information, including MECP search databases, and a review of an ERIS Database Report prepared by ERIS;
- A review of an Enviroscan Report, including Fire Insurance Plans (FIPs) prepared by Opta Information Intelligence, an SCM Company; and
- A review of physical setting sources, including aerial photographs, topography, hydrology and geology maps, the presence of fill materials, water bodies and areas of natural significance, and water well records.

The Site reconnaissance is intended to observe the following:

- Hazardous materials - usage, storage, disposal, treatment and transport on the property (if any);
- Product handling, raw material storage/transportation, equipment cleaning, etc.;
- Storage tanks and containers - above ground storage tanks (ASTs) and underground storage tanks (USTs);
- Water supply - source of potable water;
- Stained soil, pavement, concrete, floors and walls;
- Sewage disposal - pits, lagoons, septic systems and wastewater treatment;
- Topographic, geological and hydrogeological features;
- Watercourses, ditches and standing water; and
- Adjacent property land uses that might impact the Site.

3 Records Review

3.1 General

3.1.1 Study Area Determination

For the purpose of Assessment of Past Uses, Englobe has considered the assessment of the Study Area that includes the Site and surrounding properties located entirely or partially within a 250 m offset of the Site boundary (Study Area, refer to the Site and Surrounding Land Use Plan, Figure 2 in Appendix A). It is Englobe's opinion that there are no additional properties outside of the 250 m radius that should be included as part of this Assessment of Past Uses.

3.1.2 First Developed Use Determination

According to the available aerial photographs, the Site has been partially developed as residential use prior to 1954, and all on-site buildings/structures appear to be demolished sometime between 1988 and 1995. It appears that the Site was fully developed as a parking lot as part of Vellore Cultural Daycamp since 2002 and has remained the same property use as to the present.

3.1.3 Fire Insurance Plans (FIPs)

Englobe requested copies of available Fire Insurance Plans (FIPs) and other relevant insurance products from Opta Information Intelligence (Opta) through ERIS. Opta Enviroscan maintains records, including plans and maps for Canadian cities, which indicate past and existing structures on properties, including above-ground storage tanks (ASTs) and underground storage tanks (USTs). There were no insurance plans or inspection reports available for the Site or the Study Area. A copy of this report is presented in Appendix B.

3.1.4 City Directory Information

The City Directory Search provides the names of businesses that were operating at certain municipal addresses at a point in time. They do not provide details as to the activities at the properties. A city directory search for the Property Area was requested through ERIS. The city directory search results show the Site area and properties within 250 m of the Site. Pertinent information gleaned from the city directory search that have potential to impact the environmental condition of the soil or groundwater at the Site are summarized in Table 1 below. The full results of the city directory search are provided in Appendix B.

Table 1: City Directory Search Summary

Year	Municipal Address	Distance/Direction to Project Area	Listing
1999	9541 Weston Road	Onsite	Vellore Cultural Daycamp
	9465 Weston Road	110 m south	Residential building
	9516 Weston Road	70 m northwest	Address Not Listed

Year	Municipal Address	Distance/Direction to Project Area	Listing
	9520 Weston Road	75 m northwest	Address Not Listed
	9544 Weston Road	107 m northwest	Address Not Listed
	9545 Weston Road	60 north	Address Not Listed
	9555 Weston Road	80 northeast	Address Not Listed
	9564 Weston Road	130 m northwest	Address Not Listed
	9565 Weston Road	65 m north	Residential building
	9575 Weston Road	165 m north	Residential building
	9585 Weston Road	190 m north	Residential building
1994, 1989, 1983, 1977-78, 1972-73, 1966, 1960	9541 Weston Road	Onsite	Address Not Listed
	Same as above	Offsite	Address Not Listed

Regarding the above-noted database records, no onsite or offsite records were considered to be a potential environmental concern for the Site.

3.1.5 Chain of Title

Englobe obtained the land parcel information from GeoWarehouse on December 15, 2021, regarding the current and past owners of the land parcels comprising the Site. The results of the land title search are shown in the following table.

Table 2: Summary of Title Search Findings

Date	Details
Prior to 1999	Unknown
1999-Present	The Corporation of the City of Vaughan

3.1.6 Previous Reports

Englobe requested copies of all available previous environmental reports, which were completed for the Site. No reports regarding relevant information for the Assessment of Past Uses were available.

3.2 Environmental Source Information

3.2.1 MECP Freedom of Information (FOI)

An FOI request was submitted to the MECP for information regarding any environmental concerns, orders, spills, investigations/prosecutions, Waste Generator Numbers/Classes and Certificates of

Approval related to the Site. At the time of writing this report, Englobe has not received a response from the MECP. Any relevant information, which may be received from the MECP will be forwarded as an addendum to this report. A copy of the MECP request is included in Appendix C.

3.2.2 Environmental Risk Information Services (ERIS)

A regulatory database search for the Site was carried out by ERIS in December 2021. The ERIS Database Report included a review of public and private database records for the Site and surrounding properties within the Study Area. The ERIS Database Report included a diagram, a description of each database, and a description of each record when information was available. In total, there was 1 record found for the Site and 54 records found for the Study Area, as summarized in Table 3.

Table 3: ERIS Database Search Results

Database Name	Database	Project Area	Within 250 m
Borehole	BORE	0	1
Environmental Compliance Approval	ECA	0	1
Ontario Regulation 347 Waste Generators Summary	GEN	0	23
Fuel Oil Spills and Leaks	INC	0	1
Pesticide Register	PES	0	2
Record of Site Condition	RSC	0	1
Scott's Manufacturing Directory	SCT	0	1
Water Well Information System	WWIS	1	14
TOTAL RECORDS		1	54

The ERIS report was reviewed in full, and the relevant environmental information that has potential to impact the environmental condition of the soil or groundwater pertaining to the Site and surrounding properties within the Study Area is summarized in Tables 4 and 5, respectively. The full results of the ERIS Database Report are provided in Appendix B.

Table 4: ERIS Report Summary - Site

Address	Database	Description	Potential Environmental Concern
Onsite	WWIS	The record describes an abandoned well.	Due to the historical occurrence and low likelihood of impact to the environment, the record is not considered to be a potential environmental concern for the Site.

Table 5: ERIS Report Summary - Surrounding Properties

Address Site	Distance and Direction	Database	Description	Potential Environmental Concern
9565 Weston Road	65 m north	GEN	The property was registered as a waste generator of photo processing wastes and inorganic laboratory chemicals.	Due to the historical occurrence and moderate to high likelihood of impact to the environment, the record is considered to be a potential environmental concern for the Site.
141 Montcalm Boulevard	155 m southwest	GEN	The property was registered as a waste generator of organic and inorganic laboratory chemicals.	Due to the historical occurrence, distance and down-gradient from the Site and low likelihood of impact to the environment, the record is not considered to be a potential environmental concern for the Site.

Address Site	Distance and Direction	Database	Description	Potential Environmental Concern
82 Johnswood Crescent	250 m east	PES	The property was registered as a pesticide operator with legacy licenses.	Due to the historical occurrence, distance and cross-gradient from the Site and low likelihood of impact to the environment, the record is not considered to be a potential environmental concern for the Site.

Notes: **Bold Records** indicate PCAs that contribute to APECs for the Site.

Regarding the above-noted database records, no onsite record was considered to be a potential environmental concern for the Site. Only one offsite (9565 Weston Road) record of a waste generator is considered as a potential environmental concern for the Site.

3.2.3 Technical Standards and Safety Authority (TSSA)

The TSSA was contacted for information regarding fuel storage tanks with respect to the Site and the surrounding properties located at 9541 Weston Road, 9545 Weston Road, 9591 Weston Road, 9555 Weston Road, 9581 Weston Road, 9587 Weston Road and 9591 Weston Road. A response received from TSSA via e-mail on February 11, 2022, indicates that no records were on file for the Site and requested addresses. A copy of the TSSA response is included in Appendix C.

3.3 Physical Setting Sources

3.3.1 Aerial Photographs

Aerial photographs can provide an indication of historical land uses with respect to the Site and surrounding properties. Copies of nine aerial photographs in the years of 1954, 1970, 1978, 1988, 1995, 1999, 2002, 2014 and 2021 were obtained from York Region General Map Historical Aerials. Aerial photographs showing the approximate Site location and features and surrounding properties are presented in Appendix B.

Table 6: Aerial Photograph Summary

Aerial Photograph Year	Site Observations	Surrounding Properties Observations
1954	The Site appears to be residential use; The onsite structures are observed at the southwest portion of the Site.	The north adjacent building is observed. The east and south adjacent properties appear to be undeveloped/vacant or Agricultural lands. Weston Road appears to be developed at west adjacent to the Site.
1970	There are no significant changes to the Site compared to the previous photograph.	More residential buildings appear to be developed within the Study Area.
1978	One warehouse/structure is observed at the northeast portion of the Site.	There are no significant changes to the surrounding properties compared to the previous photograph.
1988	There are no significant changes to the Site compared to the previous photograph.	There are no significant changes to the surrounding properties compared to the previous photograph.
1995	All onsite buildings/structures appear to be demolished.	There are no significant changes to the surrounding properties compared to the previous photograph
1999	The Site appears to be vacant and used as a park.	There are no significant changes to the surrounding properties compared to the previous photograph.

Aerial Photograph Year	Site Observations	Surrounding Properties Observations
2002	The Site appears to be developed as a parking lot.	Vellore Hall Park is observed to be developed at north and adjacent properties. More residential buildings appear to be developed in the north and west portions of the Study Area.
2014	There are no significant changes to the Site compared to the previous photograph.	There are no significant changes to the surrounding properties compared to the previous photograph.
2021	There are no significant changes to the Site from the previous photograph.	There are no significant changes to the surrounding properties compared to the previous photograph.

3.3.2 Topography, Hydrology, and Geology

As part of this Assessment of Past Uses, Englobe completed a review of the following topographic, geological, and physiographic maps showing the Site and surrounding areas:

- Natural Heritage Information Centre (NHIC) Interactive Map, Ministry of Natural Resources and Forestry (MNRF, 2020);
- 2010 Ontario Base Map (OBM), Ontario Ministry of Natural Resources supplied by ERIS, scale 1: 22,000;
- Ontario Ministry of Natural Resources, Ontario Geological Survey, Physiography of Southern Ontario; and
- Ontario Geological Survey 2000. Quaternary Geology, seamless coverage of the Province of Ontario, Ontario Geological Survey, Data Set 15 - Revised, scale 1:1,000,000.

The Site is generally flat with elevation ranging from approximately 225 m to 226 m above sea level (asl). The nearest water body is an unnamed creek and/or a water pond located approximately 600 m northeast to the Site and drains southeast. The shallow groundwater is inferred to flow in south to southeasterly direction based on topography and location of nearby water bodies. Depending on climate conditions, surface water, seasonal fluctuation, ditching, underground services, and ground surface cover may affect the shallow groundwater flow on a local level.

The Site is located within an area with quaternary geology consists of Halton Till including predominantly silt to silty clay matrix, high in matrix carbonate content and clast poor Pleistocene. The physiography in the area of the Site and Study Area is Bevelled Till Plains. The surficial geology of the Site and Study Area consists of clayey silt to sandy silt. The bedrock geology consists of Georgina Bay Formation, Blue Mountain Formation, Billings Formation, Collingwood Member, Eastview Member with shale, limestone, dolostone and siltstone.

Based on the MECP well records, the depth to the bedrock within the Study Area ranges from approximately 64 m to 91 m below the ground surface (bgs). Based on MECP Well records for the surrounding properties, the soil stratigraphy at the Site is expected to comprise of clayey silt, overlaying clay and silty clay.

3.3.3 Fill Materials

Based on the historical photographs, some structures were demolished at the Site. The Site has been used for a parking lot where asphalt paved ground was observed during the Site visit on January 14, 2022. There is a potential that fill material was used on the Site during development. The unknown environmental quality of the fill material is a potential environmental concern for the Site.

3.3.4 Water Bodies and Areas of Natural Significance

During the Site visit on January 14, 2022, no water body was observed at the Site or adjacent properties. The closest water body is an unnamed creek and/or a water pond, which is approximately 600 m to the northeast of the Site.

Based on a review of information provided on the MNRF Natural Heritage on-line mapping indicates that there are no local or provincially significant wetlands (PSW) or ANSI on or directly adjacent to the Site.

3.3.5 Well Records

Based on a review of the well records presented in the ERIS report and the MECP well record Map (MECP 2021), there was one (1) abandoned well identified on the Site. Fourteen (14) groundwater wells were identified on surrounding properties, including 11 domestic water supply wells, 2 monitoring wells and 1 non-specified well listed for the surrounding properties within the Study Area.

4 Interviews

An interview was conducted through an interview questionnaire provided to the Supervisor (Alex Sorbara) of Facility Management Department in the City of Vaughan. Alex Sorbara has completed the questionnaire on January 21, 2022. The completed Interview Questionnaire is provided in Appendix C. A summary of pertinent information provided to Englobe are listed as follows:

- Alex Sorbara, the current facility supervisor of various sites/buildings in the City of Vaughan.
- The Site use is recreation/community use and is surrounded by park/residential properties to the east, woodlot to the south, regional road (Weston Road) to the west, and commercial plaza properties to the north.
- There are no underground storage tanks (USTs) or aboveground storage tanks (ASTs).
- There are no chemicals storage at the Site, except for regular cleaning supplies stored in the north adjacent building.
- There are no asbestos-containing materials (ACMs) in the buildings, and ACMs survey or audit has been conducted for the buildings at north adjacent properties.
- There are no Polychlorinated Biphenyls (PCBs), transformers or capacitors at the Site;
- There is no Urea Formaldehyde Foam Insulation (UFFI) at the Site.
- No spill occurred or recorded at the Site.
- The north adjacent properties were developed in approximately 1990s for commercial use.
- No fill materials have been imported to the Site.
- No previous environmental assessment, environmental monitoring wells, or private and public water wells have been conducted/installed at the Site.

5 Site Reconnaissance

A visual survey of the Site and surrounding properties was completed by Englobe staff on January 14, 2022. Weather conditions were sunny with a temperature of -20 °C. The ground was partially covered by snow.

Photographs showing the areas of the Site and surrounding properties are provided in Appendix D.

5.1 Physical Impediments

No physical impediments were encountered during the Site reconnaissance.

5.2 Observations at the Site

The Site was irregular in shape and was approximately 4,092 m² in area. The Site is accessed from the west via Weston Road.

There are no onsite buildings or structures. The majority of the Site is covered by a parking lot with an asphalt paved surface. The remainder of the Site is grass covered park area. The Site has an open area in the woodlot to the east and south.

The Site features are shown in the Site Plan, Figure 3 in Appendix A.

5.2.1 On-Site Buildings/Structures

No buildings/structures are located on the Site. Buried and underground infrastructure were not assessed by Englobe. Underground utilities including gas, water, sewer, communication cables and electric lines were observed.

5.2.2 Site Operations

The Site is a community parking providing accessibility to vehicles and pedestrians. No current operations are undertaken at the Site.

5.2.3 Utilities and Mechanical Systems

5.2.3.1 Wastewater

No wastewater is generated at the Site. However, underground sanitary sewer services from the adjacent/surrounding properties may extend throughout the Site.

5.2.3.2 Water

No potable water supply was observed at the Site. However, underground water supply services from the adjacent/surrounding properties are expected to extend throughout the Site. Domestic water supply wells were identified in the ERIS report for the Site and the surrounding properties.

5.2.3.3 Stormwater

Stormwater is directed to catch basins observed at the parking area of the Site which transfer the stormwater to the municipal system extending throughout the Site.

5.2.3.4 Electricity

Electricity extends along the west adjacent property (Weston Road) using overhead hydro poles.

5.2.3.5 Heating and Cooling

No evidence of heating and cooling systems was observed at the Site during the Site visit.

5.2.4 Waste Management

5.2.4.1 Hazardous Waste Generation

The Site is not registered as a waste generator.

5.2.4.2 Solid Waste Generation

No solid wastes are generated at the Site. Solid waste is observed stored at the parking lot for pickup on garbage days.

5.2.5 Above ground and Underground Storage Tanks

No ASTs or indications of USTs (fill/vent pipes) were observed at the Site.

5.2.6 Pits/Floor Drains/Trenches and Oil/Water Separators

No pits, floor drains, trenches, or oil/water separators were observed at the Site. Stormwater catch basins were observed at various locations throughout the Site.

5.2.7 Chemical Storage and Handling

5.2.7.1 Storage of Products and Wastes

No storage of products and wastes were observed at the Site.

5.2.7.2 Compressed Gas Storage

No storage of compressed gases was observed at the Site.

5.2.7.3 Unidentified Substances

No unidentified substances were observed at the Site.

5.2.8 Spills and Staining

No significant signs of staining or distressed vegetation were observed at the Project Area. Minor oil staining from the vehicles was noted at various locations at the parking lot of the Site.

5.2.9 Railway Lines

No railway lines were observed at the Site.

5.2.10 Air Emissions

No air emission sources were observed at the Site, other than the emission from the vehicles while parking.

5.2.11 Building Materials

The Site consists of a parking lot. No building structures were observed on the Site. As such, no evidence of hazardous building materials (i.e. asbestos containing or lead-based materials, PCBs, etc.) were observed at the Site.

5.2.12 Special Attention Items

Table 7: Special Attention Items

Characteristics	Comments
Asbestos Containing Material	Although no building structures are present at the Site, asbestos is suspected to be present in the asphalt pavement.
Lead	No evidence of the current use of lead-based materials is present at the Site. The historical buildings at the Site may use lead-based painting materials.
(Polychlorinated Biphenyls) PCBs	No evidence of the current use of PCBs is present at the Site. The historical buildings at the Site may use light ballast containing PCBs.
Ozone Depleting Substances (ODS)	No air handler units, rooftop units or refrigerators were noted within the Site. Thus, it is unlikely that ODS is present at the Site.
Radon Gas	Based on the geology of the area, radon gas accumulation is not expected to be a significant environmental concern at the Site. However, it should be noted that no testing for radon gas was completed at the Site during this assessment. Based on Radon Potential Map Ontario, the Radon level at the Site area is elevated.
Electromagnetic Frequencies (EMFs)	High-voltage transmission lines, which could generate significant electromagnetic fields, were not identified on or adjacent to the Site. Although electromagnetic fields are assumed to be typical for developed areas, no testing was performed as part of this assessment.
Noise and Vibration	Noise generated at the Site during the Site visit was limited to the nearby roadways, which may be considered a noise source. No noise or vibration testing was performed as part of this assessment.

5.3 Observations at Surrounding Properties

Neighbouring properties were observed during the Site reconnaissance from accessible public locations. These properties are identified in the attached Site and Surrounding Land Use Plan, Figure 2, contained in Appendix A, and are summarized in Table 8.

Table 8: Surrounding Property Observations

Position Relative to Project Area	Property Description	Potential for Contamination
North	Community property, commercial properties further north	These properties are not considered to be of potential environmental concern for the Site area.
South	Woodlot, residential further south	These properties are not considered to be of potential environmental concern for the Site area.
West	Community property (Weston Road), residential further west	These properties are not considered to be of potential environmental concern for the Site area.
East	Woodlot, residential further east	These properties are not considered to be of potential environmental concern for the Site area.

6 Review and Evaluation of Information

6.1 Current and Past Uses

Based on the information reviewed, the current and past land uses at the Site are provided in Table 9.

Table 9: Current and Past Uses

Dates	Names of Owner	Description of Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, etc.
Prior to 1954	Unknown	Unknown	Unknown
1954 to 1999	Unknown	Residential use	Onsite structures are observed at the southwest portion of the Site in 1954, which appears to be demolished sometime between 1988 and 1995.
1999 to 2002	City of Vaughan	Community use	The Site was a portion of a park listed as Vellore Cultural Daycamp.
2002 to present	City of Vaughan	Community use	The Site appeared to be fully developed as a parking lot.

6.2 Potentially Contaminating Activities

Based on the information obtained and reviewed as part of this assessment, current and historical potentially contaminating activities (PCAs) associated with the Site and surrounding properties within the Study Area are identified as following table:

Table 10: Potentially Contaminating Activity

No.	PCA Descriptions and Details	PCA Location	Source	Risk	Potentially Impacted Media
1	Fill material might have been imported to the Site during construction	On-site	Aerial Photograph	Moderate	Soil
2	The property was registered as a waste generator of photo processing wastes and inorganic laboratory chemicals.	Off-Site 9565 Weston Road	ERIS	Moderate to Low	Soil

6.3 Areas of Potential Environmental Concern

Areas of Potential Environmental Concern (APECs) on the Site associated with the identified on-Site and off-Site PCAs are shown on the attached Areas of Potential Environmental Concern, Figure 3, contained in Appendix A, and are presented in the following table.

Table 11: Areas of Potential Environmental Concern

APEC	Location of APEC	Potentially Contaminating Activity (PCA)	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC 1	Entire Site	Historical use of fill materials PCA# 30 - Importation of Fill Materials of Unknown Quality	On-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR and pH, PHCs, BTEX, VOCs, PAHs, PCBs, OCPs	Soil
APEC 2	The north portion of the Site	Registered as a waste generator of photo processing wastes and inorganic laboratory chemicals PCA# Undefined PCA No.	Off-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, and VOCs	Soil

6.4 Conceptual Site Model

The Conceptual Site Model for this Assessment of Past Uses is summarized in Table 12 below.

Table 12: Conceptual Site Model

Conceptual Site Model	Assessment of Past Uses Findings / Details
Show any existing buildings and structures	No buildings or structures are located on the Site.
Identify and locate water bodies located in whole or in part on the Study Area	No water bodies were observed on the Site or Study Area.
Identify and locate any areas of natural significance located in whole or in part on the Study Area	There were no ANSIs or PSWs at the Site or within the Study Area.
Locate any drinking water wells at the Site	Based on a review of the well records presented in the ERIS report, no potable water supply well was identified on the Site, while 11 domestic water supply wells were identified on the surrounding properties within the Study Area.
Show roads, including names, within the Study Area	The Site is located to the east of Weston Road. The APU Study Area consists of a parking lot in the southeastern quadrant of the intersection of Weston Road and Ashberry Boulevard in the City of Vaughan, Ontario.
Show uses of properties adjacent to the Site	The surrounding and adjacent properties consist of residential, commercial and institutional properties.
Identify and locate any PCAs/APECs	PCAs identified for the Site are summarized in Table 10 in section 6.2. The locations of the PCAs are shown on the Potential Contaminating Activity, Figure 3 in Appendix A. APECs identified for the Site are summarized in Table 11 in section 6.3. The locations of the APECs are shown on the Area of Potential Environmental Concern, Figure 3 in Appendix A.
Describe and assess any areas where potentially contaminating activity on or potentially affecting the Site has occurred	Based on the PCAs and identified APECs on the Site, media potentially impacted includes soil and groundwater.
Describe and assess and contaminants of potential environmental concern	Based on the PCAs and identified APECs on the Site, the following contaminants of potential environmental concern have been identified: PHC (Fractions F1-F4), BTEX, PAHs, PCBs, VOCs, OCPs, Metals As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR and pH.

Conceptual Site Model	Assessment of Past Uses Findings / Details
Describe and assess the potential for underground utilities, if any, to affect contaminant distribution and transport	The underground utilities consist of sanitary/storm sewers, water distribution, gas, communication, and/or hydro services. There is potential for these utilities to affect contaminant distribution and transport given that the underground utility corridors can serve as preferential pathways.
Describe and assess available regional or Site specific geological and hydrogeological information	<p>Based on a review of the contour lines from the OBM, the topography of the Site and the surrounding area appears to be relatively flat and gently slopes to the southeast. The Site appears to be at elevations between approximately 225 m and 226 m asl, depending on location.</p> <p>The surficial geology of the Site and Study Area consists of clayey silt to sandy silt. The bedrock geology consists of Georgina Bay Formation, Blue Mountain Formation, Billings Formation, Collingwood Member, Eastview Member with shale, limestone, dolostone and siltstone.</p> <p>Based on aerial photographs, an unnamed creek, which is approximately 650 m northeast to the Site, flows from northwest to southeast. The shallow groundwater in the area of the Site appears to flow in a south/southeast direction.</p>
Describe and assess how any uncertainty or absence of information obtained in each of the components of the Assessment of Past Uses could affect the validity of the model.	The material in the Assessment of Past Uses report prepared by Englobe reflects the judgment of Englobe in light of the information made available at the time of the Site reconnaissance on the date set out in the report and on information available at the time of preparation of this report. It should be noted that assessments made throughout this environmental assignment rely heavily on information supplied by others. While every effort has been made to use reliable and multiple sources, Englobe makes no guaranty of the accuracy or completeness of this third-party information available to us at the time of preparing this report. Hence, the historical records review is considered to be of a potential source of uncertainty during the Assessment of Past Uses. It is Englobe's opinion that the uncertainty or absence of information in the records review, interviews, and site reconnaissance of the Assessment of Past Uses are not anticipated to affect the validity of the conclusions.

7 Conclusions and Recommendations

Based on the information obtained as part of this Assessment of Past Uses conducted under the supervision of Sam Voore, P.Eng., QP_{ESA}, two (2) APECs associated with the Site (onsite fill materials with unknown quality) and surrounding properties (offsite waste generator) within the Study Area were identified at the Site and surrounding properties are summarized in the table below.

APEC	Location of APEC	Potentially Contaminating Activity	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC 1	Entire Site	Historical use of fill materials # 30 - Importation of Fill Materials of Unknown Quality	On-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, EC, SAR and pH, PHCs, BTEX, VOCs, PAHs, PCBs, OCPs	Soil
APEC 2	The north portion of the Site	Registered as a waste generator of photo processing wastes and inorganic laboratory chemicals # Undefined PCA No.	Off-site	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN, and VOCs	Soil

Due to current and historical PCAs are identified on the Site and surrounding properties within the Study Area, a Soil Characterization will be required and is recommended in order to assess the environmental quality of the soil on the Site based on the requirements of the O. Reg. 406/19.

Accordingly, a Sampling and Analysis Plan is required to be developed prior to the commencement of the Soil Characterization. The Sampling and Analysis Plan should be designed to meet the requirements of the O. Reg 406/19 and provide a soil quality investigation of the APECs identified on the Site.

8 Statement of Limitations

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Since the passage of time, natural occurrences, and direct or indirect human intervention may affect the views, conclusions and recommendations (if any) provided in this Report, it is intended for immediate use.

In preparing this Report, the Company has relied in good faith on information provided by others and has assumed that such information is factual, accurate and complete. The Company accepts no responsibility or liability for any deficiency, misstatement or inaccuracy in this Report resulting from the information provided, concealed or not fully disclosed by those individuals.

The conclusions presented herein are based on information gathered from a limited historical review of readily available geological, historical and regulatory information and a field inspection program. Sampling and analysis of soil, groundwater or any other material were not carried out as part of this assessment. Consequently, the presence and/or extent of any adverse environmental impact cannot be verified. The potential for environmental liability and/or environmental impact is an opinion that has been arrived at within the scope of this assessment.

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

Any description of the Site and its physical setting documented in this Report is presented for informational purposes only, to provide the reader a better understanding of the Site and scope of work. Any topographic benchmarks and elevations are primarily to establish relative elevation differences between sampling locations and should not be used for other purposes such as grading, excavation, planning, development, or similar purposes.

Any results from laboratory or other subcontractors reported herein have been carried out by others, and the Company cannot warrant their accuracy.

This Statement of Limitations forms an integral part of this report.

9 References

Canadian Standards Association Standard Z768-01 Phase I Environmental Site Assessment. Reaffirmed 2016.

Environmental Risk Information Services (ERIS) Database Report, 2021, 9541 Weston Road, Vaughan, ON

Ministry of Northern Development and Mines, Quaternary Geology, Southern Ontario, Map 2508, scale 1:50,000

Ministry of Environment, Conservation and Parks (MECP). Map: Well Records.
<https://www.ontario.ca/environment-and-energy/map-well-records>

Ministry of Natural Resources and Forestry, Land Information Ontario Imagery.

Ontario Geological Survey. 2003. Surficial Geology of Southern Ontario

Radon Potential Map Ontario. 2013. Radon Environmental Management Corp.

Ontario Geological Survey, Bedrock Geology of Southern Ontario, MRD 126 - Revision 1, 1:250,000 scale Bedrock Geology of Ontario, 1990.

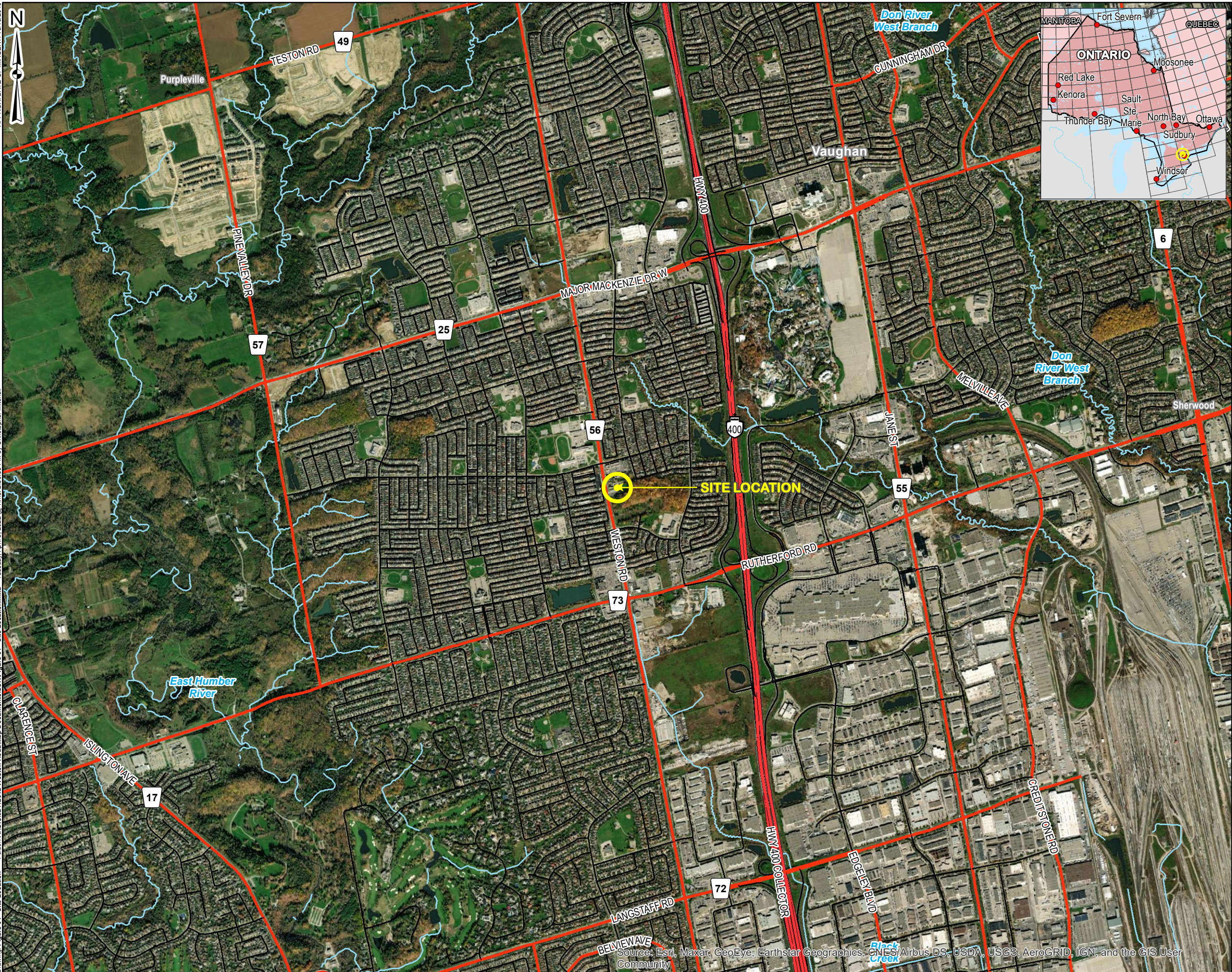
Appendix A

Figures

- Site Location Plan
- Site and Surrounding Land Use
- PCAs and APECs



eNGLOBE








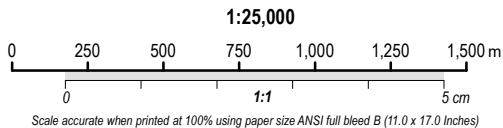
Notes

1. This drawing shall be read in conjunction with the associated technical report.
2. Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

Legend



-  Expressway / Highway
-  Major Road
-  Minor Road
-  Railway
-  Watercourse



A	2022-04-05	-	02112512
Revision	Date	Issue	GIS #

Client **City of Vaughan**

Site **9541 Weston Road, Vaughan, Ontario**

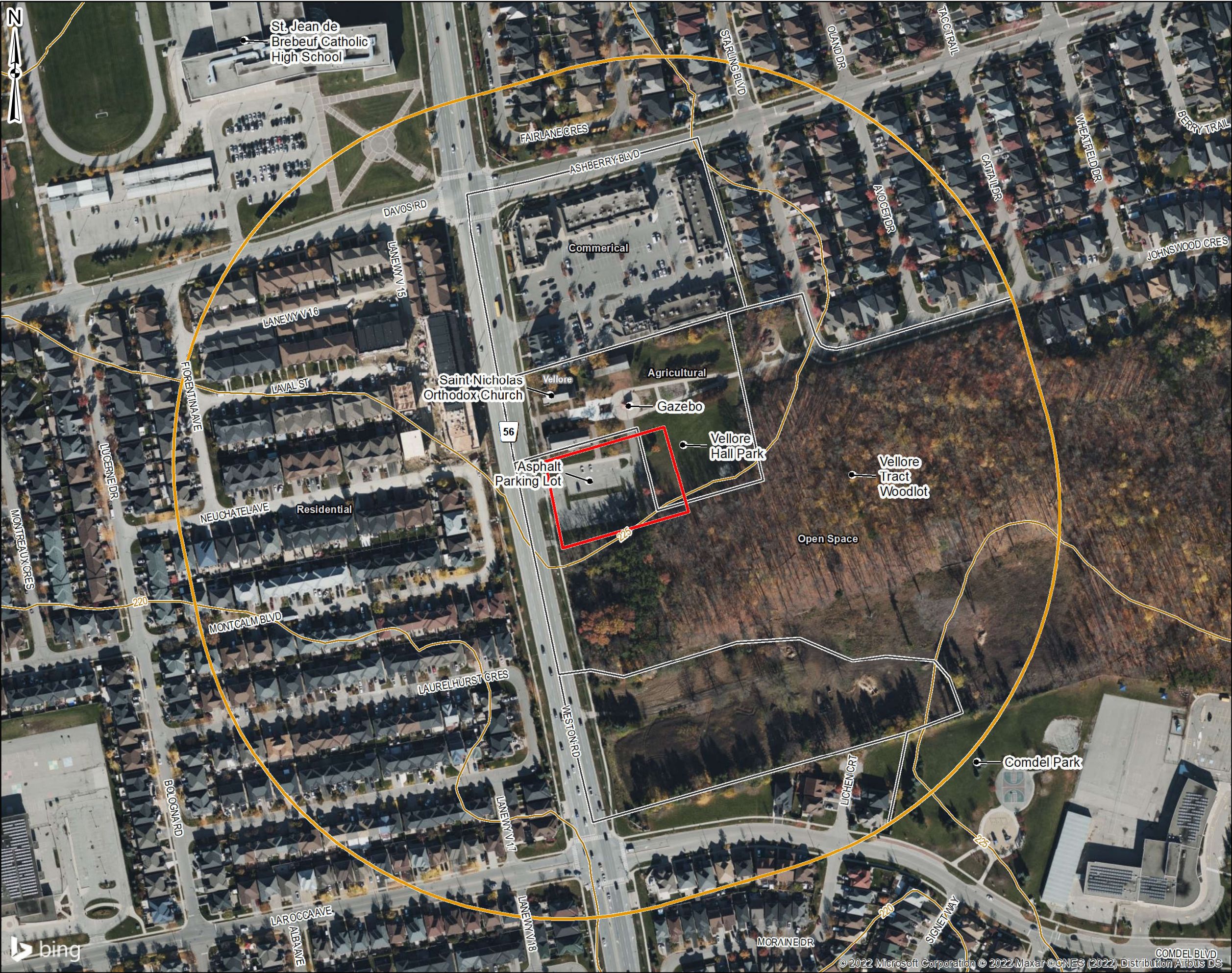
Report Title	Assessment of Past Uses
--------------	-------------------------

Drawing Title

Site Location Plan

Designed By	S.W.	Scale	1:25,000
Drawn By	C.M.	Date	April, 2022
Approved By	W.J.	Project No.	02112512.000

Figure No. **1**

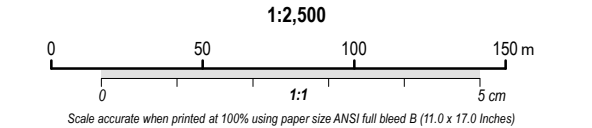


Notes

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

2. Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

- Legend**
- Site Boundary
 - 250 m Study Area
 - City of Vaughn Zoning
 - Contour (5 m Interval)



A	2022-04-05	-	02112512
Revision	Date	Issue	GIS #

Client
City of Vaughan

Site
9541 Weston Road, Vaughan, Ontario

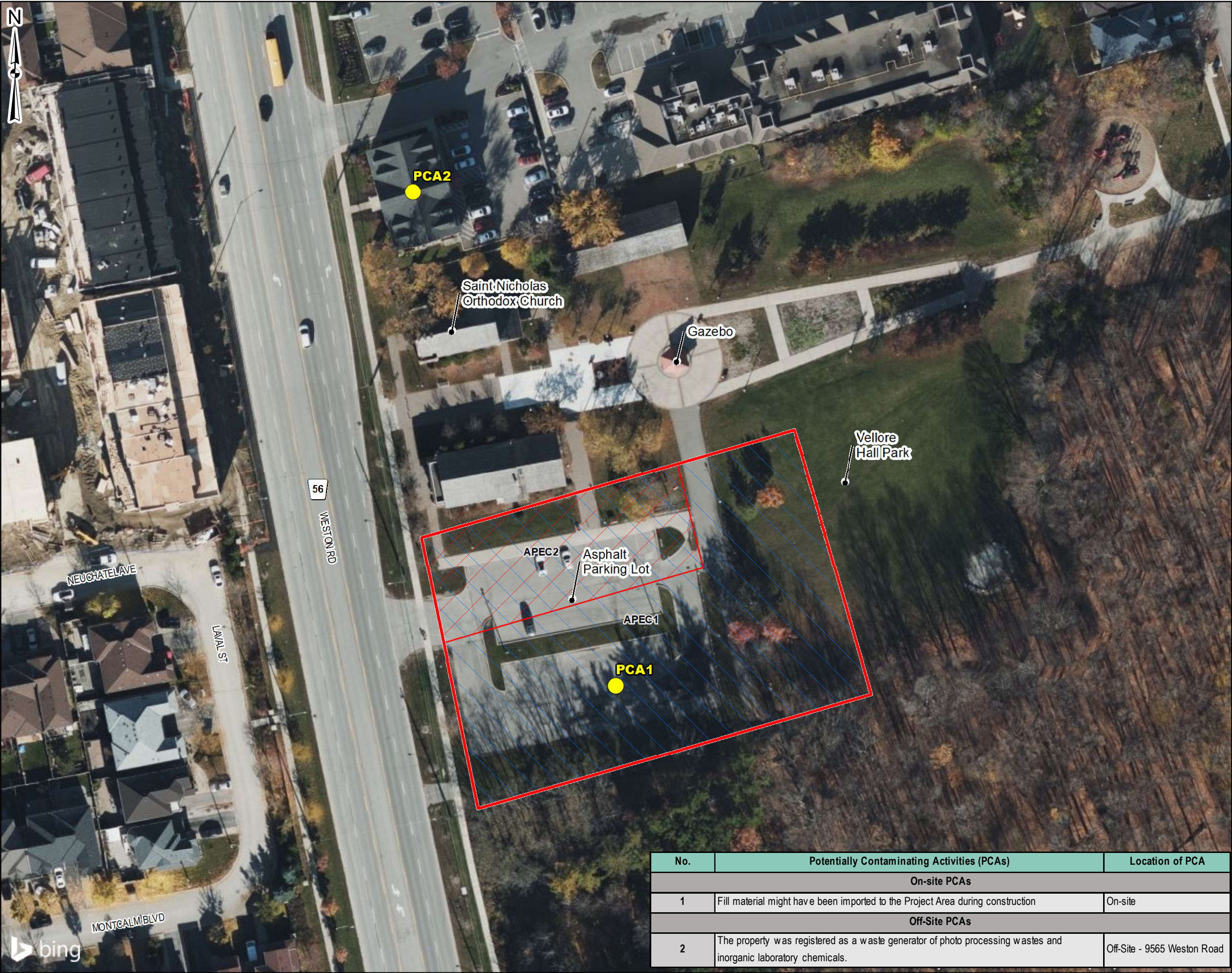
Report Title
Assessment of Past Uses

Drawing Title
Study Area and Surrounding Land Use Plan

Designed By	S.W.	Scale	1:2,500
Drawn By	C.M.	Date	April, 2022
Approved By	W.J.	Project No.	02112512.000

Figure No.
2





Notes

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

2. Coordinate System: NAD 1983 UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983

Legend

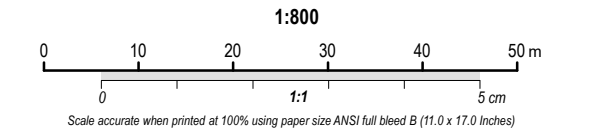
Potentially Contaminating Activity (PCA)

Site Boundary

Area of Potential Environmental Concern (APEC)

APEC1

APEC2



A	2022-04-19	-	02112512
Revision	Date	Issue	GIS #

Client
City of Vaughan

Site
9541 Weston Road, Vaughan, Ontario

Report Title
Assessment of Past Uses

Drawing Title
Site Plan

Designed By	S.W.	Scale	1:800
Drawn By	C.M.	Date	April, 2022
Approved By	W.J.	Project No.	02112512.000

Figure No.
3

No.	Potentially Contaminating Activities (PCAs)	Location of PCA
On-site PCAs		
1	Fill material might have been imported to the Project Area during construction	On-site
Off-Site PCAs		
2	The property was registered as a waste generator of photo processing wastes and inorganic laboratory chemicals.	Off-Site - 9565 Weston Road

Appendix B

ERIS Reports

- ERIS
- FIPs
- City Directory
- Aerial Photographs



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DATABASE REPORT

Project Property:	<i>Phase One ESA/Excess soil 9541 Weston Road Vaughan ON</i>
Project No:	<i>02112512.000</i>
Report Type:	<i>RSC Report (Urban)</i>
Order No:	<i>21122001000</i>
Requested by:	<i>DST Consulting Engineers Inc.</i>
Date Completed:	<i>December 23, 2021</i>

Environmental Risk Information Services

A division of Glacier Media Inc.

1.866.517.5204 | info@erisinfo.com | erisinfo.com

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Executive Summary

Property Information:

Project Property: *Phase One ESA/Excess soil
9541 Weston Road Vaughan ON*

Project No: *02112512.000*

Order Information:

Order No: *21122001000*

Date Requested: *December 20, 2021*

Requested by: *DST Consulting Engineers Inc.*

Report Type: *RSC Report (Urban)*

Historical/Products:

City Directory Search *CD - Subject Site plus 10 Adjacent Properties*

Insurance Products *Fire Insurance Maps/Inspection Reports/Site Plans*

Topographic Map *RSC Maps*

Executive Summary: Report Summary

Database	Name	Searched	Project Property	Boundary to 0.30km	Total
AAGR	Abandoned Aggregate Inventory	Y	0	0	0
AGR	Aggregate Inventory	Y	0	0	0
AMIS	Abandoned Mine Information System	Y	0	0	0
ANDR	Anderson's Waste Disposal Sites	Y	0	0	0
AST	Aboveground Storage Tanks	Y	0	0	0
AUWR	Automobile Wrecking & Supplies	Y	0	0	0
BORE	Borehole	Y	0	1	1
CA	Certificates of Approval	Y	0	0	0
CDRY	Dry Cleaning Facilities	Y	0	0	0
CFOT	Commercial Fuel Oil Tanks	Y	0	0	0
CHEM	Chemical Manufacturers and Distributors	Y	0	0	0
CHM	Chemical Register	Y	0	0	0
CNG	Compressed Natural Gas Stations	Y	0	0	0
COAL	Inventory of Coal Gasification Plants and Coal Tar Sites	Y	0	0	0
CONV	Compliance and Convictions	Y	0	0	0
CPU	Certificates of Property Use	Y	0	0	0
DRL	Drill Hole Database	Y	0	0	0
DTNK	Delisted Fuel Tanks	Y	0	0	0
EASR	Environmental Activity and Sector Registry	Y	0	0	0
EBR	Environmental Registry	Y	0	0	0
ECA	Environmental Compliance Approval	Y	0	1	1
EEM	Environmental Effects Monitoring	Y	0	0	0
EHS	ERIS Historical Searches	Y	0	8	8
EIIS	Environmental Issues Inventory System	Y	0	0	0
EMHE	Emergency Management Historical Event	Y	0	0	0
EPAR	Environmental Penalty Annual Report	Y	0	0	0
EXP	List of Expired Fuels Safety Facilities	Y	0	0	0
FCON	Federal Convictions	Y	0	0	0
FCS	Contaminated Sites on Federal Land	Y	0	0	0
FOFT	Fisheries & Oceans Fuel Tanks	Y	0	0	0
FRST	Federal Identification Registry for Storage Tank Systems (FIRSTS)	Y	0	0	0
FST	Fuel Storage Tank	Y	0	0	0
FSTH	Fuel Storage Tank - Historic	Y	0	0	0
GEN	Ontario Regulation 347 Waste Generators Summary	Y	0	23	23
GHG	Greenhouse Gas Emissions from Large Facilities	Y	0	0	0
HINC	TSSA Historic Incidents	Y	0	0	0

Database	Name	Searched	Project Property	Boundary to 0.30km	Total
IAFT	Indian & Northern Affairs Fuel Tanks	Y	0	0	0
INC	Fuel Oil Spills and Leaks	Y	0	1	1
LIMO	Landfill Inventory Management Ontario	Y	0	0	0
MINE	Canadian Mine Locations	Y	0	0	0
MNR	Mineral Occurrences	Y	0	0	0
NATE	National Analysis of Trends in Emergencies System (NATES)	Y	0	0	0
NCPL	Non-Compliance Reports	Y	0	0	0
NDFT	National Defense & Canadian Forces Fuel Tanks	Y	0	0	0
NDSP	National Defense & Canadian Forces Spills	Y	0	0	0
NDWD	National Defence & Canadian Forces Waste Disposal Sites	Y	0	0	0
NEBI	National Energy Board Pipeline Incidents	Y	0	0	0
NEBP	National Energy Board Wells	Y	0	0	0
NEES	National Environmental Emergencies System (NEES)	Y	0	0	0
NPCB	National PCB Inventory	Y	0	0	0
NPRI	National Pollutant Release Inventory	Y	0	0	0
OGWE	Oil and Gas Wells	Y	0	0	0
OOGW	Ontario Oil and Gas Wells	Y	0	0	0
OPCB	Inventory of PCB Storage Sites	Y	0	0	0
ORD	Orders	Y	0	0	0
PAP	Canadian Pulp and Paper	Y	0	0	0
PCFT	Parks Canada Fuel Storage Tanks	Y	0	0	0
PES	Pesticide Register	Y	0	2	2
PINC	Pipeline Incidents	Y	0	0	0
PRT	Private and Retail Fuel Storage Tanks	Y	0	0	0
PTTW	Permit to Take Water	Y	0	0	0
REC	Ontario Regulation 347 Waste Receivers Summary	Y	0	0	0
RSC	Record of Site Condition	Y	0	1	1
RST	Retail Fuel Storage Tanks	Y	0	0	0
SCT	Scott's Manufacturing Directory	Y	0	2	2
SPL	Ontario Spills	Y	0	1	1
SRDS	Wastewater Discharger Registration Database	Y	0	0	0
TANK	Anderson's Storage Tanks	Y	0	0	0
TCFT	Transport Canada Fuel Storage Tanks	Y	0	0	0
VAR	Variances for Abandonment of Underground Storage Tanks	Y	0	0	0
WDS	Waste Disposal Sites - MOE CA Inventory	Y	0	0	0
WDSH	Waste Disposal Sites - MOE 1991 Historical Approval Inventory	Y	0	0	0
WWIS	Water Well Information System	Y	2	13	15
Total:			2	53	55

Executive Summary: Site Report Summary - Project Property

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist (m)</i>	<i>Elev diff (m)</i>	<i>Page Number</i>
<u>1</u>	WWIS		lot 17 con 5 ON <i>Well ID:</i> 6914229	NE/0.0	-0.41	<u>22</u>
<u>2</u>	WWIS		lot 18 con 5 ON <i>Well ID:</i> 6925576	WSW/0.0	0.15	<u>25</u>

Executive Summary: Site Report Summary - Surrounding Properties

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist (m)</i>	<i>Elev Diff (m)</i>	<i>Page Number</i>
3	BORE		ON	SE/3.6	-0.84	26
4	GEN	Richard Goodfellow dentistry profesionl	9565 weston rd 2nd floor woodbridge ON L4H3A5	NW/16.5	0.16	27
4	GEN	Richard Goodfellow dentistry profesionl	9565 weston rd 2nd floor woodbridge ON L4H3A5	NW/16.5	0.16	27
4	GEN	Richard Goodfellow dentistry profesionl	9565 weston rd 2nd floor woodbridge ON L4H3A5	NW/16.5	0.16	27
4	GEN	Vellore Woods Dentistry	9565 weston rd 2nd floor woodbridge ON L4H3A5	NW/16.5	0.16	28
4	GEN	Vellore Woods Dentistry	9565 Weston Road 2nd floor Woodbridge ON L4H3A5	NW/16.5	0.16	28
4	GEN	Vellore Woods Dentistry	9565 Weston Road 2nd floor Woodbridge ON L4H3A5	NW/16.5	0.16	29
5	WWIS		lot 17 con 5 ON Well ID: 6906658	SSW/29.2	-1.27	29
6	EHS		9575 Weston Road Vaughan ON L4L 1A6	NW/40.6	0.73	34
7	WWIS		lot 17 con 6 ON Well ID: 6906777	W/42.5	0.16	35
8	EHS		9555, 9581, 9587, 9591 Weston Rd Vaughan ON	N/48.8	0.16	38
9	WWIS		lot 17 con 6 ON	W/54.4	-0.91	38

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
			Well ID: 6921136			
10	ECA	St. Magnus Developments Inc.	9554 Weston Rd Part of Lot 17 and 18, Concession 6 Vaughan ON L4K 2Y4	W/56.2	0.16	42
11	EHS		Weston Road And Laval Street Vaughan ON	W/65.4	-0.19	42
12	WWIS		lot 18 con 5 ON Well ID: 6921482	NW/70.5	1.16	42
13	WWIS		lot 18 con 5 ON Well ID: 6906659	NW/75.0	1.16	47
14	SCT	Emily's Bakery Ltd.	9591 Weston Rd Unit 1-2 Woodbridge ON L4H 3A5	NNE/76.2	-0.84	51
15	WWIS		ON Well ID: 7276114	WNW/76.4	0.18	51
16	WWIS		lot 18 con 6 ON Well ID: 6906780	WNW/80.3	1.16	52
17	WWIS		lot 18 con 5 ON Well ID: 6913822	N/84.9	0.16	55
18	WWIS		lot 18 con 6 ON Well ID: 6906778	NW/94.6	1.16	61
19	GEN	Dhuga Dentistry Professional Corporation	9581 Weston Road Unit 1 Vaughan ON L4H 3A5	N/97.3	-0.17	64
19	GEN	Dhuga Dentistry Professional Corporation	9581 Weston Road Unit 1 Vaughan ON L4H 3A5	N/97.3	-0.17	64
19	GEN	Dhuga Dentistry Professional Corporation	9581 Weston Road Unit 1 Vaughan ON L4H 3A5	N/97.3	-0.17	64
19	GEN	Dhuga Dentistry Professional Corporation	9581 Weston Road Unit 1 Vaughan ON L4H 3A5	N/97.3	-0.17	65

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
<u>20</u>	GEN	Home Alone Property Management Ltd.	141 Montcalm Blvd, Vaughan ON L4H 2N2	WSW/119.8	-5.15	<u>65</u>
<u>21</u>	WWIS		lot 17 con 5 ON Well ID: 6923108	SSE/132.7	-2.83	<u>65</u>
<u>22</u>	EHS		9465 Weston Rd Woodbridge ON L4H 2E5	SE/135.3	-1.87	<u>70</u>
<u>23</u>	EHS		9465 Weston Road Woodbridge ON L4H 2E6	SE/136.1	-1.92	<u>70</u>
<u>23</u>	EHS		9465 Weston Road Woodbridge ON L4H 2E6	SE/136.1	-1.92	<u>70</u>
<u>23</u>	EHS		9465 Weston Road Woodbridge ON L4H 2E6	SE/136.1	-1.92	<u>70</u>
<u>23</u>	EHS		9465 Weston Road Woodbridge ON L4H 2E6	SE/136.1	-1.92	<u>71</u>
<u>24</u>	WWIS		9465 WESTON RD WOODBIDGE ON Well ID: 7320102	SE/151.9	-1.83	<u>71</u>
<u>25</u>	RSC		9401 Weston Rd Woodbridge ON L4L 1A6	SSW/152.8	-4.48	<u>73</u>
<u>26</u>	SPL	Enbridge Gas Distribution	88-90 Laval St, Woodbridge Vaughan ON	W/160.7	-1.45	<u>73</u>
<u>27</u>	PES	TURF SPECIALTIES	82 JOHNSWOOD CRES WOODBIDGE ON L4H2K9	ENE/166.4	-3.15	<u>74</u>
<u>27</u>	PES	TURF SPECIALTIES	82 JOHNSWOOD CRES WOODBIDGE ON L4H2K9	ENE/166.4	-3.15	<u>74</u>
<u>28</u>	WWIS		lot 18 con 5 ON	NW/183.3	1.16	<u>75</u>

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
			Well ID: 6906660			
29	WWIS		lot 36 con 5 ON	S/209.9	-4.80	78
			Well ID: 6919834			
30	INC		1 LUCERNE DRIVE, BLOCK 100, UNIT 7, WOODBIDGE ON	WSW/266.6	-5.76	82
31	SCT	L.C. Adam Apparell	127 Bologna Rd Woodbridge ON L4H 2M6	WSW/267.4	-6.81	83
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	NW/290.4	4.21	83
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	NW/290.4	4.21	84
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	NW/290.4	4.21	84
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	NW/290.4	4.21	85
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	NW/290.4	4.21	86
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	NW/290.4	4.21	87
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	NW/290.4	4.21	87
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	NW/290.4	4.21	88
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	NW/290.4	4.21	89
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	NW/290.4	4.21	90

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist (m)</i>	<i>Elev Diff (m)</i>	<i>Page Number</i>
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	NW/290.4	4.21	91
32	GEN	York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	NW/290.4	4.21	92

Executive Summary: Summary By Data Source

BORE - Borehole

A search of the BORE database, dated 1875-Jul 2018 has found that there are 1 BORE site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	ON	3.6	<u>3</u>

ECA - Environmental Compliance Approval

A search of the ECA database, dated Oct 2011- Sep 30, 2021 has found that there are 1 ECA site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
St. Magnus Developments Inc.	9554 Weston Rd Part of Lot 17 and 18, Concession 6 Vaughan ON L4K 2Y4	56.2	<u>10</u>

EHS - ERIS Historical Searches

A search of the EHS database, dated 1999-Jun 30, 2021 has found that there are 8 EHS site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	9575 Weston Road Vaughan ON L4L 1A6	40.6	<u>6</u>
	9555, 9581, 9587, 9591 Weston Rd Vaughan ON	48.8	<u>8</u>
	Weston Road And Laval Street Vaughan ON	65.4	<u>11</u>
	9465 Weston Rd Woodbridge ON L4H 2E5	135.3	<u>22</u>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	9465 Weston Road Woodbridge ON L4H 2E6	136.1	<u>23</u>
	9465 Weston Road Woodbridge ON L4H 2E6	136.1	<u>23</u>
	9465 Weston Road Woodbridge ON L4H 2E6	136.1	<u>23</u>
	9465 Weston Road Woodbridge ON L4H 2E6	136.1	<u>23</u>

GEN - Ontario Regulation 347 Waste Generators Summary

A search of the GEN database, dated 1986-Aug 31, 2021 has found that there are 23 GEN site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
Vellore Woods Dentistry	9565 Weston Road 2nd floor Woodbridge ON L4H3A5	16.5	<u>4</u>
Vellore Woods Dentistry	9565 Weston Road 2nd floor Woodbridge ON L4H3A5	16.5	<u>4</u>
Vellore Woods Dentistry	9565 weston rd 2nd floor woodbridge ON L4H3A5	16.5	<u>4</u>
Richard Goodfellow dentistry profesionl	9565 weston rd 2nd floor woodbridge ON L4H3A5	16.5	<u>4</u>
Richard Goodfellow dentistry profesionl	9565 weston rd 2nd floor woodbridge ON L4H3A5	16.5	<u>4</u>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
Richard Goodfellow dentistry profesionl	9565 weston rd 2nd floor woodbridge ON L4H3A5	16.5	<u>4</u>
Dhuga Dentistry Professional Corporation	9581 Weston Road Unit 1 Vaughan ON L4H 3A5	97.3	<u>19</u>
Dhuga Dentistry Professional Corporation	9581 Weston Road Unit 1 Vaughan ON L4H 3A5	97.3	<u>19</u>
Dhuga Dentistry Professional Corporation	9581 Weston Road Unit 1 Vaughan ON L4H 3A5	97.3	<u>19</u>
Dhuga Dentistry Professional Corporation	9581 Weston Road Unit 1 Vaughan ON L4H 3A5	97.3	<u>19</u>
Home Alone Property Management Ltd.	141 Montcalm Blvd, Vaughan ON L4H 2N2	119.8	<u>20</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	290.4	<u>32</u>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	290.4	<u>32</u>
York Catholic District School Board	St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	290.4	<u>32</u>

INC - Fuel Oil Spills and Leaks

A search of the INC database, dated May 31, 2021 has found that there are 1 INC site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	1 LUCERNE DRIVE, BLOCK 100, UNIT 7, WOODBIDGE ON	266.6	<u>30</u>

PES - Pesticide Register

A search of the PES database, dated Oct 2011- Sep 30, 2021 has found that there are 2 PES site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
TURF SPECIALTIES	82 JOHNWOOD CRES WOODBIDGE ON L4H2K9	166.4	<u>27</u>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
TURF SPECIALTIES	82 JOHNSWOOD CRES WOODBIDGE ON L4H2K9	166.4	27

RSC - Record of Site Condition

A search of the RSC database, dated 1997-Sept 2001, Oct 2004-Oct 2021 has found that there are 1 RSC site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	9401 Weston Rd Woodbridge ON L4L 1A6	152.8	25

SCT - Scott's Manufacturing Directory

A search of the SCT database, dated 1992-Mar 2011* has found that there are 2 SCT site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
Emily's Bakery Ltd.	9591 Weston Rd Unit 1-2 Woodbridge ON L4H 3A5	76.2	14
L.C. Adam Apparell	127 Bologna Rd Woodbridge ON L4H 2M6	267.4	31

SPL - Ontario Spills

A search of the SPL database, dated 1988-Sep 2020 has found that there are 1 SPL site(s) within approximately 0.30 kilometers of the project property.

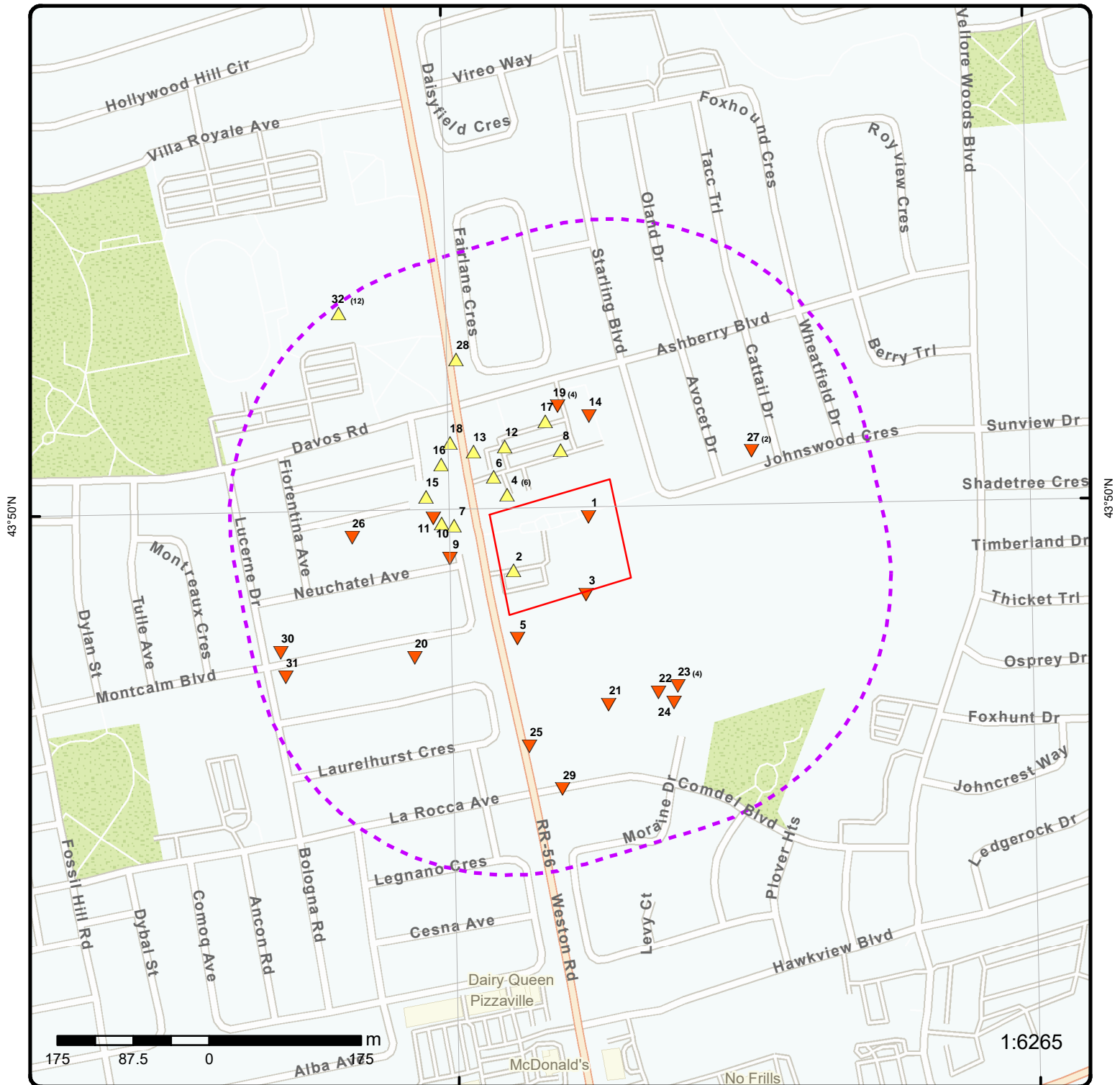
<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
Enbridge Gas Distribution	88-90 Laval St, Woodbridge Vaughan ON	160.7	26

WWIS - Water Well Information System

A search of the WWIS database, dated Apr 30, 2021 has found that there are 15 WWIS site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	lot 17 con 5 ON <i>Well ID:</i> 6914229	0.0	<u>1</u>
	lot 18 con 5 ON <i>Well ID:</i> 6925576	0.0	<u>2</u>
	lot 17 con 5 ON <i>Well ID:</i> 6906658	29.2	<u>5</u>
	lot 17 con 6 ON <i>Well ID:</i> 6906777	42.5	<u>7</u>
	lot 17 con 6 ON <i>Well ID:</i> 6921136	54.4	<u>9</u>
	lot 18 con 5 ON <i>Well ID:</i> 6921482	70.5	<u>12</u>
	lot 18 con 5 ON <i>Well ID:</i> 6906659	75.0	<u>13</u>
	ON <i>Well ID:</i> 7276114	76.4	<u>15</u>
	lot 18 con 6 ON <i>Well ID:</i> 6906780	80.3	<u>16</u>
	lot 18 con 5 ON <i>Well ID:</i> 6913822	84.9	<u>17</u>
	lot 18 con 6 ON <i>Well ID:</i> 6906778	94.6	<u>18</u>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	lot 17 con 5 ON <i>Well ID:</i> 6923108	132.7	<u>21</u>
	9465 WESTON RD WOODBRIIDGE ON <i>Well ID:</i> 7320102	151.9	<u>24</u>
	lot 18 con 5 ON <i>Well ID:</i> 6906660	183.3	<u>28</u>
	lot 36 con 5 ON <i>Well ID:</i> 6919834	209.9	<u>29</u>



Map: 0.3 Kilometer Radius

Order Number: 21122001000

Address: 9541 Weston Road, Vaughan, ON

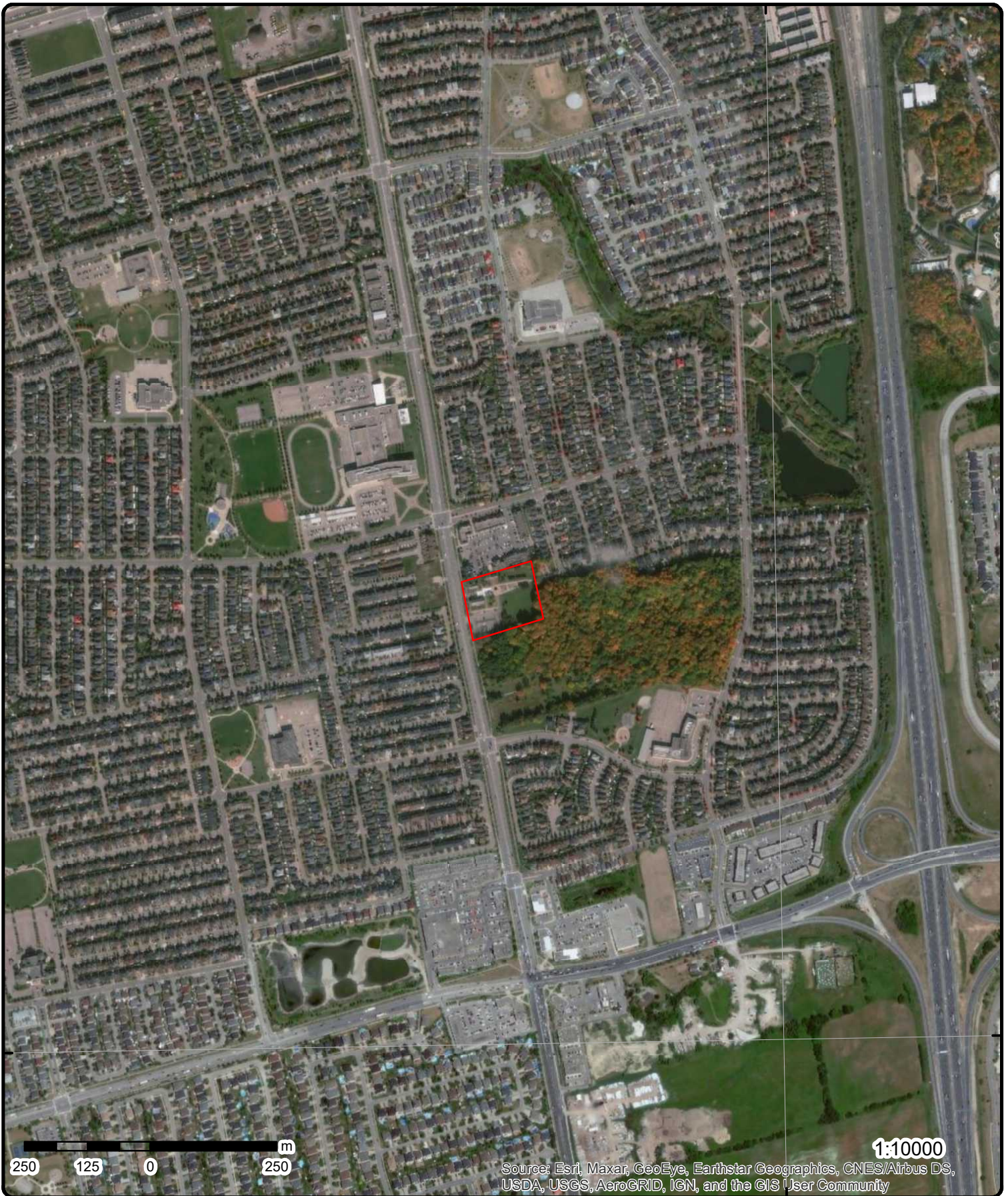


Project Property	Freeways; Highways	Beach	Shopping & Sports Area
Buffer Outline	Traffic Circle; Ramp	Airport	University/College
Eris Sites with Higher Elevation	Major Arterial; Minor Arterial	Industrial Area	Cemetery; Golf Course
Eris Sites with Same Elevation	Local Road	Military Base	Parkt (National)
Eris Sites with Lower Elevation	Service Road; Traffic Circle; Ramp	Aircraft Roads	Park (City/County)
Eris Sites with Unknown Elevation	Rail	Native Reservation	
		Hospital	

79°33'W

43°49'30"N

43°49'30"N



Aerial Year: 2019

Order Number: 21122001000

Address: 9541 Weston Road, Vaughan, ON



Source: ESRI World Imagery

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79°34'30"W

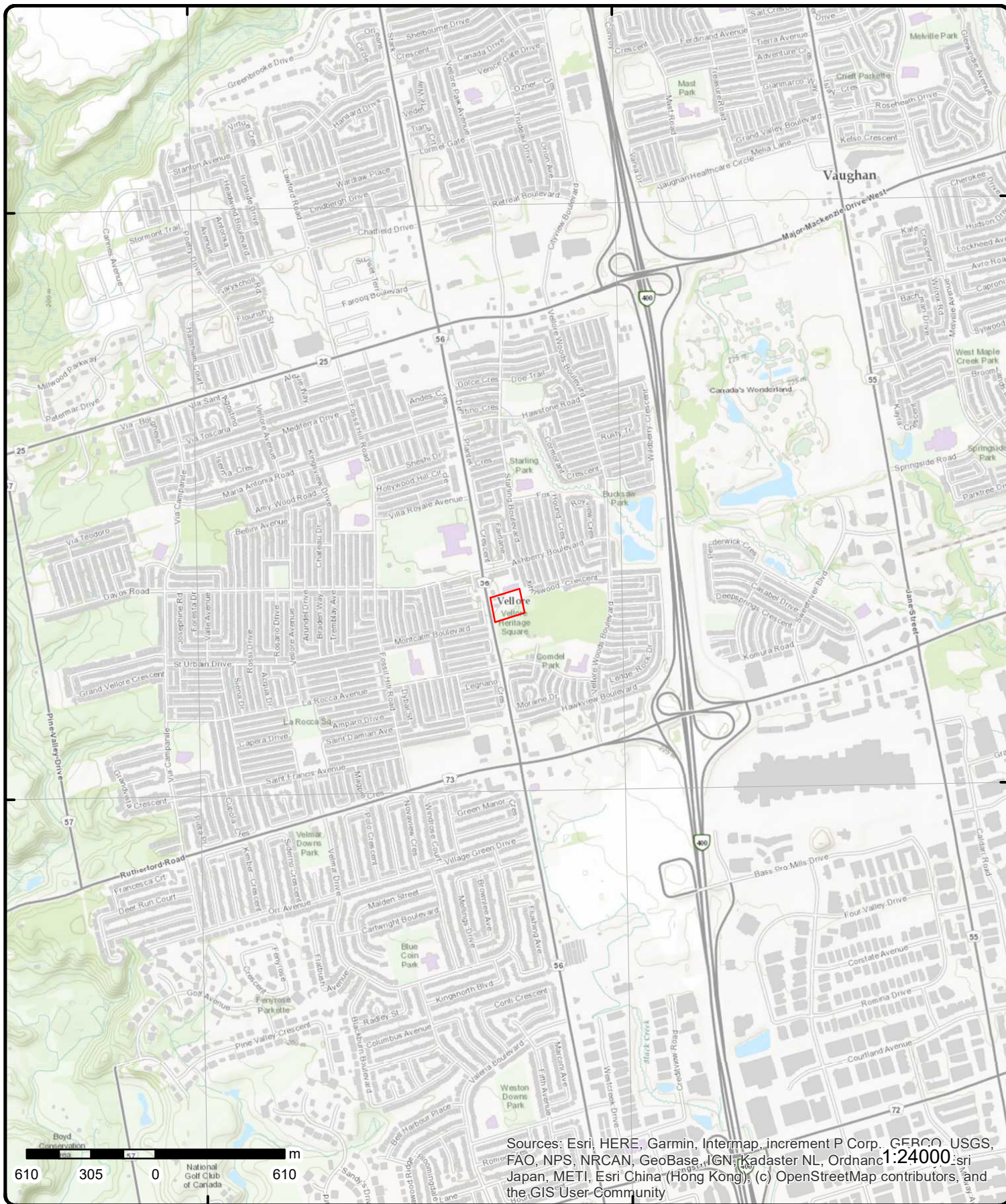
79°33'W

43°51'N

43°51'N

43°49'30"N

43°49'30"N



Topographic Map

Address: 9541 Weston Road, ON

Source: ESRI World Topographic Map

Order Number: 21122001000



© ERIS Information Limited Partnership

Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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1	1 of 1	NE/0.0	225.3 / -0.41	lot 17 con 5 ON	WWIS
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Well ID:	6914229	Data Entry Status:	
Construction Date:		Data Src:	1
Primary Water Use:	Domestic	Date Received:	11/16/1977
Sec. Water Use:	0	Selected Flag:	True
Final Well Status:	Water Supply	Abandonment Rec:	
Water Type:		Contractor:	2214
Casing Material:		Form Version:	1
Audit No:		Owner:	
Tag:		Street Name:	
Construction Method:		County:	YORK AND TORONT
Elevation (m):		Municipality:	VAUGHAN TOWN (VAUGHAN TWP)
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	017
Well Depth:		Concession:	05
Overburden/Bedrock:		Concession Name:	CON
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	
Flowing (Y/N):		Zone:	
Flow Rate:		UTM Reliability:	
Clear/Cloudy:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/691\6914229.pdf

Additional Detail(s) (Map)

Well Completed Date: 1977/09/08
Year Completed: 1977
Depth (m): 11.5824
Latitude: 43.8332291870935
Longitude: -79.5563859033772
Path: 691\6914229.pdf

Bore Hole Information

Bore Hole ID:	10504805	Elevation:	224.228515
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	o	East83:	616064.70
Code OB Desc:	Overburden	North83:	4854363.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	4
Date Completed:	08-Sep-1977 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	p4
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932769375			
Layer:		3			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		30.0			
Formation End Depth:		38.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932769373			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		79			
Mat2 Desc:		PACKED			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		20.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932769374			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		20.0			
Formation End Depth:		30.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966914229			
Method Construction Code:		6			
Method Construction:		Boring			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11053375			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930817850			
Layer:		1			
Material:					
Open Hole or Material:					
Depth From:					
Depth To:		30			
Casing Diameter:		30			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					
Casing ID:		930817851			
Layer:		2			
Material:		2			
Open Hole or Material:		GALVANIZED			
Depth From:					
Depth To:		38			
Casing Diameter:		24			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996914229			
Pump Set At:					
Static Level:		20.0			
Final Level After Pumping:		30.0			
Recommended Pump Depth:		35.0			
Pumping Rate:		6.0			
Flowing Rate:					
Recommended Pump Rate:		3.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		2			
Water State After Test:		CLOUDY			
Pumping Test Method:					
Pumping Duration HR:		0			
Pumping Duration MIN:		30			
Flowing:		No			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		935140082			
Test Type:		Recovery			
Test Duration:		60			
Test Level:		20.0			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		933997401			
Layer:		1			
Kind Code:		5			
Kind:		Not stated			
Water Found Depth:		20.0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Water Found Depth UOM:		ft			
2	1 of 1	WSW/0.0	225.9 / 0.15	lot 18 con 5 ON	WWIS
Well ID: 6925576		Data Entry Status:			
Construction Date:		Data Src: 1			
Primary Water Use: Not Used		Date Received: 9/25/2000			
Sec. Water Use:		Selected Flag: True			
Final Well Status: Abandoned-Other		Abandonment Rec:			
Water Type:		Contractor: 3108			
Casing Material:		Form Version: 1			
Audit No: 210821		Owner:			
Tag:		Street Name:			
Construction		County: YORK AND TORONT			
Method:		Municipality: VAUGHAN TOWN (VAUGHAN TWP)			
Elevation (m):		Site Info:			
Elevation Reliability:		Lot: 018			
Depth to Bedrock:		Concession: 05			
Well Depth:		Concession Name: CON			
Overburden/Bedrock:		Easting NAD83:			
Pump Rate:		Northing NAD83:			
Static Water Level:		Zone:			
Flowing (Y/N):		UTM Reliability:			
Flow Rate:					
Clear/Cloudy:					
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/692\6925576.pdf			
<u>Additional Detail(s) (Map)</u>					
Well Completed Date: 2000/08/01					
Year Completed: 2000					
Depth (m):					
Latitude: 43.8326847455032					
Longitude: -79.5574773861464					
Path: 692\6925576.pdf					
<u>Bore Hole Information</u>					
Bore Hole ID: 10515854		Elevation: 224.895385			
DP2BR:		Elevrc:			
Spatial Status:		Zone: 17			
Code OB: _		East83: 615978.00			
Code OB Desc: No formation data		North83: 4854301.00			
Open Hole:		Org CS:			
Cluster Kind:		UTMRC: 3			
Date Completed: 01-Aug-2000 00:00:00		UTMRC Desc: margin of error : 10 - 30 m			
Remarks:		Location Method: gps			
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Method of Construction & Well Use</u>					
Method Construction ID: 966925576					
Method Construction Code: 0					
Method Construction: Not Known					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Other Method Construction:					
Pipe Information					
Pipe ID:		11064424			
Casing No:		1			
Comment:					
Alt Name:					
3	1 of 1	SE/3.6	224.9 / -0.84	ON	BORE
Borehole ID:	589693			Inclin FLG:	No
OGF ID:	215500288			SP Status:	Initial Entry
Status:	Unknown			Surv Elev:	No
Type:	Outcrop			Piezometer:	No
Use:				Primary Name:	OGS-OLW-62-278
Completion Date:				Municipality:	
Static Water Level:				Lot:	
Primary Water Use:				Township:	
Sec. Water Use:				Latitude DD:	43.83242
Total Depth m:	1			Longitude DD:	-79.556439
Depth Ref:	Ground Surface			UTM Zone:	17
Depth Elev:				Easting:	616062
Drill Method:				Northing:	4854273
Orig Ground Elev m:	225			Location Accuracy:	
Elev Reliabil Note:				Accuracy:	Not Applicable
DEM Ground Elev m:	224				
Concession:					
Location D:					
Survey D:					
Comments:					
Borehole Geology Stratum					
Geology Stratum ID:	218339740			Mat Consistency:	
Top Depth:	0			Material Moisture:	
Bottom Depth:	1			Material Texture:	
Material Color:				Non Geo Mat Type:	
Material 1:	Till			Geologic Formation:	
Material 2:	Sand			Geologic Group:	
Material 3:				Geologic Period:	
Material 4:				Depositional Gen:	
Gsc Material Description:					
Stratum Description:	Di sa **Note: Many records provided by the department have a truncated [Stratum Description] field.				
Source					
Source Type:	Data Survey			Source Appl:	Spatial/Tabular
Source Orig:	Ontario Geological Survey			Source Iden:	6
Source Date:	Varies to 2004			Scale or Res:	1:50,000
Confidence:	H			Horizontal:	NAD83
Observatio:				Verticalda:	Mean Average Sea Level
Source Name:	Ontario Geological Survey Fieldwork Mapping				
Source Details:	YPDT Master Database A: -2092977982				
Confiden 1:	Location taken from OGS 1:50,000 maps by CAMC staff or consultants.				
Source List					
Source Identifier:	6			Horizontal Datum:	NAD83
Source Type:	Data Survey			Vertical Datum:	Mean Average Sea Level
Source Date:	Varies to 2004			Projection Name:	Universal Transvers Mercator

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Scale or Resolution: 1:50,000 Source Name: Ontario Geological Survey Fieldwork Mapping Source Originators: Ontario Geological Survey					
4	1 of 6	NW/16.5	225.9 / 0.16	Richard Goodfellow dentistry profesionl 9565 weston rd 2nd floor woodbridge ON L4H3A5	GEN
Generator No: ON6845187 Status: Approval Years: 2016 Contam. Facility: No MHSW Facility: No SIC Code: 621210 SIC Description: OFFICES OF DENTISTS PO Box No: Country: Canada Choice of Contact: CO_OFFICIAL Co Admin: Phone No Admin:					
Detail(s)					
Waste Class: 264 Waste Class Desc: PHOTOPROCESSING WASTES Waste Class: 312 Waste Class Desc: PATHOLOGICAL WASTES Waste Class: 261 Waste Class Desc: PHARMACEUTICALS Waste Class: 148 Waste Class Desc: INORGANIC LABORATORY CHEMICALS					
4	2 of 6	NW/16.5	225.9 / 0.16	Richard Goodfellow dentistry profesionl 9565 weston rd 2nd floor woodbridge ON L4H3A5	GEN
Generator No: ON6845187 Status: Approval Years: 2015 Contam. Facility: No MHSW Facility: No SIC Code: 621210 SIC Description: OFFICES OF DENTISTS PO Box No: Country: Canada Choice of Contact: CO_OFFICIAL Co Admin: Phone No Admin:					
Detail(s)					
Waste Class: 261 Waste Class Desc: PHARMACEUTICALS Waste Class: 312 Waste Class Desc: PATHOLOGICAL WASTES Waste Class: 148 Waste Class Desc: INORGANIC LABORATORY CHEMICALS Waste Class: 264 Waste Class Desc: PHOTOPROCESSING WASTES					
4	3 of 6	NW/16.5	225.9 / 0.16	Richard Goodfellow dentistry profesionl 9565 weston rd 2nd floor woodbridge ON L4H3A5	GEN
Generator No: ON6845187 Status: PO Box No: Country: Canada					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Approval Years: Contam. Facility: MHSW Facility: SIC Code: SIC Description:	2014 No No 621210 OFFICES OF DENTISTS			Choice of Contact: Co Admin: Phone No Admin:	CO_OFFICIAL
<u>Detail(s)</u>					
Waste Class: Waste Class Desc:	312 PATHOLOGICAL WASTES				
Waste Class: Waste Class Desc:	261 PHARMACEUTICALS				
Waste Class: Waste Class Desc:	264 PHOTOPROCESSING WASTES				
Waste Class: Waste Class Desc:	148 INORGANIC LABORATORY CHEMICALS				
4	4 of 6	NW/16.5	225.9 / 0.16	Vellore Woods Dentistry 9565 weston rd 2nd floor woodbridge ON L4H3A5	GEN
Generator No: Status: Approval Years: Contam. Facility: MHSW Facility: SIC Code: SIC Description:	ON6845187 Registered As of Dec 2018			PO Box No: Country: Choice of Contact: Co Admin: Phone No Admin:	Canada
<u>Detail(s)</u>					
Waste Class: Waste Class Desc:	148 C Misc. wastes and inorganic chemicals				
Waste Class: Waste Class Desc:	261 A Pharmaceuticals				
Waste Class: Waste Class Desc:	264 L Photoprocessing wastes				
Waste Class: Waste Class Desc:	264 T Photoprocessing wastes				
Waste Class: Waste Class Desc:	312 P Pathological wastes				
4	5 of 6	NW/16.5	225.9 / 0.16	Vellore Woods Dentistry 9565 Weston Road 2nd floor Woodbridge ON L4H3A5	GEN
Generator No: Status: Approval Years: Contam. Facility: MHSW Facility: SIC Code: SIC Description:	ON6845187 Registered As of Jul 2020			PO Box No: Country: Choice of Contact: Co Admin: Phone No Admin:	Canada
<u>Detail(s)</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Waste Class:		148 C			
Waste Class Desc:		Misc. wastes and inorganic chemicals			
Waste Class:		264 T			
Waste Class Desc:		Photoprocessing wastes			
Waste Class:		312 P			
Waste Class Desc:		Pathological wastes			
Waste Class:		264 L			
Waste Class Desc:		Photoprocessing wastes			
Waste Class:		261 A			
Waste Class Desc:		Pharmaceuticals			
<hr/>					
<u>4</u>	6 of 6	NW/16.5	225.9 / 0.16	Vellore Woods Dentistry 9565 Weston Road 2nd floor Woodbridge ON L4H3A5	GEN
Generator No:	ON6845187			PO Box No:	
Status:	Registered			Country:	Canada
Approval Years:	As of Aug 2021			Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:					
SIC Description:					
 <u>Detail(s)</u>					
Waste Class:		312 P			
Waste Class Desc:		Pathological wastes			
Waste Class:		148 C			
Waste Class Desc:		Misc. wastes and inorganic chemicals			
Waste Class:		261 A			
Waste Class Desc:		Pharmaceuticals			
Waste Class:		264 T			
Waste Class Desc:		Photoprocessing wastes			
Waste Class:		264 L			
Waste Class Desc:		Photoprocessing wastes			
<hr/>					
<u>5</u>	1 of 1	SSW/29.2	224.4 / -1.27	lot 17 con 5 ON	WWIS
Well ID:	6906658			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:				Date Received:	12/22/1964
Sec. Water Use:				Selected Flag:	True
Final Well Status:	Test Hole			Abandonment Rec:	
Water Type:				Contractor:	2801
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	YORK AND TORONT
Elevation (m):				Municipality:	VAUGHAN TOWN (VAUGHAN TWP)
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	017
Well Depth:				Concession:	05
Overburden/Bedrock:				Concession Name:	CON

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:				Easting NAD83: Northing NAD83: Zone: UTM Reliability:	
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/690\6906658.pdf			
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:		1964/08/19			
Year Completed:		1964			
Depth (m):		92.6592			
Latitude:		43.8319729353231			
Longitude:		-79.5574360777739			
Path:		690\6906658.pdf			
<u>Bore Hole Information</u>					
Bore Hole ID:		10497357	Elevation:		223.031433
DP2BR:		266.00	Elevrc:		
Spatial Status:			Zone:		17
Code OB:		z	East83:		615982.70
Code OB Desc:		Mixed Layer below top of bedrcok	North83:		4854222.00
Open Hole:			Org CS:		
Cluster Kind:			UTMRC:		9
Date Completed:		19-Aug-1964 00:00:00	UTMRC Desc:		unknown UTM
Remarks:			Location Method:		p9
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932734941			
Layer:		10			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		245.0			
Formation End Depth:		266.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932734937			
Layer:		6			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		06			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat2 Desc:		SILT			
Mat3:		11			
Mat3 Desc:		GRAVEL			
Formation Top Depth:		56.0			
Formation End Depth:		132.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734933			
Layer:		2			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		1.0			
Formation End Depth:		10.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734939			
Layer:		8			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		139.0			
Formation End Depth:		226.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734942			
Layer:		11			
Color:					
General Color:					
Mat1:		17			
Most Common Material:		SHALE			
Mat2:		05			
Mat2 Desc:		CLAY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		266.0			
Formation End Depth:		276.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734944			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Layer:		13			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		17			
Mat2 Desc:		SHALE			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		293.0			
Formation End Depth:		300.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932734940			
Layer:		9			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		226.0			
Formation End Depth:		245.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932734938			
Layer:		7			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		132.0			
Formation End Depth:		139.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932734936			
Layer:		5			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		37.0			
Formation End Depth:		56.0			
Formation End Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734943			
Layer:		12			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		17			
Mat2 Desc:		SHALE			
Mat3:		11			
Mat3 Desc:		GRAVEL			
Formation Top Depth:		276.0			
Formation End Depth:		293.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734932			
Layer:		1			
Color:					
General Color:					
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		1.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734945			
Layer:		14			
Color:					
General Color:					
Mat1:		17			
Most Common Material:		SHALE			
Mat2:		05			
Mat2 Desc:		CLAY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		300.0			
Formation End Depth:		304.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734934			
Layer:		3			
Color:					
General Color:					
Mat1:		08			
Most Common Material:		FINE SAND			
Mat2:		05			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Mat2 Desc:		CLAY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		10.0			
Formation End Depth:		35.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734935			
Layer:		4			
Color:					
General Color:					
Mat1:		08			
Most Common Material:		FINE SAND			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		35.0			
Formation End Depth:		37.0			
Formation End Depth UOM:		ft			
 <u>Method of Construction & Well Use</u>					
Method Construction ID:		966906658			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
 <u>Pipe Information</u>					
Pipe ID:		11045927			
Casing No:		1			
Comment:					
Alt Name:					
 <u>Construction Record - Casing</u>					
Casing ID:		930809728			
Layer:		1			
Material:					
Open Hole or Material:					
Depth From:					
Depth To:					
Casing Diameter:		5			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			

<u>6</u>	1 of 1	NW/40.6	226.4 / 0.73	9575 Weston Road Vaughan ON L4L 1A6	EHS
Order No:	20030204008			Nearest Intersection:	Weston and Ashbury
Status:	C			Municipality:	Regional Municipality of York
Report Type:	Complete Report			Client Prov/State:	ON
Report Date:	2/13/03			Search Radius (km):	0.25
Date Received:	2/4/03			X:	-79.557741
Previous Site Name:				Y:	43.83366
Lot/Building Size:	0.139 hectares				
Additional Info Ordered:	Fire Insur. Maps and/or Site Plans and/or Inspection Reports				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
7	1 of 1	W/42.5	225.9 / 0.16	lot 17 con 6 ON	WWIS
Well ID: 6906777		Data Entry Status:			
Construction Date:		Data Src: 1			
Primary Water Use: Domestic		Date Received: 1/4/1968			
Sec. Water Use: 0		Selected Flag: True			
Final Well Status: Water Supply		Abandonment Rec:			
Water Type:		Contractor: 1622			
Casing Material:		Form Version: 1			
Audit No:		Owner:			
Tag:		Street Name:			
Construction Method:		County: YORK AND TORONT			
Elevation (m):		Municipality: VAUGHAN TOWN (VAUGHAN TWP)			
Elevation Reliability:		Site Info:			
Depth to Bedrock:		Lot: 017			
Well Depth:		Concession: 06			
Overburden/Bedrock:		Concession Name: CON			
Pump Rate:		Easting NAD83:			
Static Water Level:		Northing NAD83:			
Flowing (Y/N):		Zone:			
Flow Rate:		UTM Reliability:			
Clear/Cloudy:					
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/690\6906777.pdf			
<u>Additional Detail(s) (Map)</u>					
Well Completed Date: 1967/08/03					
Year Completed: 1967					
Depth (m): 35.052					
Latitude: 43.8331635115822					
Longitude: -79.5583153593033					
Path: 690\6906777.pdf					
<u>Bore Hole Information</u>					
Bore Hole ID: 10497476		Elevation: 226.079376			
DP2BR:		Elevrc:			
Spatial Status:		Zone: 17			
Code OB: 0		East83: 615909.70			
Code OB Desc: Overburden		North83: 4854353.00			
Open Hole:		Org CS:			
Cluster Kind:		UTMRC: 4			
Date Completed: 03-Aug-1967 00:00:00		UTMRC Desc: margin of error : 30 m - 100 m			
Remarks:		Location Method: p4			
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID: 932735518					
Layer: 4					
Color:					
General Color:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		09			
Mat2 Desc:		MEDIUM SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		80.0			
Formation End Depth:		107.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932735516			
Layer:		2			
Color:		5			
General Color:		YELLOW			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		1.0			
Formation End Depth:		32.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932735519			
Layer:		5			
Color:					
General Color:					
Mat1:		10			
Most Common Material:		COARSE SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		107.0			
Formation End Depth:		115.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932735517			
Layer:		3			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		32.0			
Formation End Depth:		80.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Materials Interval</u>					
Formation ID:		932735515			
Layer:		1			
Color:					
General Color:					
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		1.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966906777			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11046046			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930809867			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		111			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		933388936			
Layer:		1			
Slot:		020			
Screen Top Depth:		111			
Screen End Depth:		115			
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		4			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996906777			
Pump Set At:					
Static Level:		48.0			
Final Level After Pumping:		105.0			
Recommended Pump Depth:		110.0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pumping Rate: 3.0 Flowing Rate: Recommended Pump Rate: 3.0 Levels UOM: ft Rate UOM: GPM Water State After Test Code: 1 Water State After Test: CLEAR Pumping Test Method: 1 Pumping Duration HR: 6 Pumping Duration MIN: 0 Flowing: No					
<u>Water Details</u>					
Water ID: 933990171 Layer: 1 Kind Code: 1 Kind: FRESH Water Found Depth: 107.0 Water Found Depth UOM: ft					
8	1 of 1	N/48.8	225.9 / 0.16	9555, 9581, 9587, 9591 Weston Rd Vaughan ON	EHS
Order No: 20080904008 Status: C Report Type: Standard Report Report Date: 9/8/2008 Date Received: 9/4/2008 Previous Site Name: Lot/Building Size: Additional Info Ordered:					
Nearest Intersection: Municipality: Client Prov/State: ON Search Radius (km): 0.25 X: -79.556776 Y: 43.833931					
9	1 of 1	W/54.4	224.8 / -0.91	lot 17 con 6 ON	WWIS
Well ID: 6921136 Construction Date: Primary Water Use: Domestic Sec. Water Use: Final Well Status: Water Supply Water Type: Casing Material: Audit No: 26990 Tag: Construction Method: Elevation (m): Elevation Reliability: Depth to Bedrock: Well Depth: Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:					
Data Entry Status: Data Src: 1 Date Received: 7/23/1990 Selected Flag: True Abandonment Rec: Contractor: 1663 Form Version: 1 Owner: Street Name: County: YORK AND TORONT Municipality: VAUGHAN TOWN (VAUGHAN TWP) Site Info: Lot: 017 Concession: 06 Concession Name: CON Easting NAD83: Northing NAD83: Zone: UTM Reliability:					
PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/692/6921136.pdf					
<u>Additional Detail(s) (Map)</u>					
Well Completed Date: 1989/01/17					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Year Completed:		1989			
Depth (m):		33.528			
Latitude:		43.8328222140141			
Longitude:		-79.5583820348273			
Path:		692\6921136.pdf			
<u>Bore Hole Information</u>					
Bore Hole ID:	10511448			Elevation:	223.384323
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:	o			East83:	615905.00
Code OB Desc:	Overburden			North83:	4854315.00
Open Hole:				Org CS:	
Cluster Kind:				UTMRC:	4
Date Completed:	17-Jan-1989 00:00:00			UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	gps
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932806669				
Layer:	1				
Color:	6				
General Color:	BROWN				
Mat1:	11				
Most Common Material:	GRAVEL				
Mat2:	01				
Mat2 Desc:	FILL				
Mat3:					
Mat3 Desc:					
Formation Top Depth:	0.0				
Formation End Depth:	2.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932806672				
Layer:	4				
Color:	2				
General Color:	GREY				
Mat1:	28				
Most Common Material:	SAND				
Mat2:	10				
Mat2 Desc:	COARSE SAND				
Mat3:					
Mat3 Desc:					
Formation Top Depth:	65.0				
Formation End Depth:	86.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932806671				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Layer:		3			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		14.0			
Formation End Depth:		65.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932806674			
Layer:		6			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		28			
Mat3 Desc:		SAND			
Formation Top Depth:		93.0			
Formation End Depth:		110.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932806673			
Layer:		5			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		86.0			
Formation End Depth:		93.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932806670			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		2.0			
Formation End Depth:		14.0			
Formation End Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		933213571			
Layer:		2			
Plug From:		85			
Plug To:		110			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		933213570			
Layer:		1			
Plug From:		0			
Plug To:		82			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966921136			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11060018			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930825465			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		82			
Casing Diameter:		6			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		933397599			
Layer:		1			
Slot:		014			
Screen Top Depth:		82			
Screen End Depth:		85			
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		6			
<u>Results of Well Yield Testing</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pump Test ID: 996921136 Pump Set At: Static Level: 45.0 Final Level After Pumping: 79.0 Recommended Pump Depth: 79.0 Pumping Rate: 9.0 Flowing Rate: Recommended Pump Rate: 7.0 Levels UOM: ft Rate UOM: GPM Water State After Test Code: 1 Water State After Test: CLEAR Pumping Test Method: 1 Pumping Duration HR: 2 Pumping Duration MIN: 0 Flowing: No					
<u>Water Details</u>					
Water ID: 934003965 Layer: 1 Kind Code: 1 Kind: FRESH Water Found Depth: 65.0 Water Found Depth UOM: ft					
10	1 of 1	W/56.2	225.9 / 0.16	St. Magnus Developments Inc. 9554 Weston Rd Part of Lot 17 and 18, Concession 6 Vaughan ON L4K 2Y4	ECA
Approval No: 2141-ATCPYB Approval Date: 2017-11-27 Status: Approved Record Type: ECA Link Source: IDS SWP Area Name: Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS Business Name: St. Magnus Developments Inc. Address: 9554 Weston Rd Part of Lot 17 and 18, Concession 6 Full Address: Full PDF Link: https://www.accessenvironment.ene.gov.on.ca/instruments/5896-AT6N9L-14.pdf PDF Site Location:					
MOE District: City: Longitude: Latitude: Geometry X: Geometry Y:					
11	1 of 1	W/65.4	225.5 / -0.19	Weston Road And Laval Street Vaughan ON	EHS
Order No: 20160407152 Status: C Report Type: Custom Report Report Date: 14-APR-16 Date Received: 07-APR-16 Previous Site Name: Lot/Building Size: Additional Info Ordered:					
Nearest Intersection: Municipality: Client Prov/State: ON Search Radius (km): .25 X: -79.558616 Y: 43.833237					
12	1 of 1	NW/70.5	226.9 / 1.16	lot 18 con 5 ON	WWIS
Well ID: 6921482 Data Entry Status:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Construction Date:			Data Src:	1	
Primary Water Use:	Domestic		Date Received:	7/30/1991	
Sec. Water Use:			Selected Flag:	True	
Final Well Status:	Water Supply		Abandonment Rec:		
Water Type:			Contractor:	1663	
Casing Material:			Form Version:	1	
Audit No:	79162		Owner:		
Tag:			Street Name:		
Construction Method:			County:	YORK AND TORONT	
Elevation (m):			Municipality:	VAUGHAN TOWN (VAUGHAN TWP)	
Elevation Reliability:			Site Info:		
Depth to Bedrock:			Lot:	018	
Well Depth:			Concession:	05	
Overburden/Bedrock:			Concession Name:	CON	
Pump Rate:			Easting NAD83:		
Static Water Level:			Northing NAD83:		
Flowing (Y/N):			Zone:		
Flow Rate:			UTM Reliability:		
Clear/Cloudy:					
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/692\6921482.pdf			
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:	1990/04/02				
Year Completed:	1990				
Depth (m):	36.576				
Latitude:	43.8339734460722				
Longitude:	-79.5575707184373				
Path:	692\6921482.pdf				
<u>Bore Hole Information</u>					
Bore Hole ID:	10511792		Elevation:	224.935073	
DP2BR:			Elevrc:		
Spatial Status:	Improved		Zone:	17	
Code OB:	o		East83:	615968.00	
Code OB Desc:	Overburden		North83:	4854444.00	
Open Hole:			Org CS:	N83	
Cluster Kind:			UTMRC:	4	
Date Completed:	02-Apr-1990 00:00:00		UTMRC Desc:	margin of error : 30 m - 100 m	
Remarks:			Location Method:		
Elevrc Desc:					
Location Source Date:	As of Fall, 2005				
Improvement Location Source:	YPDT_Master_A.mdb from Conservation Authority Moraine Coalition				
Improvement Location Method:	Map				
Source Revision Comment:	Sourced from Hunter and Assoc. by CAMC. Source notes: HUNTER 2001 ORM AVI STUDY; Address Maps/OBM (UTM 1982)/Orthophoto (1999)/Parc; Original units in CAMC's source: UTM NAD83 UTMs and Gnd Elev updated by Hunter Brought into CAMC data on: 02/08/2002. Source ID: 6921482				
Supplier Comment:	Changed from lot/centroid coordinates.				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932808860				
Layer:	8				
Color:	2				
General Color:	GREY				
Mat1:	28				
Most Common Material:	SAND				
Mat2:	11				
Mat2 Desc:	GRAVEL				
Mat3:	30				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Mat3 Desc:		MEDIUM GRAVEL			
Formation Top Depth:		107.0			
Formation End Depth:		112.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932808862			
Layer:		10			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		73			
Mat2 Desc:		HARD			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		119.0			
Formation End Depth:		120.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932808861			
Layer:		9			
Color:		2			
General Color:		GREY			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		08			
Mat2 Desc:		FINE SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		112.0			
Formation End Depth:		119.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932808858			
Layer:		6			
Color:		2			
General Color:		GREY			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		05			
Mat2 Desc:		CLAY			
Mat3:		08			
Mat3 Desc:		FINE SAND			
Formation Top Depth:		81.0			
Formation End Depth:		97.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932808856			
Layer:		4			
Color:		3			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		73			
Mat3 Desc:		HARD			
Formation Top Depth:		28.0			
Formation End Depth:		52.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932808857			
Layer:		5			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		28			
Mat2 Desc:		SAND			
Mat3:		85			
Mat3 Desc:		SOFT			
Formation Top Depth:		52.0			
Formation End Depth:		81.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932808859			
Layer:		7			
Color:		2			
General Color:		GREY			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		08			
Mat2 Desc:		FINE SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		97.0			
Formation End Depth:		107.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932808854			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		28			
Mat3 Desc:		SAND			
Formation Top Depth:		1.0			
Formation End Depth:		26.0			
Formation End Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932808853			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		1.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932808855			
Layer:		3			
Color:					
General Color:					
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		26.0			
Formation End Depth:		28.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		933213815			
Layer:		1			
Plug From:		0			
Plug To:		108			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966921482			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11060362			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930825867			
Layer:		1			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Material:					
Open Hole or Material:		1	STEEL		
Depth From:					
Depth To:		108			
Casing Diameter:		62			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		933397845			
Layer:		1			
Slot:		014			
Screen Top Depth:		108			
Screen End Depth:		111			
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		6			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996921482			
Pump Set At:					
Static Level:		42.0			
Final Level After Pumping:		108.0			
Recommended Pump Depth:		100.0			
Pumping Rate:		20.0			
Flowing Rate:					
Recommended Pump Rate:		10.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		1			
Pumping Duration MIN:		45			
Flowing:		No			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934881463			
Test Type:		Recovery			
Test Duration:		45			
Test Level:		42.0			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		934004293			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		107.0			
Water Found Depth UOM:		ft			
13	1 of 1	NW/75.0	226.9 / 1.16	lot 18 con 5 ON	WWIS
Well ID:		6906659		Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:		Domestic		Date Received:	8/2/1960

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Sec. Water Use:	0			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	4823
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	YORK AND TORONT
Elevation (m):				Municipality:	VAUGHAN TOWN (VAUGHAN TWP)
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	018
Well Depth:				Concession:	05
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/690\6906659.pdf			
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:	1960/05/02				
Year Completed:	1960				
Depth (m):	27.432				
Latitude:	43.8339251376759				
Longitude:	-79.5580233832938				
Path:	690\6906659.pdf				
<u>Bore Hole Information</u>					
Bore Hole ID:	10497358			Elevation:	225.434204
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:	o			East83:	615931.70
Code OB Desc:	Overburden			North83:	4854438.00
Open Hole:				Org CS:	
Cluster Kind:				UTMRC:	5
Date Completed:	02-May-1960 00:00:00			UTMRC Desc:	margin of error : 100 m - 300 m
Remarks:				Location Method:	p5
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932734947				
Layer:	2				
Color:	7				
General Color:	RED				
Mat1:	09				
Most Common Material:	MEDIUM SAND				
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:	2.0				
Formation End Depth:	30.0				
Formation End Depth UOM:	ft				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734946			
Layer:		1			
Color:					
General Color:					
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		2.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734948			
Layer:		3			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		30.0			
Formation End Depth:		80.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734949			
Layer:		4			
Color:					
General Color:					
Mat1:		06			
Most Common Material:		SILT			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		80.0			
Formation End Depth:		86.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734950			
Layer:		5			
Color:					
General Color:					
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:		09			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat2 Desc:		MEDIUM SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		86.0			
Formation End Depth:		90.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966906659			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11045928			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930809729			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		86			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		933388886			
Layer:		1			
Slot:		018			
Screen Top Depth:		86			
Screen End Depth:		90			
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		4			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996906659			
Pump Set At:					
Static Level:		52.0			
Final Level After Pumping:		72.0			
Recommended Pump Depth:		72.0			
Pumping Rate:		3.0			
Flowing Rate:					
Recommended Pump Rate:		3.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		24			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pumping Duration MIN: Flowing:		0 No			
<u>Water Details</u>					
Water ID:		933990063			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		86.0			
Water Found Depth UOM:		ft			
14	1 of 1	NNE/76.2	224.9 / -0.84	Emily's Bakery Ltd. 9591 Weston Rd Unit 1-2 Woodbridge ON L4H 3A5	SCT
Established:		01-AUG-01			
Plant Size (ft²):					
Employment:					
<u>--Details--</u>					
Description:		Retail Bakeries			
SIC/NAICS Code:		311811			
Description:		Retail Bakeries			
SIC/NAICS Code:		311811			
15	1 of 1	WNW/76.4	225.9 / 0.18	ON	WWIS
Well ID:		7276114		Data Entry Status:	Yes
Construction Date:				Data Src:	
Primary Water Use:				Date Received:	11/29/2016
Sec. Water Use:				Selected Flag:	True
Final Well Status:				Abandonment Rec:	
Water Type:				Contractor:	7215
Casing Material:				Form Version:	8
Audit No:		C34204		Owner:	
Tag:		A206740		Street Name:	
Construction Method:				County:	YORK AND TORONT
Elevation (m):				Municipality:	VAUGHAN TOWN (VAUGHAN TWP)
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):					
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:		2016/05/20			
Year Completed:		2016			
Depth (m):					
Latitude:		43.8334656713867			
Longitude:		-79.5587148047164			
Path:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Bore Hole Information</u>					
Bore Hole ID:	1006298972			Elevation:	225.536666
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:				East83:	615877.00
Code OB Desc:				North83:	4854386.00
Open Hole:				Org CS:	UTM83
Cluster Kind:				UTMRC:	4
Date Completed:	20-May-2016 00:00:00			UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					

<u>16</u>	1 of 1	WNW/80.3	226.9 / 1.16	lot 18 con 6 ON	WWIS
Well ID:	6906780			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Domestic			Date Received:	3/22/1949
Sec. Water Use:	0			Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	1622
Casing Material:				Form Version:	1
Audit No:				Owner:	
Tag:				Street Name:	
Construction Method:				County:	YORK AND TORONT
Elevation (m):				Municipality:	VAUGHAN TOWN (VAUGHAN TWP)
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	018
Well Depth:				Concession:	06
Overburden/Bedrock:				Concession Name:	CON
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/690\6906780.pdf

Additional Detail(s) (Map)

Well Completed Date: 1948/05/28
Year Completed: 1948
Depth (m): 32.9184
Latitude: 43.8337959290229
Longitude: -79.5584867018023
Path: 690\6906780.pdf

Bore Hole Information

Bore Hole ID:	10497479	Elevation:	225.565994
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	o	East83:	615894.70
Code OB Desc:	Overburden	North83:	4854423.00
Open Hole:		Org CS:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Cluster Kind:				UTMRC:	4
Date Completed:	28-May-1948 00:00:00			UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	p4
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932735528				
Layer:	3				
Color:					
General Color:					
Mat1:	09				
Most Common Material:	MEDIUM SAND				
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:	30.0				
Formation End Depth:	75.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932735527				
Layer:	2				
Color:					
General Color:					
Mat1:	06				
Most Common Material:	SILT				
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:	10.0				
Formation End Depth:	30.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932735526				
Layer:	1				
Color:					
General Color:					
Mat1:	05				
Most Common Material:	CLAY				
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:	0.0				
Formation End Depth:	10.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Materials Interval</u>					
Formation ID:		932735529			
Layer:		4			
Color:					
General Color:					
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		75.0			
Formation End Depth:		108.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966906780			
Method Construction Code:		8			
Method Construction:		Jetting			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11046049			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930809870			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		103			
Casing Diameter:		2			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		933388938			
Layer:		1			
Slot:		010			
Screen Top Depth:		103			
Screen End Depth:		108			
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		2			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996906780			
Pump Set At:					
Static Level:		95.0			
Final Level After Pumping:					
Recommended Pump Depth:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pumping Rate: 2.0 Flowing Rate: Recommended Pump Rate: Levels UOM: ft Rate UOM: GPM Water State After Test Code: 1 Water State After Test: CLEAR Pumping Test Method: 1 Pumping Duration HR: 5 Pumping Duration MIN: 0 Flowing: No					
<u>Water Details</u>					
Water ID: 933990174 Layer: 1 Kind Code: 1 Kind: FRESH Water Found Depth: 93.0 Water Found Depth UOM: ft					
17	1 of 1	N/84.9	225.9 / 0.16	lot 18 con 5 ON	WWIS
Well ID: 6913822 Construction Date: Primary Water Use: Domestic Sec. Water Use: 0 Final Well Status: Water Supply Water Type: Casing Material: Audit No: Tag: Construction Method: Elevation (m): Elevation Reliability: Depth to Bedrock: Well Depth: Overburden/Bedrock: Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:					
Data Entry Status: Data Src: 1 Date Received: 2/15/1977 Selected Flag: True Abandonment Rec: Contractor: 1663 Form Version: 1 Owner: Street Name: County: YORK AND TORONT Municipality: VAUGHAN TOWN (VAUGHAN TWP) Site Info: Lot: 018 Concession: 05 Concession Name: CON Easting NAD83: Northing NAD83: Zone: UTM Reliability:					
PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/691\6913822.pdf					
<u>Additional Detail(s) (Map)</u>					
Well Completed Date: 1976/10/26 Year Completed: 1976 Depth (m): 45.72 Latitude: 43.8342271405623 Longitude: -79.5569837469023 Path: 691\6913822.pdf					
<u>Bore Hole Information</u>					
Bore Hole ID: 10504402 DP2BR: Spatial Status: Code OB: 0					
Elevation: 223.937240 Elevrc: Zone: 17 East83: 616014.70					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Code OB Desc:	Overburden			North83:	4854473.00
Open Hole:				Org CS:	
Cluster Kind:				UTMRC:	5
Date Completed:	26-Oct-1976 00:00:00			UTMRC Desc:	margin of error : 100 m - 300 m
Remarks:				Location Method:	p5
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767187			
Layer:		6			
Color:		2			
General Color:		GREY			
Mat1:		08			
Most Common Material:		FINE SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		65.0			
Formation End Depth:		77.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767189			
Layer:		8			
Color:		2			
General Color:		GREY			
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		90.0			
Formation End Depth:		95.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767183			
Layer:		2			
Color:		5			
General Color:		YELLOW			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		81			
Mat3 Desc:		SANDY			
Formation Top Depth:		1.0			
Formation End Depth:		19.0			
Formation End Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932767184			
Layer:		3			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		19.0			
Formation End Depth:		46.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932767188			
Layer:		7			
Color:					
General Color:					
Mat1:		28			
Most Common Material:		SAND			
Mat2:		05			
Mat2 Desc:		CLAY			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		77.0			
Formation End Depth:		90.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932767195			
Layer:		14			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		145.0			
Formation End Depth:		150.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932767186			
Layer:		5			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat3:					
Mat3 Desc:					
Formation Top Depth:		48.0			
Formation End Depth:		65.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767191			
Layer:		10			
Color:		2			
General Color:		GREY			
Mat1:		10			
Most Common Material:		COARSE SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		107.0			
Formation End Depth:		109.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767182			
Layer:		1			
Color:					
General Color:					
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		1.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767190			
Layer:		9			
Color:		2			
General Color:		GREY			
Mat1:		08			
Most Common Material:		FINE SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		95.0			
Formation End Depth:		107.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767194			
Layer:		13			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Color:					
General Color:					
Mat1:		08			
Most Common Material:		FINE SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		135.0			
Formation End Depth:		145.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767193			
Layer:		12			
Color:		2			
General Color:		GREY			
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		122.0			
Formation End Depth:		135.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767192			
Layer:		11			
Color:					
General Color:					
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		109.0			
Formation End Depth:		122.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932767185			
Layer:		4			
Color:		2			
General Color:		GREY			
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		46.0			
Formation End Depth:		48.0			
Formation End Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Method of Construction & Well Use</u>					
Method Construction ID:	966913822				
Method Construction Code:	2				
Method Construction:	Rotary (Convent.)				
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:	11052972				
Casing No:	1				
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:	930817427				
Layer:	1				
Material:	1				
Open Hole or Material:	STEEL				
Depth From:					
Depth To:	89				
Casing Diameter:	5				
Casing Diameter UOM:	inch				
Casing Depth UOM:	ft				
<u>Construction Record - Screen</u>					
Screen ID:	933392816				
Layer:	1				
Slot:	012				
Screen Top Depth:	89				
Screen End Depth:	92				
Screen Material:					
Screen Depth UOM:	ft				
Screen Diameter UOM:	inch				
Screen Diameter:	5				
<u>Results of Well Yield Testing</u>					
Pump Test ID:	996913822				
Pump Set At:					
Static Level:	47.0				
Final Level After Pumping:	85.0				
Recommended Pump Depth:	90.0				
Pumping Rate:	8.0				
Flowing Rate:					
Recommended Pump Rate:	6.0				
Levels UOM:	ft				
Rate UOM:	GPM				
Water State After Test Code:	1				
Water State After Test:	CLEAR				
Pumping Test Method:	2				
Pumping Duration HR:	1				
Pumping Duration MIN:	0				
Flowing:	No				
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:	934364728				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Test Type:		Recovery			
Test Duration:		15			
Test Level:		47.0			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		933996982			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		90.0			
Water Found Depth UOM:		ft			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/690\6906778.pdf

Well Completed Date: 1962/10/16
Year Completed: 1962
Depth (m): 23.4696
Latitude: 43.8340193831969
Longitude: -79.5583569412486
Path: 690/6906778.pdf

Bore Hole ID:	10497477	Elevation:	225.514755
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:	o	East83:	615904.70
Code OB Desc:	Overburden	North83:	4854448.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	4
Date Completed:	16-Oct-1962 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	p4
Elevrc Desc:			
Location Source Date:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Improvement Location Source: Improvement Location Method: Source Revision Comment: Supplier Comment:					
<u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932735520			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		20.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932735521			
Layer:		2			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		20.0			
Formation End Depth:		64.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932735522			
Layer:		3			
Color:		2			
General Color:		GREY			
Mat1:		08			
Most Common Material:		FINE SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		64.0			
Formation End Depth:		72.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932735523			
Layer:		4			
Color:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
General Color:					
Mat1:		10			
Most Common Material:		COARSE SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		72.0			
Formation End Depth:		77.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966906778			
Method Construction Code:		8			
Method Construction:		Jetting			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11046047			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930809868			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		72			
Casing Diameter:		2			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		933388937			
Layer:		1			
Slot:		010			
Screen Top Depth:		72			
Screen End Depth:		77			
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		2			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996906778			
Pump Set At:					
Static Level:		55.0			
Final Level After Pumping:					
Recommended Pump Depth:		71.0			
Pumping Rate:		2.0			
Flowing Rate:					
Recommended Pump Rate:		2.0			
Levels UOM:		ft			
Rate UOM:		GPM			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Water State After Test Code: 1 Water State After Test: CLEAR Pumping Test Method: 1 Pumping Duration HR: 3 Pumping Duration MIN: 0 Flowing: No					
<u>Water Details</u>					
Water ID: 933990172 Layer: 1 Kind Code: 1 Kind: FRESH Water Found Depth: 72.0 Water Found Depth UOM: ft					
19	1 of 4	N/97.3	225.5 / -0.17	Dhuga Dentistry Professional Corporation 9581 Weston Road Unit 1 Vaughan ON L4H 3A5	GEN
Generator No: ON4680900 Status: Approval Years: 2016 Contam. Facility: No MHSW Facility: No SIC Code: 621210 SIC Description: OFFICES OF DENTISTS					
PO Box No: Country: Canada Choice of Contact: CO_OFFICIAL Co Admin: Phone No Admin:					
<u>Detail(s)</u>					
Waste Class: 312 Waste Class Desc: PATHOLOGICAL WASTES					
19	2 of 4	N/97.3	225.5 / -0.17	Dhuga Dentistry Professional Corporation 9581 Weston Road Unit 1 Vaughan ON L4H 3A5	GEN
Generator No: ON4680900 Status: Approval Years: 2015 Contam. Facility: No MHSW Facility: No SIC Code: 621210 SIC Description: OFFICES OF DENTISTS					
PO Box No: Country: Canada Choice of Contact: CO_OFFICIAL Co Admin: Amber Nagy-Ouellette Phone No Admin: 905.879.1600 Ext.					
<u>Detail(s)</u>					
Waste Class: 312 Waste Class Desc: PATHOLOGICAL WASTES					
19	3 of 4	N/97.3	225.5 / -0.17	Dhuga Dentistry Professional Corporation 9581 Weston Road Unit 1 Vaughan ON L4H 3A5	GEN
Generator No: ON4680900 Status: Registered Approval Years: As of Dec 2017 Contam. Facility: MHSW Facility: SIC Code: SIC Description:					
PO Box No: Country: Canada Choice of Contact: Co Admin: Phone No Admin:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Detail(s)</u>					
Waste Class:		312 P			
Waste Class Desc:		Pathological wastes			
<u>19</u>	4 of 4	N/97.3	225.5 / -0.17	Dhuga Dentistry Professional Corporation 9581 Weston Road Unit 1 Vaughan ON L4H 3A5	GEN
Generator No:	ON4680900			PO Box No:	
Status:	Registered			Country:	Canada
Approval Years:	As of Jul 2020			Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:					
SIC Description:					
<u>Detail(s)</u>					
Waste Class:		312 P			
Waste Class Desc:		Pathological wastes			
<u>20</u>	1 of 1	WSW/119.8	220.5 / -5.15	Home Alone Property Management Ltd. 141 Montcalm Blvd, Vaughan ON L4H 2N2	GEN
Generator No:	ON5817118			PO Box No:	
Status:				Country:	
Approval Years:	07,08			Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:	531310				
SIC Description:	Real Estate Property Managers				
<u>Detail(s)</u>					
Waste Class:		263			
Waste Class Desc:		ORGANIC LABORATORY CHEMICALS			
Waste Class:		148			
Waste Class Desc:		INORGANIC LABORATORY CHEMICALS			
<u>21</u>	1 of 1	SSE/132.7	222.9 / -2.83	lot 17 con 5 ON	WWIS
Well ID:	6923108			Data Entry Status:	
Construction Date:				Data Src:	1
Primary Water Use:	Domestic			Date Received:	3/22/1995
Sec. Water Use:				Selected Flag:	True
Final Well Status:	Water Supply			Abandonment Rec:	
Water Type:				Contractor:	1663
Casing Material:				Form Version:	1
Audit No:	159722			Owner:	
Tag:				Street Name:	
Construction Method:				County:	YORK AND TORONT
Elevation (m):				Municipality:	VAUGHAN TOWN (VAUGHAN TWP)
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	017
Well Depth:				Concession:	05
Overburden/Bedrock:				Concession Name:	CON

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Pump Rate: Static Water Level: Flowing (Y/N): Flow Rate: Clear/Cloudy:			Easting NAD83: Northing NAD83: Zone: UTM Reliability:		
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/692\6923108.pdf			
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:		1994/11/02			
Year Completed:		1994			
Depth (m):		35.9664			
Latitude:		43.8312723286711			
Longitude:		-79.5561432883828			
Path:		692\6923108.pdf			
<u>Bore Hole Information</u>					
Bore Hole ID:		10513411		Elevation:	221.218048
DP2BR:				Elevrc:	
Spatial Status:		Improved		Zone:	17
Code OB:		o		East83:	616088.00
Code OB Desc:		Overburden		North83:	4854146.00
Open Hole:				Org CS:	N83
Cluster Kind:				UTMRC:	4
Date Completed:		02-Nov-1994 00:00:00		UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	
Elevrc Desc:					
Location Source Date:		As of Fall, 2005			
Improvement Location Source:		YPDT_Master_A.mdb from Conservation Authority Moraine Coalition			
Improvement Location Method:		Map			
Source Revision Comment:		Sourced from Hunter and Assoc. by CAMC. Source notes: HUNTER 2001 ORM AVI STUDY; Address Maps/OBM (UTM 1982)/Orthophoto (1999)/Parc; Original units in CAMC's source: UTM NAD83 UTMs and Gnd Elev updated by Hunter Brought into CAMC data on: 02/08/2002. Source ID: 6923108			
Supplier Comment:		Changed from lot/centroid coordinates.			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932817562			
Layer:		5			
Color:		2			
General Color:		GREY			
Mat1:		08			
Most Common Material:		FINE SAND			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		105.0			
Formation End Depth:		109.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932817561			
Layer:		4			
Color:		2			
General Color:		GREY			
Mat1:		08			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Most Common Material:		FINE SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		94.0			
Formation End Depth:		105.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932817563			
Layer:		6			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		109.0			
Formation End Depth:		118.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932817559			
Layer:		2			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		16.0			
Formation End Depth:		62.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932817558			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		28			
Mat2 Desc:		SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		16.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Formation ID:		932817560			
Layer:		3			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		11			
Mat2 Desc:		GRAVEL			
Mat3:		28			
Mat3 Desc:		SAND			
Formation Top Depth:		62.0			
Formation End Depth:		94.0			
Formation End Depth UOM:		ft			
 <u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		933215981			
Layer:		2			
Plug From:		20			
Plug To:		99			
Plug Depth UOM:		ft			
 <u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		933215980			
Layer:		1			
Plug From:		0			
Plug To:		20			
Plug Depth UOM:		ft			
 <u>Method of Construction & Well Use</u>					
Method Construction ID:		966923108			
Method Construction Code:		2			
Method Construction:		Rotary (Convent.)			
Other Method Construction:					
 <u>Pipe Information</u>					
Pipe ID:		11061981			
Casing No:		1			
Comment:					
Alt Name:					
 <u>Construction Record - Casing</u>					
Casing ID:		930827640			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		99			
Casing Diameter:		6			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
 <u>Construction Record - Screen</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Screen ID:		933398930			
Layer:		1			
Slot:		008			
Screen Top Depth:		99			
Screen End Depth:		105			
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		6			
 <u>Results of Well Yield Testing</u>					
Pump Test ID:		996923108			
Pump Set At:					
Static Level:		26.0			
Final Level After Pumping:		100.0			
Recommended Pump Depth:		100.0			
Pumping Rate:		7.0			
Flowing Rate:					
Recommended Pump Rate:		7.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		2			
Pumping Duration HR:		1			
Pumping Duration MIN:		30			
Flowing:		No			
 <u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934876548			
Test Type:		Draw Down			
Test Duration:		45			
Test Level:		98.0			
Test Level UOM:		ft			
 <u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934635723			
Test Type:		Draw Down			
Test Duration:		30			
Test Level:		96.0			
Test Level UOM:		ft			
 <u>Draw Down & Recovery</u>					
Pump Test Detail ID:		935149840			
Test Type:		Draw Down			
Test Duration:		60			
Test Level:		100.0			
Test Level UOM:		ft			
 <u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934361307			
Test Type:		Draw Down			
Test Duration:		15			
Test Level:		92.0			
Test Level UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Water Details</u>					
Water ID:	934005701				
Layer:	1				
Kind Code:	1				
Kind:	FRESH				
Water Found Depth:	94.0				
Water Found Depth UOM:	ft				
<u>22</u>	1 of 1	SE/135.3	223.8 / -1.87	9465 Weston Rd Woodbridge ON L4H 2E5	EHS
Order No:	20180801018			Nearest Intersection:	
Status:	C			Municipality:	
Report Type:	Standard Express Report			Client Prov/State:	ON
Report Date:	01-AUG-18			Search Radius (km):	.25
Date Received:	01-AUG-18			X:	-79.555429
Previous Site Name:				Y:	43.831396
Lot/Building Size:					
Additional Info Ordered:					
<u>23</u>	1 of 4	SE/136.1	223.8 / -1.92	9465 Weston Road Woodbridge ON L4H 2E6	EHS
Order No:	20200805054			Nearest Intersection:	
Status:	C			Municipality:	
Report Type:	RSC Report - Quote			Client Prov/State:	ON
Report Date:	10-AUG-20			Search Radius (km):	.3
Date Received:	05-AUG-20			X:	-79.55514788
Previous Site Name:				Y:	43.83145622
Lot/Building Size:					
Additional Info Ordered:	Fire Insur. Maps and/or Site Plans				
<u>23</u>	2 of 4	SE/136.1	223.8 / -1.92	9465 Weston Road Woodbridge ON L4H 2E6	EHS
Order No:	20200805054			Nearest Intersection:	
Status:	C			Municipality:	
Report Type:	RSC Report - Quote			Client Prov/State:	ON
Report Date:	10-AUG-20			Search Radius (km):	.3
Date Received:	05-AUG-20			X:	-79.55514788
Previous Site Name:				Y:	43.83145622
Lot/Building Size:					
Additional Info Ordered:	Fire Insur. Maps and/or Site Plans				
<u>23</u>	3 of 4	SE/136.1	223.8 / -1.92	9465 Weston Road Woodbridge ON L4H 2E6	EHS
Order No:	20200805054			Nearest Intersection:	
Status:	C			Municipality:	
Report Type:	RSC Report - Quote			Client Prov/State:	ON
Report Date:	10-AUG-20			Search Radius (km):	.3
Date Received:	05-AUG-20			X:	-79.55514788
Previous Site Name:				Y:	43.83145622
Lot/Building Size:					
Additional Info Ordered:	Fire Insur. Maps and/or Site Plans				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
23	4 of 4	SE/136.1	223.8 / -1.92	9465 Weston Road Woodbridge ON L4H 2E6	EHS
Order No: 20200805054				Nearest Intersection:	
Status: C				Municipality:	
Report Type: RSC Report - Quote				Client Prov/State: ON	
Report Date: 10-AUG-20				Search Radius (km): .3	
Date Received: 05-AUG-20				X: -79.55514788	
Previous Site Name:				Y: 43.83145622	
Lot/Building Size:					
Additional Info Ordered: Fire Insur. Maps and/or Site Plans					
24	1 of 1	SE/151.9	223.9 / -1.83	9465 WESTON RD WOODBIDGE ON	WWIS
Well ID: 7320102				Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use: Test Hole				Date Received: 10/15/2018	
Sec. Water Use: Monitoring				Selected Flag: True	
Final Well Status: Test Hole				Abandonment Rec:	
Water Type:				Contractor: 7323	
Casing Material:				Form Version: 7	
Audit No: Z271871				Owner:	
Tag: A182146				Street Name: 9465 WESTON RD	
Construction Method:				County: YORK AND TORONT	
Elevation (m):				Municipality: VAUGHAN TOWN (VAUGHAN TWP)	
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):					
Additional Detail(s) (Map)					
Well Completed Date: 2018/08/03					
Year Completed: 2018					
Depth (m): 8.5344					
Latitude: 43.8312875438124					
Longitude: -79.5552101092584					
Path:					
Bore Hole Information					
Bore Hole ID: 1007297765				Elevation:	
DP2BR:				Elevrc:	
Spatial Status:				Zone: 17	
Code OB:				East83: 616163.00	
Code OB Desc:				North83: 4854149.00	
Open Hole:				Org CS: UTM83	
Cluster Kind:				UTMRC: 4	
Date Completed: 03-Aug-2018 00:00:00				UTMRC Desc: margin of error : 30 m - 100 m	
Remarks:				Location Method: wwr	
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		1007537457			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		06			
Mat2 Desc:		SILT			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		28.0			
Formation End Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1007537465			
Layer:		1			
Plug From:		0			
Plug To:		16			
Plug Depth UOM:		ft			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1007537466			
Layer:		2			
Plug From:		16			
Plug To:		28			
Plug Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1007537464			
Method Construction Code:		6			
Method Construction:		Boring			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1007537456			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Screen</u>					
Screen ID:		1007537461			
Layer:		1			
Slot:		.10			
Screen Top Depth:		18			
Screen End Depth:		28			
Screen Material:		5			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		2.25			
<u>Water Details</u>					
Water ID:		1007537459			
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		ft			
<u>Hole Diameter</u>					
Hole ID:		1007537458			
Diameter:		6.0			
Depth From:		0.0			
Depth To:		28.0			
Hole Depth UOM:		ft			
Hole Diameter UOM:		inch			
25	1 of 1	SSW/152.8	221.2 / -4.48	9401 Weston Rd Woodbridge ON L4L 1A6	RSC
RSC ID:				Cert Date:	
RA No:				Cert Prop Use No:	
RSC Type:				Intended Prop Use:	
Curr Property Use:				Qual Person Name:	
Ministry District:		York Durham		Stratified (Y/N):	
Filing Date:		05/24/00		Audit (Y/N):	
Date Ack:				Entire Leg Prop. (Y/N):	
Date Returned:		06/30/00		Accuracy Estimate:	
Restoration Type:				Telephone:	
Soil Type:				Fax:	
Criteria:				Email:	
CPU Issued Sect					
1686:					
Asmt Roll No:					
Prop ID No (PIN):					
Property Municipal Address:					
Mailing Address:					
Latitude & Latitude:					
UTM Coordinates:					
Consultant:		Unknown			
Legal Desc:					
Measurement Method:					
Applicable Standards:					
RSC PDF:					
26	1 of 1	W/160.7	224.2 / -1.45	Enbridge Gas Distribution 88-90 Laval St, Woodbridge Vaughan ON	SPL
Ref No:		3224-9CDL5L		Discharger Report:	
Site No:				Material Group:	
Incident Dt:		2013/10/11		Health/Env Conseq:	
Year:				Client Type:	
Incident Cause:		Leak/Break		Sector Type:	Valve/Fitting/Piping
Incident Event:				Agency Involved:	
Contaminant Code:		35		Nearest Watercourse:	
Contaminant Name:		NATURAL GAS (METHANE)		Site Address:	88-90 Laval St, Woodbridge
Contaminant Limit 1:				Site District Office:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<div> <div> Contam Limit Freq 1: Contaminant UN No 1: Environment Impact: Confirmed Nature of Impact: Air Pollution Receiving Medium: Receiving Env: MOE Response: Referral to others Dt MOE Arvl on Scn: MOE Reported Dt: 2013/10/11 Dt Document Closed: 2013/11/01 Incident Reason: Operator/Human Error Site Name: Residential Townhouse<UNOFFICIAL> Site County/District: Site Geo Ref Meth: Incident Summary: TSSA: Meter damage, safe Contaminant Qty: 0 other - see incident description </div> <div> Site Postal Code: Site Region: Site Municipality: Vaughan Site Lot: Site Conc: Northing: Easting: Site Geo Ref Accu: Site Map Datum: SAC Action Class: TSSA - Fuel Safety Branch - Hydrocarbon Fuel Release/Spill Source Type: </div> </div>					
27	1 of 2	ENE/166.4	222.5 / -3.15	TURF SPECIALTIES 82 JOHNSTOWN CRES WOODBIDGE ON L4H2K9	PES
<div> <div> Detail Licence No: 02-01-04711-0 Licence No: 04711 Status: Approval Date: Report Source: Legacy Licenses (Excluding TS) Licence Type: Operator Licence Type Code: 02 Licence Class: 01 Licence Control: 0 Latitude: Longitude: Lot: Concession: Region: 3 District: County: 69 Trade Name: PDF Link: PDF Site Location: </div> <div> Operator Box: Operator Class: Operator No: Operator Type: Oper Area Code: 905 Oper Phone No: 3032949 Operator Ext: Operator Lot: Oper Concession: Operator Region: 3 Operator District: Operator County: 69 Op Municipality: Post Office Box: MOE District: SWP Area Name: </div> </div>					
27	2 of 2	ENE/166.4	222.5 / -3.15	TURF SPECIALTIES 82 JOHNSTOWN CRES WOODBIDGE ON L4H2K9	PES
<div> <div> Detail Licence No: Licence No: 04711 Status: Approval Date: Report Source: Legacy Licenses (Excluding TS) Licence Type: Operator Licence Type Code: 01 Licence Class: 06 Licence Control: Latitude: Longitude: Lot: Concession: Region: District: County: </div> <div> Operator Box: Operator Class: Operator No: Operator Type: Oper Area Code: 905 Oper Phone No: 3032949 Operator Ext: Operator Lot: Oper Concession: Operator Region: Operator District: Operator County: Op Municipality: Post Office Box: MOE District: SWP Area Name: </div> </div>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Trade Name: PDF Link: PDF Site Location:					
28	1 of 1	NW/183.3	226.9 / 1.16	lot 18 con 5 ON	WWIS
Well ID: 6906660		Data Entry Status:			
Construction Date:		Data Src: 1			
Primary Water Use: Domestic		Date Received: 2/14/1958			
Sec. Water Use: 0		Selected Flag: True			
Final Well Status: Water Supply		Abandonment Rec:			
Water Type:		Contractor: 1622			
Casing Material:		Form Version: 1			
Audit No:		Owner:			
Tag:		Street Name:			
Construction Method:		County: YORK AND TORONT			
Elevation (m):		Municipality: VAUGHAN TOWN (VAUGHAN TWP)			
Elevation Reliability:		Site Info:			
Depth to Bedrock:		Lot: 018			
Well Depth:		Concession: 05			
Overburden/Bedrock:		Concession Name: CON			
Pump Rate:		Easting NAD83:			
Static Water Level:		Northing NAD83:			
Flowing (Y/N):		Zone:			
Flow Rate:		UTM Reliability:			
Clear/Cloudy:					
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/690\6906660.pdf			
Additional Detail(s) (Map)					
Well Completed Date: 1957/06/10					
Year Completed: 1957					
Depth (m): 30.48					
Latitude: 43.8348913738386					
Longitude: -79.5582488769865					
Path: 690\6906660.pdf					
Bore Hole Information					
Bore Hole ID: 10497359		Elevation: 224.058959			
DP2BR:		Elevrc:			
Spatial Status:		Zone: 17			
Code OB: o		East83: 615911.70			
Code OB Desc: Overburden		North83: 4854545.00			
Open Hole:		Org CS:			
Cluster Kind:		UTMRC: 9			
Date Completed: 10-Jun-1957 00:00:00		UTMRC Desc: unknown UTM			
Remarks:		Location Method: p9			
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
Overburden and Bedrock Materials Interval					
Formation ID:		932734951			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Layer:		1			
Color:					
General Color:					
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		0.0			
Formation End Depth:		1.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932734953			
Layer:		3			
Color:		3			
General Color:		BLUE			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		20.0			
Formation End Depth:		70.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932734952			
Layer:		2			
Color:					
General Color:					
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		1.0			
Formation End Depth:		20.0			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		932734955			
Layer:		5			
Color:					
General Color:					
Mat1:		11			
Most Common Material:		GRAVEL			
Mat2:		09			
Mat2 Desc:		MEDIUM SAND			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		90.0			
Formation End Depth:		100.0			
Formation End Depth UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		932734954			
Layer:		4			
Color:					
General Color:					
Mat1:		09			
Most Common Material:		MEDIUM SAND			
Mat2:					
Mat2 Desc:					
Mat3:					
Mat3 Desc:					
Formation Top Depth:		70.0			
Formation End Depth:		90.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966906660			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11045929			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930809730			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		96			
Casing Diameter:		4			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Screen</u>					
Screen ID:		933388887			
Layer:		1			
Slot:		008			
Screen Top Depth:		96			
Screen End Depth:		100			
Screen Material:					
Screen Depth UOM:		ft			
Screen Diameter UOM:		inch			
Screen Diameter:		4			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996906660			
Pump Set At:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Static Level:		40.0			
Final Level After Pumping:		60.0			
Recommended Pump Depth:					
Pumping Rate:		3.0			
Flowing Rate:					
Recommended Pump Rate:					
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		1			
Pumping Duration HR:		24			
Pumping Duration MIN:		0			
Flowing:		No			
<u>Water Details</u>					
Water ID:		933990064			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		100.0			
Water Found Depth UOM:		ft			
29	1 of 1	S/209.9	220.9 / -4.80	lot 36 con 5 ON	WWIS
Well ID:		6919834		Data Entry Status:	
Construction Date:				Data Src: 1	
Primary Water Use:		Domestic		Date Received: 9/14/1988	
Sec. Water Use:				Selected Flag: True	
Final Well Status:		Water Supply		Abandonment Rec:	
Water Type:				Contractor: 3656	
Casing Material:				Form Version: 1	
Audit No:		39205		Owner:	
Tag:				Street Name:	
Construction Method:				County: YORK AND TORONT	
Elevation (m):				Municipality: VAUGHAN TOWN (VAUGHAN TWP)	
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot: 036	
Well Depth:				Concession: 05	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
PDF URL (Map):		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/691\6919834.pdf			
<u>Additional Detail(s) (Map)</u>					
Well Completed Date:		1988/09/02			
Year Completed:		1988			
Depth (m):		67.056			
Latitude:		43.8304075651174			
Longitude:		-79.5568233175794			
Path:		691\6919834.pdf			
<u>Bore Hole Information</u>					
Bore Hole ID:		10510157		Elevation: 219.327987	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
DP2BR:	209.00			Elevrc:	
Spatial Status:				Zone:	17
Code OB:	r			East83:	616035.00
Code OB Desc:	Bedrock			North83:	4854049.00
Open Hole:				Org CS:	
Cluster Kind:				UTMRC:	3
Date Completed:	02-Sep-1988 00:00:00			UTMRC Desc:	margin of error : 10 - 30 m
Remarks:				Location Method:	gps
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932798764				
Layer:	4				
Color:	2				
General Color:	GREY				
Mat1:	05				
Most Common Material:	CLAY				
Mat2:	34				
Mat2 Desc:	TILL				
Mat3:	66				
Mat3 Desc:	DENSE				
Formation Top Depth:	112.0				
Formation End Depth:	180.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932798761				
Layer:	1				
Color:	6				
General Color:	BROWN				
Mat1:	05				
Most Common Material:	CLAY				
Mat2:	34				
Mat2 Desc:	TILL				
Mat3:	66				
Mat3 Desc:	DENSE				
Formation Top Depth:	0.0				
Formation End Depth:	12.0				
Formation End Depth UOM:	ft				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	932798763				
Layer:	3				
Color:	2				
General Color:	GREY				
Mat1:	06				
Most Common Material:	SILT				
Mat2:	66				
Mat2 Desc:	DENSE				
Mat3:					
Mat3 Desc:					
Formation Top Depth:	82.0				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Formation End Depth:		112.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932798766			
Layer:		6			
Color:		2			
General Color:		GREY			
Mat1:		34			
Most Common Material:		TILL			
Mat2:		66			
Mat2 Desc:		DENSE			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		197.0			
Formation End Depth:		209.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932798767			
Layer:		7			
Color:		2			
General Color:		GREY			
Mat1:		17			
Most Common Material:		SHALE			
Mat2:		66			
Mat2 Desc:		DENSE			
Mat3:					
Mat3 Desc:					
Formation Top Depth:		209.0			
Formation End Depth:		220.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932798762			
Layer:		2			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		34			
Mat2 Desc:		TILL			
Mat3:		66			
Mat3 Desc:		DENSE			
Formation Top Depth:		12.0			
Formation End Depth:		82.0			
Formation End Depth UOM:		ft			
 <u>Overburden and Bedrock</u> <u>Materials Interval</u>					
Formation ID:		932798765			
Layer:		5			
Color:		6			
General Color:		BROWN			
Mat1:		28			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Most Common Material:					
Mat2:		SAND	84		
Mat2 Desc:		SILTY			
Mat3:		66			
Mat3 Desc:		DENSE			
Formation Top Depth:		180.0			
Formation End Depth:		197.0			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		966919834			
Method Construction Code:		1			
Method Construction:		Cable Tool			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		11058727			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930823914			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		212			
Casing Diameter:		6			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		996919834			
Pump Set At:					
Static Level:		80.0			
Final Level After Pumping:		140.0			
Recommended Pump Depth:		180.0			
Pumping Rate:		12.0			
Flowing Rate:					
Recommended Pump Rate:		7.0			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		1			
Water State After Test:		CLEAR			
Pumping Test Method:		2			
Pumping Duration HR:		2			
Pumping Duration MIN:		15			
Flowing:		No			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		935150756			
Test Type:					
Test Duration:		60			
Test Level:		140.0			
Test Level UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:	934878122				
Test Type:					
Test Duration:	45				
Test Level:	140.0				
Test Level UOM:	ft				
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:	934628342				
Test Type:					
Test Duration:	30				
Test Level:	120.0				
Test Level UOM:	ft				
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:	934361782				
Test Type:					
Test Duration:	15				
Test Level:	100.0				
Test Level UOM:	ft				
<u>Water Details</u>					
Water ID:	934002770				
Layer:	1				
Kind Code:	1				
Kind:	FRESH				
Water Found Depth:	217.0				
Water Found Depth UOM:	ft				
30	1 of 1	WSW/266.6	219.9 / -5.76	1 LUCERNE DRIVE, BLOCK 100, UNIT 7, WOODBIDGE ON	INC
Incident No:	1808792			Any Health Impact:	Unknown
Incident ID:				Any Enviro Impact:	Unknown
Instance No:				Service Interrupted:	Unknown
Status Code:				Was Prop Damaged:	Unknown
Attribute Category:	FS-Perform L1 Incident Insp			Reside App. Type:	
Context:				Commer App. Type:	
Date of Occurrence:	2016/02/17 00:00:00			Indus App. Type:	
Time of Occurrence:	12:00:00			Institut App. Type:	
Incident Created On:				Venting Type:	
Instance Creation Dt:				Vent Conn Mater:	
Instance Install Dt:				Vent Chimney Mater:	
Occur Insp Start Date:	2016/02/17 00:00:00			Pipeline Type:	
Approx Quant Rel:				Pipeline Involved:	
Tank Capacity:				Pipe Material:	
Fuels Occur Type:	CO Release			Depth Ground Cover:	
Fuel Type Involved:	Natural Gas			Regulator Location:	
Enforcement Policy:	NULL			Regulator Type:	
Prc Escalation Req:	NULL			Operation Pressure:	
Tank Material Type:				Liquid Prop Make:	
Tank Storage Type:				Liquid Prop Model:	
Tank Location Type:				Liquid Prop Serial No:	
Pump Flow Rate Cap:				Liquid Prop Notes:	
Task No:	6055177			Equipment Type:	
Notes:				Equipment Model:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Drainage System: Sub Surface Contam.: Aff Prop Use Water: Contam. Migrated: Contact Natural Env: Incident Location: Occurence Narrative: Operation Type Involved: Item: Item Description: Device Installed Location:		1 LUCERNE DRIVE, BLOCK 100, UNIT 7, WOODBRIDGE - CO RELEASE unable to confirm CO Private Dwelling		Serial No: Cylinder Capacity: Cylinder Cap Units: Cylinder Mat Type: Near Body of Water:	
31	1 of 1	WSW/267.4	218.9 / -6.81	L.C. Adam Apparell 127 Bologna Rd Woodbridge ON L4H 2M6	SCT
Established: Plant Size (ft²): Employment:		01-JAN-94 1600			
--Details-- Description: SIC/NAICS Code:		Clothing Accessories and Other Clothing Manufacturing 315990			
32	1 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	GEN
Generator No: Status: Approval Years: Contam. Facility: MHSW Facility: SIC Code: SIC Description:		ON6162584 07,08 611110 Elementary and Secondary Schools		PO Box No: Country: Choice of Contact: Co Admin: Phone No Admin:	
<u>Detail(s)</u>					
Waste Class: Waste Class Desc:		145 PAINT/PIGMENT/COATING RESIDUES			
Waste Class: Waste Class Desc:		146 OTHER SPECIFIED INORGANICS			
Waste Class: Waste Class Desc:		148 INORGANIC LABORATORY CHEMICALS			
Waste Class: Waste Class Desc:		211 AROMATIC SOLVENTS			
Waste Class: Waste Class Desc:		212 ALIPHATIC SOLVENTS			
Waste Class: Waste Class Desc:		213 PETROLEUM DISTILLATES			
Waste Class: Waste Class Desc:		251 OIL SKIMMINGS & SLUDGES			
Waste Class: Waste Class Desc:		252 WASTE OILS & LUBRICANTS			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>263</div> <div>ORGANIC LABORATORY CHEMICALS</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>264</div> <div>PHOTOPROCESSING WASTES</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>331</div> <div>WASTE COMPRESSED GASES</div> </div>					
32	2 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	GEN
<div> <div>Generator No:</div> <div>Status:</div> <div>Approval Years:</div> <div>Contam. Facility:</div> <div>MHSW Facility:</div> <div>SIC Code:</div> <div>SIC Description:</div> <div>ON6162584</div> <div>2009</div> <div>611110</div> <div>Elementary and Secondary Schools</div> </div> <div> <div>PO Box No:</div> <div>Country:</div> <div>Choice of Contact:</div> <div>Co Admin:</div> <div>Phone No Admin:</div> </div>					
<u>Detail(s)</u>					
<div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>145</div> <div>PAINT/PIGMENT/COATING RESIDUES</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>146</div> <div>OTHER SPECIFIED INORGANICS</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>148</div> <div>INORGANIC LABORATORY CHEMICALS</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>211</div> <div>AROMATIC SOLVENTS</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>212</div> <div>ALIPHATIC SOLVENTS</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>213</div> <div>PETROLEUM DISTILLATES</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>251</div> <div>OIL SKIMMINGS & SLUDGES</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>252</div> <div>WASTE OILS & LUBRICANTS</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>263</div> <div>ORGANIC LABORATORY CHEMICALS</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>264</div> <div>PHOTOPROCESSING WASTES</div> </div> <div> <div>Waste Class:</div> <div>Waste Class Desc:</div> <div>331</div> <div>WASTE COMPRESSED GASES</div> </div>					
32	3 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	GEN
<div> <div>Generator No:</div> <div>Status:</div> <div>ON6162584</div> </div> <div> <div>PO Box No:</div> <div>Country:</div> </div>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Approval Years: Contam. Facility: MHSW Facility: SIC Code: SIC Description:	2010 611110			Choice of Contact: Co Admin: Phone No Admin: Elementary and Secondary Schools	
<u>Detail(s)</u>					
Waste Class:		251			
Waste Class Desc:		OIL SKIMMINGS & SLUDGES			
Waste Class:		331			
Waste Class Desc:		WASTE COMPRESSED GASES			
Waste Class:		145			
Waste Class Desc:		PAINT/PIGMENT/COATING RESIDUES			
Waste Class:		252			
Waste Class Desc:		WASTE OILS & LUBRICANTS			
Waste Class:		264			
Waste Class Desc:		PHOTOPROCESSING WASTES			
Waste Class:		213			
Waste Class Desc:		PETROLEUM DISTILLATES			
Waste Class:		146			
Waste Class Desc:		OTHER SPECIFIED INORGANICS			
Waste Class:		211			
Waste Class Desc:		AROMATIC SOLVENTS			
Waste Class:		148			
Waste Class Desc:		INORGANIC LABORATORY CHEMICALS			
Waste Class:		212			
Waste Class Desc:		ALIPHATIC SOLVENTS			
Waste Class:		263			
Waste Class Desc:		ORGANIC LABORATORY CHEMICALS			

<u>32</u>	4 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	GEN
Generator No: Status: Approval Years: Contam. Facility: MHSW Facility: SIC Code: SIC Description:	ON6162584 2011 611110			PO Box No: Country: Choice of Contact: Co Admin: Phone No Admin: Elementary and Secondary Schools	
<u>Detail(s)</u>					
Waste Class:		252			
Waste Class Desc:		WASTE OILS & LUBRICANTS			
Waste Class:		148			
Waste Class Desc:		INORGANIC LABORATORY CHEMICALS			
Waste Class:		211			
Waste Class Desc:		AROMATIC SOLVENTS			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Waste Class:		145			
Waste Class Desc:		PAINT/PIGMENT/COATING RESIDUES			
Waste Class:		212			
Waste Class Desc:		ALIPHATIC SOLVENTS			
Waste Class:		251			
Waste Class Desc:		OIL SKIMMINGS & SLUDGES			
Waste Class:		213			
Waste Class Desc:		PETROLEUM DISTILLATES			
Waste Class:		331			
Waste Class Desc:		WASTE COMPRESSED GASES			
Waste Class:		263			
Waste Class Desc:		ORGANIC LABORATORY CHEMICALS			
Waste Class:		146			
Waste Class Desc:		OTHER SPECIFIED INORGANICS			
Waste Class:		264			
Waste Class Desc:		PHOTOPROCESSING WASTES			

32	5 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	GEN
Generator No:	ON6162584			PO Box No:	
Status:				Country:	
Approval Years:	2012			Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:	611110				
SIC Description:	Elementary and Secondary Schools				
<u>Detail(s)</u>					
Waste Class:		251			
Waste Class Desc:		OIL SKIMMINGS & SLUDGES			
Waste Class:		212			
Waste Class Desc:		ALIPHATIC SOLVENTS			
Waste Class:		145			
Waste Class Desc:		PAINT/PIGMENT/COATING RESIDUES			
Waste Class:		146			
Waste Class Desc:		OTHER SPECIFIED INORGANICS			
Waste Class:		213			
Waste Class Desc:		PETROLEUM DISTILLATES			
Waste Class:		252			
Waste Class Desc:		WASTE OILS & LUBRICANTS			
Waste Class:		264			
Waste Class Desc:		PHOTOPROCESSING WASTES			
Waste Class:		331			
Waste Class Desc:		WASTE COMPRESSED GASES			
Waste Class:		148			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Waste Class Desc:		INORGANIC LABORATORY CHEMICALS			
Waste Class:		263			
Waste Class Desc:		ORGANIC LABORATORY CHEMICALS			
Waste Class:		211			
Waste Class Desc:		AROMATIC SOLVENTS			
32	6 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON	GEN
Generator No:		ON6162584		PO Box No:	
Status:				Country:	
Approval Years:		2013		Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:		611110			
SIC Description:		ELEMENTARY AND SECONDARY SCHOOLS			
<u>Detail(s)</u>					
Waste Class:		150			
Waste Class Desc:		INERT INORGANIC WASTES			
Waste Class:		264			
Waste Class Desc:		PHOTOPROCESSING WASTES			
Waste Class:		252			
Waste Class Desc:		WASTE OILS & LUBRICANTS			
Waste Class:		146			
Waste Class Desc:		OTHER SPECIFIED INORGANICS			
Waste Class:		331			
Waste Class Desc:		WASTE COMPRESSED GASES			
Waste Class:		211			
Waste Class Desc:		AROMATIC SOLVENTS			
Waste Class:		212			
Waste Class Desc:		ALIPHATIC SOLVENTS			
Waste Class:		148			
Waste Class Desc:		INORGANIC LABORATORY CHEMICALS			
Waste Class:		251			
Waste Class Desc:		OIL SKIMMINGS & SLUDGES			
Waste Class:		145			
Waste Class Desc:		PAINT/PIGMENT/COATING RESIDUES			
Waste Class:		213			
Waste Class Desc:		PETROLEUM DISTILLATES			
Waste Class:		263			
Waste Class Desc:		ORGANIC LABORATORY CHEMICALS			
32	7 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	GEN
Generator No:		ON6162584		PO Box No:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Status:				Country:	Canada
Approval Years:	2016			Choice of Contact:	CO_OFFICIAL
Contam. Facility:	No			Co Admin:	Joseph McLoughlin
MHSW Facility:	No			Phone No Admin:	905-713-1211 Ext.12387
SIC Code:	611110				
SIC Description:		ELEMENTARY AND SECONDARY SCHOOLS			
<u>Detail(s)</u>					
Waste Class:		148			
Waste Class Desc:		INORGANIC LABORATORY CHEMICALS			
Waste Class:		211			
Waste Class Desc:		AROMATIC SOLVENTS			
Waste Class:		331			
Waste Class Desc:		WASTE COMPRESSED GASES			
Waste Class:		145			
Waste Class Desc:		PAINT/PIGMENT/COATING RESIDUES			
Waste Class:		212			
Waste Class Desc:		ALIPHATIC SOLVENTS			
Waste Class:		150			
Waste Class Desc:		INERT INORGANIC WASTES			
Waste Class:		252			
Waste Class Desc:		WASTE OILS & LUBRICANTS			
Waste Class:		264			
Waste Class Desc:		PHOTOPROCESSING WASTES			
Waste Class:		263			
Waste Class Desc:		ORGANIC LABORATORY CHEMICALS			
Waste Class:		146			
Waste Class Desc:		OTHER SPECIFIED INORGANICS			
Waste Class:		251			
Waste Class Desc:		OIL SKIMMINGS & SLUDGES			
Waste Class:		213			
Waste Class Desc:		PETROLEUM DISTILLATES			

32	8 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	GEN
<hr/>					
Generator No:	ON6162584			PO Box No:	
Status:				Country:	Canada
Approval Years:	2015			Choice of Contact:	CO_OFFICIAL
Contam. Facility:	No			Co Admin:	Joseph McLoughlin
MHSW Facility:	No			Phone No Admin:	905-713-1211 Ext.12387
SIC Code:	611110				
SIC Description:	ELEMENTARY AND SECONDARY SCHOOLS				
 <u>Detail(s)</u>					
Waste Class:	148				
Waste Class Desc:	INORGANIC LABORATORY CHEMICALS				
Waste Class:	252				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Waste Class Desc:		WASTE OILS & LUBRICANTS			
Waste Class:		146			
Waste Class Desc:		OTHER SPECIFIED INORGANICS			
Waste Class:		212			
Waste Class Desc:		ALIPHATIC SOLVENTS			
Waste Class:		331			
Waste Class Desc:		WASTE COMPRESSED GASES			
Waste Class:		211			
Waste Class Desc:		AROMATIC SOLVENTS			
Waste Class:		150			
Waste Class Desc:		INERT INORGANIC WASTES			
Waste Class:		264			
Waste Class Desc:		PHOTOPROCESSING WASTES			
Waste Class:		145			
Waste Class Desc:		PAINT/PIGMENT/COATING RESIDUES			
Waste Class:		251			
Waste Class Desc:		OIL SKIMMINGS & SLUDGES			
Waste Class:		213			
Waste Class Desc:		PETROLEUM DISTILLATES			
Waste Class:		263			
Waste Class Desc:		ORGANIC LABORATORY CHEMICALS			

<u>32</u>	9 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	GEN
Generator No:	ON6162584			PO Box No:	
Status:				Country:	Canada
Approval Years:	2014			Choice of Contact:	CO_OFFICIAL
Contam. Facility:	No			Co Admin:	Joseph McLoughlin
MHSW Facility:	No			Phone No Admin:	905-713-1211 Ext.12387
SIC Code:	611110				
SIC Description:	ELEMENTARY AND SECONDARY SCHOOLS				

Detail(s)

Waste Class:	252
Waste Class Desc:	WASTE OILS & LUBRICANTS
Waste Class:	331
Waste Class Desc:	WASTE COMPRESSED GASES
Waste Class:	150
Waste Class Desc:	INERT INORGANIC WASTES
Waste Class:	264
Waste Class Desc:	PHOTOPROCESSING WASTES
Waste Class:	145
Waste Class Desc:	PAINT/PIGMENT/COATING RESIDUES
Waste Class:	212
Waste Class Desc:	ALIPHATIC SOLVENTS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Waste Class: Waste Class Desc:		148 INORGANIC LABORATORY CHEMICALS			
Waste Class: Waste Class Desc:		213 PETROLEUM DISTILLATES			
Waste Class: Waste Class Desc:		211 AROMATIC SOLVENTS			
Waste Class: Waste Class Desc:		263 ORGANIC LABORATORY CHEMICALS			
Waste Class: Waste Class Desc:		146 OTHER SPECIFIED INORGANICS			
Waste Class: Waste Class Desc:		251 OIL SKIMMINGS & SLUDGES			
32	10 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	GEN
Generator No: Status: Approval Years: Contam. Facility: MHSW Facility: SIC Code: SIC Description:	ON6162584 Registered As of Dec 2018		PO Box No: Country: Choice of Contact: Co Admin: Phone No Admin:	Canada	
<u>Detail(s)</u>					
Waste Class: Waste Class Desc:	145 H Wastes from the use of pigments, coatings and paints				
Waste Class: Waste Class Desc:	146 L Other specified inorganic sludges, slurries or solids				
Waste Class: Waste Class Desc:	146 T Other specified inorganic sludges, slurries or solids				
Waste Class: Waste Class Desc:	148 B Misc. wastes and inorganic chemicals				
Waste Class: Waste Class Desc:	148 C Misc. wastes and inorganic chemicals				
Waste Class: Waste Class Desc:	148 I Misc. wastes and inorganic chemicals				
Waste Class: Waste Class Desc:	148 L Misc. wastes and inorganic chemicals				
Waste Class: Waste Class Desc:	148 R Misc. wastes and inorganic chemicals				
Waste Class: Waste Class Desc:	150 L Inert organic wastes				
Waste Class: Waste Class Desc:	211 H Aromatic solvents and residues				
Waste Class: Waste Class Desc:	212 B Aliphatic solvents and residues				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Waste Class:		212 H			
Waste Class Desc:		Aliphatic solvents and residues			
Waste Class:		212 L			
Waste Class Desc:		Aliphatic solvents and residues			
Waste Class:		213 I			
Waste Class Desc:		Petroleum distillates			
Waste Class:		252 L			
Waste Class Desc:		Waste crankcase oils and lubricants			
Waste Class:		263 I			
Waste Class Desc:		Misc. waste organic chemicals			
Waste Class:		264 T			
Waste Class Desc:		Photoprocessing wastes			
Waste Class:		331 I			
Waste Class Desc:		Waste compressed gases including cylinders			

[32](#)

11 of 12

NW/290.4

229.9 / 4.21

York Catholic District School Board
St Jean de Brebeuf CHS 2 Davos Road
Vaughan ON L4H 2Y1

GEN

Generator No:

ON6162584

Status:

Registered

Approval Years:

As of Jul 2020

Contam. Facility:

MHSW Facility:

SIC Code:

SIC Description:

PO Box No:

Country:

Canada

Choice of Contact:

Co Admin:

Phone No Admin:

Detail(s)

Waste Class:

150 L

Waste Class Desc:

Inert organic wastes

Waste Class:

331 I

Waste Class Desc:

Waste compressed gases including cylinders

Waste Class:

213 I

Waste Class Desc:

Petroleum distillates

Waste Class:

146 T

Waste Class Desc:

Other specified inorganic sludges, slurries or solids

Waste Class:

148 R

Waste Class Desc:

Misc. wastes and inorganic chemicals

Waste Class:

263 I

Waste Class Desc:

Misc. waste organic chemicals

Waste Class:

146 L

Waste Class Desc:

Other specified inorganic sludges, slurries or solids

Waste Class:

252 L

Waste Class Desc:

Waste crankcase oils and lubricants

Waste Class:

264 T

Waste Class Desc:

Photoprocessing wastes

Waste Class:

148 B

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Waste Class Desc:		Misc. wastes and inorganic chemicals			
Waste Class:		211 H			
Waste Class Desc:		Aromatic solvents and residues			
Waste Class:		212 H			
Waste Class Desc:		Aliphatic solvents and residues			
Waste Class:		212 L			
Waste Class Desc:		Aliphatic solvents and residues			
Waste Class:		148 C			
Waste Class Desc:		Misc. wastes and inorganic chemicals			
Waste Class:		145 H			
Waste Class Desc:		Wastes from the use of pigments, coatings and paints			
Waste Class:		148 L			
Waste Class Desc:		Misc. wastes and inorganic chemicals			
Waste Class:		148 I			
Waste Class Desc:		Misc. wastes and inorganic chemicals			
Waste Class:		212 B			
Waste Class Desc:		Aliphatic solvents and residues			
<hr/>					
32	12 of 12	NW/290.4	229.9 / 4.21	York Catholic District School Board St Jean de Brebeuf CHS 2 Davos Road Vaughan ON L4H 2Y1	GEN
Generator No:		ON6162584		PO Box No:	
Status:		Registered		Country: Canada	
Approval Years:		As of Aug 2021		Choice of Contact:	
Contam. Facility:				Co Admin:	
MHSW Facility:				Phone No Admin:	
SIC Code:					
SIC Description:					
<hr/>					
<u>Detail(s)</u>					
Waste Class:		213 I			
Waste Class Desc:		Petroleum distillates			
Waste Class:		252 L			
Waste Class Desc:		Waste crankcase oils and lubricants			
Waste Class:		212 H			
Waste Class Desc:		Aliphatic solvents and residues			
Waste Class:		146 L			
Waste Class Desc:		Other specified inorganic sludges, slurries or solids			
Waste Class:		148 B			
Waste Class Desc:		Misc. wastes and inorganic chemicals			
Waste Class:		212 L			
Waste Class Desc:		Aliphatic solvents and residues			
Waste Class:		212 B			
Waste Class Desc:		Aliphatic solvents and residues			
Waste Class:		145 H			
Waste Class Desc:		Wastes from the use of pigments, coatings and paints			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Waste Class: Waste Class Desc:		148 R Misc. wastes and inorganic chemicals			
Waste Class: Waste Class Desc:		150 L Inert organic wastes			
Waste Class: Waste Class Desc:		148 I Misc. wastes and inorganic chemicals			
Waste Class: Waste Class Desc:		331 I Waste compressed gases including cylinders			
Waste Class: Waste Class Desc:		148 L Misc. wastes and inorganic chemicals			
Waste Class: Waste Class Desc:		146 T Other specified inorganic sludges, slurries or solids			
Waste Class: Waste Class Desc:		211 H Aromatic solvents and residues			
Waste Class: Waste Class Desc:		148 C Misc. wastes and inorganic chemicals			
Waste Class: Waste Class Desc:		264 T Photoprocessing wastes			
Waste Class: Waste Class Desc:		263 I Misc. waste organic chemicals			

Unplottable Summary

Total: **32** Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
CA	SINGLAND HOLDINGS LTD.	WESTON RD., VELLORE WOODS SUB.	VAUGHAN CITY ON	
CA	REALTY GROWTH & REVENUE FUND GEN. PARTNE	LOT 16&17, CONC.7/BARKER SUBD.	VAUGHAN CITY ON	
CA	SINGLAND HOLDINGS LTD.	PT.LOTS 16-20/C-5, WESTON RD.	VAUGHAN CITY ON	
CA	SINGLAND HOLDINGS LTD.	WESTON RD., PT.LOT 16, CON. 5	VAUGHAN CITY ON	
CA	MAJORSOUTH DEVELOPMENT CORP.	WESTON RD., VELLORE WOODS SUB.	VAUGHAN CITY ON	
CA		Lot 16, Concession 5	Vaughan ON	
CA		Lot 16, Concession 5	Vaughan ON	
CA	Vellore Village - Phase 3	Part of Lot 17 and 18, Concession 6	Vaughan ON	
CA	Vellore Village - Phase 3	Part of Lot 17 and 18, Concession 6	Vaughan ON	
CA		Part of Lot 16 and 17, Concession 5	Vaughan ON	
CA	Vellore Woods Community	Pt. Lot 16 & Pt. S. half of Lot 17, Con. 5	Vaughan ON	
CA		Part of Lot 16 and 17, Concession 5	Vaughan ON	
CA	Vellore Woods Community	Pt. Lot 16 & Pt. S. half of Lot 17, Con. 5	Vaughan ON	
CA		Part of Lot 18, Concession 5	Vaughan ON	
CA	St. Magnus Developments Inc.		Vaughan ON	
CA	YORK CITY WESTON RD.	WESTON RD.	YORK CITY ON	
CA	WESTWIL HOLDINGS INC.	WESTON ROAD S.W.M. FAC.	VAUGHAN TOWN ON	
CA	BRAMALEA LIMITED	STREET 'A' WESTON RD.	YORK CITY ON	

WESTPOINTE VILLAGE DEV.

CA	TORONTO STAR NEWSPAPERS LTD. LOTS 2&3	CONC. 5-7271 WESTON ROAD	VAUGHAN TOWN ON	
CA	ROYBRIDGE HOLDINGS LTD.	VELLORE WOODS SUBD., WESTON RD	VAUGHAN CITY ON	
CA	WESTON/400 BUSINESS PARK	WESTON RD.	VAUGHAN TOWN ON	
PES	EMPIRE GARDEN CENTRE	R R 1 HIGHWAY #56	YORK ON	N0A 1R0
PES	EMPIRE GARDEN CENTRE	R R 1 HIGHWAY #56	YORK ON	N0A 1R0
RSC		Pt. Lot 17, Conc. 6, Designated as Parts 5, 6, 7, Plan 65R-20822,	Vaughan ON	
RSC		Lot 18, Concession 5	Vaughan ON	
RSC		Lot 16, Concession 5	Vaughan ON	
RSC		Weston Road E/S Part of Lots 16 & 17, concession 5	Vaughan ON	
RSC		Pt. Lot 18, Conc. 6, Designated as Part 9, Plan 65R-20822,	Vaughan ON	
RSC		Pt. Lot 17, Conc. 6, Designated as Part 8, Plan 65R-20822,	Vaughan ON	
RSC		Pt. Lot 17, Conc. 6, Designated as Parts 5, 6, 7, Plan 65R-20822,	Vaughan ON	
RSC		Pt. Lot 18, Conc. 6, Designated as Part 9, Plan 65R-20822,	Vaughan ON	
SPL	TRANSPORT TRUCK	WESTON RD NORTH OF HWY 407 MOTOR VEHICLE (OPERATING FLUID)	VAUGHAN CITY ON	

Unplottable Report

Site: SINGLAND HOLDINGS LTD.
WESTON RD., VELLORE WOODS SUB. VAUGHAN CITY ON

Database:
CA

Certificate #: 7-0280-99-
Application Year: 99
Issue Date: 5/7/1999
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: REALTY GROWTH & REVENUE FUND GEN. PARTNE
LOT 16&17, CONC.7/BARKER SUBD. VAUGHAN CITY ON

Database:
CA

Certificate #: 3-1028-99-
Application Year: 99
Issue Date: 9/10/1999
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: SINGLAND HOLDINGS LTD.
PT.LOTS 16-20/C-5, WESTON RD. VAUGHAN CITY ON

Database:
CA

Certificate #: 3-0456-99-
Application Year: 99
Issue Date: 5/18/1999
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: SINGLAND HOLDINGS LTD.
WESTON RD., PT.LOT 16, CON. 5 VAUGHAN CITY ON

Database:
CA

Certificate #: 3-0420-99-

Application Year: 99
Issue Date: 5/7/1999
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: MAJORSOUTH DEVELOPMENT CORP.
WESTON RD., VELLORE WOODS SUB. VAUGHAN CITY ON

Database:
CA

Certificate #: 3-0419-99-
Application Year: 99
Issue Date: 5/7/1999
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: Lot 16, Concession 5 Vaughan ON

Database:
CA

Certificate #: 5386-52JPV2
Application Year: 01
Issue Date: 9/14/01
Approval Type: Municipal & Private sewage
Status: Approved
Application Type: New Certificate of Approval
Client Name: F&F Realty Holdings Inc.
Client Address: 9625 Yonge Street
Client City: Richmond Hill
Client Postal Code: L4C 5T2
Project Description: Construction of Sanitary and Storm Sewers for Subdivision Development
Contaminants:
Emission Control:

Site: Lot 16, Concession 5 Vaughan ON

Database:
CA

Certificate #: 0130-52HKUK
Application Year: 01
Issue Date: 9/14/01
Approval Type: Municipal & Private water
Status: Approved
Application Type: New Certificate of Approval
Client Name: F&F Realty Holdings Inc.
Client Address: 9625 Yonge Street
Client City: Richmond Hill
Client Postal Code: L4C 5T2
Project Description: Construction of Watermains for Subdivision Development
Contaminants:
Emission Control:

Site: Vellore Village - Phase 3
Part of Lot 17 and 18, Concession 6 Vaughan ON

Database:
CA

Certificate #: 2218-4YXLQ2
Application Year: 01
Issue Date: 8/10/01
Approval Type: Municipal & Private sewage
Status: Approved
Application Type: New Certificate of Approval
Client Name: Mr. Fraser L. Nelson
Client Address: 1700 Langstaff Road
Client City: Vaughan
Client Postal Code: L4K 3S3
Project Description: Sanitary sewers, foundation drain collector sewers, storm sewers and all related appurtenances to be constructed.
Contaminants:
Emission Control:

Site: Vellore Village - Phase 3
Part of Lot 17 and 18, Concession 6 Vaughan ON

Database:
CA

Certificate #: 9143-4YXLGK
Application Year: 01
Issue Date: 8/10/01
Approval Type: Municipal & Private water
Status: Approved
Application Type: New Certificate of Approval
Client Name: Mr. Fraser L. Nelson
Client Address: 1700 Langstaff Road
Client City: Vaughan
Client Postal Code: L4K 3S3
Project Description: Construction of watermain and appurtenances
Contaminants:
Emission Control:

Site: Part of Lot 16 and 17, Concession 5 Vaughan ON

Database:
CA

Certificate #: 4633-4HTS6B
Application Year: 00
Issue Date: 3/30/00
Approval Type: Municipal & Private sewage
Status: Approved
Application Type: New Certificate of Approval
Client Name: Comdel Developments Inc.
Client Address: 270 Chrislea Road
Client City: Woodbridge
Client Postal Code: L4L 8A8
Project Description: Sanitary and storm sewers to be constructed to serve the Comdel Developments Inc. Subdivision, Vellore Woods Community (19T-97V26)
Contaminants:
Emission Control:

Site: Vellore Woods Community
Pt. Lot 16 & Pt. S. half of Lot 17, Con. 5 Vaughan ON

Database:
CA

Certificate #: 4608-4HPLQZ
Application Year: 00
Issue Date: 3/30/00
Approval Type: Municipal & Private sewage
Status: Approved
Application Type: New Certificate of Approval
Client Name: Block 32 Developments Inc.

Client Address: 270 Chrislea Road
Client City: Woodbridge
Client Postal Code: L4L 8A8
Project Description: This application is for the installation of storm & sanitary sewers on Comdel Boulevard, Lichen Court and Moraine Drive
Contaminants:
Emission Control:

Site: *Part of Lot 16 and 17, Concession 5 Vaughan ON* **Database:** [CA](#)

Certificate #: 3150-4HTSJL
Application Year: 00
Issue Date: 3/30/00
Approval Type: Municipal & Private water
Status: Approved
Application Type: New Certificate of Approval
Client Name: Comdel Developments Inc.
Client Address: 270 Chrislea Road
Client City: Woodbridge
Client Postal Code: L4L 8A8
Project Description: Watermains to be constructed to serve the Comdel Developments Inc. Subdivision, Vellore Woods Community (19T-97V26)
Contaminants:
Emission Control:

Site: *Vellore Woods Community
Pt. Lot 16 & Pt. S. half of Lot 17, Con. 5 Vaughan ON* **Database:** [CA](#)

Certificate #: 5364-4HPMBE
Application Year: 00
Issue Date: 3/30/00
Approval Type: Municipal & Private water
Status: Approved
Application Type: New Certificate of Approval
Client Name: Block 32 Developments Inc.
Client Address: 270 Chrislea Road
Client City: Woodbridge
Client Postal Code: L4L 8A8
Project Description: This application is for the installation of watermains on Comdel Boulevard, Lichen Court, and Moraine Drive.
Contaminants:
Emission Control:

Site: *Part of Lot 18, Concession 5 Vaughan ON* **Database:** [CA](#)

Certificate #: 7008-4HNQ9D
Application Year: 00
Issue Date: 3/28/00
Approval Type: Municipal & Private water
Status: Approved
Application Type: New Certificate of Approval
Client Name: Roybridge Holdings Limited
Client Address: 1 Royal Gate Blvd
Client City: Woodbridge
Client Postal Code: L4L 8Z7
Project Description: Watermains to be constructed to serve the Roybridge Holdings Limited Subdivision, Vellore Woods Community (19T-97V33).
Contaminants:
Emission Control:

Site: *St. Magnus Developments Inc.* **Database:** [CA](#)

Vaughan ON

Certificate #: 7396-6PPL5T
Application Year: 2006
Issue Date: 5/19/2006
Approval Type: Municipal and Private Sewage Works
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: YORK CITY WESTON RD.
WESTON RD. YORK CITY ON

Database:
CA

Certificate #: 3-0540-88-
Application Year: 88
Issue Date: 6/30/1988
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: WESTWIL HOLDINGS INC.
WESTON ROAD S.W.M. FAC. VAUGHAN TOWN ON

Database:
CA

Certificate #: 3-0230-94-
Application Year: 94
Issue Date: 3/28/1994
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: BRAMALEA LIMITED WESTPOINTE VILLAGE DEV.
STREET 'A' WESTON RD. YORK CITY ON

Database:
CA

Certificate #: 7-1120-89-
Application Year: 89
Issue Date: 8/28/1989
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:

Contaminants:
Emission Control:

Site: TORONTO STAR NEWSPAPERS LTD. LOTS 2&3
CONC. 5-7271 WESTON ROAD VAUGHAN TOWN ON

Database:
CA

Certificate #: 3-1960-90-
Application Year: 90
Issue Date: 12/18/1991
Approval Type: Municipal sewage
Status: Approved in 1991
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ROYBRIDGE HOLDINGS LTD.
VELLORE WOODS SUBD., WESTON RD VAUGHAN CITY ON

Database:
CA

Certificate #: 7-0261-99-
Application Year: 99
Issue Date: 5/7/1999
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: WESTON/400 BUSINESS PARK
WESTON RD. VAUGHAN TOWN ON

Database:
CA

Certificate #: 3-0653-87-
Application Year: 87
Issue Date: 6/12/1990
Approval Type: Municipal sewage
Status: Cancelled
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: EMPIRE GARDEN CENTRE
R R 1 HIGHWAY #56 YORK ON N0A 1R0

Database:
PES

Detail Licence No:	Operator Box:
Licence No:	Operator Class:
Status:	Operator No:
Approval Date:	Operator Type:
Report Source:	Oper Area Code:

Licence Type: Vendor
Licence Type Code:
Licence Class:
Licence Control:
Latitude:
Longitude:
Lot:
Concession:
Region:
District:
County:
Trade Name:
PDF Link:
PDF Site Location:

Oper Phone No:
Operator Ext:
Operator Lot:
Oper Concession:
Operator Region:
Operator District:
Operator County:
Op Municipality:
Post Office Box:
MOE District:
SWP Area Name:

Site: **EMPIRE GARDEN CENTRE**
R R 1 HIGHWAY #56 YORK ON N0A 1R0

Database:
PES

Detail Licence No: 23-01-08047-0
Licence No: 08047
Status:
Approval Date:
Report Source:
Licence Type: Limited Vendor
Licence Type Code: 23
Licence Class: 01
Licence Control: 0
Latitude:
Longitude:
Lot:
Concession:
Region: 2
District: 1
County: 26
Trade Name:
PDF Link:
PDF Site Location:

Operator Box:
Operator Class:
Operator No:
Operator Type:
Oper Area Code:
Oper Phone No:
Operator Ext:
Operator Lot:
Oper Concession:
Operator Region: 2
Operator District: 1
Operator County: 26
Op Municipality:
Post Office Box:
MOE District:
SWP Area Name:

Site: **Pt. Lot 17, Conc. 6, Designated as Parts 5, 6, 7, Plan 65R-20822, Vaughan ON**

Database:
RSC

RSC ID:
RA No:
RSC Type:
Curr Property Use:
Ministry District: Burlington
Filing Date: 08/12/99
Date Ack:
Date Returned: 08/24/99
Restoration Type:
Soil Type:
Criteria:
CPU Issued Sect
1686:
Asmt Roll No:
Prop ID No (PIN):
Property Municipal Address:
Mailing Address:
Latitude & Longitude:
UTM Coordinates:
Consultant: Frontline Environmental
Legal Desc:
Measurement Method:
Applicable Standards:
RSC PDF:

Cert Date:
Cert Prop Use No:
Intended Prop Use:
Qual Person Name:
Stratified (Y/N):
Audit (Y/N): N
Entire Leg Prop. (Y/N):
Accuracy Estimate:
Telephone:
Fax:
Email:

Site:**Lot 18, Concession 5 Vaughan ON****Database:****RSC**

RSC ID:
RA No:
RSC Type:
Curr Property Use:
Ministry District: York Durham
Filing Date: 09/15/99
Date Ack:
Date Returned: 02/06/01
Restoration Type:
Soil Type:
Criteria:
CPU Issued Sect
1686:
Asmt Roll No:
Prop ID No (PIN):
Property Municipal Address:
Mailing Address:
Latitude & Latitude:
UTM Coordinates:
Consultant: Soil-Eng Ltd.
Legal Desc:
Measurement Method:
Applicable Standards:
RSC PDF:

Cert Date:
Cert Prop Use No:
Intended Prop Use:
Qual Person Name:
Stratified (Y/N):
Audit (Y/N):
Entire Leg Prop. (Y/N):
Accuracy Estimate:
Telephone:
Fax:
Email:

Site:**Lot 16, Concession 5 Vaughan ON****Database:****RSC**

RSC ID:
RA No:
RSC Type:
Curr Property Use:
Ministry District: York Durham
Filing Date: 08/25/99
Date Ack:
Date Returned: 02/06/01
Restoration Type:
Soil Type:
Criteria:
CPU Issued Sect
1686:
Asmt Roll No:
Prop ID No (PIN):
Property Municipal Address:
Mailing Address:
Latitude & Latitude:
UTM Coordinates:
Consultant: Soil-Eng Ltd.
Legal Desc:
Measurement Method:
Applicable Standards:
RSC PDF:

Cert Date:
Cert Prop Use No:
Intended Prop Use:
Qual Person Name:
Stratified (Y/N):
Audit (Y/N):
Entire Leg Prop. (Y/N):
Accuracy Estimate:
Telephone:
Fax:
Email:

Site:**Weston Road E/S Part of Lots 16 & 17, concession 5 Vaughan ON****Database:****RSC**

RSC ID:
RA No:
RSC Type:
Curr Property Use:
Ministry District: Toronto
Filing Date: 01/11/00
Date Ack:
Date Returned: 01/11/00

Cert Date:
Cert Prop Use No:
Intended Prop Use:
Qual Person Name:
Stratified (Y/N): N
Audit (Y/N):
Entire Leg Prop. (Y/N):
Accuracy Estimate:

Restoration Type: Generic
Soil Type: Coarse
Criteria: Res/parkland + potable

Telephone:
Fax:
Email:

CPU Issued Sect
1686:

Asmt Roll No:
Prop ID No (PIN):
Property Municipal Address:
Mailing Address:
Latitude & Latitude:
UTM Coordinates:

Consultant: Comdel Development Inc

Legal Desc:
Measurement Method:
Applicable Standards:
RSC PDF:

Site: Pt. Lot 18, Conc. 6, Designated as Part 9, Plan 65R-20822, Vaughan ON

Database:
RSC

RSC ID:
RA No:
RSC Type:
Curr Property Use:
Ministry District: Toronto
Filing Date: 08/05/99
Date Ack: 08/30/99

Cert Date:
Cert Prop Use No:
Intended Prop Use:
Qual Person Name:
Stratified (Y/N): N
Audit (Y/N):
Entire Leg Prop. (Y/N):
Accuracy Estimate:
Telephone:
Fax:
Email:

Date Returned:
Restoration Type:
Soil Type:
Criteria:

CPU Issued Sect
1686:

Asmt Roll No:
Prop ID No (PIN):
Property Municipal Address:
Mailing Address:
Latitude & Latitude:
UTM Coordinates:

Consultant: Environmental Auditors Limited

Legal Desc:
Measurement Method:
Applicable Standards:
RSC PDF:

Site: Pt. Lot 17, Conc. 6, Designated as Part 8, Plan 65R-20822, Vaughan ON

Database:
RSC

RSC ID:
RA No:
RSC Type:
Curr Property Use:
Ministry District: York Durham
Filing Date: 07/29/99
Date Ack: 08/18/99

Cert Date:
Cert Prop Use No:
Intended Prop Use:
Qual Person Name:
Stratified (Y/N): N
Audit (Y/N): N
Entire Leg Prop. (Y/N):
Accuracy Estimate:
Telephone:
Fax:
Email:

Date Returned:
Restoration Type: Background
Soil Type: Fine
Criteria: Res/parkland + nonpotable

CPU Issued Sect
1686:

Asmt Roll No:
Prop ID No (PIN):
Property Municipal Address:
Mailing Address:
Latitude & Latitude:
UTM Coordinates:

Consultant: Trow Consulting

Legal Desc:
Measurement Method:
Applicable Standards:
RSC PDF:

Site: Pt. Lot 17, Conc. 6, Designated as Parts 5, 6, 7, Plan 65R-20822, Vaughan ON **Database:** RSC

RSC ID:		Cert Date:	
RA No:		Cert Prop Use No:	
RSC Type:		Intended Prop Use:	
Curr Property Use:		Qual Person Name:	
Ministry District:	Sarnia	Stratified (Y/N):	N
Filing Date:	07/30/99	Audit (Y/N):	Y
Date Ack:	09/09/99	Entire Leg Prop. (Y/N):	
Date Returned:		Accuracy Estimate:	
Restoration Type:	Generic	Telephone:	
Soil Type:	Coarse	Fax:	
Criteria:	Res/parkland + nonpotable	Email:	
CPU Issued Sect			
1686:			
Asmt Roll No:			
Prop ID No (PIN):			
Property Municipal Address:			
Mailing Address:			
Latitude & Longitude:			
UTM Coordinates:			
Consultant:	C.T.Soil & Materials Engineering Inc		
Legal Desc:			
Measurement Method:			
Applicable Standards:			
RSC PDF:			

Site: Pt. Lot 18, Conc. 6, Designated as Part 9, Plan 65R-20822, Vaughan ON **Database:** RSC

RSC ID:		Cert Date:	
RA No:		Cert Prop Use No:	
RSC Type:		Intended Prop Use:	
Curr Property Use:		Qual Person Name:	
Ministry District:	Burlington	Stratified (Y/N):	N
Filing Date:	08/19/99	Audit (Y/N):	N
Date Ack:		Entire Leg Prop. (Y/N):	
Date Returned:	08/19/99	Accuracy Estimate:	
Restoration Type:	Generic	Telephone:	
Soil Type:	-	Fax:	
Criteria:	Unknown	Email:	
CPU Issued Sect			
1686:			
Asmt Roll No:			
Prop ID No (PIN):			
Property Municipal Address:			
Mailing Address:			
Latitude & Longitude:			
UTM Coordinates:			
Consultant:	Terrapex Environmental Ltd		
Legal Desc:			
Measurement Method:			
Applicable Standards:			
RSC PDF:			

Site: TRANSPORT TRUCK WESTON RD NORTH OF HWY 407 MOTOR VEHICLE (OPERATING FLUID) VAUGHAN CITY ON **Database:** SPL

Ref No:	226569	Discharger Report:	
Site No:		Material Group:	
Incident Dt:	5/28/2002	Health/Env Conseq:	

Year:		Client Type:	
Incident Cause:	OTHER TRANSPORTATION ACCIDENT	Sector Type:	
Incident Event:		Agency Involved:	
Contaminant Code:		Nearest Watercourse:	
Contaminant Name:		Site Address:	
Contaminant Limit 1:		Site District Office:	
Contam Limit Freq 1:		Site Postal Code:	
Contaminant UN No 1:		Site Region:	
Environment Impact:	POSSIBLE	Site Municipality:	27101
Nature of Impact:	Water course or lake	Site Lot:	
Receiving Medium:	LAND / WATER	Site Conc:	
Receiving Env:		Northing:	
MOE Response:		Easting:	
Dt MOE Arvl on Scn:		Site Geo Ref Accu:	
MOE Reported Dt:	5/28/2002	Site Map Datum:	
Dt Document Closed:		SAC Action Class:	
Incident Reason:	NEGLIGENCE (APPARENT)	Source Type:	
Site Name:			
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	NATIONAL FAST FREIGHT:MVA UKN QTY DIESEL TO RD, REGION IS CLEANING		
Contaminant Qty:			

Appendix: Database Descriptions

*Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. **Note:** Databases denoted with " * " indicates that the database will no longer be updated. See the individual database description for more information.*

Abandoned Aggregate Inventory:

Provincial [AAGR](#)

The MAAP Program maintains a database of abandoned pits and quarries. Please note that the database is only referenced by lot and concession and city/town location. The database provides information regarding the location, type, size, land use, status and general comments.*

Government Publication Date: Sept 2002*

Aggregate Inventory:

Provincial [AGR](#)

The Ontario Ministry of Natural Resources maintains a database of all active pits and quarries. The database provides information regarding the registered owner/operator, location name, operation type, approval type, and maximum annual tonnage.

Government Publication Date: Up to Sep 2020

Abandoned Mine Information System:

Provincial [AMIS](#)

The Abandoned Mines Information System contains data on known abandoned and inactive mines located on both Crown and privately held lands. The information was provided by the Ministry of Northern Development and Mines (MNDM), with the following disclaimer: "the database provided has been compiled from various sources, and the Ministry of Northern Development and Mines makes no representation and takes no responsibility that such information is accurate, current or complete". Reported information includes official mine name, status, background information, mine start/end date, primary commodity, mine features, hazards and remediation.

Government Publication Date: 1800-Oct 2018

Anderson's Waste Disposal Sites:

Private [ANDR](#)

The information provided in this database was collected by examining various historical documents which aimed to characterize the likely position of former waste disposal sites from 1860 to present. The research initiative behind the creation of this database was to identify those sites that are missing from the Ontario MOE Waste Disposal Site Inventory, as well as to provide revisions and corrections to the positions and descriptions of sites currently listed in the MOE inventory. In addition to historic waste disposal facilities, the database also identifies certain auto wreckers and scrap yards that have been extrapolated from documentary sources. Please note that the data is not warranted to be complete, exhaustive or authoritative. The information was collected for research purposes only.

Government Publication Date: 1860s-Present

Aboveground Storage Tanks:

Provincial [AST](#)

Historical listing of aboveground storage tanks made available by the Department of Natural Resources and Forestry. Includes tanks used to hold water or petroleum. This dataset has been retired as of September 25, 2014 and will no longer be updated.

Government Publication Date: May 31, 2014

Automobile Wrecking & Supplies:

Private [AUWR](#)

This database provides an inventory of known locations that are involved in the scrap metal, automobile wrecking/recycling, and automobile parts & supplies industry. Information is provided on the company name, location and business type.

Government Publication Date: 1999-Sep 30, 2021

Borehole:

Provincial [BORE](#)

A borehole is the generalized term for any narrow shaft drilled in the ground, either vertically or horizontally. The information here includes geotechnical investigations or environmental site assessments, mineral exploration, or as a pilot hole for installing piers or underground utilities. Information is from many sources such as the Ministry of Transportation (MTO) boreholes from engineering reports and projects from the 1950 to 1990's in Southern Ontario. Boreholes from the Ontario Geological Survey (OGS) including The Urban Geology Analysis Information System (UGAIS) and the York Peel Durham Toronto (YPDT) database of the Conservation Authority Moraine Coalition. This database will include fields such as location, stratigraphy, depth, elevation, year drilled, etc. For all water well data or oil and gas well data for Ontario please refer to WWIS and OOGW.

Government Publication Date: 1875-Jul 2018

Certificates of Approval:

Provincial CA

This database contains the following types of approvals: Air & Noise, Industrial Sewage, Municipal & Private Sewage, Waste Management Systems and Renewable Energy Approvals. The MOE in Ontario states that any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste, must have a Certificate of Approval before it can operate lawfully. Fields include approval number, business name, address, approval date, approval type and status. This database will no longer be updated, as CofA's have been replaced by either Environmental Activity and Sector Registry (EASR) or Environmental Compliance Approval (ECA). Please refer to those individual databases for any information after Oct.31, 2011.

Government Publication Date: 1985-Oct 30, 2011*

Dry Cleaning Facilities:

Federal CDRY

List of dry cleaning facilities made available by Environment and Climate Change Canada. Environment and Climate Change Canada's Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations (SOR/2003-79) are intended to reduce releases of tetrachloroethylene to the environment from dry cleaning facilities.

Government Publication Date: Jan 2004-Dec 2019

Commercial Fuel Oil Tanks:

Provincial CFOT

Locations of commercial underground fuel oil tanks. This is not a comprehensive or complete inventory of commercial fuel tanks in the province; this listing is a copy of records of registered commercial underground fuel oil tanks obtained under Access to Public Information.

Note that the following types of tanks do not require registration: waste oil tanks in apartments, office buildings, residences, etc.; aboveground gas or diesel tanks. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

Chemical Manufacturers and Distributors:

Private CHEM

This database includes information from both a one time study conducted in 1992 and private source and is a listing of facilities that manufacture or distribute chemicals. The production of these chemical substances may involve one or more chemical reactions and/or chemical separation processes (i.e. fractionation, solvent extraction, crystallization, etc.).

Government Publication Date: 1999-Jan 31, 2020

Chemical Register:

Private CHM

This database includes a listing of locations of facilities within the Province or Territory that either manufacture and/or distributes chemicals.

Government Publication Date: 1999-Sep 30, 2021

Compressed Natural Gas Stations:

Private CNG

Canada has a network of public access compressed natural gas (CNG) refuelling stations. These stations dispense natural gas in compressed form at 3,000 pounds per square inch (psi), the pressure which is allowed within the current Canadian codes and standards. The majority of natural gas refuelling is located at existing retail gasoline that have a separate refuelling island for natural gas. This list of stations is made available by the Canadian Natural Gas Vehicle Alliance.

Government Publication Date: Dec 2012 -Nov 2021

Inventory of Coal Gasification Plants and Coal Tar Sites:

Provincial COAL

This inventory includes both the "Inventory of Coal Gasification Plant Waste Sites in Ontario-April 1987" and the Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario-November 1988) collected by the MOE. It identifies industrial sites that produced and continue to produce or use coal tar and other related tars. Detailed information is available and includes: facility type, size, land use, information on adjoining properties, soil condition, site operators/occupants, site description, potential environmental impacts and historic maps available. This was a one-time inventory.*

Government Publication Date: Apr 1987 and Nov 1988*

Compliance and Convictions:

Provincial CONV

This database summarizes the fines and convictions handed down by the Ontario courts beginning in 1989. Companies and individuals named here have been found guilty of environmental offenses in Ontario courts of law.

Government Publication Date: 1989-Jul 2021

Certificates of Property Use:

Provincial CPU

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all CPU's on the registry such as (EPA s. 168.6) - Certificate of Property Use.

Government Publication Date: 1994 - Oct 31, 2021

Drill Hole Database:

Provincial

[DRL](#)

The Ontario Drill Hole Database contains information on more than 113,000 percussion, overburden, sonic and diamond drill holes from assessment files on record with the department of Mines and Minerals. Please note that limited data is available for southern Ontario, as it was the last area to be completed. The database was created when surveys submitted to the Ministry were converted in the Assessment File Research Image Database (AFRI) project. However, the degree of accuracy (coordinates) as to the exact location of drill holes is dependent upon the source document submitted to the MNDM. Levels of accuracy used to locate holes are: centering on the mining claim; a sketch of the mining claim; a 1:50,000 map; a detailed company map; or from submitted a "Report of Work".

Government Publication Date: 1886 - Sep 2020

Delisted Fuel Tanks:

Provincial

[DTNK](#)

List of fuel storage tank sites that were once found in - and have since been removed from - the list of fuel storage tanks made available by the regulatory agency under Access to Public Information.

Government Publication Date: May 31, 2021

Environmental Activity and Sector Registry:

Provincial

[EASR](#)

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. The EASR allows businesses to register certain activities with the ministry, rather than apply for an approval. The registry is available for common systems and processes, to which preset rules of operation can be applied. The EASR is currently available for: heating systems, standby power systems and automotive refinishing. Businesses whose activities aren't subject to the EASR may apply for an ECA (Environmental Compliance Approval). Please see our ECA database.

Government Publication Date: Oct 2011- Sep 30, 2021

Environmental Registry:

Provincial

[EBR](#)

The Environmental Registry lists proposals, decisions and exceptions regarding policies, Acts, instruments, or regulations that could significantly affect the environment. Through the Registry, thirteen provincial ministries notify the public of upcoming proposals and invite their comments. For example, if a local business is requesting a permit, license, or certificate of approval to release substances into the air or water; these are notified on the registry. Data includes: Approval for discharge into the natural environment other than water (i.e. Air) - EPA s. 9, Approval for sewage works - OWRA s. 53(1), and EPA s. 27 - Approval for a waste disposal site. For information regarding Permit to Take Water (PTTW), Certificate of Property Use (CPU) and (ORD) Orders please refer to those individual databases.

Government Publication Date: 1994- Oct 31, 2021

Environmental Compliance Approval:

Provincial

[ECA](#)

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. In the past, a business had to apply for multiple approvals (known as certificates of approval) for individual processes and pieces of equipment. Today, a business either registers itself, or applies for a single approval, depending on the types of activities it conducts. Businesses whose activities aren't subject to the EASR may apply for an ECA. A single ECA addresses all of a business's emissions, discharges and wastes. Separate approvals for air, noise and waste are no longer required. This database will also include Renewable Energy Approvals. For certificates of approval prior to Nov 1st, 2011, please refer to the CA database. For all Waste Disposal Sites please refer to the WDS database.

Government Publication Date: Oct 2011- Sep 30, 2021

Environmental Effects Monitoring:

Federal

[EEM](#)

The Environmental Effects Monitoring program assesses the effects of effluent from industrial or other sources on fish, fish habitat and human usage of fisheries resources. Since 1992, pulp and paper mills have been required to conduct EEM studies under the Pulp and Paper Effluent Regulations. This database provides information on the mill name, geographical location and sub-lethal toxicity data.

Government Publication Date: 1992-2007*

ERIS Historical Searches:

Private

[EHS](#)

ERIS has compiled a database of all environmental risk reports completed since March 1999. Available fields for this database include: site location, date of report, type of report, and search radius. As per all other databases, the ERIS database can be referenced on both the map and "Statistical Profile" page.

Government Publication Date: 1999-Jun 30, 2021

Environmental Issues Inventory System:

Federal

[EIIS](#)

The Environmental Issues Inventory System was developed through the implementation of the Environmental Issues and Remediation Plan. This plan was established to determine the location and severity of contaminated sites on inhabited First Nation reserves, and where necessary, to remediate those that posed a risk to health and safety; and to prevent future environmental problems. The EIIS provides information on the reserve under investigation, inventory number, name of site, environmental issue, site action (Remediation, Site Assessment), and date investigation completed.

Government Publication Date: 1992-2001*

Emergency Management Historical Event:

Provincial

EMHE

List of locations of historical occurrences of emergency events, including those assigned to the Ministry of Natural Resources by Order-In-Council (OIC) under the Emergency Management and Civil Protection Act, as well as events where MNR provided requested emergency response assistance. Many of these events will have involved community evacuations, significant structural loss, and/or involvement of MNR emergency response staff. These events fall into one of ten (10) type categories: Dam Failure; Drought / Low Water; Erosion; Flood; Forest Fire; Soil and Bedrock Instability; Petroleum Resource Center Event, EMO Requested Assistance, Continuity of Operations Event, Other Requested Assistance. EMHE record details are reproduced by ERIIS under License with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2017.

Government Publication Date: Dec 31, 2016

Environmental Penalty Annual Report:

Provincial

EPAR

This database contains data from Ontario's annual environmental penalty report published by the Ministry of the Environment and Climate Change. These reports provide information on environmental penalties for land or water violations issued to companies in one of the nine industrial sectors covered by the Municipal Industrial Strategy for Abatement (MISA) regulations.

Government Publication Date: Jan 1, 2011 - Dec 31, 2020

List of Expired Fuels Safety Facilities:

Provincial

EXP

List of facilities and tanks for which there was once a fuel registration. This is not a comprehensive or complete inventory of expired tanks/tank facilities in the province; this listing is a copy of previously registered tanks and facilities obtained under Access to Public Information. Includes private fuel outlets, bulk plants, fuel oil tanks, gasoline stations, marinas, propane filling stations, liquid fuel tanks, piping systems, etc; includes tanks which have been removed from the ground.

Notes: registration was not required for private fuel underground/aboveground storage tanks prior to January 1990, nor for furnace oil tanks prior to May 1, 2002; registration is not required for waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2020

Federal Convictions:

Federal

FCON

Environment Canada maintains a database referred to as the "Environmental Registry" that details prosecutions under the Canadian Environmental Protection Act (CEPA) and the Fisheries Act (FA). Information is provided on the company name, location, charge date, offence and penalty.

Government Publication Date: 1988-Jun 2007*

Contaminated Sites on Federal Land:

Federal

FCS

The Federal Contaminated Sites Inventory includes information on known federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations as well as those that are being or have been investigated to determine whether they have contamination arising from past use that could pose a risk to human health or the environment. The inventory also includes non-federal contaminated sites for which the Government of Canada has accepted some or all financial responsibility. It does not include sites where contamination has been caused by, and which are under the control of, enterprise Crown corporations, private individuals, firms or other levels of government. Includes fire training sites and sites at which Per- and Polyfluoroalkyl Substances (PFAS) are a concern.

Government Publication Date: Jun 2000-Aug 2021

Fisheries & Oceans Fuel Tanks:

Federal

FOFT

Fisheries & Oceans Canada maintains an inventory of aboveground & underground fuel storage tanks located on Fisheries & Oceans property or controlled by DFO. Our inventory provides information on the site name, location, tank owner, tank operator, facility type, storage tank location, tank contents & capacity, and date of tank installation.

Government Publication Date: 1964-Sep 2019

Federal Identification Registry for Storage Tank Systems (FIRSTS):

Federal

FRST

A list of federally regulated Storage tanks from the Federal Identification Registry for Storage Tank Systems (FIRSTS). FIRSTS is Environment and Climate Change Canada's database of storage tank systems subject to the Storage Tank for Petroleum Products and Allied Petroleum Products Regulations. The main objective of the Regulations is to prevent soil and groundwater contamination from storage tank systems located on federal and aboriginal lands. Storage tank systems that do not have a valid identification number displayed in a readily visible location on or near the storage tank system may be refused product delivery.

Government Publication Date: May 31, 2018

Fuel Storage Tank:

Provincial

FST

List of registered private and retail fuel storage tanks. This is not a comprehensive or complete inventory of private and retail fuel storage tanks in the province; this listing is a copy of registered private and retail fuel storage tanks, obtained under Access to Public Information.

Notes: registration was not required for private fuel underground/aboveground storage tanks prior to January 1990, nor for furnace oil tanks prior to May 1, 2002; registration is not required for waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

Fuel Storage Tank - Historic:

Provincial

FSTH

The Fuels Safety Branch of the Ontario Ministry of Consumer and Commercial Relations maintained a database of all registered private fuel storage tanks. Public records of private fuel storage tanks are only available since the registration became effective in September 1989. This information is now collected by the Technical Standards and Safety Authority.

Government Publication Date: Pre-Jan 2010*

Ontario Regulation 347 Waste Generators Summary:

Provincial

GEN

Regulation 347 of the Ontario EPA defines a waste generation site as any site, equipment and/or operation involved in the production, collection, handling and/or storage of regulated wastes. A generator of regulated waste is required to register the waste generation site and each waste produced, collected, handled, or stored at the site. This database contains the registration number, company name and address of registered generators including the types of hazardous wastes generated. It includes data on waste generating facilities such as: drycleaners, waste treatment and disposal facilities, machine shops, electric power distribution etc. This information is a summary of all years from 1986 including the most currently available data. Some records may contain, within the company name, the phrase "See & Use..." followed by a series of letters and numbers. This occurs when one company is amalgamated with or taken over by another registered company. The number listed as "See & Use", refers to the new ownership and the other identification number refers to the original ownership. This phrase serves as a link between the 2 companies until operations have been fully transferred.

Government Publication Date: 1986-Aug 31, 2021

Greenhouse Gas Emissions from Large Facilities:

Federal

GHG

List of greenhouse gas emissions from large facilities made available by Environment Canada. Greenhouse gas emissions in kilotonnes of carbon dioxide equivalents (kt CO₂ eq).

Government Publication Date: 2013-Dec 2019

TSSA Historic Incidents:

Provincial

HINC

List of historic incidences of spills and leaks of diesel, fuel oil, gasoline, natural gas, propane, and hydrogen recorded by the TSSA in their previous incident tracking system. The TSSA's Fuels Safety Program administers the Technical Standards & Safety Act 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, the TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of historical fuel spills and leaks in the province. This listing is a copy of the data captured at one moment in time and is hence limited by the record date provided here.

Government Publication Date: 2006-June 2009*

Indian & Northern Affairs Fuel Tanks:

Federal

IAFT

The Department of Indian & Northern Affairs Canada (INAC) maintains an inventory of aboveground & underground fuel storage tanks located on both federal and crown land. Our inventory provides information on the reserve name, location, facility type, site/facility name, tank type, material & ID number, tank contents & capacity, and date of tank installation.

Government Publication Date: 1950-Aug 2003*

Fuel Oil Spills and Leaks:

Provincial

INC

Listing of spills and leaks of diesel, fuel oil, gasoline, natural gas, propane, and hydrogen reported to the Spills Action Centre (SAC). This is not a comprehensive or complete inventory of fuel-related leaks, spills, and incidents in the province; this listing is a copy of incidents reported to the SAC, obtained under Access to Public Information. Includes incidents from fuel-related hazards such as spills, fires, and explosions. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

Landfill Inventory Management Ontario:

Provincial

LIMO

The Landfill Inventory Management Ontario (LIMO) database is updated every year, as the Ministry of the Environment, Conservation and Parks compiles new and updated information. Includes small and large landfills currently operating as well as those which are closed and historic. Operators of larger landfills provide landfill information for the previous operating year to the ministry for LIMO including: estimated amount of total waste received, landfill capacity, estimated total remaining landfill capacity, fill rates, engineering designs, reporting and monitoring details, size of location, service area, approved waste types, leachate of site treatment, contaminant attenuation zone and more. The small landfills include information such as site owner, site location and certificate of approval # and status.

Government Publication Date: Feb 28, 2019

Canadian Mine Locations:

Private

MINE

This information is collected from the Canadian & American Mines Handbook. The Mines database is a national database that provides over 290 listings on mines (listed as public companies) dealing primarily with precious metals and hard rocks. Listed are mines that are currently in operation, closed, suspended, or are still being developed (advanced projects). Their locations are provided as geographic coordinates (x, y and/or longitude, latitude). As of 2002, data pertaining to Canadian smelters and refineries has been appended to this database.

Government Publication Date: 1998-2009*

Mineral Occurrences:

Provincial

MNR

In the early 70's, the Ministry of Northern Development and Mines created an inventory of approximately 19,000 mineral occurrences in Ontario, in regard to metallic and industrial minerals, as well as some information on building stones and aggregate deposits. Please note that the "Horizontal Positional Accuracy" is approximately +/- 200 m. Many reference elements for each record were derived from field sketches using pace or chain/tape measurements against claim posts or topographic features in the area. The primary limiting factor for the level of positional accuracy is the scale of the source material. The testing of horizontal accuracy of the source materials was accomplished by comparing the plan metric (X and Y) coordinates of that point with the coordinates of the same point as defined from a source of higher accuracy.

Government Publication Date: 1846-Dec 2020

National Analysis of Trends in Emergencies System (NATES):

Federal

NATE

In 1974 Environment Canada established the National Analysis of Trends in Emergencies System (NATES) database, for the voluntary reporting of significant spill incidents. The data was to be used to assist in directing the work of the emergencies program. NATES ran from 1974 to 1994. Extensive information is available within this database including company names, place where the spill occurred, date of spill, cause, reason and source of spill, damage incurred, and amount, concentration, and volume of materials released.

Government Publication Date: 1974-1994*

Non-Compliance Reports:

Provincial

NCPL

The Ministry of the Environment provides information about non-compliant discharges of contaminants to air and water that exceed legal allowable limits, from regulated industrial and municipal facilities. A reported non-compliance failure may be in regard to a Control Order, Certificate of Approval, Sectoral Regulation or specific regulation/act.

Government Publication Date: Dec 31, 2019

National Defense & Canadian Forces Fuel Tanks:

Federal

NDFT

The Department of National Defense and the Canadian Forces maintains an inventory of all aboveground & underground fuel storage tanks located on DND lands. Our inventory provides information on the base name, location, tank type & capacity, tank contents, tank class, date of tank installation, date tank last used, and status of tank as of May 2001. This database will no longer be updated due to the new National Security protocols which have prohibited any release of this database.

Government Publication Date: Up to May 2001*

National Defense & Canadian Forces Spills:

Federal

NDSP

The Department of National Defense and the Canadian Forces maintains an inventory of spills to land and water. All spill sites have been classified under the "Transportation of Dangerous Goods Act - 1992". Our inventory provides information on the facility name, location, spill ID #, spill date, type of spill, as well as the quantity of substance spilled & recovered.

Government Publication Date: Mar 1999-Apr 2018

National Defence & Canadian Forces Waste Disposal Sites:

Federal

NDWD

The Department of National Defence and the Canadian Forces maintains an inventory of waste disposal sites located on DND lands. Where available, our inventory provides information on the base name, location, type of waste received, area of site, depth of site, year site opened/closed and status.

Government Publication Date: 2001-Apr 2007*

National Energy Board Pipeline Incidents:

Federal

NEBI

Locations of pipeline incidents from 2008 to present, made available by the Canada Energy Regulator (CER) - previously the National Energy Board (NEB). Includes incidents reported under the Onshore Pipeline Regulations and the Processing Plant Regulations related to pipelines under federal jurisdiction, does not include incident data related to pipelines under provincial or territorial jurisdiction.

Government Publication Date: 2008-Jun 30, 2021

National Energy Board Wells:

Federal

NEBP

The NEBW database contains information on onshore & offshore oil and gas wells that are outside provincial jurisdiction(s) and are thereby regulated by the National Energy Board. Data is provided regarding the operator, well name, well ID No./UWI, status, classification, well depth, spud and release date.

Government Publication Date: 1920-Feb 2003*

National Environmental Emergencies System (NEES):

Federal

NEES

In 2000, the Emergencies program implemented NEES, a reporting system for spills of hazardous substances. For the most part, this system only captured data from the Atlantic Provinces, some from Quebec and Ontario and a portion from British Columbia. Data for Alberta, Saskatchewan, Manitoba and the Territories was not captured. However, NEES is also a repository for previous Environment Canada spill datasets. NEES is composed of the historic datasets ' or Trends ' which dates from approximately 1974 to present. NEES Trends is a compilation of historic databases, which were merged and includes data from NATES (National Analysis of Trends in Emergencies System), ARTS (Atlantic Regional Trends System), and NEES. In 2001, the Emergencies Program determined that variations in reporting regimes and requirements between federal and provincial agencies made national spill reporting and trend analysis difficult to achieve. As a consequence, the department has focused efforts on capturing data on spills of substances which fall under its legislative authority only (CEPA and FA). As such, the NEES database will be decommissioned in December 2004.

Government Publication Date: 1974-2003***National PCB Inventory:**

Federal

NPCB

Environment Canada's National PCB inventory includes information on in-use PCB containing equipment in Canada including federal, provincial and private facilities. Federal out-of-service PCB containing equipment and PCB waste owned by the federal government or by federally regulated industries such as airlines, railway companies, broadcasting companies, telephone and telecommunications companies, pipeline companies, etc. are also listed. Although it is not Environment Canada's mandate to collect data on non-federal PCB waste, the National PCB inventory includes some information on provincial and private PCB waste and storage sites. Some addresses provided may be Head Office addresses and are not necessarily the location of where the waste is being used or stored.

Government Publication Date: 1988-2008***National Pollutant Release Inventory:**

Federal

NPRI

Environment Canada has defined the National Pollutant Release Inventory ("NPRI") as a federal government initiative designed to collect comprehensive national data regarding releases to air, water, or land, and waste transfers for recycling for more than 300 listed substances.

Government Publication Date: 1993-May 2017**Oil and Gas Wells:**

Private

OGWE

The Nickle's Energy Group (publisher of the Daily Oil Bulletin) collects information on drilling activity including operator and well statistics. The well information database includes name, location, class, status and depth. The main Nickle's database is updated on a daily basis, however, this database is updated on a monthly basis. More information is available at www.nickles.com.

Government Publication Date: 1988-Nov 30, 2021**Ontario Oil and Gas Wells:**

Provincial

OOGW

In 1998, the MNR handed over to the Ontario Oil, Gas and Salt Resources Corporation, the responsibility of maintaining a database of oil and gas wells drilled in Ontario. The OGSR Library has over 20,000+ wells in their database. Information available for all wells in the ERIS database include well owner/operator, location, permit issue date, and well cap date, license No., status, depth and the primary target (rock unit) of the well being drilled. All geology/stratigraphy table information, plus all water table information is also provide for each well record.

Government Publication Date: 1800-Jan 2021**Inventory of PCB Storage Sites:**

Provincial

OPCB

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of PCB storage sites within the province. Ontario Regulation 11/82 (Waste Management - PCB) and Regulation 347 (Generator Waste Management) under the Ontario EPA requires the registration of inactive PCB storage equipment and/or disposal sites of PCB waste with the Ontario Ministry of Environment. This database contains information on: 1) waste quantities; 2) major and minor sites storing liquid or solid waste; and 3) a waste storage inventory.

Government Publication Date: 1987-Oct 2004; 2012-Dec 2013**Orders:**

Provincial

ORD

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all Orders on the registry such as (EPA s. 17) - Order for remedial work, (EPA s. 18) - Order for preventative measures, (EPA s. 43) - Order for removal of waste and restoration of site, (EPA s. 44) - Order for conformity with Act for waste disposal sites, (EPA s. 136) - Order for performance of environmental measures.

Government Publication Date: 1994-Oct 31, 2021**Canadian Pulp and Paper:**

Private

PAP

This information is part of the Pulp and Paper Canada Directory. The Directory provides a comprehensive listing of the locations of pulp and paper mills and the products that they produce.

Government Publication Date: 1999, 2002, 2004, 2005, 2009-2014**Parks Canada Fuel Storage Tanks:**

Federal

PCFT

Canadian Heritage maintains an inventory of known fuel storage tanks operated by Parks Canada, in both National Parks and at National Historic Sites. The database details information on site name, location, tank install/removal date, capacity, fuel type, facility type, tank design and owner/operator.

Government Publication Date: 1920-Jan 2005*

Pesticide Register:

Provincial PES

The Ontario Ministry of the Environment and Climate Change maintains a database of licensed operators and vendors of registered pesticides.

Government Publication Date: Oct 2011- Sep 30, 2021

Pipeline Incidents:

Provincial PINC

List of pipeline incidents (strikes, leaks, spills). This is not a comprehensive or complete inventory of pipeline incidents in the province; this listing is an historical copy of records previously obtained under Access to Public Information. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

Private and Retail Fuel Storage Tanks:

Provincial PRT

The Fuels Safety Branch of the Ontario Ministry of Consumer and Commercial Relations maintained a database of all registered private fuel storage tanks and licensed retail fuel outlets. This database includes an inventory of locations that have gasoline, oil, waste oil, natural gas and/or propane storage tanks on their property. The MCCR no longer collects this information. This information is now collected by the Technical Standards and Safety Authority (TSSA).

Government Publication Date: 1989-1996*

Permit to Take Water:

Provincial PTTW

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all PTTW's on the registry such as OWRA s. 34 - Permit to take water.

Government Publication Date: 1994 - Oct 31, 2021

Ontario Regulation 347 Waste Receivers Summary:

Provincial REC

Part V of the Ontario Environmental Protection Act ("EPA") regulates the disposal of regulated waste through an operating waste management system or a waste disposal site operated or used pursuant to the terms and conditions of a Certificate of Approval or a Provisional Certificate of Approval. Regulation 347 of the Ontario EPA defines a waste receiving site as any site or facility to which waste is transferred by a waste carrier. A receiver of regulated waste is required to register the waste receiving facility. This database represents registered receivers of regulated wastes, identified by registration number, company name and address, and includes receivers of waste such as: landfills, incinerators, transfer stations, PCB storage sites, sludge farms and water pollution control plants. This information is a summary of all years from 1986 including the most currently available data.

Government Publication Date: 1986-1990, 1992-2019

Record of Site Condition:

Provincial RSC

The Record of Site Condition (RSC) is part of the Ministry of the Environment's Brownfields Environmental Site Registry. Protection from environmental cleanup orders for property owners is contingent upon documentation known as a record of site condition (RSC) being filed in the Environmental Site Registry. In order to file an RSC, the property must have been properly assessed and shown to meet the soil, sediment and groundwater standards appropriate for the use (such as residential) proposed to take place on the property. The Record of Site Condition Regulation (O. Reg. 153/04) details requirements related to site assessment and clean up.

RSCs filed after July 1, 2011 will also be included as part of the new (O.Reg. 511/09).

Government Publication Date: 1997-Sept 2001, Oct 2004-Oct 2021

Retail Fuel Storage Tanks:

Private RST

This database includes an inventory of retail fuel outlet locations (including marinas) that have on their property gasoline, oil, waste oil, natural gas and / or propane storage tanks.

Government Publication Date: 1999-Sep 30, 2021

Scott's Manufacturing Directory:

Private SCT

Scott's Directories is a data bank containing information on over 200,000 manufacturers across Canada. Even though Scott's listings are voluntary, it is the most comprehensive database of Canadian manufacturers available. Information concerning a company's address, plant size, and main products are included in this database.

Government Publication Date: 1992-Mar 2011*

Ontario Spills:

Provincial SPL

List of spills and incidents made available the Ministry of the Environment, Conservation and Parks. This database identifies information such as location (approximate), type and quantity of contaminant, date of spill, environmental impact, cause, nature of impact, etc. Information from 1988-2002 was part of the ORIS (Occurrence Reporting Information System). The SAC (Spills Action Centre) handles all spills reported in Ontario. Regulations for spills in Ontario are part of the MOE's Environmental Protection Act, Part X.

Government Publication Date: 1988-Sep 2020

Wastewater Discharger Registration Database:

Provincial

[SRDS](#)

Information under this heading is combination of the following 2 programs. The Municipal/Industrial Strategy for Abatement (MISA) division of the Ontario Ministry of Environment maintained a database of all direct dischargers of toxic pollutants within nine sectors including: Electric Power Generation; Mining; Petroleum Refining; Organic Chemicals; Inorganic Chemicals; Pulp & Paper; Metal Casting; Iron & Steel; and Quarries. All sampling information is now collected and stored within the Sample Result Data Store (SRDS).

Government Publication Date: 1990-Dec 31, 2018

Anderson's Storage Tanks:

Private

[TANK](#)

The information provided in this database was collected by examining various historical documents, which identified the location of former storage tanks, containing substances such as fuel, water, gas, oil, and other various types of miscellaneous products. Information is available in regard to business operating at tank site, tank location, permit year, permit & installation type, no. of tanks installed & configuration and tank capacity. Data contained within this database pertains only to the city of Toronto and is not warranted to be complete, exhaustive or authoritative. The information was collected for research purposes only.

Government Publication Date: 1915-1953*

Transport Canada Fuel Storage Tanks:

Federal

[TCFT](#)

List of fuel storage tanks currently or previously owned or operated by Transport Canada. This inventory also includes tanks on The Pickering Lands, which refers to 7,530 hectares (18,600 acres) of land in Pickering, Markham, and Uxbridge owned by the Government of Canada since 1972; properties on this land has been leased by the government since 1975, and falls under the Site Management Policy of Transport Canada, but is administered by Public Works and Government Services Canada. This inventory provides information on the site name, location, tank age, capacity and fuel type.

Government Publication Date: 1970 - Dec 2020

Variances for Abandonment of Underground Storage Tanks:

Provincial

[VAR](#)

Listing of variances granted for storage tank abandonment. This is not a comprehensive or complete inventory of tank abandonment variances in the province; this listing is a copy of tank abandonment variance records previously obtained under Access to Public Information. In Ontario, registered underground storage tanks must be removed within two years of disuse; if removal of a tank is not feasible, an application may be sought for a variance from this code requirement.

Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

Waste Disposal Sites - MOE CA Inventory:

Provincial

[WDS](#)

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of known open (active or inactive) and closed disposal sites in the Province of Ontario. Active sites maintain a Certificate of Approval, are approved to receive and are receiving waste. Inactive sites maintain Certificate(s) of Approval but are not receiving waste. Closed sites are not receiving waste. The data contained within this database was compiled from the MOE's Certificate of Approval database. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number. All new Environmental Compliance Approvals handed out after Oct 31, 2011 for Waste Disposal Sites will still be found in this database.

Government Publication Date: Oct 2011- Sep 30, 2021

Waste Disposal Sites - MOE 1991 Historical Approval Inventory:

Provincial

[WDSH](#)

In June 1991, the Ontario Ministry of Environment, Waste Management Branch, published the "June 1991 Waste Disposal Site Inventory", of all known active and closed waste disposal sites as of October 30th, 1990. For each "active" site as of October 31st 1990, information is provided on site location, site/CA number, waste type, site status and site classification. For each "closed" site as of October 31st 1990, information is provided on site location, site/CA number, closure date and site classification. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number.

Government Publication Date: Up to Oct 1990*

Water Well Information System:

Provincial

[WWIS](#)

This database describes locations and characteristics of water wells found within Ontario in accordance with Regulation 903. It includes such information as coordinates, construction date, well depth, primary and secondary use, pump rate, static water level, well status, etc. Also included are detailed stratigraphy information, approximate depth to bedrock and the approximate depth to the water table.

Government Publication Date: Apr 30, 2021

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

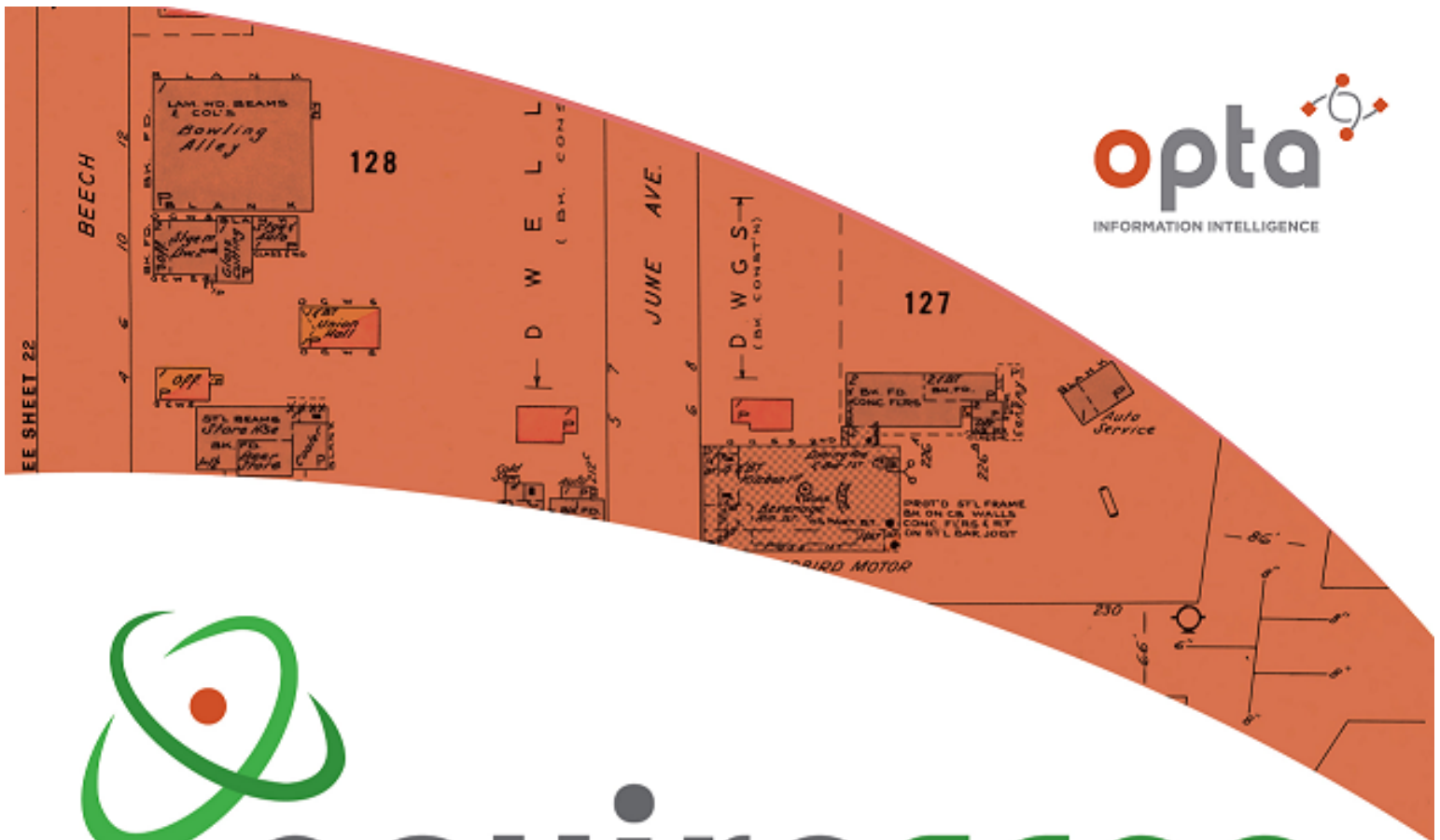
'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.



enviroscan



An SCM Company

175 Commerce Valley Drive W
Markham, Ontario L3T 7Z3

T: 905-882-6300
W: www.optaintel.ca

Report Completed By:
Stephanie

Site Address:

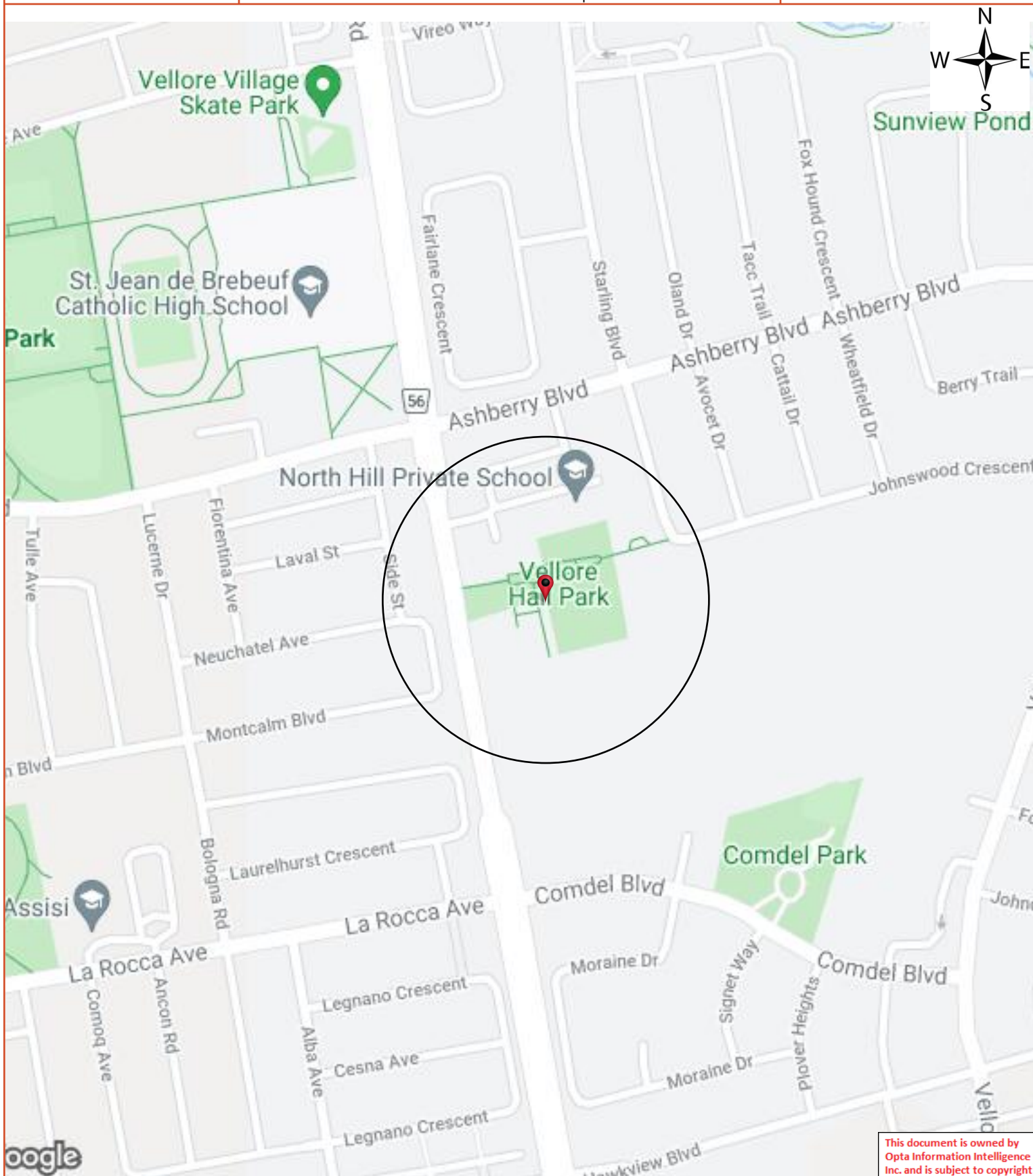
9541 Weston Road Vaughan ON
Project No:

21122001000
Opta Order ID:

101804

Requested by:
Eleanor Goolab
Ecolog Eris

Date Completed:
1/5/2022 6:25:05 AM



Opta Historical Environmental Services EnviroscanTM Terms and Conditions

Report

The documents (hereinafter referred to as the "Documents") to be released as part of the report (hereinafter referred to as the "Report") to be delivered to the purchaser as set out above are documents in Opta's records relating to the described property (hereinafter referred to as the "Property"). Opta makes no representations or warranties respecting the Documents whatsoever, including, without limitation, with respect to the completeness, accuracy or usefulness of the Documents, and does not represent or warrant that these are the only plans and reports prepared in association with the Property or in Opta's possession at the time of Report delivery to the purchaser. The Documents are current as of the date(s) indicated on them. Interpretation of the Documents, if any, is by inference based upon the information which is apparent and obvious on the face of the Documents only. Opta does not represent, warrant or guarantee that interpretations other than those referred to do not exist from other sources. The Report will be prepared for use by the purchaser of the services as shown above hereof only.

Disclaimer

Opta disclaims responsibility for any losses or damages of any kind whatsoever, whether consequential or other, however caused, incurred or suffered, arising directly or indirectly as a result of the services (which services include, but are not limited to, the preparation of the Report provided hereunder), including but not limited to, any losses or damages arising directly or indirectly from any breach of contract, fundamental or otherwise, from reliance on Opta Reports or from any tortious acts or omissions of Opta's agents, employees or representatives.

Entire Agreement

The parties hereto acknowledge and agree to be bound by the terms and conditions hereof. The request form constitutes the entire agreement between the parties pertaining to the subject matter hereof and supersedes all prior and contemporaneous agreements, negotiations and discussions, whether oral or written, and there are no representations or warranties, or other agreements between the parties in connection with the subject matter hereof except as specifically set forth herein. No supplement, modification, waiver, or termination of the request shall be binding, unless confirmed in writing by the parties hereto.

Governing Document

In the event of any conflicts or inconsistencies between the provisions hereof and the Reports, the rights and obligations of the parties shall be deemed to be governed by the request form, which shall be the paramount document.

Law

This agreement shall be governed by and construed in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein.

No Records Found

Requested by:
Eleanor Goolab
Date Completed: 01/05/2022 06:25:05



OPTA INFORMATION INTELLIGENCE

No Records Found



ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES



CITY
DIRECTORY

Project Property: *9541 Weston Road, Woodbridge, ON*
Report Type: *City Directory*
Order No: *21122300431*
Information Source: *Polk's York Region, Ontario Criss-Cross Directory*
Date Completed: *11/01/22*

Environmental Risk Information Services

A division of Glacier Media Inc.

1.866.517.5204 | info@erisinfo.com | erisinfo.com

City Directory Information Source
<i>Polk's York Region, Ontario Criss-Cross Directory</i>

PROJECT NUMBER: 21122300431	
Site Address:	9541 Weston Road, Woodbridge, ON
Year: 1999	
Site Listing:	- Vellore Cultural Daycamp Town of Vghn Prks & Rcrtn
Adjacent Properties:	
9465 Weston Road	- Residential (1 Tenant)
9516 Weston Road	-Address Not Listed
9520 Weston Road	-Address Not Listed
9544 Weston Road	-Address Not Listed
9545 Weston Road	-Address Not Listed
9555 Weston Road	-Address Not Listed

9564 Weston Road	-Address Not Listed
9565 Weston Road	-Residential (1 Tenant)
9575 Weston Road	-Residential (1 Tenant)
9585 Weston Road	-Residential (1 Tenant)

PROJECT NUMBER: 21122300431	
Site Address:	9541 Weston Road, Woodbridge, ON
Year: 1994	
Site Listing:	- Address Not Listed
Adjacent Properties:	
9465 Weston Road	- Address Not Listed
9516 Weston Road	-Address Not Listed
9520 Weston Road	-Address Not Listed
9544 Weston Road	-Address Not Listed

9545 Weston Road	-Address Not Listed
9555 Weston Road	-Address Not Listed
9564 Weston Road	-Address Not Listed
9565 Weston Road	-Address Not Listed
9575 Weston Road	-Address Not Listed
9585 Weston Road	-Address Not Listed

PROJECT NUMBER: 21122300431	
Site Address:	9541 Weston Road, Woodbridge, ON
Year: 1989	
Site Listing:	- Address Not Listed
Adjacent Properties:	
9465 Weston Road	- Address Not Listed

9516 Weston Road	-Address Not Listed
9520 Weston Road	-Address Not Listed
9544 Weston Road	-Address Not Listed
9545 Weston Road	-Address Not Listed
9555 Weston Road	-Address Not Listed
9564 Weston Road	-Address Not Listed
9565 Weston Road	-Address Not Listed
9575 Weston Road	-Address Not Listed
9585 Weston Road	-Address Not Listed

PROJECT NUMBER: 21122300431	
Site Address:	9541 Weston Road, Woodbridge, ON
Year: 1983	

Site Listing:	- Address Not Listed
Adjacent Properties:	
9465 Weston Road	- Address Not Listed
9516 Weston Road	-Address Not Listed
9520 Weston Road	-Address Not Listed
9544 Weston Road	-Address Not Listed
9545 Weston Road	-Address Not Listed
9555 Weston Road	-Address Not Listed
9564 Weston Road	-Address Not Listed
9565 Weston Road	-Address Not Listed
9575 Weston Road	-Address Not Listed
9585 Weston Road	-Address Not Listed

PROJECT NUMBER: 21122300431	
Site Address:	9541 Weston Road, Woodbridge, ON
Year: 1977-1978	
Site Listing:	- Address Not Listed
Adjacent Properties:	
9465 Weston Road	- Address Not Listed
9516 Weston Road	-Address Not Listed
9520 Weston Road	-Address Not Listed
9544 Weston Road	-Address Not Listed
9545 Weston Road	-Address Not Listed
9555 Weston Road	-Address Not Listed
9564 Weston Road	-Address Not Listed
9565 Weston Road	-Address Not Listed

9575 Weston Road	-Address Not Listed
9585 Weston Road	-Address Not Listed

PROJECT NUMBER: 21122300431	
Site Address:	9541 Weston Road, Woodbridge, ON
Year: 1972-1973	
Site Listing:	- Street Not Listed
Adjacent Properties:	
9465 Weston Road	- Street Not Listed
9516 Weston Road	- Street Not Listed
9520 Weston Road	- Street Not Listed
9544 Weston Road	- Street Not Listed
9545 Weston Road	- Street Not Listed

9555 Weston Road	- Street Not Listed
9564 Weston Road	- Street Not Listed
9565 Weston Road	- Street Not Listed
9575 Weston Road	- Street Not Listed
9585 Weston Road	- Street Not Listed

PROJECT NUMBER: 21122300431	
Site Address:	9541 Weston Road, Woodbridge, ON
Year: 1966	
Site Listing:	- Street Not Listed
Adjacent Properties:	
9465 Weston Road	- Street Not Listed
9516 Weston Road	- Street Not Listed
9520 Weston Road	- Street Not Listed

9544 Weston Road	- Street Not Listed
9545 Weston Road	- Street Not Listed
9555 Weston Road	- Street Not Listed
9564 Weston Road	- Street Not Listed
9565 Weston Road	- Street Not Listed
9575 Weston Road	- Street Not Listed
9585 Weston Road	- Street Not Listed

PROJECT NUMBER: 21122300431	
Site Address:	9541 Weston Road, Woodbridge, ON
Year: 1960	
Site Listing:	- Street Not Listed
Adjacent Properties:	

9465 Weston Road	- Street Not Listed
9516 Weston Road	- Street Not Listed
9520 Weston Road	- Street Not Listed
9544 Weston Road	- Street Not Listed
9545 Weston Road	- Street Not Listed
9555 Weston Road	- Street Not Listed
9564 Weston Road	- Street Not Listed
9565 Weston Road	- Street Not Listed
9575 Weston Road	- Street Not Listed
9585 Weston Road	- Street Not Listed

-All listings for businesses were listed as they are in the city directory.

-Listings that are residential are listed as “residential” with the number of tenants. The name of the residential tenant is not listed in the above city directory.



1: 4,514
March 30, 2022



Notes

9541 Weston Road, Vaughan



1: 4,514
March 30, 2022



Notes

9541 Weston Road, Vaughan

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Queen's Printer for Ontario 2003-2022



1: 4,514
March 30, 2022



Notes

9541 Weston Road, Vaughan



1: 4,514
March 30, 2022



Notes

9541 Weston Road, Vaughan



1: 4,514
March 30, 2022



Notes

9541 Weston Road, Vaughan



1: 4,514
March 30, 2022



Notes

9541 Weston Road, Vaughan



1: 4,514
March 30, 2022



Notes

9541 Weston Road, Vaughan



1: 4,514
March 30, 2022



Notes

9541 Weston Road, Vaughan



1: 4,514
March 30, 2022



Notes

9541 Weston Road, Vaughan

Appendix C

Correspondence



Feng Li

From: Public Information Services <publicinformationsservices@tssa.org>
Sent: Friday, February 11, 2022 9:29 AM
To: Feng Li
Subject: RE: 02112512 - 9541 Weston Road, Vaughan, ON

ATTENTION: Assurez-vous que le contenu soit de confiance avant d'ouvrir une pièce jointe ou un hyperlien.
CAUTION: Do not click on links or open attachments you do not trust.

Please refrain from sending documents to head office and only submit your requests electronically via email along with credit card payment. We are all working remotely and mailing in applications with cheques will lengthen the overall processing time.

NO RECORD FOUND

Hello,

Thank you for your request for confirmation of public information.

- We confirm that there are no records in our database of any fuel storage tanks at the subject addresses.

For a further search in our archives please complete our release of public information form found at https://www.tssa.org/en/about-tssa/release-of-public-information.aspx?_mid_=392 and email the completed form to publicinformationsservices@tssa.org along with a fee of \$56.50 (including HST) per location. The fee is payable with credit card (Visa or MasterCard).

Although TSSA believes the information provided pursuant to your request is accurate, please note that TSSA does not warrant this information in any way whatsoever.

Kind regards,

Sherees



Public Information Agent

Facilities and Business Services
345 Carlingview Drive
Toronto, Ontario M9W 6N9

Tel: +1-416-734-6222 | Fax: +1-416-734-3568 | E-Mail: publicinformationsservices@tssa.org
www.tssa.org



From: Feng Li <Feng.Li@englobecorp.com>
Sent: February 10, 2022 11:52 PM
To: Public Information Services <publicinformationsservices@tssa.org>
Subject: 02112512 - 9541 Weston Road, Vaughan, ON

[CAUTION]: This email originated outside the organisation.
Please do not click links or open attachments unless you recognise the source of this email and know the content is safe.

Good morning,

Could you please indicate if the TSSA has any fuel storage records on file for the properties listed below?

9541 Weston Road, Vaughan, ON
9545 Weston Road, Vaughan, ON
9591 Weston Road, Vaughan, ON
9555 Weston Road, Vaughan, ON
9581 Weston Road, Vaughan, ON
9587 Weston Road, Vaughan, ON
9591 Weston Road, Vaughan, ON

Thank you in advance for any information provided.



Feng Li, M.Sc., M.Eng., P.Eng.
Project Manager, Environment GTA / East - ON
T 1.877.300.4800 | M 1.437.991.6210

ENGLOBE

3397 American Drive, Units 14 & 15, Mississauga, ON L4V 1T8
englobecorp.com



AVERTISSEMENT : Le présent courriel et tous les documents qui y sont annexés sont confidentiels et peuvent être assujettis au secret professionnel. Si vous recevez ce courriel par erreur, veuillez nous en informer immédiatement et le détruire intégralement. **NOTICE**: This email and any files transmitted with it are confidential and can be subject to professional secrecy. If you have received this email in error or are not the intended recipient, please notify us immediately and delete it in its entirety.

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**Ministry of the Environment,
Conservation and Parks**

Access and Privacy Office

12th Floor
40 St. Clair Avenue West
Toronto ON M4V 1M2
Tel: (416) 314-4075
Fax: (416) 314-4285

**Ministère de l'Environnement, de
la Protection de la nature et des
Parcs**

Bureau de l'accès à l'information et
de la protection de la vie privée

12^e étage
40, avenue St. Clair ouest
Toronto ON M4V 1M2
Tél. : (416) 314-4075
Téléc.: (416) 314-4285



January 17, 2022

Feng Li
DST Consulting Engineers, a Division of Englobe
3397 American Drive, Unit 14 and 15
Mississauga, ON L4V 1T8

Dear Feng Li:

RE: ***Freedom of Information and Protection of Privacy Act Request***
Our File # A-2021-09027, Your Reference 02112512.000

The Ministry is in receipt of your request made pursuant to the *Freedom of Information and Protection of Privacy Act* and has received your payment in the amount of \$5.00 (non-refundable application fee).

**The search will be conducted on the following: 9541 Weston Road, Woodbridge.
If there is any discrepancy please contact us immediately.**

You may expect a reply or additional communication as your request is processed. For your information, the Ministry charges for search and preparation time.

Due to the COVID-19 outbreak, requesters may experience some delays with FOI requests at this time.

This is to advise you, we've gone digital! Requests submitted by fax will no longer be accepted starting August 31, 2021. If you submitted requests by fax before August 31, 2021, we'll process it. Please don't re-submit it using the online form or you might get charged twice. The online form can be found on the central forms repository at the following link

<https://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/FormDetail?OpenForm&ACT=RDR&TAB=PROFILE&SRCH=1&ENV=WWE&TIT=freedom+of+information&NO=012-2146E>.

If you have any questions regarding this matter, please contact Nasreen Salar at or nasreen.salar@ontario.ca.

Yours truly,

Original Signed by

Noel Kent
Manager, Access and Privacy



Phase I/One Environmental Site Assessment – Interview Questionnaire

Name of Company: The City of Vaughan

Name: Alex Sorbara

Position/Title: Supervisor, Facility Management Department

Site address: 9541 Weston Road

Number of Building(s) at Site: 3 When were the building(s) constructed Unknown, suspect late 1800's

The Person's Relation to the Site

How long have you lived/worked at the Site? N/A

Main duties of your role? Facility supervisor of various sites/buildings in Vaughan

Current Activities at the Site and Surrounding Areas

Site Description	Property Uses (Residential/Commercial /Industrial, etc.)	Historical and Current Activities that May Have an Environmental Concern (e.g. manufacturing, chemical uses, waste generation, etc.)
The Site	Recreation / community use	Not applicable / unknown
Properties to the East	Park / residential	Not applicable / unknown
Properties to the South	Woodlot	Not applicable / unknown
Properties to the West	Regional road (Weston Road)	Not applicable / unknown
Properties to the North	Commercial plaza	Not applicable / unknown

Underground or Aboveground Storage Tanks (USTs or ASTs)

Does the property have any USTs? ☐ Yes (Number of USTs____) ☐ NO ☒ Unknown

If Yes,

Please indicate location, year of installation and contents: _____

Leak detection equipment or secondary containment systems installed? ☐ Yes ☐ NO ☐ Unknown

Any record of leak, spill or discharge? ☐ Yes ☐ NO ☐ Unknown

Does the property have any ASTs? ☐ Yes (Number of ASTS____) ☒ NO ☐ Unknown

If Yes,

Please indicate, location, year of installation and contents: _____

Leak detection equipment or secondary containment systems installed? ☐ Yes ☐ NO ☐ Unknown

Any record of leak, spill or discharge? ☐ Yes ☐ NO ☐ Unknown



Other Chemical Storage

Are chemicals other than the USTs/ASTs above stored on the Site? ☐ Yes ☒ NO ☐ Unknown

If Yes,

Please indicate type, volume and container: Only regular cleaning supplies stored in the buildings

Asbestos Containing Materials (ACMs)

Are there any ACMs in the building: ☐ Yes (Location _____) ☒ NO ☐ Unknown

Was ACMs removed from Site: ☐ Yes (Location _____) ☐ NO ☐ Unknown

Has an asbestos survey or audit of the property been conducted? ☒ Yes ☐ NO ☐ Unknown

Note: only survey of the existing buildings

Polychlorinated Biphenyls (PCBs)

Are there any PCBs (transformers and capacitors) at the Site: ☐ Yes ☒ NO ☐ Unknown

Was PCBs removed from Site: ☐ Yes (Location _____) ☐ NO ☐ Unknown

Ureaformaldehyde (UFFI)

Are there any UFFI at the Site? ☐ Yes (Location _____) ☒ NO ☐ Unknown

Was UFFI removed from Site? ☐ Yes (Location _____) ☐ NO ☐ Unknown

Spills

Has there ever been a spill at or near the Site? ☐ Yes ☒ NO ☐ Unknown

If Yes,

Please indicate location, date, amount and actions taken: _____

Industrial/Commercial Use

Has the Site or an adjacent property(s) ever been used for an industrial or commercial use?

☒ Yes ☐ NO ☐ Unknown

If Yes,

Please specify activities and time frames: Adjacent site (north) commercial / plaza use
Developed approx. 1990's

Environmental Violation

Has the Site ever been subject to environmental violations?

☐ Yes ☐ NO ☒ Unknown

If Yes,

Please specify and time frames: _____



Discharge of Wastewater

Does the Site discharge wastewater (not including sanitary waste or storm water) into a sanitary sewer system or onto the Site?

☐ Yes ☒ NO ☐ Unknown

If Yes,

Please specify and time frames: _____

Fill

Has fill material ever been imported to the Site (including illegal dumping)?

☐ Yes ☒ NO ☐ Unknown

If Yes,

Please specify amount, location and time frames: _____

Others

Has the site ever received a notice of Violation? ☐ Yes ☐ NO ☒ Unknown

Has there been any previous environmental assessment at the Site? ☐ Yes ☒ NO ☐ Unknown

Are there any environmental monitoring wells at the Site? ☐ Yes (Number____) ☒ NO ☐ Unknown

Are there any private or public water wells at the Site? ☐ Yes (Number____) ☒ NO ☐ Unknown

Additional Comments and/or Explanations if Any:

I, _____ (Print Name) from _____ (Company Name)
affirms that the above information and facts provided are true and correct, based on my current
knowledge as of the date completed.

Signature

Date Completed (MM-DD-YYYY)

Appendix D

Site Photographs



eNGLOBE



Photograph 1: View of the Site, standing on parking lot, looking west



Photograph 2: View of the east adjacent property (park), looking east



Photograph 3: View of north adjacent building (hall), looking north



Photograph 4: View of south adjacent property (woodlot), looking south.



Photograph 5: View of west adjacent property (Weston Road), looking west



Photograph 6: View of further north commercial plaza, looking east

HYDRANT INSPECTION & FLOW REPORT



Prepared By: The Ontario Clean Water Agency
 Prepared For: SCS Consulting
 Residual Hyd Andrew Cruickshank
 Flow Hyd(s) Seth Wiggins, Daniel Johnston

SUGGESTED NFPA RATING	
BLUE	CLASS AA
5182 gpm @ 20 psi (138 kPa)	

Date: 24-Mar-22 Time: 12:14 PM

HYDRANT DESCRIPTION

Hydrant ID:	3203_3525	Side of Street:	North	Make:	Canada Valve	Open Dir:	Left
Address:	9541 Weston Road			Model:	Century	Latitude:	
Location:	Vaughan ON			Year:	2007	Longitude:	

GENERAL INSPECTION

OK - Good Condition

FR - Future Repair Required

N/A - Not Applicable

CF - Component Failure

Upper Section					Mid Section					General				
OK	FR	N/A	CF		OK	FR	N/A	CF		OK	FR	N/A	CF	
Bonnet	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Port Height	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Accessibility	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Operating Nut	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Caps / Nozzles	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Position / Height	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Gaskets / Bolts	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Chains	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Paint Cond	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
O-Ring(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Traffic Flange	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Drain Ports	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hydrostatic Leak Testing					Maintenance					Auxiliary / Secondary Valve				
Hydrant Closed	Above Grade Leak		N/A		Lubricate Operating Nut		N/A			Located / Accessible		N/A		
	Subsurface Leak		N/A		Lubricate & Clean Nozzle Threads		N/A			Operated/Exercised		N/A		
Hydrant Open	Above Grade Leak		N/A		Lubricate & Clean Cap Threads		N/A			Number of Turns		N/A		
	Subsurface Leak		N/A		Water Removed (if non-draining)		N/A			Open Direction				
Comments:										Auxiliary Valve Location:				

FLUSHING *If hydrants are being flow tested, inspections and flushing are completed prior to testing

Hydrant Operated	Clear Flow Obtained	Cl2 Residual	Time Flushed	Flow	Total Flow	Dechlorinated
Yes - Easily Operated	Yes	N/A	5 minutes	1294 gal	6472 gal	Yes

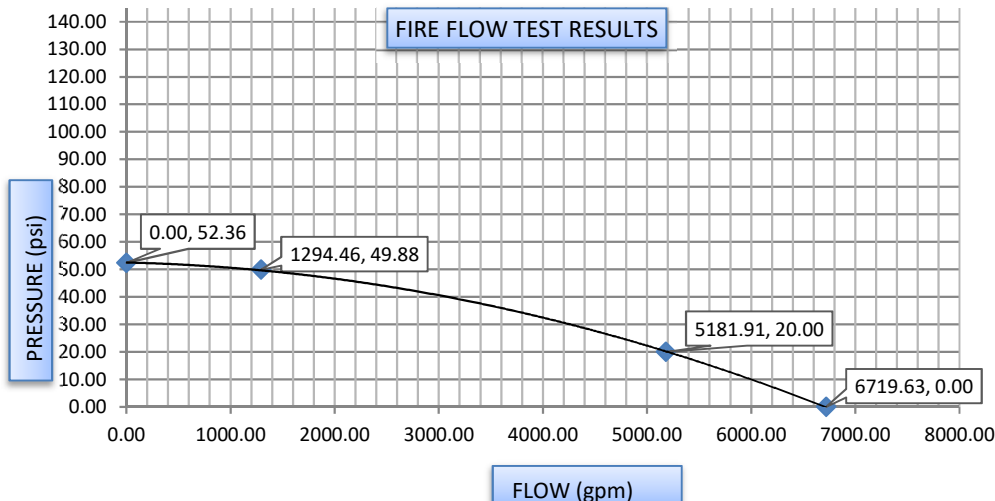
Comments:

STATIC AFTER FLOW TEST WAS PERFORMED 51.12 PSI

FLOW TESTING *Flow testing results may be from previous year(s). Note date & time

Date: 24-Mar-22 Time: 12:14 PM

Flow Hydrant								Test Hydrant		
ID	Flow Device Used	Size	Coefficient	Time Flushed	Flow	Total Flow	Pitot	ID	Static	Residual
69	Pollard Diffuser	2.5"	0.832	5.0 minutes	694 gal	3468 gal	20 psi	3203_3525	52.36	49.88
69	Pollard Diffuser	2.5"	0.832	5.0 minutes	601 gal	3004 gal	15 psi			



Calculated Results

Calculated Flow @ 20 psi	5182 gpm
Calculated Flow @ 0 psi	6720 gpm
Pressure Drop	4.74%

Comments:

HYDRANT INSPECTION & FLOW REPORT



Prepared By: The Ontario Clean Water Agency
 Prepared For: SCS Consulting
 Residual Hyd Andrew Cruickshank
 Flow Hyd(s) Seth Wiggins, Daniel Johnston

SUGGESTED NFPA RATING	
BLUE	CLASS AA
5351 gpm @ 20 psi (138 kPa)	

Date: 24-Mar-22 Time: 12:44 PM

HYDRANT DESCRIPTION

Hydrant ID:	3203_3525	Side of Street:	North	Make:	Canada Valve	Open Dir:	Left
Address:	9541 Weston Road			Model:	Century	Latitude:	
Location:	Vaughan ON			Year:	2007	Longitude:	

GENERAL INSPECTION

OK - Good Condition

FR - Future Repair Required

N/A - Not Applicable

CF - Component Failure

Upper Section	OK	FR	N/A	CF	Mid Section	OK	FR	N/A	CF	General	OK	FR	N/A	CF
Bonnet	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Port Height	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Accessibility	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Operating Nut	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Caps / Nozzles	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Position / Height	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Gaskets / Bolts	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Chains	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Paint Cond	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
O-Ring(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Traffic Flange	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Drain Ports	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Hydrostatic Leak Testing

Hydrant Closed	Above Grade Leak	N/A
	Subsurface Leak	N/A
Hydrant Open	Above Grade Leak	N/A
	Subsurface Leak	N/A

Maintenance

Lubricate Operating Nut	N/A
Lubricate & Clean Nozzle Threads	N/A
Lubricate & Clean Cap Threads	N/A
Water Removed (if non-draining)	N/A

Auxiliary / Secondary Valve

Located / Accessible	N/A
Operated/Exercised	N/A
Number of Turns	N/A
Open Direction	

Comments: Leak present at Bonnet during testing on Residual Hydrant

Auxiliary Valve Location:

FLUSHING *If hydrants are being flow tested, inspections and flushing are completed prior to testing

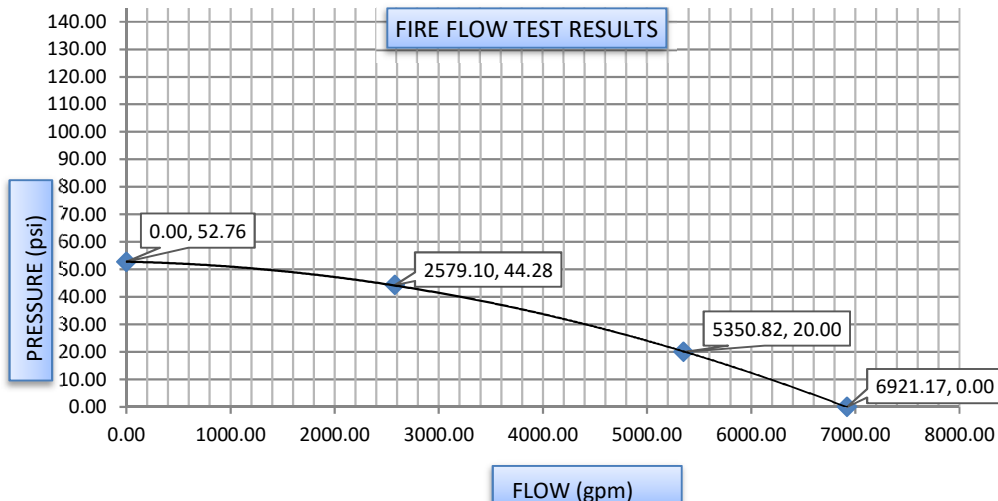
Hydrant Operated	Clear Flow Obtained	Cl2 Residual	Time Flushed	Flow	Total Flow	Dechlorinated
Yes - Easily Operated	Yes	N/A	5 minutes	2579 gal	12896 gal	Yes

Comments: **STATIC AFTER FLOW TEST WAS PERFORMED 52.44 PSI**

FLOW TESTING *Flow testing results may be from previous year(s). Note date & time

Date: 24-Mar-22 Time: 12:44 PM

Flow Hydrant								Test Hydrant		
ID	Flow Device Used	Size	Coefficient	Time Flushed	Flow	Total Flow	Pitot	ID	Static	Residual
69	Pollard Diffuser	2.5"	0.832	5.0 minutes	744 gal	3720 gal	23 psi	3203_3525	52.76	44.28
69	Pollard Diffuser	2.5"	0.832	5.0 minutes	491 gal	2453 gal	10 psi			
66	Pollard Diffuser	2.5"	0.832	5.0 minutes	744 gal	3720 gal	23 psi			
66	Pollard Diffuser	2.5"	0.832	5.0 minutes	601 gal	3004 gal	15 psi			



Calculated Results

Calculated Flow @ 20 psi	5351 gpm
Calculated Flow @ 0 psi	6921 gpm
Pressure Drop	16.07%

Comments:

Stage 1 and 2 Archaeological Assessment of Part of Vellore Hall Park, 9541 Weston Road, Part of Lot 17, Concession 5, Geographic Township of Vaughan, County of York, Now in the City of Vaughan, Regional Municipality of York

Original Report

Prepared for:

City of Vaughan

2141 Major Mackenzie Dr.

Vaughan, Ontario L6A 1T1

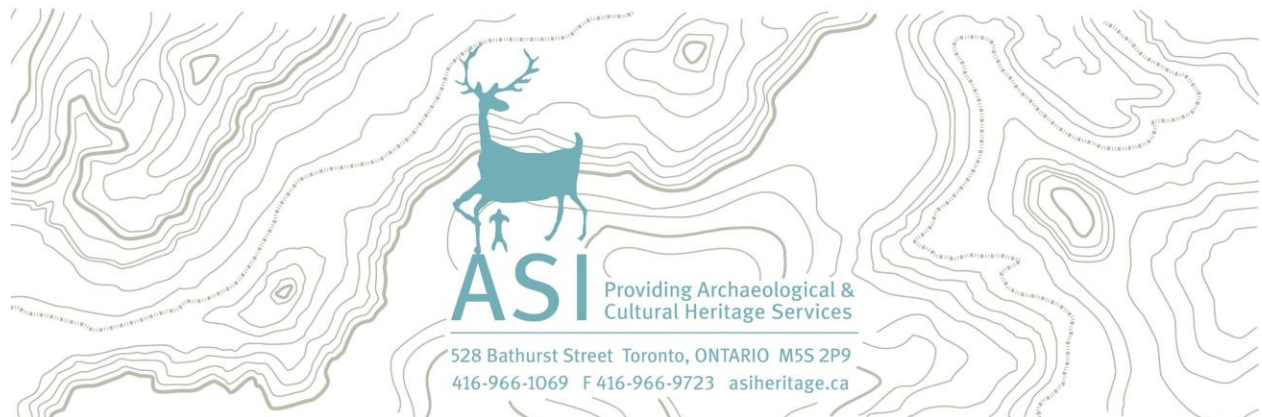
(905) 832-8585

Archaeological Licence: P1133 (Kashani)

Project Information Form: P1133-0012-2022

Archaeological Services Inc. File: 22PL-225

22 February 2023



Executive Summary

Archaeological Services Inc. was contracted by the City of Vaughan to undertake a Stage 1 and 2 Archaeological Assessment of Part of Vellore Hall Park, 9541 Weston Road, Part of Lot 17, Concession 5, Geographic Township of Vaughan, County of York, now in the City of Vaughan, Regional Municipality of York. The development envelope (project area) is approximately 0.17 hectares and consists of only a small portion of the larger property limits for 9541 Weston Road.

The Stage 1 background research entailed consideration of the proximity of previously registered archaeological sites and the original environmental setting of the project area, along with nineteenth- and twentieth-century settlement trends and the general guidance provided by the *Archaeological Management Plan for the Region of York* (York Region, 2014). This research indicated there was potential for both Indigenous and Euro-Canadian historical archaeological resources in the project area.

The Stage 2 property assessment was conducted on November 7, 2022, by means of a test pit survey initiated at five-metre intervals and increased to 10 metres when disturbance was encountered. Despite careful scrutiny, no archaeological resources were encountered during the test pit survey.

It is recommended that no further archaeological assessment of the project area be required.



Project Personnel

- **Senior Project Manager:** Jennifer Ley, Honours Bachelor of Arts (R376), Lead Archaeologist, Manager, Planning Assessment Division
- **Project Manager:** Christopher Brown, Master of Arts (P361), Associate Archaeologist, Project Manager, Planning Assessment Division
- **Project Director:** Poorya Kashani, Doctor of Philosophy (P1133), Associate Archaeologist, Field Director, Planning Assessment Division
- **Project Administrator:** Lauren Vince, Honours Bachelor of Arts (R1235), Archaeologist, Project Administrator, Planning Assessment Division
- **Field Director:** Poorya Kashani
- **Field Archaeologists:** Aidan Dunphy; Marcus Morgan
- **Project Historian:** Christopher Brown
- **Report Preparation:** Christopher Brown
- **Graphics:** Jonas Fernandez, Master of Science, Lead Archaeologist, Geomatics Manager, Operations Division; Robin Latour, Master of Philosophy, Postgraduate Diploma, Associate Archaeologist, Geomatics Specialist, Operations Division
- **Report Reviewer:** Jennifer Ley



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1.0 Project Context

Archaeological Services Inc. was contracted by the City of Vaughan to undertake a Stage 1 and 2 Archaeological Assessment of Part of Vellore Hall Park, 9541 Weston Road, Part of Lot 17, Concession 5, Geographic Township of Vaughan, County of York, now in the City of Vaughan, Regional Municipality of York (Figure 1). The development envelope (project area) is approximately 0.17 hectares and consists of only a small portion of the larger property limits for 9541 Weston Road.

1.1 Development Context

This assessment was conducted under the senior project management of Jennifer Ley (R376), the project management of Christopher Brown (P361), and the project direction of Poorya Kashani (P1133) under Ministry of Citizenship and Multiculturalism (hereafter “the Ministry”) Project Information Form P1133-0012-2022. All activities carried out during this assessment were completed as part of a Site Plan application, as required by the Regional Municipality of York and the Planning Act (Ministry of Municipal Affairs and Housing, 1990). The proposed site plan includes a new paved parking area. As directed by the Development Planning Department of the City of Vaughan, the Stage 1-2 Archaeological Assessment was restricted to the impact area for the construction of the east parking lot only. A copy of relevant correspondence with City staff is included in the Supplementary Documentation for this report.

All work was completed in accordance with the Ontario Heritage Act (Ministry of Culture (now the Ministry), 1990) and the Standards and Guidelines for Consultant Archaeologists (hereafter “the Standards”) (the Ministry, 2011).

The work carried out for this assessment was also guided by the *Archaeological Management Plan for the Region of York* (York Region, 2014), which provides further refinement with regard to potential buffers surrounding any noted features or characteristics which affect archaeological potential.



Permission to access the project area and to carry out all activities necessary for the completion of the assessment was granted by the proponent on July 4, 2022. Buried utility locates were obtained prior to fieldwork.

1.2 Historical Context

The purpose of this section is to describe the past and present land use and settlement history, and any other relevant historical information gathered through the Stage 1 background research. First, a summary is presented of the current understanding of the Indigenous land use of the project area. This is followed by a review of historical Euro-Canadian settlement trends.

1.2.1 Pre-Contact Settlement

Table 1 provides a general summary of the pre-contact Indigenous settlement of the project area and surrounding area.

Table 1: Pre-contact Indigenous Temporal Culture Periods in Southern Ontario

Period	Description
Paleo 13, 000 Before Present (B.P.) – 9,000 B.P.	<ul style="list-style-type: none">• First human occupation of Ontario• Astronomers/ Artists/ Hunters/ Gatherers/ Foragers• Language Unknown• Small occupations• Non-stratified populations
Archaic 9,000 B.P. – 3,000 B.P.	<ul style="list-style-type: none">• Astronomers/ Artists/ Hunters/ Gatherers/ Foragers• Small occupations• Non-stratified populations• Mortuary ceremonialism• Extensive trade networks for raw materials and finished objects



Period	Description
Early Woodland 3,000 B.P. – 2,400 B.P.	<ul style="list-style-type: none"> • Astronomers/ Artists/ Hunters/ Gatherers/ Foragers • General trend in spring/summer congregation and fall/winter dispersal • Small and large occupations • First evidence of community identity • Mortuary ceremonialism • Extensive trade networks for raw materials and finished objects
Middle Woodland 2,400 B.P. – 1,300 B.P., Transitional Woodland 1,300 B.P. – 1,000 B.P.	<ul style="list-style-type: none"> • Astronomers/ Artists/ Hunters/ Gatherers/ Foragers • A general trend in spring/summer congregation and fall/winter dispersal into large and small settlements • Kin-based political system • Increasingly elaborate mortuary ceremonialism • Incipient agriculture in some regions • Longer term settlement occupation and reuse
Late Woodland (Early) <i>Anno domini</i> (A.D.) 900 – A.D. 1300	<ul style="list-style-type: none"> • Foraging with locally defined dependence on agriculture • Villages, specific and special purpose sites • Socio-political system strongly kinship based
Late Woodland (Middle) A.D. 1300 – A.D. 1400	<ul style="list-style-type: none"> • Major shift to agricultural dependency • Villages, specific and special purpose sites • Development of socio-political complexity
Late Woodland (Late) A.D. 1400 – A.D. 1650	<ul style="list-style-type: none"> • Complex agricultural society • Villages, specific and special purpose sites • Politically allied regional populations



1.2.2 Post-Contact Settlement

Historically, the project area was located in the western part of Lot 17, Concession 5, in the Geographic Township of Vaughan, County of York. Currently, the project area consists of a landscaped lawn, situated within the larger park property at 9541 Weston Road in the City of Vaughan.

The Toronto Purchase – Treaty 13

Immediately following British hegemony in the Canadas at the conclusion of the Seven Years War, settlement in the Toronto area was limited even though its potential to serve as an effective link in the transportation and communications network associated with the fur trade was widely recognized (Careless, 1984:10). At the conclusion of the American War of Independence (1774-1783) however, the British were forced to recognize the emergence of a new political frontier which had to be maintained by a strong military presence. In addition, a number of British Loyalists travelled north in order to remain within British territory. Many of them were eventually given land grants by the Crown partly in exchange for their loyalty and partly as compensation for their estates, which had been confiscated in the Colonies. These developments led the colonial government to enter into negotiations for purchase of tracts of land from the Mississaugas, who they recognized as the “owners” of the north shore of Lake Ontario.

The Toronto Purchase (Treaty 13) was made between the Crown and the Mississaugas on September 23, 1787, and then renegotiated on August 1, 1805. The main purpose of the treaty was to secure access to communication routes and posts along the shore of Lake Ontario and to connect Niagara and Kingston, leading to the creation of twelve townships (Surtees, 1984:60). However, the 1787 agreement had many inconsistencies. The document did not describe the physical boundaries of the treaty, or the quantity of land surrendered, nor did the body of the document name the Chiefs of the bands with whom the surrender was negotiated. At the end of the document, the names of three Chiefs, Wabakinine, Neace, and Pakquan, together with their dodems, appear on slips of paper that had been attached to the document, suggesting that this was not the document that the Mississauga representatives were presented during negotiations (Surtees, 1984:62).



In light of these inconsistencies, the Crown, as represented by William Claus, Deputy Superintendent of Indian Affairs, approached the Mississaugas in 1805 with the intent of identifying the land in question and formally purchasing it from them. The formal deed of surrender confirming the Toronto purchase was drawn up and executed on August 1, 1805, the date that the surrender of the Mississauga tract was negotiated. In addition to confirming the 1787 transaction made with Sir John Johnson, the deed included a detailed legal description of the boundaries of the surrendered parcel. However, the revised boundaries of the 1805 purchase appear to be significantly larger than the original description of the lands. Due to the inconsistencies between the 1787 and 1805 treaties and the fact that the Crown did not disclose to the Mississaugas in 1805 that the previous treaty was invalid, this treaty was subject to a specific claims process – ultimately leading to a settlement in 2010 between the Federal government and the Mississaugas of the Credit First Nation (Mississaugas of the Credit First Nation, 2017).

Geographic Township of Vaughan

The British government acquired the area comprising Vaughan Township from the Mississauga Nation as part of the Toronto Purchase in 1787. John Stegman, Deputy Surveyor, drew up a rough plan for the location of Vaughan in 1788; however, Abraham Iredell completed the first survey in 1795 along Yonge Street and the first legal settlers occupied their land holdings in 1796. The township was named in honour of Benjamin Vaughan, who was one of the negotiators for the Treaty of Paris which ended the American Revolutionary War in 1783. The township was not surveyed in its entirety until 1851, and the sidelines were resurveyed in 1861. The survey divided the township into eleven north-south concessions with 200-acre lots. The exceptions were Concessions 9, 10 and 11, which were cut off in the south due to original survey line of the Toronto Purchase on the west and Yonge Street on the east. The east to west sideroads were located one-and-a-quarter miles apart. In 1792, Lieutenant Governor Simcoe announced a plan to attract settlers to Upper Canada, offering 200 acres of land, provided they undertake certain duties in return. By 1800, all the lots on Yonge Street between the current Steeles Avenue and Langstaff Road had been granted. Vaughan was initially settled by Loyalists, the children of Loyalists, disbanded soldiers, and by Americans including the Pennsylvania Dutch, French



Huguenots, and Quakers. In 1805, Boulton noted that the soil in Vaughan was “much improved,” and due to its proximity to York “may be expected to form an early and flourishing settlement.” By the 1840s, the township was noted for its excellent land and “well cleared and highly cultivated farms” (Boulton, 1805:89; Smith, 1846:199; Reaman, 1971:19; Armstrong, 1985:148; Rayburn, 1997:355).

In the period between 1814 and 1860, the lots and concessions that had been previously surveyed formed the basis for the clearing of land for future agricultural development. The township population grew slowly until the 1820s when Crown and Clergy Reserve land became available for purchase. In the late 1820s and early 1830s there was a substantial increase in British migration to the area. Smith’s *Canadian Gazetteer* (1846) described Vaughan in 1846 as follows:

a township of excellent land; [Vaughan] is well settled and contains numerous, well cleared and highly cultivated farms. The land is generally rolling, and the timber a mixture of hardwood and pine. The land is watered by branches of the River Humber. The Yonge Street Road separates the township from that of Markham. There are six grist and twenty-five saw mills in the township (Smith, 1846).

The Township prospered economically as a farming area between 1840 and 1867 with Toronto to the south a major market. Centres of settlement developed as service and institutional communities to support the burgeoning agricultural growth in Vaughan.

The Township was incorporated in 1850 as a municipal government. Construction for the Ontario Simcoe and Huron Railway began in 1852 and the line was opened through Vaughan Township in 1853 with a station in Concord. It was renamed the Northern Railway Company in 1858, and later became part of the Grand Trunk Railway and then Canadian National Railway circa 1920. The Toronto, Grey and Bruce Railway was opened through the west part of the Township in 1871. This facilitated growth in population of both rural and urban communities in the Township of Vaughan. Improvements to water and sewage infrastructure aided development.



Tremaine's Map of the County of York (Tremaine, 1860) shows a developed agricultural landscape, traversed by the Humber River and its tributaries, with small hamlets, a local road system and churches and schoolhouses. The Township continued to develop economically in the 1860s and 1870s. The *Illustrated Historical Atlas of the County of York* (Miles and Company, 1878) shows a well-established and prosperous agricultural township dotted with farmsteads, small hamlets and villages. Although Yonge Street on the east side of the township was the principal route to the markets in Toronto to the south, two railways built through the township greatly increased market access for the farmers and contributed to the township's prosperity. Agriculture continued as the principal land use throughout the nineteenth century.

Vellore

The hamlet of Vellore is located along Weston Road between Rutherford Road and Major MacKenzie Drive, in the centre of the former Township of Vaughan. The village is centred around the location of the Township Hall and the adjacent Vellore School, S.S. Number 9. The name 'Vellore' comes from a location in India that was the site of a victory by Sir Arthur Wellesley and was applied to the new Post Office in 1864. The Post Office would operate until 1916 (Reaman, 1971:124).

The settlement itself pre-dates the Post Office, with the first settler in the area believed to have been John Frank on Lot 19, Concession 5. A log schoolhouse was constructed around 1837 on a half-acre parcel of land in the northwest corner of Lot 17, Concession 5. This original schoolhouse was roughly 16 feet by 20 feet and served School Section Number 9, an area of two-and-a-half square miles (approximately 6.5 square kilometres). Pupils sat on benches, and heat came via a single fireplace. This original log building was replaced by a 30-foot by 40-foot frame schoolhouse in 1868. This new school featured double desks and was heated by a box stove. Renovations to this structure were completed in 1904, with the addition of hardwood floors, slate blackboards, single seat desks, a front platform and a drilled well. Further improvements to the building were made in 1925, when the school was raised and bricked and a concrete basement with a furnace was installed underneath. Electric lighting was installed four years later.



The school was eventually closed in 1964. Of note, one of the early teachers at the school was Alexander Muir, author of 'The Maple Leaf Forever' (Reaman, 1971: 124; 184-185).

In 1845, the Vellore Township Hall was constructed immediately to the south of the Vellore School. Initially a red frame building with white trim, it was bricked and updated with a columned front veranda in 1919. Also at that time, the building was renamed as the 'Vaughan Memorial Hall', to honour those who perished in the First World War. With the establishment of municipal government following the Baldwin Act of 1849, the Hall was used for local township council meetings. This building served as the administrative centre for the Township of Vaughan from 1850 until 1942 (City of Vaughan, 2022).

In addition to the Township Hall, Vellore School and Post Office, through the nineteenth century Vellore would feature a general store, blacksmith shop, wagon maker's shop and four houses (Reaman, 1971:24).

Both the existing Vellore School (1868) and Township Hall (circa 1845-1850) buildings, along with an associated drive shed located to the rear, were designated under Part IV of the Ontario Heritage Act as being of Cultural Heritage Value or Interest in 1983 (Corporation of the Town of Vaughan, 1983).

North Half of Lot 17, Concession 5

The 100-acre north half of Lot 17, Concession 5 was initially patented to John Crossan in 1812. The north half of the Lot was then sold to John Snider for a price of £102.10.0 in 1830. In 1837, one-half acre was donated to John Frank *et alia*, trustees for the construction of a new school. The remainder of the property was transferred to Jacob Snider in 1841. In 1845, a small parcel was purchased from Jacob Snider by the District Council of the Home District for the construction of the Vaughan Township Hall, with another parcel being sold off to the Municipal Council of the Township of Vaughan between 1850 and 1858 (Ontario Land Registry Access, no date).

According to Mulvaney *et alia* (1885:365-366) the Snider family originated in Pennsylvania, leaving to come to Canada in 1800. Jacob Snider was born on the



journey north, and in 1830 settled on Lot 17, Concession 5 in Vaughan Township. He was married to Fanny Mussulman and known for his skill as a surgeon, as well as acting as Township tax collector and assessor (Reaman, 1971:220). Their son John was born in 1821 near the Village of Maple and would eventually marry Mary Sturp in 1852. Following the death of the elder Jacob Snider in 1864, John Snider would occupy the family farm. His children were Susannah, Jacob and David (Mulvaney *et alia*, 1885:365-366; Reaman, 1971:220).

There is some discrepancy between the various official documents and historical accounts of the Snider family. Although ownership information suggests that a John Snider was the owner of the north half of Lot 17 from 1830 until selling it to Jacob Snider in 1841, one historical account recalls Jacob Snider being the owner from 1830 until his death in 1864 (Mulvaney *et alia*, 1885:365-366). Reaman (1971:220), however, suggests that Jacob Snider settled on Lot 18, while his son John Snider was the one who initially settled Lot 17, although he was only born in 1821. Both the 1837 and 1846 Home District directories list Jacob Snider as the occupant of Lot 17, Concession 5 (Brown, 1846:96; Walton, 1837:146).

Following Jacob Snider's death in 1864, the 98-acre parcel remained with the Snider family, eventually coming to be owned by his son John. Following his own death around 1898, the property was willed to his daughter, Susannah Snider. The mid-1940s saw much of the Lot being purchased from Susannah Jarrett (Snider) by the Minister of Highways, Ontario for the construction of the nearby Highway 400 and the development of the broader area (Ontario Land Registry Access, no date).

In 1947, a 2.019-acre parcel was sold by the Minister of Highways, Ontario to the Trustees of S. S. #9, Township of Vaughan. This roughly rectangular parcel is located immediately to the east of the existing drive shed and forms much of the eastern portion of the existing Vellore Hall Park property. One year later, another parcel (25 feet by 82.5 feet in the northwest corner of the lot) was sold by the Township to the Trustees of S. S. #9, Township of Vaughan.

In 1949, a 20-foot-wide right-of-way extending for 231 feet between the Vellore Township Hall and Vellore School buildings was leased for five years by the Public School Section No. 9 for the Township of Vaughan.



In 1964, Mabel Snider sold a parcel along the western limits of the lot (which would become a separate residential lot) to William J. Law. The limits outlined in this transaction appear to have been incorrect, and were corrected in 1967. That same year, this parcel was sold by William J. Law and his wife Catherine S. Law to Enrico and Angela Moretto (one half) and Italo and Adelia Moretto (the other half).

In 1968, the Public School Board of the Township School Area of Vaughan granted three parcels in the northwest of the lot which had become the broader Vellore School lands, to Township of Vaughan for a cost of \$2.00.

In 1983, By-Law 26-83 was passed by the Corporation of the Town of Vaughan to designate the property which had come to be known municipally as 9547 Weston Road (the location of the Vellore School and Vellore Township Hall) as being of historical value or interest.

In 1986, the residential lot fronting onto Weston Road (initially created in 1964 and corrected in 1967) was sold to Louis Albert Borgo (half), Almerigo Borgo (one quarter), and Mary Louise Borgo (one quarter). In 1988, the ownership shares of this parcel were re-allocated.

No further ownership changes within the broader Vellore Hall Park property are recorded through 1996 (Ontario Land Registry Access, no date).

1.2.3 Review of Map Sources

A review of nineteenth- and early twentieth-century mapping was completed to determine if these sources depict any nineteenth-century Euro-Canadian settlement features that may represent potential historical archaeological sites within or adjacent to the project area. Historic map sources are used to reconstruct/predict the location of former features within the modern landscape by cross-referencing points between the various sources and then georeferencing them to provide the most accurate determination of the location of any property from historic mapping sources. The results can be imprecise (or even contradictory) because sources of error, such as the vagaries of map production, differences in scale or resolution, and distortions caused by the reproduction of



the sources, introduce error into the process. The impacts of this error are dependent on the size of the feature in question, the constancy of reference points on mapping, the distances between them, and the consistency with which both are depicted on historic mapping.

In addition, not all settlement features were depicted systematically in the compilation of these historical map sources, given that they were financed by subscription, and subscribers were given preference with regards to the level of detail provided. Thus, not every feature of interest from the perspective of archaeological resource management would have been within the scope of these sources.

The 1860 *Tremaine Map of the County of York* (Tremaine, 1860) (Figure 2) shows the project area in the western portion of the north half of Lot 17 within a parcel of land owned by Jacob Snider. Jacob Snider is also shown to have been the occupant of the eastern half of Lot 18, Concession 5, to the northeast. Approximately 30 metres and 50 metres to the northwest, respectively, are the locations of the Vellore Township Hall and the Vellore School. No other structures are shown in the area. The settlement road of present-day Weston Road is illustrated approximately 100 metres to the west. An unnamed tributary of the west branch of the Don River is shown approximately three kilometres to the east and is the nearest source of water.

On the 1878 *Illustrated Historical Atlas of the County of York* (Miles and Co., 1878) (Figure 3), the project area continues to be shown to the southeast of the Vellore Township Hall and Schoolhouse, approximately 100 metres east of the course of Weston Road. It is situated in lands owned by John Snider, whose farm is shown to be located approximately 2.5 kilometres to the northeast. John Snider also owned lands in the eastern half of Lot 18, also featuring a farmhouse, with an orchard located to its west. To the north of the Vellore School (by now the updated frame structure) is a blacksmith shop, located in the southwest corner of Lot 18, approximately 150 metres northwest of the project area. The Vellore Post Office, as well as two residences are illustrated on the west side of Weston Road, to the northwest. The unnamed tributary of the west branch of the Don River is



illustrated in roughly the same location as the 1860 mapping and remains the closest source of water to the project area.

Early topographic mapping was also reviewed for the presence of potential historical features. Figure 4 illustrates the project area located on the 1914 Bolton Topographic Map (Department of Militia and Defence, 1914). Land features such as waterways, wetlands, woodlots, and elevation are clearly illustrated on this series of mapping, along with roads and structure locations. The project area is depicted as part of a cleared area just above the 725-foot (221 metre) elevation contour, adjacent to a mixed wooded area to the east and approximately 100 metres east of the course of Weston Road. To the northwest, the hamlet of Vellore (which boasted a telephone office at this time) features a cluster of mainly wood structures fronting onto both sides of the unmetalled Weston Road, which include a post office and school on the west side. Approximately 50 metres to the west of the project area a row of four structures is indicated, in the approximate location of the Vellore Township Hall and School. No water sources are illustrated in the vicinity of the project area, with the nearest lying approximately one kilometre to the east.

1.2.4 Review of Aerial Imagery

In order to further understand the previous land use on the project area, twentieth-century aerial imagery was reviewed (Hunting Survey Corporation Limited, 1954; York Region, 2022). Figure 5 shows the project area on 1954 aerial photography. It depicts the project area within an agricultural area southeast of the community of Vellore. Wooded lands are visible to the south and east. No structures are shown within the project area at this time, however the western limits contain some treed lands associated with a residence located approximately 50 metres to the west, fronting onto Weston Road. To the northwest of the property, the Vellore Township Hall and Vellore School complex can be seen. Figure 6 shows the location of the project area on aerial imagery from 1970, 1988, 1999 and satellite imagery from 2002. In 1970, the project area is situated in scrubland areas, and shown similar to the earlier 1954 imagery. By 1988, the project area is shown to have been located in lawn areas, southwest of a newly-installed baseball diamond. A parking area has been added to the immediate northwest of the project area. By 1999, the project area continues to



be situated within lawn areas, while the adjacent parking area has been expanded and the baseball diamond reconfigured. The surrounding lands continue to be predominantly rural. Satellite imagery from 2002 shows the project area to have remained as greenspace, with essentially the present configuration of Vellore Hall Park in the surrounding area. The earlier residence to the west of the project area has been demolished and replaced with a parking lot. Extensive, new residential development can be seen in the surrounding area at this time.

1.3 Archaeological Context

This section provides background research pertaining to previous archaeological fieldwork conducted within and in the vicinity of the project area, its environmental characteristics (including drainage, soils, surficial geology and topography), and current land use and field conditions.

1.3.1 Registered Archaeological Sites

In order that an inventory of archaeological resources could be compiled for the project area, three sources of information were consulted: the site record forms for registered sites housed at the Ministry, published and unpublished documentary sources, and the files of Archaeological Services Inc.

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database, which is maintained by the Ministry. This database contains archaeological sites registered within the Borden system. The Borden system was first proposed by Doctor Charles E. Borden and is based on a block of latitude and longitude. Each Borden block measures approximately 13 kilometres east-west by 18.5 kilometres north-south and is referenced by a four-letter designator. Sites within a block are numbered sequentially as they are found. The project area is located along the extreme northern edge of the AkGv Borden block.

Twenty archaeological sites have been registered within an approximate one-kilometre radius of the project area, though none are within the immediate vicinity (The Ministry, 2022). The closest of these are the Vellore 2 (AlGv-162) site, an Early Archaic scatter located approximately 200 metres northeast of the



current project area and the Vellore Farm (AlGv-163) site, a historic Euro-Canadian scatter located approximately 200 metres northwest of the current project area (The Ministry, 2022). A detailed summary of nearby sites is available in Appendix A.

The project area is situated between the East Humber River and the West Branch of the Don River. These river valleys were a focal point for the establishment of a series of large, ancestral Huron settlements during the fifteenth and sixteenth centuries. These settlements, which typically ranged in size from 1-4 hectares, were often fortified and associated with nearby ossuaries. Notable examples of these settlements include Boyd (AkGv-3), Seed-Barker (AkGv-1) and Skandatut (AlGv-193) on the East Humber and Teston (AlGv-2) and Keffer (AkGv-14) on the West Don (York Region, 2014).

The nearest of these settlements to the project area is the Jarrett-Lahmer (AlGv-18) site, located approximately 1,250 metres to the northwest.

1.3.2 Previous Assessments

During the course of the background research, it was determined that four archaeological assessments had been completed on or within 50 metres of the project area. The limits and results of these assessments in the vicinity of the project area are illustrated on Figure 7.

Stage 1 and 2 Archaeological Assessment of Block 32, O.P.A. Number 400

From 1996 to 1997, Archaeological Services Inc. completed a Stage 1 and 2 Archaeological Assessment of Block 32, O.P.A. Number 400, Part of Lots 16 to 20, Concession 5, in the City of Vaughan, Regional Municipality of York (Archaeological Services Inc., 1999, Contract Information Forms 96-019 and 97-017). The 150-hectare study area for this assessment is located to the north of Rutherford Road, between Highway 400 and Weston Road in the City of Vaughan. The boundary of this study area lies immediately adjacent to the current project area, to the south. The Stage 1 background research for the Block 32 Lands



determined that no sites had previously been identified within the study area, however most of the study area featured archaeological potential.

The Stage 2 assessment was conducted through a combination of pedestrian survey and test pit survey at five-metre intervals over the course of two field seasons. Although part of the study area, comprising the mature woodlot to the south of the current project area does not appear to have been assessed as part of Stage 2 component of this study. The 1996-1997 assessment resulted in the identification of three Indigenous isolated findspots, four Indigenous sites and three Euro-Canadian sites. The Indigenous sites include Westford I (AkGv-151), Westford II (AkGv-152), Vellore I (AlGv-160) and Vellore II (AlGv-162). The Euro-Canadian sites are composed of Lehman I (AkGv-154), Lehman II (AkGv-155), and McNaughton (AkGv-165).

Westford I (AkGv-151) is a Middle Archaic lithic scatter consisting of a large Brewerton side-notched projectile point, along with two secondary knapping flakes, one secondary retouch flake and a single piece of chert shatter. Westford II (AkGv-152) is a probable Archaic lithic scatter consisting of an incomplete projectile point, a utilized secondary knapping flake and a secondary retouch flake. Vellore I (AlGv-160) is a possible Middle Woodland lithic scatter consisting of a heavily retouched side-notched projectile point, along with three biface fragments, three pieces of retouched chert debitage, four utilized chert flakes, three secondary knapping flakes, eight secondary retouch flakes, three pieces of chert shatter and one piece of slate debitage. The assemblage was composed of a variety of lithic raw materials. Vellore II (AlGv-162) is an Early Archaic lithic scatter, consisting of a Nettling projectile point, along with a primary reduction flake, a secondary retouch flake and a piece of shatter.

Given their isolated nature, two the three Indigenous findspots were not considered to represent significant archaeological resources, and no further work was recommended. It was recommended that the other findspot, P4, be revisited in order to determine its possible association with the nearby Vellore I (AlGv-160) site. If the findspot proved to be isolated, no further work was recommended.

Westford I (AkGv-151), Westford II (AkGv-152), Vellore I (AlGv-160) and Vellore II (AlGv-162) were determined to represent potentially significant archaeological



resources, and Stage 3 investigations were recommended in order to determine their character and extent. These investigations would consist of a controlled surface pickup of artifacts, followed by the excavation of one metre test units across the site area in order to determine the nature and extent of cultural deposits. Following Stage 3 investigations, a recommendation would be made as to whether the sites required further Stage 4 mitigation or would be freed from further archaeological concern. Westford I (AkGv-151), Westford II (AkGv-152), Vellore I (AlGv-160) and Vellore II (AlGv-162) are located approximately 550 metres to the south, 400 metres to the south, 500 metres to the northeast and 200 metres to the northeast of the current project area, respectively.

The Euro-Canadian Lehman I (AkGv-154) and Lehman II (AkGv-155) sites were deemed to represent mid- to late-nineteenth century occupations and were not considered significant archaeological resources. No further work at these sites was recommended.

The early- to mid-nineteenth century Euro-Canadian McNaughton (AlGv-165) site was determined to represent a significant archaeological resource and Stage 3 and 4 investigations were recommended if the site could not be avoided. The Stage 3 investigations would consist of a controlled surface pickup of artifacts, followed by the excavation of one metre test units across the site areas in order to determine the nature and extent of cultural deposits. If significant cultural deposits were encountered, following Stage 3 investigations comprehensive Stage 4 excavation would be required, consisting of the mechanical removal of all topsoil in the site area and the documentation and excavation of any identified archaeological deposits. The McNaughton (AlGv-165) site is located approximately 750 metres northeast of the current project area.

In addition to these recommendations, the report also recommended that the mature woodlot located in the west-central portion of the study area (to the south of the current project area) be subjected to systematic test pit survey. No further work was recommended for all other land, that had been assessed as part of the Stage 2 assessment.



Western Vaughan Transportation Improvements Individual Environmental Assessment Archaeological Existing Conditions Report

In 2008, Archaeological Services Inc. completed a draft Archaeological Existing Conditions Report as part of the Western Vaughan Transportation Improvements Individual Environmental Assessment (Archaeological Services Inc., 2008). This was a high-level, broad study which identified and described the archaeological resources associated with the Western Vaughan Transportation Improvements Individual Environmental Assessment study area. This large study area is located in the City of Vaughan, and was roughly bounded by Teston Road to the north, by Highway 50 to the west, by Steeles Avenue to the south and by Highway 400 to the east. The current project area is situated in the eastern portion of this study area. The study was conducted in advance of proposed transportation improvements within the study area and with the purpose of aiding and assessing a number of alternatives within the Individual Environmental Assessment. Although the study area for this project included the current project area, it was not conducted at an individual property level, and is of little use for the current assessment.

Stage 1 Archaeological Assessment of the Western Vaughan Transportation Improvements Individual Environmental Assessment

In 2009, Archaeological Services Inc. completed a Stage 1 Archaeological Assessment of the Western Vaughan Transportation Improvements Individual Environmental Assessment, in the City of Vaughan, Region of York, Ontario (Archaeological Services Inc., 2014, Project Information Form P117-143-2009). This study was conducted following the earlier Existing Conditions report, and within the broader study area focused on a narrower study corridor, consisting of the areas of the Transportation Improvements Preferred Alternative. This Preferred Alternative consisted of proposed road and transit improvements which included the widening of sections of Major Mackenzie Drive, Rutherford Road, Highway 27, Weston Road, Pine Valley Drive, and Highway 50, and the construction of a new section of Major Mackenzie Drive west of Highway 27. The study corridor for this project consisted mainly of a 30-metre buffer on either side of the existing road centre line along these routes. In the area of the present



project area, this study corridor was located approximately 50 metres to the west, composed of a 30-metre buffer from the centre line of Weston Road. The assessment concluded that those areas within the study corridor to the west and northwest of the present project area had been disturbed and did not warrant any further archaeological assessment. Those lands within the corridor to the southwest, associated with the large woodlot, were found to have archaeological potential and would require a further Stage 2 Archaeological Assessment if they were to be impacted by development activities.

Stage 2 Archaeological Assessment of the Western Vaughan Transportation Improvements Preliminary Design Individual Environmental Assessment

In 2010, Archaeological Services Inc. completed a Stage 2 Archaeological Assessment of the Western Vaughan Transportation Improvements Preliminary Design Individual Environmental Assessment, in the City of Vaughan, Region of York, Ontario (Archaeological Services Inc., 2011, Contract Information Form P117-156-2009). This study was conducted following the earlier Stage 1 Archaeological Assessment and included those lands that were identified by that study as having archaeological potential, as well as new lands outside that corridor. Lands were assessed where permission to enter was available. The Stage 2 assessment was conducted through a combination of pedestrian survey and test pit survey at five-metre intervals and resulted in the identification of one Late Archaic findspot (AkGv-308) and one indeterminate Indigenous findspot that was not registered. Both of these sites were not considered significant archaeological resources, and no further work was recommended. In the vicinity of the present project area, the right-of-way along the east side of Weston Road, adjacent to the southern woodlot was assessed and was found to be disturbed. Within the study corridor, those lands along the western edge of the woodlot outside the existing right-of-way were not assessed as part of this study. The assessment recommended that no further work be required for the assessed lands within the proposed grading limits, however Stage 2 assessment was required for those unassessed lands that were determined to have archaeological potential. Additionally, monitoring of topsoil stripping in part of the study area was recommended as part of an ossuary burial avoidance strategy, in those lands



within the study corridor which are within 1000 metres of a documented Late Woodland settlement and also within 300 metres of a current of former water source. Lands adjacent to the current project area were not included in this particular recommendation.

1.3.3 Physiography

The project area is situated within the Peel Plain physiographic region of southern Ontario. The Peel Plain covers a large area across the central portions of the regional municipalities of York, Peel and Halton and the City of Toronto (Chapman and Putnam 1984:174-176). The surface of the plain is characterized by level to gently rolling topography, with a consistent, gradual slope toward Lake Ontario. The plain is made up of deep deposits of dense, limestone and shale imbued till, often covered by a shallow layer of clay sediment. While the clay soils of the plain may be imperfectly drained in inter stream areas, the region is without large swamps or bogs. Several major rivers cut across the plain, draining southward into Lake Ontario. The project area exists within a smaller physiographic landform area characterized by bevelled till plains (Ontario Geological Survey, 2007).

The surficial geology of the project area is till, consisting of clay to silt-textured till derived from glaciolacustrine deposits or shale (Ontario Geological Survey, 2018).

The project area straddles the division between the Black Creek-Humber River Outlet Watershed and the Don River Watershed (Ministry of Natural Resources and Forestry, 2020).

The Black Creek Watershed is the smallest of the five subwatersheds of the Humber River, draining an area of 6,600 hectares. Its headwaters are located north of Major MacKenzie Road in the City of Vaughan. It flows in a general northwest to southeast direction before connecting with the Humber River near the former Village of Lambton Mills in the City of Toronto (Toronto and Region Conservation Authority, 2008).

The Don River Watershed covers an area of approximately 36,000 hectares. The Don River itself is almost 38 kilometers in length, flowing from atop the Oak



Ridges Moraine southwards to empty into Lake Ontario at the Keating Channel (Toronto and Region Conservation Authority, 2009).

1.3.4 Existing Conditions

The project area is approximately 0.17 hectare and is located within a mixed commercial and medium-density residential area in the City of Vaughan (Figure 8). It is situated within the larger property of Vellore Hall Park, located at 9541 Weston Road. The Vellore Hall Park consists of manicured lawn space, pathways, a paved parking lot, as well as a gazebo and the Vellore Township Hall and School buildings. The entirety of the project area is composed of a manicured lawn area. It is bounded by a paved parking lot to the west, by wooded lands to the south, by adjacent lawn areas to the east and by a concrete pathway to the north.

1.3.5 Review of Indigenous Archaeological Potential

The Standards, Section 1.3.1 stipulates that lands within 300 metres of primary water sources (lakes, rivers, streams and creeks), secondary water sources (intermittent streams and creeks, springs, marshes and swamps), as well as ancient water sources (such as glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges; relic river or stream channels indicated by clear dip or swale in the topography; shorelines of drained lakes or marshes; cobble beaches) have potential for archaeological resources. Geographic characteristics also indicate archaeological potential and include distinct topographic features and soils.

Potable water is the single most important resource necessary for any extended human occupation or settlement. Since water sources have remained relatively stable in south central Ontario after the Pleistocene era, proximity to water can be regarded as a useful index for the evaluation of archaeological site potential. Indeed, distance from water has been one of the most commonly used variables for predictive modelling of site location.

Geographic characteristics, such as distinct topographic features and soils, also indicate archaeological potential. These characteristics include elevated topography (eskers, drumlins, large knolls, plateaux), pockets of well-drained



sandy soil, especially near areas of heavy soil or rocky ground, and distinctive land formations that might have been special or spiritual places for Indigenous populations, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use by Indigenous peoples, such as burials, structures, offerings, rock paintings or carvings. Resource areas, including food or medicinal plants (migratory routes, spawning areas, prairie), and scarce raw materials (quartz, copper, ochre, or outcrops of chert) are also considered characteristics that indicate Indigenous archaeological potential.

The generic distance-to-water potential model has been refined for the *Archaeological Management Plan for the Regional Municipality of York* (York Region, 2014). According to the *Management Plan's* modelling criteria, undisturbed lands within 250 metres of major rivers and their tributaries, in addition to the original Lake Ontario and Lake Simcoe shorelines have potential for the presence of Indigenous archaeological sites. This 250-metre potential zone is also extended to the lands above glacial lake strands, while 200 metre buffers are applied to the lands below glacial lake strands. The *Management Plan* also identifies potential for Indigenous resources within 100 metres of registered Indigenous sites. The *Archaeological Management Plan for the Regional Municipality of York* also includes an Ossuary Potential Model, which places a 1000 metre buffer around Late Woodland village sites for which an ossuary has not been identified, in lands which are located within 300 metres of a current or former water source.

No nearby watercourses have been identified during the survey of historic mapping and aerial and satellite imagery. The project area is not associated with any nearby distinct topographic features or soils, and no registered Indigenous sites are located within 100 metres. As such, according to the *Archaeological Management Plan for the Regional Municipality of York*, the potential for the presence of Indigenous archaeological resources within the subject property is low. However, given the location of a previously identified Indigenous site within 300 metres of the project area, and according to the more generic model of potential present in the Provincial Standards, the project area would contain potential for Indigenous archaeological resources.



1.3.6 Review of Historical Archaeological Potential

The Standards, Section 1.3.1 stipulates those areas of early Euro-Canadian settlement, including places of early military pioneer settlement (pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches, and early cemeteries, are considered to have archaeological potential. There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks. Early historical transportation routes (trails, passes, roads, railways, portage routes), properties listed on a municipal register or designated under the *Ontario Heritage Act* or a federal, provincial, or municipal historical landmark or site, and properties that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations are also considered to have archaeological potential.

For the Euro-Canadian period, the majority of early nineteenth-century farmsteads (that is, those which are arguably the most potentially significant resources and whose locations are rarely recorded on nineteenth century maps) are likely to be captured by the basic proximity to water model, since these occupations were subject to similar environmental constraints. An added factor, however, is the development of the network of concession roads and railroads through the course of the nineteenth century. These transportation routes frequently influenced the siting of farmsteads and businesses. Accordingly, undisturbed lands within 100 metres of an early historical transportation route are also considered to have potential for the presence of Euro-Canadian archaeological sites.

The *Archaeological Management Plan for the Regional Municipality of York* considers a similar suite of criteria or indicators (York Region, 2014). There is potential for historical sites within 100 metres of registered or designated historical sites, cemeteries and features illustrated on historical maps. There is also potential within 100 metres of settlement roads and early railways.

The project area is located approximately 80 metres east of a historical transportation corridor (Weston Road) and less than 100 metres to the southeast of settlement features illustrated on historic mapping (Figures 2 to 4). These



features are associated with the extant Vellore School and Township Hall complex. Both the Vellore School (1868) and Township Hall (circa 1845-1850) buildings, along with an associated drive shed located to the rear, were designated under Part IV of the Ontario Heritage Act as being of Cultural Heritage Value or Interest in 1983 (Corporation of the Town of Vaughan, 1983).

As such, there is potential for the presence of Euro-Canadian historical archaeological resources within the project area, depending on the degree of subsequent soil alteration.

2.0 Field Methods

The Stage 2 field assessment was conducted on November 7, 2022, in order to inventory, identify, and describe any archaeological resources extant within the project area prior to development. All fieldwork was conducted under the field direction of Poorya Kashani (P1133) and was carried out in accordance with the Standards. The weather conditions were appropriate for the completion of fieldwork, permitting good visibility of the land features.

Representative photos documenting the field conditions during the Stage 2 fieldwork are presented in Section 8.0 of this report, and photo locations and field observations have been compiled on project mapping (Images 1-7; Figure 9). Field observations and photographs were recorded with a Trimble Catalyst Global Navigation Satellite System Global Positioning System unit using World Geodetic System 84.

2.1 Areas of No Potential

The assessment was initiated by conducting a visual review to identify areas of no archaeological potential. During this review, no areas of the project area were identified as having no potential for the presence of archaeological resources.

2.2 Test Pit Survey

The project area consists of a manicured lawn area located to the east of an existing parking lot (Images 1-2; Figure 9). As no areas were identified as having



no archaeological potential and in accordance with the Standards, Section 2.1.2, the entirety of the lands within the project area was assessed by means of a test pit survey conducted at intervals of five metres and increased to ten metres when disturbance was encountered (Images 3-4; Figure 9). All standards under Section 2.1.2 Test Pit Survey of the Standards were met. Test pits were hand excavated at least five centimetres into subsoil, when possible, and all soil was screened through six-millimetre mesh to facilitate artifact recovery. The test pits were examined for stratigraphy, cultural features, and evidence of fill. All test pits were at least 30 centimetres in diameter and excavated within one metre of all adjacent structures and/or disturbances when possible. Upon completion, all test pits were backfilled.

Approximately 35% of the test pit area was surveyed at five metre intervals where both surface and buried topsoil was encountered. These areas were found in the western half of the project area. A small area in the northwest of the project area featured a surface A-horizon, consisting of approximately 30 centimetres of very dark greyish brown (10YR 3/2) sandy loam, overlying a yellowish brown (10YR 5/4) sandy clay subsoil (B-horizon) (Image 5). Test pits in the remainder of the western part of the project area consisted of approximately 20 centimetres of a dark greyish brown (10YR 4/2) sandy loam landscape fill, overlying approximately 30 centimetres of very dark greyish brown (10YR 3/2) sandy loam (A-horizon), overlying a yellowish brown (10YR 5/4) sandy clay subsoil (B-horizon) (Image 6).

The balance of the test pit area (approximately 65%) featured disturbed test-pit profiles and was surveyed at 10-metre intervals. Disturbed test pits were observed in the eastern portion of the project area. Disturbed test pit profiles consisted of approximately 20 centimetres of a dark greyish brown (10YR 4/2) sandy loam landscape fill, overlying approximately 100 centimetres of pale brown (10YR 6/3) sand and gravel fill (Image 7). Due to this deep fill exceeding a depth of 120 centimetres, test pit excavation ceased due to health and safety concerns and subsoil was not reached in this area.



3.0 Record of Finds

Despite careful scrutiny, no archaeological resources were found during the course of the Stage 2 field assessment. Written field notes, annotated field maps, Global Positioning System logs and other archaeological data related to the project area are located at Archaeological Services Inc.

The documentation and materials related to this project will be curated by Archaeological Services Inc. until such a time that arrangements for their ultimate transfer to Her Majesty the King in right of Ontario, or other public institution, can be made to the satisfaction of the project owner(s), the Ministry of Citizenship and Multiculturalism, and any other legitimate interest groups.

4.0 Analysis and Conclusions

Archaeological Services Inc. was contracted by the City of Vaughan to undertake a Stage 1 and 2 Archaeological Assessment of Part of Vellore Hall Park, 9541 Weston Road, Part of Lot 17, Concession 5, Geographic Township of Vaughan, County of York, now in the City of Vaughan, Regional Municipality of York (Figure 1). The development envelope (project area) is approximately 0.17 hectares and consists of only a small portion of the larger property limits for 9541 Weston Road.

The Stage 1 background research entailed consideration of the proximity of previously registered archaeological sites and the original environmental setting of the property, along with nineteenth- and twentieth-century settlement trends and the general guidance provided by the *York Region Archaeological Management Plan* (York Region, 2014). This research indicated there was potential for both Indigenous and Euro-Canadian historical archaeological resources in the project area.

The Stage 2 field assessment was conducted on November 7, 2022. The project area was assessed by means of a test pit survey conducted at intervals of five metres and increased to ten metres when disturbance was encountered. Despite careful scrutiny, no archaeological resources were encountered during the test pit survey.



5.0 Recommendations

In light of these results, the following recommendation is made:

1. No further archaeological assessment of the project area be required.
2. Should proposed impacts from any current or future developments on the larger 9541 Weston Road property extend beyond the limits of the assessed project area, as illustrated on Figure 9, an additional Stage 1 Archaeological Assessment must be conducted in accordance with the 2011 Standards.

NOTWITHSTANDING the results and recommendations presented in this study, Archaeological Services Inc. notes that no archaeological assessment, no matter how thorough or carefully completed, can necessarily predict, account for, or identify every form of isolated or deeply buried archaeological deposit. In the event that archaeological remains are found during subsequent construction activities, the consultant archaeologist, approval authority, and the Cultural Programs Unit of the Ministry of Citizenship and Multiculturalism should be immediately notified.

The above recommendations are subject to Ministry approval and it is an offence to alter any archaeological site without Ministry of Citizenship and Multiculturalism concurrence. No grading or other activities that may result in the destruction or disturbance of any archaeological sites are permitted until notice of Ministry approval has been received.

6.0 Legislation Compliance Advice

Archaeological Services Inc. advises compliance with the following legislation:

- This report is submitted to the Ministry of Citizenship and Multiculturalism as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, RSO 2005, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological field work and report recommendations ensure the conservation, preservation and protection of the cultural heritage of



Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Citizenship and Multiculturalism, a letter will be issued by the Ministry stating that there are no further concerns with regards to alterations to archaeological sites by the proposed development.

- It is an offence under Sections 48 and 69 of the Ontario Heritage Act for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological field work on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the Ontario Heritage Act.
- Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the Ontario Heritage Act.
- The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33, requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the Registrar of Cemeteries at the Ministry of Government and Consumer Services is also immediately notified.
- Archaeological sites recommended for further archaeological field work or protection remain subject to Section 48(1) of the Ontario Heritage Act and may not be altered, nor may artifacts be removed from them, except by a person holding an archaeological license.



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8.0 Images



Image 1: Manicured lawn making up the project area.



Image 2: Manicured lawn making up the project area.



Image 3: Field crew test pitting at five metre intervals



Image 4: Field crew test pitting at ten metre intervals.



Image 5: Typical undisturbed test pit profile (surface A-horizon) in the northwest of the project area.



Image 6: Typical undisturbed test pit profile (buried A-horizon) in the west of the project area.

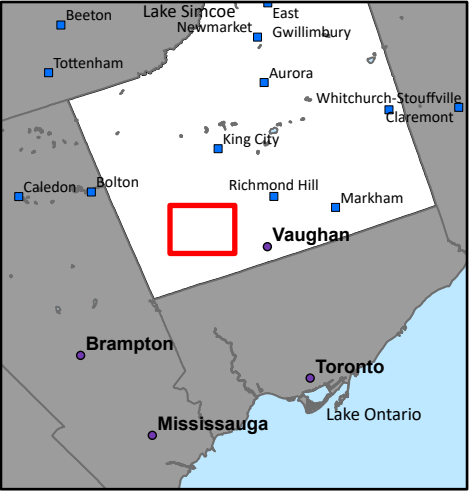
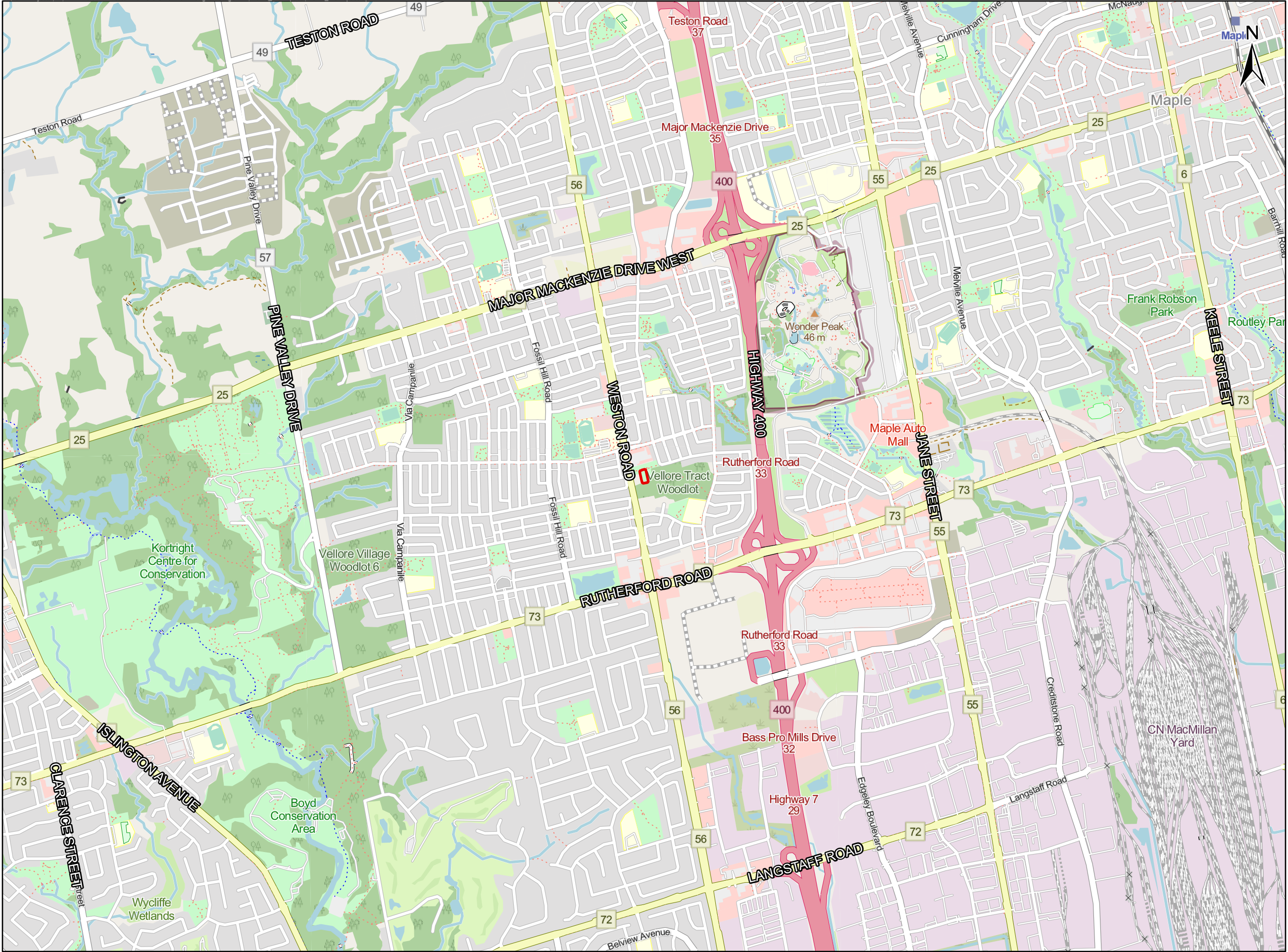


Image 7: Typical disturbed test pit profile in the southeast of the project area.

9.0 Maps

See following pages for detailed assessment mapping and figures





 PROJECT AREA

Sources: Map data ©
OpenStreetMap
contributors, Microsoft,
Facebook, Inc. and its
affiliates, Esri Community
Maps contributors, Map
layer by Esri

Projection: NAD 1983
UTM Zone 17N
Scale: 1:25,000
Page Size: 11 x 17



ASI Project No: 22PL-225
Date: 7/19/2022 9:30 AM

Drawn By: rlatour
File: Figure1

 Providing Archaeological & Cultural Heritage Services
528 Bathurst Street Toronto, ONTARIO M5S 2P9
T 416-966-1069 F 416-966-9723 asiheritage.ca

Figure 1: Location of the Project Area



Figure 2: Project Area Located on the 1860 Tremaine Map of the County of York



Figure 3: Project Area Located on the 1878 Illustrated Historical Atlas of the County of York

	<div><div></div>PROJECT AREA</div>	Sources: Tremaine Map of the County of York, 1860 1878 Illustrated Historical Atlas of the County of York, 1878	<div><div>0500</div><div></div><div>Metres</div></div>	
		Projection: NAD 1983 UTM Zone 17N Scale: 1:15,000 Page Size: 8.5 x 11	ASI Project No.: 22PL-225 Date: 7/26/2022	Drawn By: jfernandez File: 22PL225_fig2_3_Hist

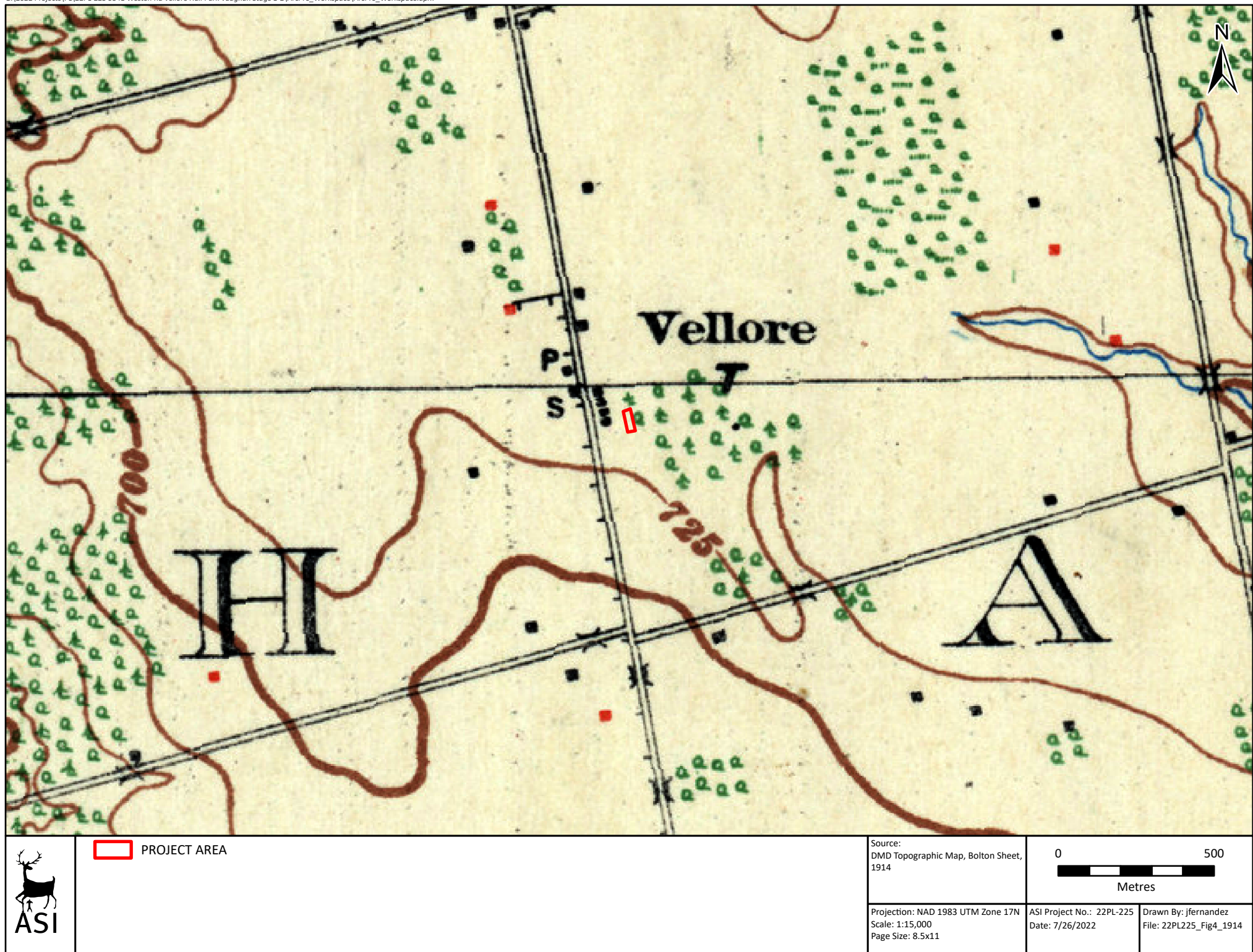


Figure 4: Project Area Located on the 1914 Bolton Topographic Map



	 PROJECT AREA	Source: Aerial Survey of Ontario, 1954	<div>0 125</div>  <div>Metres</div>
		Projection: NAD 1983 UTM Zone 17N Scale: 1:5,000 Page Size: 8.5x11	

Figure 5: Project Area Located on 1954 Air Photo of Southern Ontario



1970



1988



1999



2002

	 PROJECT AREA	 Metres			
Projection: NAD 1983 UTM Zone 17N Scale: 1:7,500 Page Size: 8.5x11		ASI Project No.: 22PL-225 Date: 8/3/2022 12:50 PM		Drawn By: riatour File: 8.5x11_Historic_x4	

Figure 6: Project Area Located on 1970, 1988, 1999 Aerial Imagery and 2002 Satellite Imagery



Figure 7: Archaeological Assessments Within 50 Metres of the Project Area






	 PROJECT AREA	Source: City of Toronto, ON, Maxar, Microsoft	<div>010</div> <div></div> <div>Metres</div>	
		Projection: NAD 1983 UTM Zone 17N Scale: 1:500 Page Size: 8.5x11	ASI Project No.: 22PL-225 Date: 12/8/2022	Drawn By: pbikoulis File: 22PL225_Fig8_Existing

Figure 8: Existing Conditions of the Project Area

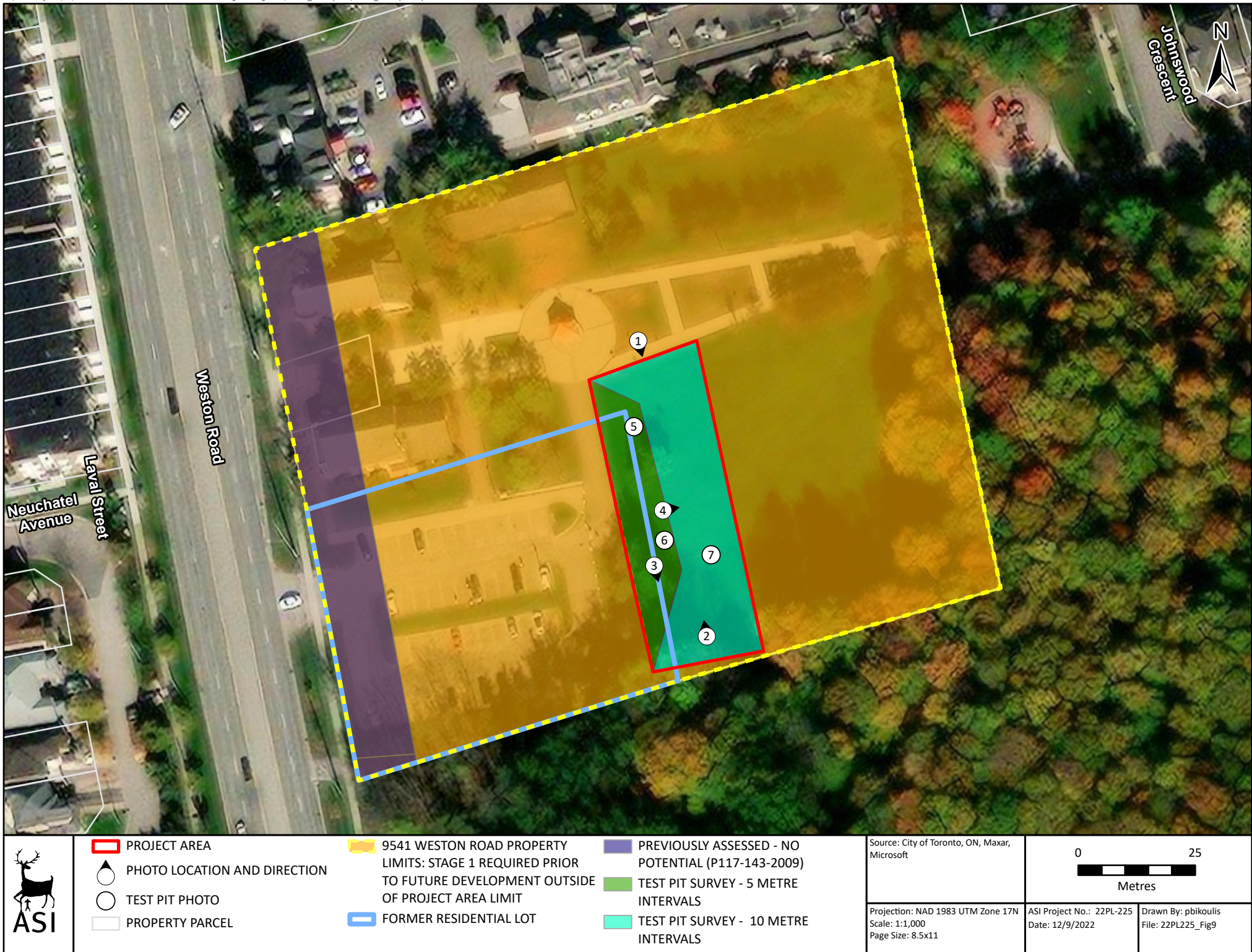


Figure 9: Stage 2 Archaeological Assessment Results

10.0 Appendix A: Archaeological Sites Registered Within a One-Kilometre Radius

A total of twenty archaeological sites registered in the Ontario Archaeological Sites Database are located within a one-kilometre radius of the Project Area (accessed from Past Portal on July 19, 2022).

Borden Number	Site Name	Temporal/Cultural Affiliation	Site Type	Researcher
AkGv-144	-	Indigenous	Findspot	Archaeological Services Inc., 1998
AkGv-145	-			Archaeological Services Inc., 1998
AkGv-146	-	Indigenous	Findspot	Archaeological Services Inc., 1998
AkGv-148	-	Indigenous	Findspot	Archaeological Services Inc., 1998
AkGv-149	Cowan	Euro-Canadian	Homestead, Privy	Archaeological Services Inc., 1998; 1998

Borden Number	Site Name	Temporal/Cultural Affiliation	Site Type	Researcher
AkGv-150	McLean	Euro-Canadian	Homestead	Archaeological Services Inc., 1998; 1998
AkGv-151	Westford 1	Middle Archaic	Campsite	Archaeological Services Inc., 1996; 1998
AkGv-152	Westford 2	Archaic	Campsite	Archaeological Services Inc., 1996; 1998
AkGv-154	Lehman 1	Euro-Canadian	Homestead	Archaeological Services Inc., 1997
AkGv-155	Lehman 2	Euro-Canadian	Homestead	Archaeological Services Inc., 1997
AkGv-161	Hector McLean	Euro-Canadian	Homestead	Archaeological Services Inc., 1999
AkGv-163	Dickout	Euro-Canadian	Homestead	Archaeological Services Inc., 1999

Borden Number	Site Name	Temporal/Cultural Affiliation	Site Type	Researcher
ALGv-18	Jarrett-Lahmer	Late Woodland	Village, Burial	Orr, R., 1911; 1918; Konrad, 1972; Mayer, Pihl, Poulton and Associates Inc., 1987; Dandy, 1987; Poulton, 1989; Archaeological Services Inc., 2017
ALGv-49	Circle Ridge 1	Indigenous	Campsite	Mayer, Pihl, Poulton and Associates Inc., 1987
ALGv-160	Vellore 1	Indigenous	Scatter	Archaeological Services Inc., 1997; 1998
ALGv-161	Killdeer	Late Woodland	Unknown	Archaeological Services Inc., 1997; 1998
ALGv-162	Vellore 2	Early Archaic	Scatter	Archaeological Services Inc., 1997; 1998
ALGv-163	Vellore Farm	Euro-Canadian	Scatter	Archaeological Services Inc., 1998

Borden Number	Site Name	Temporal/Cultural Affiliation	Site Type	Researcher
ALGv-165	McNaughton	Euro-Canadian	Homestead	Archaeological Services Inc., 1996; 1997
ALGv-198	Constable	Euro-Canadian	Homestead	Archaeological Services Inc., 2002; 2002

DATE OF LOCATE: 25-Jul-2022 (see each auxiliary page(s) for the validity period for each buried service marked)

COMPANY: ASI TICKET #: 35723 PLI JOB #:

REQUESTED BY: Lauren Vince PHONE #: 6476950293 EMAIL ADDRESS: LVince@asiheritage.ca

COMPANY ADDRESS: 200-2321 Fairview St, Burlington P.O. / JOB #: 22PL-225

LOCATE ADDRESS: 9541 Weston Rd, WOODBRIDGE EXCAVATION DATE: 29-Jul-2022

SITE MEET WITH EXCAVATOR?: ☐ Yes ☒ No IF YES, SITE CONTACT NAME: SITE CONTACT PHONE #:

TYPE AND LOCATION OF WORK (check all that apply):
☐ PUBLIC PROPERTY ☐ PRIVATE PROPERTY ☐ EXTERIOR ☐ INTERIOR
☐ BOREHOLE DRILLING ☐ DIRECTIONAL DRILLING ☐ MACHINE DIG ☐ VACUUM EXCAVATION ☒ HAND DIG ☐ OTHER:

CLIENT REMARKS / INSTRUCTIONS:	LOCATE TECHNICIAN (DPT) REMARKS: <input checked="" type="checkbox"/> IF CHECKED, PRIVATE UTILITY LOCATE LIMITATIONS EXIST FOR THIS WORK SITE. SEE THE PRIVATE AUXILIARY PAGE FOR THE LIMITATION(S)	THIRD PARTY NOTIFICATION: If there is a STOP warning in this box, you must not dig and: • Check each Auxiliary Locate Report in this locate package and follow the STOP instructions from that Utility Owner
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ORANGE Communications - Phones, Cable TV, Alarm or Signal Lines, Cables, or Conduit	PINK Temporary Survey Marks (SUE / SUM)
RED Electric Power Lines, Cables, Conduit, and Lighting	PURPLE Reclaimed Water, Irrigation, and Slurry Lines
BLUE Potable Water	WHITE Proposed Excavation Limits (White Lining)

EQUIPMENT USED:
☒ EM TRANSMITTER / RECEIVER ☐ PUSH SEWER CAMERA / SONDE ☐ ROBOTIC SEWER CAMERA ☐ LATERAL LAUNCH SEWER CAMERA ☐ MAGNETOMETER / PIN FINDER
☐ NOGGIN GPR 250 MHz WITH GPS ☐ CONQUEST GPR 1000 MHz ☐ EM61 ☐ EM31

DAY 1: START TIME: _____ TECH 1: MB 3.5 hrs. FINISH TIME: _____ TECH 2: _____ hrs. TECH 3: _____ hrs. TECH 4: _____ hrs.	DAY 2: START TIME: _____ TECH 1: _____ hrs. FINISH TIME: _____ TECH 2: _____ hrs. TECH 3: _____ hrs. TECH 4: _____ hrs.	DPT NAME: M. Bombardieri DPT ID #: LOCATE DELIVERED VIA EMAIL
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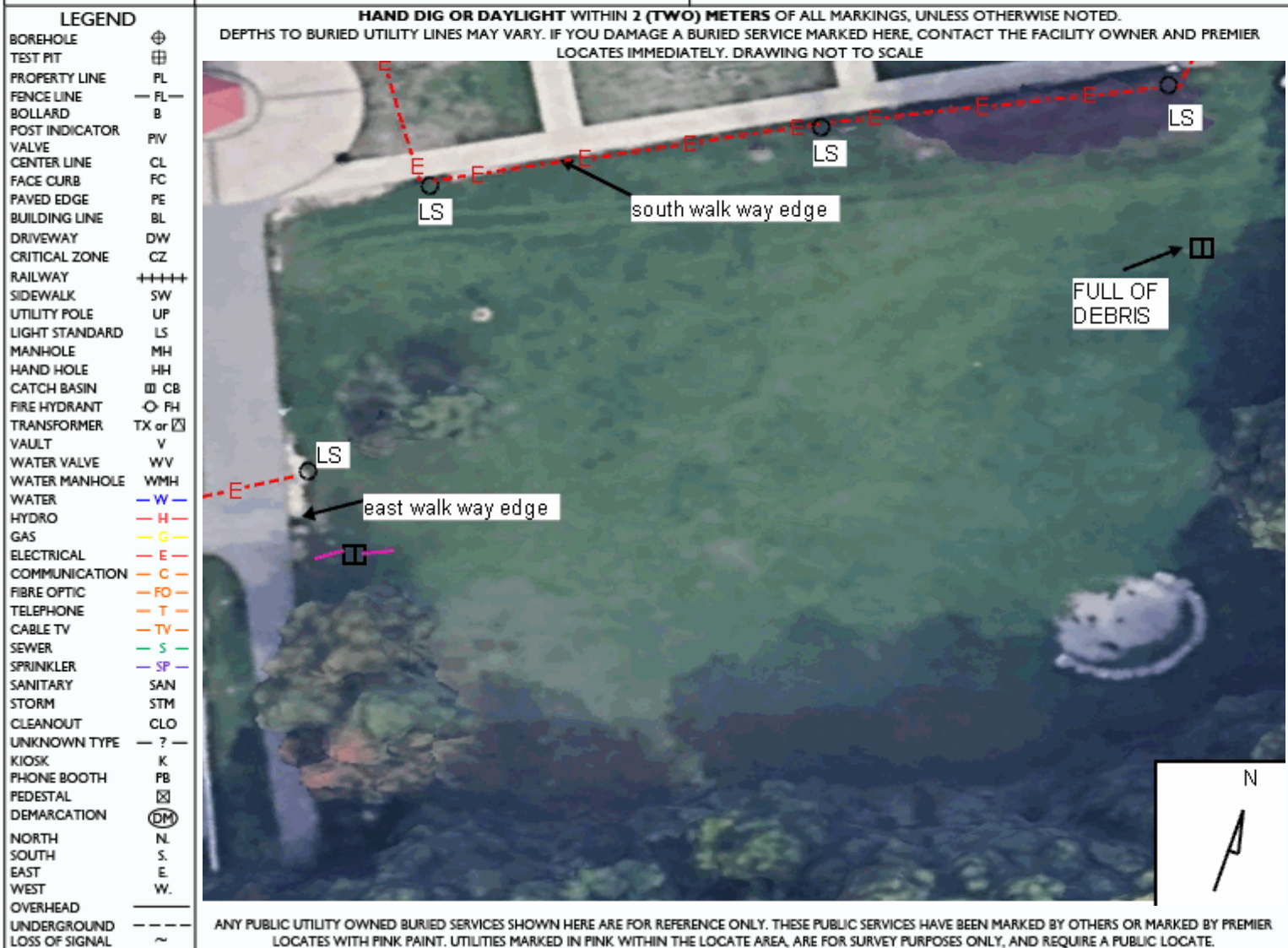
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PAGE 2 OF 3

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LOCATED AREA:	FROM: SOUTH WALK WAY EDGE AS SHOWN ON DR.		TO: 78m SOUTH OF SOUTH WALK WAY EDGE AS SHOWN	
	FROM: EAST WALK WAY EDGE		TO: 32m EAST OF EAST WALK WAY EDGE	



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GUIDELINE FOR EXCAVATING PROXIMITY OF UNDERGROUND DISTRIBUTION LINES (ESA, FEB 2021)
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PRIVATELY-OWNED UTILITY AUXILIARY REPORT

(NOT VALID UNLESS ACCOMPANIED BY A PRIMARY LOCATE REPORT)

PAGE 3 OF 3

UTILITY SERVICES LOCATED:	<input type="checkbox"/> PRIVATELY OWNED	REQUEST / TICKET #: 35723	VALIDITY: 60 days from this date:	DATE LOCATED: 25-Jul-2022
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LOCATED AREA:	FROM:	TO:
	FROM:	TO:

LEGEND

BOREHOLE

TEST PIT

PROPERTY LINE

FENCE LINE

BOLLARD

POST INDICATOR

VALVE

CENTER LINE

FACE CURB

PAVED EDGE

BUILDING LINE

DRIVEWAY

CRITICAL ZONE

RAILWAY

SIDEWALK

UTILITY POLE

LIGHT STANDARD

MANHOLE

HAND HOLE

CATCH BASIN

FIRE HYDRANT

TRANSFORMER

VAULT

WATER VALVE

WATER MANHOLE

WATER

HYDRO

GAS

ELECTRICAL

COMMUNICATION

FIBRE OPTIC

TELEPHONE

CABLE TV

SEWER

SPRINKLER

SANITARY

STORM

CLEANOUT

UNKNOWN TYPE

KIOSK

PHONE BOOTH

PEDESTAL

DEMARICATION

NORTH

SOUTH

EAST

WEST

OVERHEAD

UNDERGROUND

LOSS OF SIGNAL

HAND DIG OR DAYLIGHT WITHIN 2 (TWO) METERS OF ALL MARKINGS, UNLESS OTHERWISE NOTED.
DEPTHS TO BURIED UTILITY LINES MAY VARY. IF YOU DAMAGE A BURIED SERVICE MARKED HERE, CONTACT THE FACILITY OWNER AND PREMIER LOCATES IMMEDIATELY. DRAWING NOT TO SCALE

NOTES AND LIMITATIONS

*NO RECORDS OR AS-BUILTS PRESENT AT TIME OF PRIVATE LOCATE.

*WORK AREA SCANNED FOR PASSIVE AND ACTIVE SIGNALS.

*SEWER INVERTS MARKED NOT TRACED.

*NORTH EAST CB FILLED WITH DEBRIS, INVERTS UNKNOWN.

*POSSIBLE UNKNOWN / UNMARKED SERVICES IN WORK AREA.

DOCUMENTS TO BE USED WITH THIS LOCATE:

PRIVATE LOCATE GUIDELINE (OWN YOUR SAFETY, 2021)
DAMAGE PREVENTION FOR THE PROTECTION OF UNDERGROUND INFRASTRUCTURE, (CSA Z-247-15, AUG 2016)
GUIDELINE FOR EXCAVATING PROXIMITY OF UNDERGROUND DISTRIBUTION LINES (ESA, FEB 2021)

(If you would like a copy of any of these documents, please contact our office at the number above.)

LOCATE METH-	ODS:
UTILITY LOCATE METHODS USED: <input checked="" type="checkbox"/> ACTIVE <input checked="" type="checkbox"/> PASSIVE <input type="checkbox"/> INDUCTIVE SWEEP	PRIVATE DETECTABLE SERVICES FOUND: <input checked="" type="checkbox"/> AS SHOWN ON DRAWING <input type="checkbox"/> NONE
SEWER LINES: <input type="checkbox"/> TRACED <input type="checkbox"/> NOT TRACED <input checked="" type="checkbox"/> MH OR CB INVERTS MARKED WHERE FOUND / VISIBLE	
GEOPHYSICS: <input type="checkbox"/> EXTERIOR 250 MHz GPR LINE SCAN <input type="checkbox"/> EXTERIOR 250 MHz GPR GRID SCAN <input type="checkbox"/> INTERIOR 1,000 MHz GPR LINE SCAN <input type="checkbox"/> INTERIOR 1,000 MHz GPR GRID SCAN	

SITE CONDITIONS / LIMITATIONS:

IF THERE IS A LIMITATION INDICATED HERE, WRITTEN OR CHECKED, THERE IS AN **ELEVATED RISK** OF STRIKING A BURIED FACILITY. THE CLIENT REPRESENTATIVE IS TO NOTIFY ALL INVOLVED WITH THE PROJECT (INCLUDING AND NOT LIMITED TO ALL FIELD STAFF, PROJECT MANAGERS, THEIR CLIENT AND/OR PROPERTY OWNER OF THE SUBJECT PROPERTY IF THE SAME). ANY LIMITATION NOTED TRANSLATES INTO AN INCREASED RISK OF NOT FINDING ALL BURIED FACILITIES WITHIN THE WORK AREA.

AS-BUILT OR UTILITY DRAWINGS REQUESTED FROM: _____

SITE PLAN (SHOWING WORK AREA): ☒ Yes ☐ No PROPERTY AS-BUILT OR UTILITY DRAWINGS: ☐ Yes ☒ No SURVEY: ☐ Yes ☒ No

BUILDING ACCESS: ☐ Yes ☒ No ☐ NA SITE OPERATIONS PERSONNEL INTERVIEWED: ☐ Yes ☒ No ☐ NA

WEATHER: 23C, CLEAR GROUND SNOW COVERED: ☐ Yes ☐ No

OBSTRUCTIONS: ☐ PARKED VEHICLES ☐ OVERGROWN VEGETATION ☐ PRODUCT STORAGE ☐ OTHER (specify): _____

LIST ANY OTHER LIMITATIONS:
SEE AUXILIARY SHEET FOR MORE NOTES AND LIMITATIONS

THE CLIENT HAS BEEN MADE AWARE AND ACKNOWLEDGES THAT ANY **PUBLIC UTILITY OWNED** SERVICES (GAS, TELEPHONE, CABLE TV, HYDRO, WATER, SEWER, ETC.) WITHIN THE LIMITS OF THIS PRIVATE AUXILIARY LOCATE REPORT AND MARKED BY PREMIER LOCATES INC., ARE FOR SURVEY PURPOSES ONLY AND REQUIRE PUBLIC LOCATES THROUGH ONTARIO ONECALL



PREMIER LOCATES

PRIVATELY-OWNED UTILITY LOCATE CLIENT COMPANY ACKNOWLEDGEMENTS

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BY SIGNING OR RECEIVING AN EMAILED COPY OF THIS LOCATE REPORT, THE CLIENT HAS READ, ACKNOWLEDGES AND AGREES TO THE FOLLOWING:

EXCAVATOR
AN EXCAVATOR IS ANY PERSON, PARTNERSHIP, CORPORATION, PUBLIC AGENCY, AGENT, OR OTHER ENTITY THAT IS RESPONSIBLE FOR CARRYING OUT A GROUND DISTURBANCE.

GROUND DISTURBANCE / EXCAVATE
GROUND DISTURBANCE OR EXCAVATE MEANS ANY WORK, OPERATION, OR ACTIVITY ON OR UNDER THE EXISTING SURFACE RESULTING IN A DISTURBANCE OR DISPLACEMENT OF THE SOIL OR GROUND COVER. GROUND DISTURBANCE OR EXCAVATE CAN INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: DIGGING; EXCAVATION; TRENCHING; DITCHING; TUNNELING; BORING/DRILLING/PUSHING; AUGERING; TOPSOIL STRIPPING; LAND LEVELLING/GRADING; FLOWING TO INSTALL UNDERGROUND INFRASTRUCTURE; TREE PLANTING; CLEARING AND STUMP REMOVAL; SUBSOILING; BLASTING/USE OF EXPLOSIVES; GRINDING AND MILLING OF ASPHALT/CONCRETE; SEISMIC EXPLORATION; DRIVING FENCE POSTS, BARS, RODS, PINS, ANCHORS, OR PILLING; AND, CROSSING OF BURIED PIPELINES OR OTHER UNDERGROUND INFRASTRUCTURE BY HEAVY LOADS OFF THE TRAVELLED PORTION OF A PUBLIC ROADWAY.

LIMIT OF LOCATE
THE EXCAVATOR MUST NOT WORK OUTSIDE THE INDICATED LOCATE AREA WITHOUT FURTHER LOCATES BY PREMIER LOCATES INC. (SUBSEQUENTLY REFERRED TO AS "PLI").

MULTIPLE EXCAVATORS
WHEN A LOCATE IS BEING PROVIDED FOR MORE THAN ONE PARTY WORKING ON THE PROJECT, THE PERSON NAMED ON THIS LOCATE REPORT IS CONSIDERED TO BE ACTING ON BEHALF OF THE EXCAVATOR IN ACCEPTING AND ENSURING THE EXCAVATOR RECEIVES A COPY OF THIS LOCATE.

VALIDITY OF LOCATE
THIS LOCATE IS ONLY VALID FOR 60 DAYS UNLESS STATED OTHERWISE ON THE LOCATE REPORT. A RE-MARK OF SURFICIAL MARKINGS PLACED ON THE SITE BY PLI MUST BE OBTAINED PRIOR TO ANY EXCAVATION IF: THE DATE OF EXCAVATION IS PAST THE VALIDATION PERIOD; MARKINGS BECOME UNCLEAR, DISAPPEAR, ARE DISTURBED OR DISPLACED; THE SKETCH AND SITE MARKINGS DO NOT COINCIDE; THE WORK LOCATION HAS CHANGED; AND, IF ANYTHING OCCURS WHICH MAY INDICATE THAT A NEW, BETTER, OR DIFFERENT LOCATE SERVICE IS NEEDED.

GROUND MARKINGS
IF THE MARKINGS DISAPPEAR OR ARE DISPLACED OR SHOULD SKETCH MARKINGS NOT COINCIDE WITH GROUND MARKINGS, THE PRIVATE LOCATE IS INVALID AND PLI WILL NEED TO BE CONTACTED TO EITHER REFRESH THE MARKINGS OR FIX ANY DISCREPANCY.

LEGAL REQUIREMENTS
YOU ARE REQUIRED BY LAW TO HAVE ALL BURIED PUBLIC AND PRIVATE UTILITIES LOCATED AND MARKED IN THE VICINITY OF ANY WORK BEFORE PERFORMING ANY TYPE OF EXCAVATION OR DRILLING ACTIVITIES. YOU MUST HAVE VALID PUBLIC LOCATES FOR YOUR WORK AREA. FINES AND PENALTIES BY PUBLIC AUTHORITIES CAN BE GIVEN IF WORKING WITH EXPIRED LOCATES.

PUBLIC LOCATES
ANY PUBLIC UTILITY OWNED SERVICES (GAS, TELEPHONE, CABLE TV, HYDRO, WATER, SEWER, ETC.) WITHIN THE LIMITS OF THIS LOCATE AND SHOWN ON THIS LOCATE REPORT, ARE FOR REFERENCE ONLY. THESE PUBLIC UTILITIES HAVE BEEN MARKED BY OTHERS OR MARKED BY PLI WITH PINK PAINT. ANY BURIED UTILITIES MARKED IN PINK WITHIN THE LOCATE AREA, ARE FOR SURVEY PURPOSES ONLY, AND REQUIRE A PUBLIC LOCATE BEFORE EXCAVATING. IT IS THE RESPONSIBILITY OF THE CLIENT TO ENSURE AND VERIFY THAT THE INTENDED WORK ARE COINCIDES WITH THE WORK AREAS DRAWN OR DESCRIBED ON ALL PUBLIC AND PRIVATE UTILITY LOCATE REPORTS.

SCOPE OF WORK
THIS PRIVATE LOCATE REPORT IS BASED ON INFORMATION GIVEN AT THE TIME OF THE LOCATE. ANY CHANGES TO THE LOCATION OR SCOPE OF WORK REQUIRES A NEW LOCATE REPORT.

BUILDING AND/OR SERVICE ROOM ACCESS
SOME CABLES OR PIPES MAY NOT BE DETECTED OR LOCATED IF DIRECT PHYSICAL ACCESS TO BUILDING SERVICE ROOMS ARE NOT PROVIDED AT THE TIME OF THE LOCATE.

PHYSICAL LIMITATIONS
IF THERE ARE ANY PHYSICAL LIMITATIONS AT THE SITE (I.E. SNOW-COVERED GROUND, PARKED CARS, EQUIPMENT OR MATERIALS, ETC. CONGESTING THE AREA TO BE LOCATED), THE CLIENT IS HEREBY MADE AWARE AND ACKNOWLEDGES THAT SOME CABLES OR PIPES MAY NOT BE DETECTED OR LOCATED IF THE LOCATE AREA IS NOT CLEAR OF THESE OBSTRUCTIONS AT THE TIME OF THE LOCATE.

INTERIOR LOCATES
DUE TO BUILDING INTERFERENCES, CONGESTION, AND HIDDEN OR INACCESSIBLE ELECTRICAL CONDUITS OR PIPES, SOME CABLES OR PIPES MAY OR MAY NOT BE DETECTED WITH THE EQUIPMENT EMPLOYED BY PLI. PLI USES GROUND PENETRATING RADAR (GPR) WITH A 1000 MHZ ANTENNA ALONG WITH ELECTROMAGNETIC CABLE LOCATE EQUIPMENT WHILE PERFORMING INTERIOR PRIVATE LOCATES. SEWER LINES INSIDE BUILDINGS MAY NOT BE VISIBLE WITH GPR IF THEY ARE DEEPER THAN 2 FEET OR ARE COMPRISED OF A MATERIAL SUCH AS PLASTIC OR CLAY THAT ARE NOT VISIBLE TO GPR.

SANITARY AND STORM SEWERS
PLI USES A CCTV CAMERA WITH BUILT-IN SONDE TO LOCATE SEWER LINES PROVIDED: SEWER DRAWINGS HAVE BEEN PROVIDED TO PLI FROM THE PRIVATE LANDOWNER; THERE IS SUFFICIENT ACCESS TO THE SEWER LINE THAT DOES NOT REQUIRE CONFINED SPACE ENTRY; AND, THE SEWER LINE IS ON PRIVATE PROPERTY. IF A MANHOLE OR CATCHBASIN IS SHOWN ON A DRAWING OR FOUND DURING THE LOCATE, PLI WILL ATTEMPT TO OPEN THEM, MARK THE INVERT DIRECTION, AND USE A CCTV CAMERA WITH SONDE TO LOCATE THE LINE IF SO REQUESTED BY THE CLIENT. IF PLI IS UNABLE OPEN THE MH OR CB, DETERMINE THE DIRECTION OF THE INVERTS, OR LOCATE THE BURIED LINE, IT WILL BE INDICATED AS A LIMITATION AND NOTED ON THE LOCATE REPORT. THE CLIENT ALSO ACKNOWLEDGES THAT TRUNK SEWER AND WATER MAINS MAY NOT BE DETECTABLE AND REQUIRE A PUBLIC LOCATE IF WITHIN AN EASEMENT ON PRIVATE PROPERTY.

UNDERGROUND STORAGE TANKS AND ASSOCIATED EQUIPMENT
PLI DOES NOT LOCATE UNDERGROUND STORAGE TANKS OR ANY ASSOCIATED EQUIPMENT UNLESS GROUND PENETRATING RADAR AND/OR AN EM61 TIME DOMAIN METAL DETECTOR IS EMPLOYED AT THE TIME OF THE LOCATE. THE CLIENT ALSO HAS BEEN MADE AWARE OF AND ACKNOWLEDGES THAT ANY EXCAVATING OR DRILLING WITHIN PLI DEFINED CRITICAL AREAS (FOUND IN THE MEMBER LOGIN AREA AT WWW.PREMIERLOCATES.CA) AROUND ANY UNDERGROUND PETROLEUM EQUIPMENT AND STRUCTURES SUCH AS UNDERGROUND STORAGE TANKS (USTS) AND FUEL DISPENSERS; AND, WITHIN THE AREA BETWEEN USTS, PUMP DISPENSERS AND FUEL KIOSK, REQUIRES HAND DIGGING OR SOFT DIGGING WITH VACUUM EXCAVATION EQUIPMENT TO EXPOSE THE WORK AREA.

- LIMITATIONS**
- THE TECHNOLOGIES EMPLOYED BY PLI TO TRACE AND MARK BURIED FACILITIES ARE COMPLIANT WITH ACSE STANDARD 38-02 LEVEL B, WHICH ARE ASSIGNED TO HAVE A MODERATE RISK. THESE GEO-PHYSICAL METHODS ARE NOT 100% EFFECTIVE AND CANNOT DETECT ALL BURIED SERVICES SINCE THERE ARE TOO MANY VARIABLES THAT CAN WORK AGAINST THE EQUIPMENT. IT MAY NOT BE POSSIBLE TO ABSOLUTELY "CLEAR" REGARDLESS OF THE SKILL, EFFORT, OR TECHNOLOGIES USED BY PLI. LOCATING METHODS USED BY PLI ONLY HELPS REDUCE RISK OF STRIKING A BURIED UTILITY AND DOES NOT ELIMINATE THE RISK. IF PRECISE HORIZONTAL AND VERTICAL LOCATIONS OF BURIED FACILITIES ARE NEEDED, THEN ACSE STANDARD 38-02 QUALITY LEVEL A METHODS WOULD NEED TO BE EMPLOYED. QUALITY LEVEL A METHODS INVOLVE THE ACTUAL EXPOSURE OF A FACILITY BY MEANS OF EITHER HAND DIGGING OR THE USE OF VACUUM EXCAVATION SYSTEMS.
 - SOME CABLES OR PIPES MAY NOT BE DETECTABLE OR LOCATED ACCURATELY DUE TO DEPTH, LACK OF OR MALFUNCTIONING TRACER WIRES, MATERIAL MAKEUP, CONFINED SPACES, OR INABILITY TO CONNECT PROPERLY. THIS MAY BE COMPOUNDED BY THE LACK OF ACCESS OR ACCESS TOO FAR FROM THE AREA TO BE TRACED.
 - THE LOCATION AND MARKING OF BURIED FACILITIES BY THE PLI LOCATE TECHNICIAN FOR THE CLIENT REPRESENTATIVE IS FOR THE CONVENIENCE OF THAT SAID APPLICANT ONLY AND DOES NOT RELIEVE SAID APPLICANT, OR ANY PERSON OR CORPORATION, FROM LIABILITY FOR DAMAGES OR PERSONAL INJURY INCLUDING DEATH TO ANY PERSON OR FOR PROPERTY DAMAGE CAUSED TO THE SAID PLANT OR TO ANY OTHER PROPERTY. BY REASON OF THE SAID APPLICANT, OR ANY OTHER PERSON OR CORPORATION, HAVING RELIED UPON THE LOCATION AND MARKING OF FACILITIES BY PLI.
 - IF THERE ARE ANY LIMITATIONS NOTED ON THE LOCATE REPORT AND/OR SITE SERVICES CHECKLIST, THE CLIENT ACCEPTING THIS LOCATE REPORT MUST INFORM ALL INVOLVED WITH THE PROJECT OF THE LIMITATION INCLUDING AND NOT LIMITED TO: ALL FIELD STAFF; PROJECT MANAGERS; THEIR CLIENT; AND THE PROPERTY OWNER OF THE SUBJECT PROPERTY. THE PROPERTY OWNER IS ULTIMATELY RESPONSIBLE FOR THEIR BURIED FACILITIES AND SHOULD HAVE THE FINAL DECISION IN HOW TO EXCAVATE NEAR THEIR BURIED FACILITIES IF THEY CANNOT BE ACCURATELY LOCATED AND MARKED. WHOMEVER ACCEPTS THE LIMITATION CLAIMS RESPONSIBILITY IF A BURIED FACILITY IS DAMAGED AS A RESULT OF THE LIMITATION.
 - THE PRIVATE UTILITY LOCATE PREPARED BY PLI IS FOR THE USE OF THE CLIENT. IF THE CLIENT'S PROVIDES THE LOCATE REPORT TO A SUB-CONTRACTORS FOR RELIANCE, THE SUB-CONTRACTOR MUST BE GIVEN A COPY OF THE LOCATE REPORT AND NOTIFIED OF ANY LIMITATIONS NOTED WITHIN THE LOCATE REPORT.

THE PERSON ACCEPTING THIS PRIVATE UTILITY LOCATE REPORT, AGREES THAT THEY FULLY UNDERSTAND ALL OF THE INFORMATION PRESENTED IN THE LOCATE REPORT, SITE SERVICES CHECKLIST, AND CLIENT COMPANY ACKNOWLEDGEMENT.

THE CLIENT WARRANTS THAT PLI IS NOT LIABLE FOR ANY CLAIMS FOR DAMAGES TO ANY UNDERGROUND FACILITY WHERE PLI WAS NOT NOTIFIED OF SUCH DAMAGE FORTHWITH, SUCH THAT PLI CAN COMPLETE A DAMAGE INVESTIGATION TO PHYSICALLY VIEW ANY SUCH DAMAGED UNDERGROUND FACILITY WHETHER OR NOT ANY SUCH DAMAGE MAY ATTRIBUTED TO ERRORS OR OMISSIONS COMMITTED BY PLI IN PERFORMING THE WORK.

PLI SHALL NOT BE LIABLE FOR ANY AMOUNT IN EXCESS OF THE FEES PAID BY THE CLIENT TO PLI FOR THE SERVICE ON ACCOUNT OF ANY LOSS, INJURY, DEATH OR DAMAGE WHETHER RESULTING DIRECTLY OR INDIRECTLY TO A PERSON OR PROPERTY IRRESPECTIVE OF THE CAUSE OR ORIGIN OF SUCH LOSS, INJURY, DEATH OR DAMAGE INCLUDING, WITHOUT LIMITATION, LOSS, INJURY, DEATH OR DAMAGE ATTRIBUTABLE TO THE NEGLIGENCE OF PLI, ITS EMPLOYEES AND AGENTS IN THE PERFORMANCE OR NON-PERFORMANCE OF THE SERVICE.

CLIENT COMPANY ACKNOWLEDGEMENTS - GPR & EM61

BY SIGNING OR RECEIVING AN EMAILED COPY OF THIS LOCATE REPORT, THE CLIENT HAS READ, ACKNOWLEDGES AND AGREES TO THE FOLLOWING:

DATA PRESENTATION

THE GEOPHYSICAL DATA WERE ACQUIRED AT THE STATION SPACING AND ON THE DATE AS SHOWN ON THE FRONT OF THIS SHEET.

THE INTERPRETATION OF THE GROUND PENETRATING RADAR (GPR) AND/OR EM61 IS PRESENTED ON THE SKETCH ON THE FRONT OF THIS SHEET AND WITH PAINT MARKS IN THE WORK STUDY AREA.

THE GPR AND EM61 DATA ARE PRESENTED ALONG A SURVEY LINE, DISPLAYED FROM LEFT TO RIGHT. THE GPR DATA IS A REPRESENTATIVE IMAGE OF THE GPR SIGNAL AMPLITUDE AND IS NOT AN IMAGE OF THE SUBSURFACE. THE GPR SIGNAL PENETRATION DEPTH IS NOTED ON THE FRONT OF THIS SHEET. THE STANDARD EM61 CANNOT DETECT SINGLE OBJECTS AND DEPTHS MUCH GREATER THAN 3-4 METERS.

GEOPHYSICAL DATA RECORDED ON-SITE IS RE-EXAMINED AFTER THE COMPLETION OF THE SURVEY AND A SUPPLEMENTAL REPORT WILL BE SENT IF COMPUTER ANALYZED DATA DIFFERS FROM THE FIELD TECHNICIANS INTERPRETATION.

TECHNICAL LIMITATIONS

THE INTERPRETATION OF THE GEOPHYSICAL DATA OBTAINED DURING THE INVESTIGATION IS INTENDED FOR THE GUIDANCE OF THE CLIENT ONLY. SHOULD THIS INTERPRETATION OF THE DATA BE USED DURING ANY SUBSEQUENT PROGRAMS, THE USER MUST BE AWARE OF THE FOLLOWING INTERPRETIVE RESTRICTIONS:

THE CLIENT ACKNOWLEDGES THAT THE LAWS OF FUNDAMENTAL PHYSICS APPLY AND DO NOT ENABLE PREMIER LOCATES INC. (PLI) LOCATING EQUIPMENT TO DETECT ALL UTILITIES, OBJECTS, FEATURES, AND STRUCTURES OR TO PROVIDE ALL COORDINATES OF THE POSITION THEREOF. PIPE, CABLE, CONDUIT, UTILITIES, OBJECTS, FEATURES OR STRUCTURES WHICH ARE NOT DETECTABLE (I.E. NOT "LOCATABLE") BECAUSE OF THE LAWS OF FUNDAMENTAL PHYSICS CANNOT BE LOCATED BY PLI AND ARE NOT THE SUBJECT OF THE PROVISION OF THE "SERVICE" PURSUANT TO THIS CONTRACT.

THE "SERVICE" PROVIDED TO THIS CONTRACT IS THE LOCATION, Laterally and longitudinally, of utilities, objects, features or structures and the subsequent marking of the site according to the standard subsurface utility locating industry practice. The depth and/or size of pipe, cable, conduits, utilities, objects, features and structures is recorded only if the client has requested prior to the start of the survey.

A "DETECTABLE FEATURE" DEFINED BY THIS INVESTIGATION MAY CONSIST OF A CABLE, WIRE, PIPE, CONDUIT, STRUCTURE OR OTHER OBJECT CONTAINED WITHIN THE SUBSURFACE. DIFFERENTIATION BETWEEN THESE TYPES OF FEATURES IS NOT PROMISED NOR GUARANTEED. A FEATURE IS ONLY DETECTABLE IF THE SUBSURFACE ALLOWS THE GPR SIGNAL TO PROPAGATE DEEP ENOUGH TO DEFINE THE FEATURE. GPR PENETRATION INTO THE SUBSURFACE VARIES DEPENDING UPON THE SUBSURFACE CONDITIONS AND IS NOT CONTROLLED BY THE RADAR EQUIPMENT OR THE TECHNICIAN'S ABILITY. LIMITED PENETRATION IS CAUSED BY HIGH-CONDUCTIVITY MATERIALS SUCH AS CLAY AND SILT SOILS AND SOLIDS THAT ARE SALT CONTAMINATED. PERFORMANCE IS ALSO LIMITED BY SIGNAL SCATTERING IN HETEROGENEOUS CONDITIONS (E.G. ROCKY SOILS, LARGE TREE ROOTS, CONSTRUCTION DEBRIS ETC.), SNOW, DISSOLVED SOLIDS, MOISTURE, VOIDS, AND FEATURES HAVING A SIGNIFICANT ELECTROMAGNETIC VARIANCE.

ACCURACY OF INFERRED BURIED DETECTABLE FEATURES WILL VARY DUE TO SUBSURFACE SOIL CONDITIONS AND SURFACE CONDITIONS (I.E. LOOSE DIRT, ICE, SNOW, TALL GRASS, AND WATER).

PLI IS NOT LIABLE FOR DAMAGES, IF ANY, RESULTING FROM PHYSICAL EXPOSURE OF ANY 'DETECTABLE FEATURES' BY THE CLIENT, OR THEIR REPRESENTATIVES, OR THEIR SUB-CONTRACTORS, OR ANY OTHER PERSON, OR CORPORATION, BASED ON THE INFORMATION PROVIDED.

AREAS CONSIDERED TO BE INACCESSIBLE (AN "INACCESSIBLE AREA") FOR THE SERVICE INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: THOSE OF PHYSICALLY RESTRICTED ACCESS; THOSE COVERED BY A STRUCTURE OR OBJECT (I.E. BUILDING WALLS, VEHICLES, EQUIPMENT, DEBRIS, STOCKPILES OF MATERIAL OR SNOW ETC.); THOSE COVERED BY OPEN WATER; THOSE COVERED BY WOODS OR VEGETATION TOO THICK TO PERMIT EASY WALKING; THOSE WITH SURFACE TERRAIN SLOPES STEEPER THAN 1:3; AND, THOSE WHERE THE SAFETY OF THE TECHNICIAN IS JEOPARDIZED (I.E. UNSTABLE FOOTING, ENVIRONMENTAL HAZARDS, UNCONTROLLED ROADS, ETC.). THE JUDGEMENT OF THE PLI TECHNICIAN WILL PREVAIL ON ACCESSIBILITY DECISIONS.

IT IS THE RESPONSIBILITY OF THE CLIENT TO PROVIDE DIRECT AND SIMPLE ACCESS FREE FROM SURFACE OBJECTS TO ANY AND ALL SURVEY AREAS. PLI ACCEPTS NO RESPONSIBILITY FOR SURVEYING IN ANY AREAS WHERE THE CLIENT DOES NOT PROVIDE ACCESS AND/OR APPROPRIATE WORKPLACE SAFETY MEASURES. AREAS CONSIDERED TO BE INACCESSIBLE FOR SCANNING AND MARKING, ASIDE FROM RESTRICTED ACCESS, INCLUDE THE FOLLOWING, BUT NOT LIMITED TO: WITHIN 1.0 M OF A STRUCTURE OR OBJECT (I.E. WALLS, VEHICLES, EQUIPMENT, DEBRIS, STOCKPILES OF MATERIALS, ETC.).

THE EM61 AND/OR EM31 RESPONSES OF TARGETS MAY BE DETECTED ONLY IF THEY ARE GREATER THAN THE BACKGROUND NOISE LEVELS. GEOPHYSICAL NOISE (NOT SENSOR SENSITIVITY) IS THEREFORE THE LIMITING FACTOR IN DETERMINING THRESHOLDS AND DETECTION DEPTHS.

LIMITS OF PREMIER LOCATES INC. LIABILITY

ANY INFORMATION PROVIDED BY PLI REGARDING THE LOCATION OF UNDERGROUND UTILITIES BY GPR AND/OR EM61 AND/OR EM31, DOES NOT SUBSTITUTE FOR A FULL PRIVATE UTILITY LOCATE PERFORMED BY PLI. THE SERVICE IS PROVIDED TO ASSIST WITH EXCAVATION PLANNING ONLY. THE CLIENT IS ALWAYS RESPONSIBLE FOR OBTAINING SANCTIONED LOCATES FROM THE OWNERS OF UNDERGROUND PLANT SUCH AS ELECTRIC CABLES, NATURAL GAS, ANY TYPE OF PIPELINE, TELECOMMUNICATIONS, CABLE TV, FIBRE-OPTIC CABLES, WATER, SEWER, OIL, STEAM, ETC. THE CLIENT MUST CONTACT THE UTILITY OWNERS DIRECTLY, OR THEIR CALL CENTRE, TO FACILITATE THESE LOCATES.

PLI MARKING OF UNDERGROUND FEATURES IS ONLY FOR THE CONVENIENCE OF THE CLIENT, AND THIS DOES NOT RELIEVE THE CLIENT, OR ANY OTHER PERSON, OR CORPORATION, FROM LIABILITY FOR DAMAGES FOR PERSON INJURY INCLUDING DEATH, OR FOR PROPERTY DAMAGE OR LIABILITY CAUSED TO OR FROM ANY UNDERGROUND UTILITY, WITHIN THE AREA ON THE PROPERTY WHERE THE UNDERGROUND UTILITY AND/OR CLEARANCE WAS MARKED, OR ANY OTHER PROPERTY, BY REASON OF THE CLIENT, ITS REPRESENTATIVES, OR ANY OTHER PERSON, OR CORPORATION HAVING RELIED UPON THE SURFACE MARKING PROVIDED BY PLI.

PLI IS NOT LIABLE FOR DAMAGES RESULTING FROM PHYSICAL EXPOSURE OF ANY UNDERGROUND FEATURES BY THE CLIENT, ITS REPRESENTATIVES, THEIR SUB-CONTRACTORS OR ANY OTHER PERSON OR CORPORATION.

THE SERVICE COMPLETED BY PLI IS BASED ON INFORMATION PROVIDED BY THE CLIENT AT OR PRIOR TO THE EARLIER OF THE TIME WHEN THE SERVICE IS DESCRIBED IN THIS CONTRACT OR THE PERFORMANCE OF THE SERVICE. THE SERVICE PROVIDED BY PLI REGARDING THE LOCATION OF ANY UNDERGROUND UTILITY, OBJECT OR STRUCTURE, IS ON A BEST EFFORT AND BEST PRACTICES BASIS.

A RE-MARK OF SURFICIAL MARKINGS PLACED ON THE SITE BY PLI MUST BE OBTAINED PRIOR TO ANY EXCAVATION IF:

- MARKINGS BECOME UNCLEAR, DISAPPEAR, ARE DISTURBED OR DISPLACED;
- THE SKETCH AND SITE MARKINGS DO NOT COINCIDE;
- THE WORK LOCATION HAS CHANGED;
- IF ANYTHING OCCURS WHICH MAY INDICATE THAT A NEW OR BETTER OR DIFFERENT LOCATE SERVICE IS NEEDED.

IF THE CLIENT EXCAVATES OUTSIDE THE LIMIT OF LOCATE AREA, PLI ACCEPTS NO RESPONSIBILITY.

THE CLIENT WARRANTS THAT PLI IS NOT LIABLE FOR ANY CLAIMS FOR DAMAGES TO ANY UNDERGROUND PLANT WHERE PLI WAS NOT NOTIFIED OF SUCH DAMAGE FORTHWITH SUCH THAT PLI CAN COMPLETE A DAMAGE INVESTIGATION TO PHYSICALLY VIEW ANY SUCH DAMAGED UNDERGROUND PLANT WHETHER OR NOT ANY SUCH DAMAGE MAY BE ATTRIBUTED TO ERRORS OR OMISSIONS COMMITTED BY PLI IN PERFORMING THE WORK.

PLI SHALL NOT BE LIABLE FOR ANY AMOUNT IN EXCESS OF THE FEES PAID BY THE CLIENT TO PLI FOR THE SERVICE ON ACCOUNT OF ANY LOSS, INJURY, DEATH OR DAMAGE WHETHER RESULTING DIRECTLY OR INDIRECTLY TO A PERSON OR PROPERTY IRRESPECTIVE OF THE CAUSE OR ORIGIN OF SUCH LOSS, INJURY, DEATH OR DAMAGE.

Ministry of Citizenship and Multiculturalism (MCM)

Archaeology Program Unit
Heritage Branch
Citizenship, Inclusion and Heritage Division
5th Floor, 400 University Ave.
Toronto ON M7A 2R9
Tel.: (416) 414-7787
Email: Jessica.Marr@ontario.ca

Ministère des Affaires civiques et du Multiculturalisme (MCM)

Unité des programme d'archéologie
Direction du patrimoine
Division de la citoyenneté, de l'inclusion et du patrimoine
5e étage, 400 ave. University
Toronto ON M7A 2R9
Tél. : (416) 414-7787
Email: Jessica.Marr@ontario.ca



Feb 24, 2023

Poorya Kashani (P1133)
ASI Archaeological and Cultural Heritage Services
409 - 17 Kenaston Gardens Toronto ON M2K0B9

RE: Entry into the Ontario Public Register of Archaeological Reports: Archaeological Assessment Report Entitled, "Stage 1 and 2 Archaeological Assessment of Part of Vellore Hall Park, 9541 Weston Road, Part of Lot 17, Concession 5, Geographic Township of Vaughan, County of York, Now in the City of Vaughan, Regional Municipality of York", Dated Feb 22, 2023, Filed with MCM Toronto Office on N/A, MCM Project Information Form Number P1133-0012-2022, MCM File Number 0017221

Dear Dr. Kashani:

The above-mentioned report, which has been submitted to this ministry as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18, has been entered into the Ontario Public Register of Archaeological Reports without technical review.¹

Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the register.

Should you require further information, please do not hesitate to send your inquiry to Archaeology@Ontario.ca

cc. Archaeology Licensing Officer
Wei Chiao, City of Vaughan
Katrina Guy, City of Vaughan- Development Planning

¹In no way will the ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

Stage 1 and 2 Archaeological Assessment of Part of Vellore Hall Park, 9541 Weston Road, Part of Lot 17, Concession 5, Geographic Township of Vaughan, County of York, Now in the City of Vaughan, Regional Municipality of York

Supplementary Documentation

Prepared for:

City of Vaughan

2141 Major Mackenzie Dr.

Vaughan, Ontario L6A 1T1

(905) 832-8585

Archaeological Licence: P1133 (Kashani)

Project Information Form: P1133-0012-2022

Archaeological Services Inc. File: 22PL-225

12 December 2022



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1.0 Approval Authority Correspondence

- See following pages for record of approval authority consultations and related materials/documentation.



David Robertson

From: Katrina Guy <Katrina.Guy@vaughan.ca>
Sent: July 5, 2022 5:28 PM
To: Wei Chiao; David Robertson
Cc: Dennis Yip
Subject: RE: [External] FW: Stage 1 and Stage 2 Archaeological Assessment
Attachments: Map Excerpt Stage 1-2 Proposal - Revised July 4 with KG signature.pdf

Good afternoon Wei,

Thank you for clarifying what is needed – the assessment is to be restricted to the impact area for the construction of the east parking lot, as shown outlined in red on City of Vaughan Fire Station 7-12 Site Demolition Plan/Site Details drawing A2.2, dated May 31, 2022 (revision 7). I have signed the map to verify that I have seen the map.

Thanks,
Katrina

Katrina Guy, B. A. (She/Her)
Cultural Heritage Coordinator
905-832-8585 ext. 8115 | katrina.guy@vaughan.ca

City of Vaughan | Development Planning
2141 Major Mackenzie Dr., Vaughan, ON L6A 1T1
vaughan.ca



***Please note, I will be working from home for the time being due to the ongoing COVID-19 pandemic. I have access to voicemail and emails from home however I will not be able to answer any phone calls from my phone extension 8115**

From: Wei Chiao <Wei.Chiao@vaughan.ca>
Sent: Tuesday, July 05, 2022 9:50 AM
To: Katrina Guy <Katrina.Guy@vaughan.ca>
Cc: Dennis Yip <Dennis.Yip@vaughan.ca>
Subject: FW: [External] FW: Stage 1 and Stage 2 Archaeological Assessment
Importance: High

Hi Katerina,

We have now confirmed a Stage1-2 Archaeological Assessment scope of work for ASI.

Would you please refer to the highlighted note below and provide an email confirmation back to us this morning? See attached drawing – last page in the attachment.

