REPORT

Hydrogeological Assessment

Proposed Redevelopment of 895 Lawrence Avenue East, North York, Ontario

Submitted to:

First Capital Asset Management (FCAM) LP

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Attn: Ms. Julie Barnard
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Submitted by:

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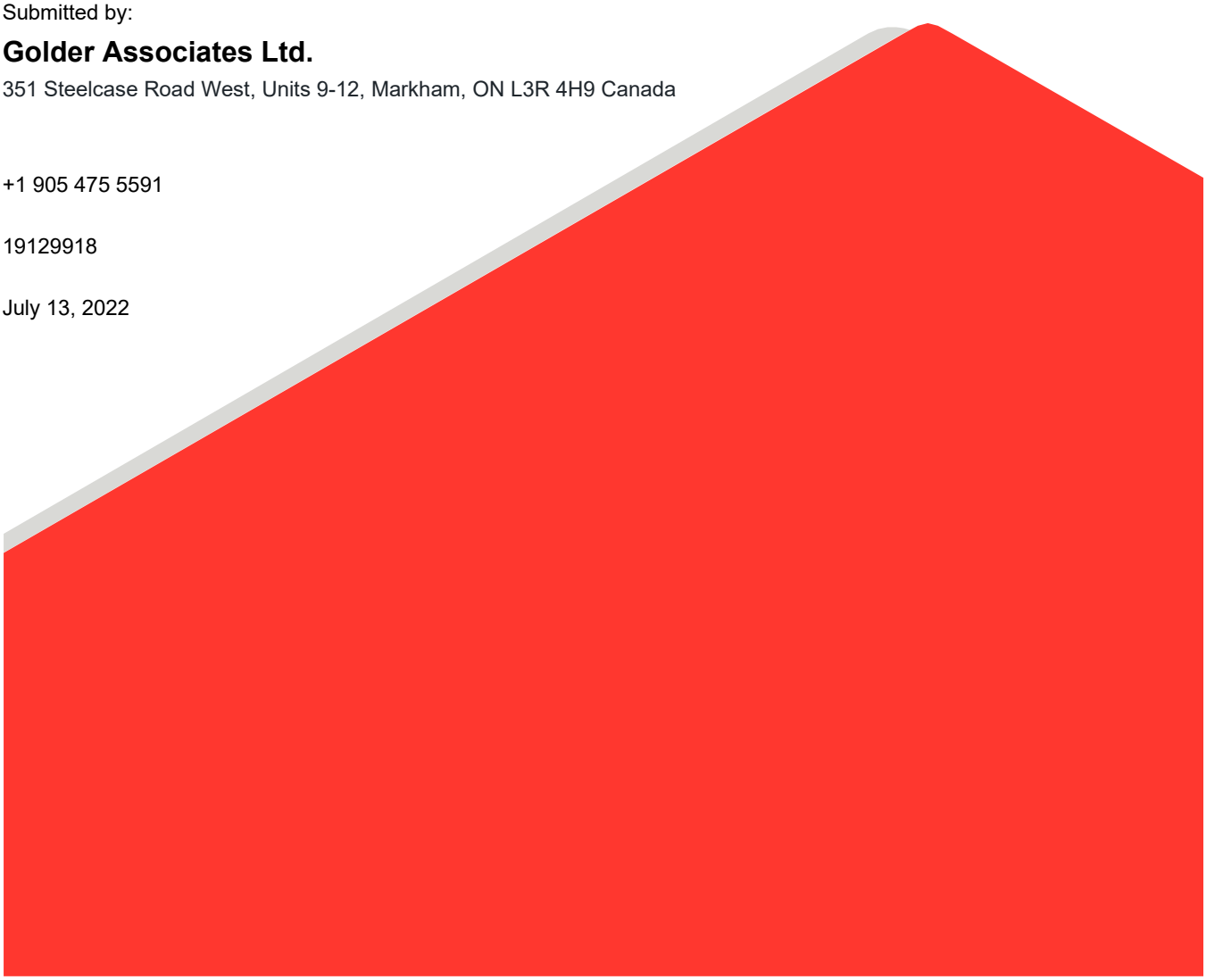
19129918

July 13, 2022



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APPENDICES

1.0 INTRODUCTION

Golder Associates Ltd., a Member of WSP, ("Golder") has been retained by First Capital Asset Management LP ("FCAM" or "Client") to provide geotechnical and hydrogeological consulting services in support of the design for the proposed commercial and residential development (the "project") to be located southwest of the intersection of Lawrence Avenue East and The Donway West (the "Site") in Toronto, Ontario, at the location shown on Figure 1. The terms of reference for the consulting services are included in Golder's proposal No. P19129915 dated October 4, 2019. Authorization to proceed with the investigation was obtained in the form of the signed proposal received on February 25, 2020 from FCAM.

This report provides the results of the geotechnical exploration and testing and should be read in conjunction with the *"Important Information and Limitations of This Report"* in Appendix A which forms an integral part of this document. The reader's attention is specifically drawn to this information, as it is essential for the proper use and interpretation of this report. The data, interpretations and recommendations contained in this report pertain to a specific project as described in the report and are not applicable to any other project or site location. If the project is modified in concept, location or elevation, or if the project is not initiated within eighteen months of the date of the report, Golder should be given an opportunity to confirm that the recommendations in this report are still valid.

1.1 Site and Project Description

The Site is located at 895 Lawrence Avenue East, North York, Ontario (M3C 3L2), at the southwest corner of the intersection of Lawrence Avenue East and The Donway West in Toronto, Ontario, as shown on Figure 2. The site is bordered on the north by Lawrence Avenue East, on the east and south by The Donway West and on the west by four-storey and one-storey commercial buildings. The Site is currently occupied by a one-storey commercial building in the northwest portion of the Site and a paved parking area and access roads in the remainder of the Site. Based on the topographic survey of the Site, the ground surface generally slopes downward from the west to the east with geodetic elevations ranging from approximately 146 metres (m) to 143 m. Along the western boundary of the Site, a retaining wall about 1 m to 1.5 m high separates the property from the neighbouring property, which is at a higher elevation.

At the time of preparing this report, the conceptual drawings provided by FCAM indicated that the proposed development consist of two towers (22 and 17 storeys) connected by a 6-storey podium. The towers will be for residential use and the podium will be mixed-use commercial and residential. All of the buildings will have a common underground parking structure extending to two levels below grade, which will be approximately 6 m below finished grade.

1.1.1 Topography and Drainage

The ground surface at the Site is relatively flat, with ground surface elevations ranging from approximately 143 metres above sea level (masl) in the east to 146 masl in the west. It is assumed that surface water (i.e., rainfall) at the Site discharges to the municipal sewer system. The closest surface water features to the Site are Willet Creek approximately 1 kilometre (km) to the west, and the Don River approximately 1.1 km to the east.

1.1.2 Geology and Physiography

Physiographic mapping in the area indicates that the Site lies within the physiographic region of southern Ontario known as the South Slope (Chapman and Putnam, 2007). The South Slope region slopes gradually downward towards Lake Ontario. The overburden immediately below ground surface within the South Slope generally consists of clayey silt till and silty clay till and at depth consists of alternating deposits of dense lacustrine sands and silts

and over consolidated lacustrine clays and clay tills overlying the bedrock. Geological mapping conducted by the Ontario Geological Survey (OGS) indicates that the surficial geology at the Site consists of stone-poor silty sand to sandy silty till (OGS, 2010).

1.1.3 Groundwater Use

It is expected all the properties within 500 m of the Site are connected to the municipal water supply system. A review was conducted of the Ministry of the Environment, Conservation and Parks (MECP) water well database in the vicinity of the Site (Appendix B). The MECP records indicate 52 water well records are located within approximately 500 m of the Site, and all of the records are associated with monitoring wells (i.e., observation wells) completed at depths of between 2 and 6 mbgs. No water supply well records were noted within 200 m of the Site.

1.2 Scope of Work

The scope of work for the hydrogeological investigation consisted of:

- Assessing the local hydrogeological setting of the site based on a review of published information sources, including topographic and geologic mapping, the MECP Water Well Record database and available site-specific reports;
- Completing a drilling and monitoring well installation program as part of the concurrent geotechnical investigation. Five monitoring wells were installed at the Site;
- Conducting single-well response testing at each monitoring well to estimate the hydraulic conductivity of the material adjacent to the screened intervals;
- Collecting groundwater samples from one of the monitoring wells (plus one QA/QC duplicate sample), for analysis of the City of Toronto sewer use by-law parameters;
- Monitoring groundwater levels at each well on six events over a period of three months (i.e., bi-weekly measurements);
- Assessing adjacent infrastructure and providing comments on potential geotechnical impacts (i.e., settlement) from dewatering on structures within the zone of influence; and,
- Preparing a report summarizing the methods, data and findings of the investigation, including characterization of subsurface conditions based on field findings and a description of the groundwater quality including an assessment of potential groundwater discharge options (i.e., provide a comparison of existing groundwater quality to the sewer discharge limits). The report includes an estimate of short-term dewatering rates for construction purposes and long-term dewatering rates for a permanent sub-grade drainage system based on available designs provided to Golder, an assessment of dewatering impacts to surrounding features, comments on discharge management and comments on the need for water taking permitting from the MECP.

2.0 INVESTIGATION PROCEDURE

2.1 Drilling and Well Installations

The combined drilling investigation for this assignment was carried out from March 19 to 27, 2020, during which time five boreholes (designated as BH20-1 to BH20-5) were advanced. The boreholes for the investigation were drilled using a standard truck-mounted CME75 drill rig supplied and operated by DBW Drilling Limited of Ajax, Ontario, subcontracted to Golder. The approximate borehole locations are shown on the Figure 2. The monitoring wells each consisted of a 50-millimetre (mm) diameter PVC riser pipe, with a slotted screen sealed at a selected depth within the borehole. A sand filter pack was placed around the screen, and above the screen the annular space was backfilled to the surface with bentonite. The borehole logs and well completion details are provided in Appendix C.

The field work for this investigation was observed by members of Golder's technical staff, who located the boreholes in the field, arranged for the clearance of underground utilities, observed the borehole drilling, sampling and in situ testing operations, logged the boreholes as well as examined and took custody of the recovered soil samples.

The geodetic ground surface elevations at the borehole locations were determined from elevation references taken from a survey plan provided by FCAM, titled, "*Topographic Plan of Part of Blocks B and C, Registered Plan 4545, City of Toronto,*" prepared by Schaeffer Dzaldov Bennett Ltd., dated June 26, 2013, and as such, the elevations given on the Record of Borehole sheets and referred to herein should be considered to be approximate.

2.2 Soil Conditions

In general, the subsurface conditions encountered at the boreholes consisted of the existing pavement structure underlain by fill, extending to depths ranging from about 0.3 to 1.0 m below the existing ground surface. The native material at the Site generally consisted of interlayered deposits of silty clay, clayey silt, silt and silty sand till. A deeper silty clay/clayey silt unit was noted at the bottom of each borehole. The soil consistency generally varied from hard to very dense. Table 1 (below) summarizes the general geological conditions at the Site based on the results of the drilling program. Figure 3 illustrates the inferred geologic profile at the Site.

Table 1: Site Geology

Stratigraphic Unit	Approximate Depth (mbgs)
Fill	0.0 – 1.0
Interlayered silt, silty sand, and silty clay till	0.4 – 14.0
Silty clay/clayey silt till	8.5 – 17.0

The Record of Borehole sheets indicate the subsurface conditions at the borehole locations only. The stratigraphic boundaries shown on the borehole records are inferred from non-continuous sampling, observations of drilling progress as well as results of Standard Penetration Tests and, therefore, typically represent transitions between soil types rather than exact planes of geological/stratigraphic change. Subsurface soil conditions will vary between and beyond the borehole locations.

2.3 Groundwater Level Measurements

Water level measurements for the current investigation were collected at the Site starting in May 2020. Water levels were measured at each location with an electronic water level tape, which was cleaned between well locations. Table A (attached) provides a summary of all available water level measurements, including measurements collected to date as part of the current study.

The depth to groundwater at the Site was found to be at depths ranging from approximately 3.3 m below ground surface (bgs) to 4.5 mbgs. The water levels generally declined on the order of 5 to 10 centimetres (cm) over the period of monitoring between May and July, which is generally consistent with seasonal water level fluctuations over the summer months in southern Ontario. The lateral groundwater flow direction in the shallow overburden is to the east (Figure 2). It is expected that depth to groundwater at the Site will vary both on a seasonal and year over year basis.

2.4 Hydraulic Conductivity

Single-well response testing was carried out by Golder on May 13, 2020 at each of the newly installed monitoring wells. This testing was carried out by rapidly purging a known volume of water from each well with a dedicated disposable bailer and monitoring the subsequent water level recovery.

The Bouwer-Rice (1976) method for unconfined conditions was applied to rising head test data. The data was analyzed using the AQTESOLV for Windows version 4.50 Professional software. The single-well response testing AQTESOLV printouts are provided in Appendix C. The hydraulic conductivity values for the various overburden units ranged from about 1 x 10^{-8} to 3 x 10^{-9} m/s in the silty clay till and 1 x 10^{-7} to 3 x 10^{-6} m/s in the silt and silty sand (see Table A, attached).

2.5 Groundwater Quality

Groundwater quality samples were collected from monitoring well BH21-3 on June 27, 2022, according to standard environmental practices. The samples were stored on ice following collection, and were delivered to AGAT Laboratories of Mississauga, Ontario for analysis of the parameters stipulated under the City of Toronto Municipal Code, Chapter 681 by-law. The laboratory analytical data sheets are provided in Appendix D. The sampling results indicate that the concentrations of all the parameters stipulated under the by-law were below their respective by-law limit values for both storm and sanitary sewer discharge.

3.0 DEWATERING EVALUATION

Based on the design information currently available the proposed development consist of two towers (22 and 17 storeys) connected by a 6-storey podium. All of the buildings will have a common underground parking structure extending to two levels below grade, which will be approximately 6 m below finished grade. The geotechnical report (Golder, 2020) indicates that the depths for the shallow foundations will be 1 to 2 m below the finished basement floor and suggests the deepest footing base elevation would be approximately 139.1 masl. The highest measured water table elevation at the Site is approximately 141.3 masl (Table A). As such it is expected that placement of the foundations and bottom building slab would be a maximum of 2.2 m below the water table, and in excavation control of groundwater and incident precipitation will be required. Based on the geological profile (Figure 3) it is expected that groundwater inflow would occur primarily from within the uppermost silty sand/sandy silt till.

F or the purpose of determining dewatering rates and the zone of influence (ZOI), Golder has assumed that dewatering will be carried out as follows:

- The groundwater level will be controlled at no more than 0.5 m below the base on the footing levels (i.e., a minimum of 138.6 masl);
- Surface water runoff will be directed away from any open excavation; and,
- Groundwater should be pumped in a manner to prevent loss of ground.

Regardless of the above assumptions, the method of construction dewatering is to be solely determined by the Contractor based on their own assessment of the Site-specific conditions, and likely by their specialist dewatering contractor.

3.1 Drawdown Estimate

The amount of drawdown in the water table will depend on both the depth to groundwater and depth of the required excavations. The measured depth to groundwater was found to vary across the Site, ranging from about 3.3 to 4.6 m bgs, or from about 138.5 to 141.3 masl. As the water level measurements were collected during the late spring it is expected that the recorded measurements are close to the seasonal high water levels for the Site. Excavations for footing installations would run the length of the proposed building. Based on the conceptual drawings provided by the Client the building footprint will be approximately 100 m long from east to west, and 50 m wide from north to south. As shown on Figure 3, the depth to groundwater will vary over the excavation length, gradually dropping from west to east. To provide a conservative estimate of the required drawdown the highest measured groundwater elevation (141.3 masl) was compared to the lowest required water level (138.6 masl), for a maximum required drawdown of 2.8 m.

3.2 Water Taking Needs

In order to estimate the potential dewatering requirements for utility excavation at the Site the dewatering Zone of Influence (ZOI) must be calculated. The ZOI represents the lateral extent of groundwater drawdown in response to potential dewatering. Applying the Sichart and Kyrieleis empirical relationship, the lateral extent of groundwater level drawdown is estimated as follows:

$$R_0 = 3000s\sqrt{K}$$

Where:

R_0 = distance to zero drawdown (i.e., limit of influence) (m);

s = theoretical drawdown at the excavation wall; and

K = hydraulic conductivity of the material

Using the geometric mean of the measured hydraulic conductivity measurements in the silty and silty sand (1×10^{-6} m/s) and the estimated maximum required drawdown of 2.8 m, the ZOI, which is taken as the distance to zero drawdown, is calculated to be 8 m.

3.3 Construction Dewatering Rates

To assess potential dewatering rates within the surficial deposits to allow excavation of the proposed building footprint, the steady state dewatering rate is estimated for an unenclosed excavation 100 m long by 50 m wide with a maximum drawdown of 2.8 m. The dewatering rate (“Q”) is estimated using a modified version of Jacob’s equation for unconfined aquifer conditions:

$$Q = \left[\frac{xK(H^2 - {h_w}^2)}{2L}\right]$$

Where:

Q = Dewatering rate (m^3/s)
H = initial groundwater level (2.8 m)
x = excavation wall length (300 m)
K = hydraulic conductivity (1 x 10^{-6} m/s)
h = final groundwater level (0 m)
L = zone of influence, ZOI (8 m)

Based on the above information the steady-state dewatering rate for the full excavation footprint is calculated to be 14 m^3/day. Assuming a safety factor of two to provide a conservative estimate, the steady dewatering rate is therefore assumed to be 28 m^3/day.

Additional inflow will occur as a result of pore water storage release from the till material within the ZOI (a soil volume of approximately 1,120 m^3 or 112 m^3 of pore water (assuming a specific yield of 10%). The rate of this storage release is, in part, dependent on the rate of excavation. In this case, we assume that the overall excavation would be completed within a 14-day period, resulting in an additional 8 m^3/day of inflow. Finally, assuming a 30 mm rain event occurs over the excavation area during the higher dewatering rate period, another 150 m^3 of water would require removal. Assuming removal of the incident rainfall within one day, an estimated total water taking of 172 m^3/day would be required for construction dewatering purposes as part of subsurface construction activities. Management and disposal of groundwater and incident rainfall will be required during construction. Options for disposal typically include off-site trucking and disposal or discharge to the municipal sewer system. A temporary discharge permit would be required if discharge the sewer system is to be implemented.

Based on the above calculations the construction dewatering requirements for subsurface construction activities will be below the 400 m^3/day threshold for a Permit to Take Water, and but will be above the 50 m^3/day threshold for an Environmental Activity Sector Register (EASR).

3.4 Long-Term Drainage

It is understood that the current design plans include use of a water-tight (i.e., tanked or bath-tubbed) foundation. As such, there will be no long-term post-construction dewatering activities or water taking/discharge at the Site.

4.0 ASSESSMENT OF POTENTIAL DEWATERING EFFECTS

4.1 Geotechnical Assessment

Section 3.2 discusses the lateral extent of the anticipated groundwater drawdown for the proposal excavation due to temporary construction dewatering. The drawdown curve indicates that:

- The drawdown is zero at approximately 8 m from the pumping source in the fill and native deposits;
- For a drawdown of about 1.0 m in the fill and non-cohesive native deposits, the distance from the pumping source is approximately 5 m; and,
- The maximum anticipated drawdown is 2.8 m at the edge of the planned excavation.

For the purpose of this assessment, the predicted zone of influence due to groundwater dewatering will depend on the depth of excavations, lateral extent (width) of the excavations and most importantly the depth and locations of the dewatering well points (if any) from the structures.

Lowering of the groundwater table by about 1.0 m at the nearest foundations / structures will result in an increase in effective stress of about 10 kPa. As this is a relatively small increase, the impacts of such groundwater lowering are considered to be negligible at distances beyond 5 m from the pumping source. The maximum drawdown of 2.8 m will result in an increase in effective stress of about 28 kPa and, based on the stratigraphy encountered in the boreholes advanced at the Site, this temporary increase in effective stress is estimated to result in settlements of approximately 4 mm immediately adjacent to the point of groundwater extraction.

A review of the Site indicates that along the western boundary two buildings are located about 5 m away from the property line. Settlements induced by dewatering at a distance of 5 m from the pumping source are estimated to be about 1 mm. Along the north, east and south boundaries, the light poles and signs are located along the sidewalk about 3 m from the property boundary. At a distance of 3 m from the property line, an estimated maximum settlement of only about 2.5 mm would be anticipated at the ground surface. Considering the maximum anticipated settlement and the distances of the adjacent structures, buildings, utilities, electrical poles or signs from the property line, the impacts of the dewatering can be considered to be negligible.

4.2 Groundwater Resources

As noted in Section 1.1.3, no private water wells are located within the immediate vicinity of the Site or within the estimated ZOI, and the entire Site is outside of any wellhead protection area for water quantity or quality. Based on the estimated dewatering requirements and dewatering zone of influence (ZOI) (see Section 3.2) as part of the construction activities, it is not anticipated that temporary dewatering activities pose a risk to any water supply wells.

4.3 Surface Water Resources

Disposal options for diverted water are expected to include off-Site trucking or discharge to the sewer system. No watercourse features are located in close proximity to the Site. Based on the small size of the predicted ZOI, and the temporary nature of dewatering and discharge activities, dewatering activities are not expected to have any effect on surface water features or on the natural environment.

5.0 CLOSURE

We trust that this report is suitable for your current requirements. If you have any questions regarding the contents of this report or require additional information, please do not hesitate to contact this office.

Signature Page

Golder Associates Ltd.

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Hydrogeologist

Mark A. Swallow, M.A.Sc., P.E., P.Eng.
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DD/MAS/sat

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REFERENCES

Chapman, L.J., and Putnam, D.F., 2007, *"The Physiography of Southern Ontario"*; 4th Edition, Ontario Geological Survey.

Ontario Geological Survey. 2010. Surficial geology of Southern Ontario; Ontario Geological Survey, Miscellaneous Release--Data 128-REV.

Table A

Table A
Groundwater Level Measurements

Well ID	Borehole Depth (mbgs)	Ground Surface (masl)	Stick-up (m)	Measurement Date	Water Level (mbtoc)	Water Level (mbgs)	Water Level (masl)	Hydraulic Conductivity (m/s)	Primary Unit
BH20-1	12.20	142.90	-0.10	13-May-20	4.30	4.40	138.50	1.0E-07	silty clay/silty sand
				21-May-20	4.29	4.39	138.51		
				5-Jun-20	4.25	4.35	138.55		
				16-Jun-20	4.26	4.36	138.54		
				7-Jul-20	4.31	4.41	138.49		
				22-Jul-20	4.34	4.44	138.46		
BH20-2	17.80	144.00	-0.10	13-May-20	3.44	3.54	140.46	3.5E-09	silty clay/clayey silt till
				21-May-20	3.79	3.89	140.11		
				5-Jun-20	3.68	3.78	140.22		
				16-Jun-20	3.57	3.67	140.33		
				7-Jul-20	3.58	3.68	140.32		
				22-Jul-20	3.57	3.67	140.33		
BH20-3	12.20	145.80	-0.10	13-May-20	4.36	4.46	141.34	3.4E-06	silt
				21-May-20	4.37	4.47	141.33		
				5-Jun-20	4.40	4.50	141.30		
				16-Jun-20	4.38	4.48	141.32		
				7-Jul-20	4.40	4.50	141.30		
				22-Jul-20	4.52	4.62	141.18		
BH20-4	11.70	143.60	-0.10	13-May-20	3.21	3.31	140.29	3.6E-06	silty sand/silt
				21-May-20	3.23	3.33	140.27		
				5-Jun-20	3.24	3.34	140.26		
				16-Jun-20	3.25	3.35	140.25		
				7-Jul-20	3.26	3.36	140.24		
				22-Jul-20	3.26	3.36	140.24		

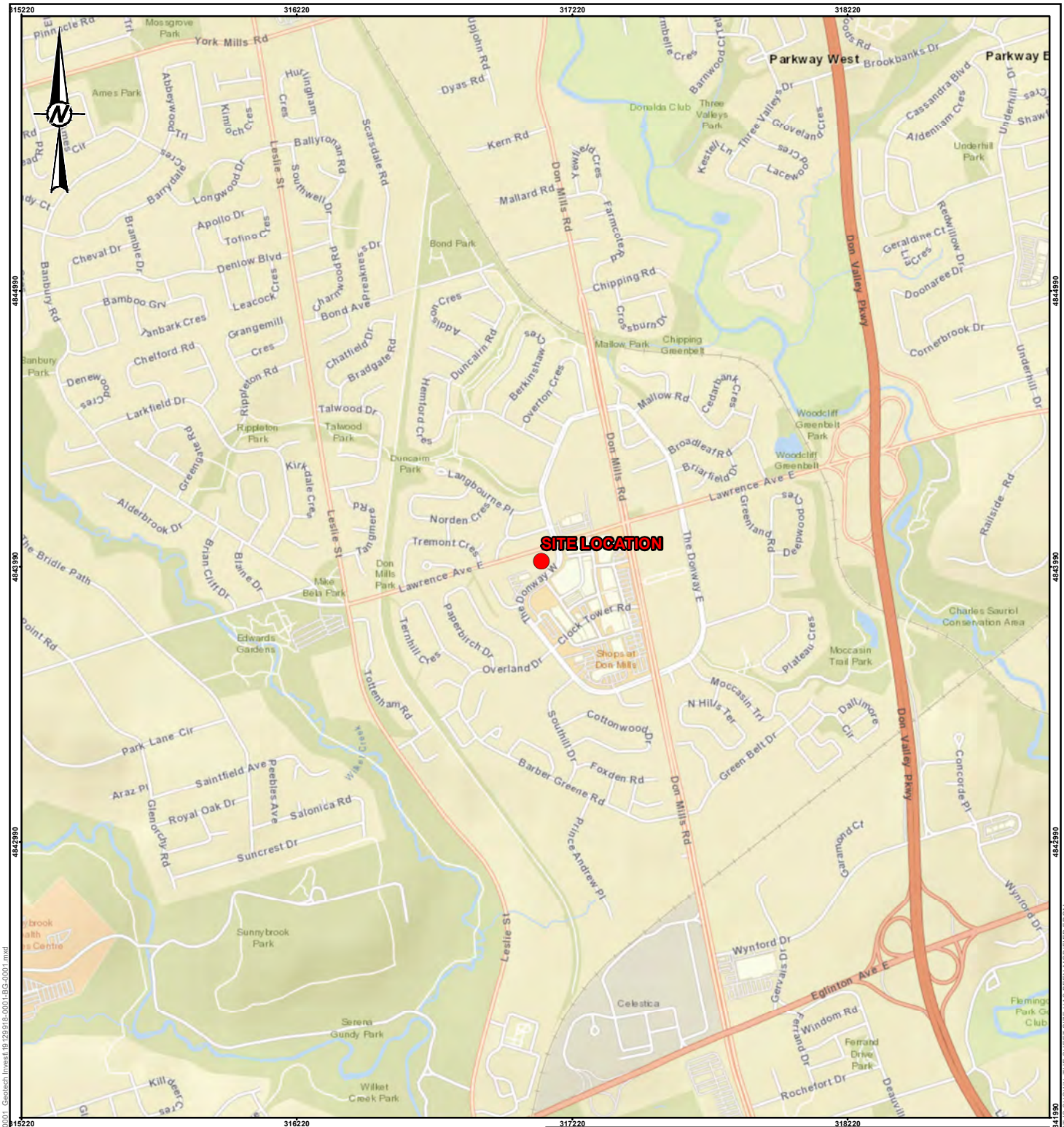
Table A
Groundwater Level Measurements

Well ID	Borehole Depth (mbgs)	Ground Surface (masl)	Stick-up (m)	Measurement Date	Water Level (mbtoc)	Water Level (mbgs)	Water Level (masl)	Hydraulic Conductivity (m/s)	Primary Unit
BH20-5	16.8	144.6	-0.06	13-May-20	3.53	3.59	141.01	1.1E-08	silty clay/clayey silt till
				21-May-20	3.47	3.53	141.07		
				5-Jun-20	3.50	3.56	141.04		
				16-Jun-20	3.50	3.56	141.04		
				7-Jul-20	3.56	3.62	140.98		
				22-Jul-20	3.60	3.66	140.94		

Notes:

1. m toc meters below top of casing
2. masl meters above sea level
3. m bgs meters below ground surface
4. Table to be read in conjunction with accompanying report
5. Superscript [1] denotes approximate stickups

Figures



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REFERENCE(S)

SERVICE LAYER CREDITS: SOURCES: ESRI, HERE, GARMIN, USGS, INTERMAP, INCREMENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), ESRI KOREA, ESRI (THAILAND), NGCC, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
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PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17N

CLIENT
FIRST CAPITAL ASSET MANAGEMENT (FCAM) LP

PROJECT
HYDROGEOLOGICAL ASSESSMENT
PROPOSED REDEVELOPMENT OF 895 LAWRENCE AVENUE EAST, NORTH YORK, ONTARIO

TITLE
KEY PLAN

CONSULTANT
GOLDER

YYYY-MM-DD	2020-04-08
DESIGNED	
PREPARED	MK / JPR
REVIEWED	DPD
APPROVED	-

PROJECT NO. 19129918 CONTROL REV. FIGURE **1**

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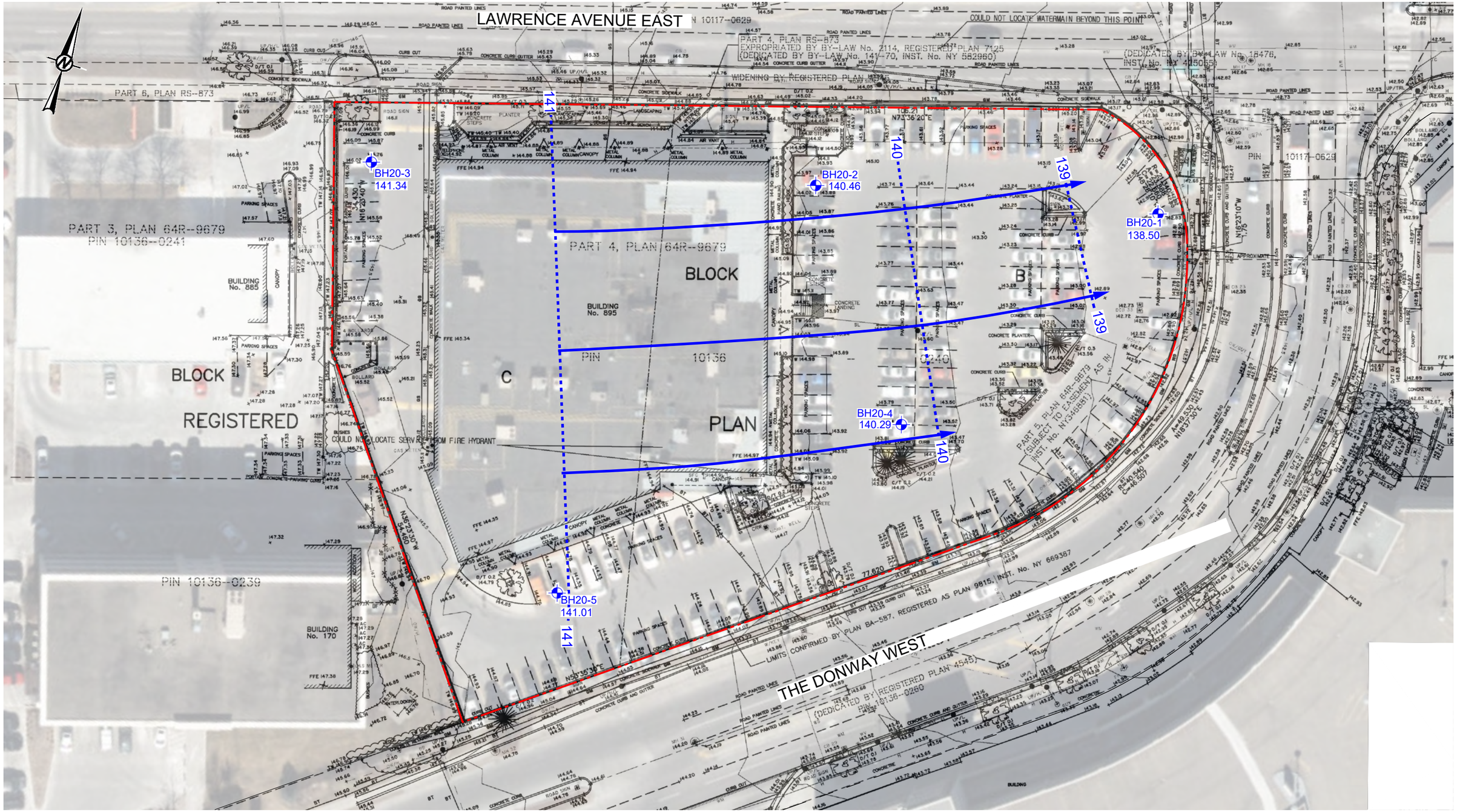

LEGEND

- BOREHOLE LOCATION
- 141.01 STATIC WATER ELEVATION 31 MAY 2020 (masl)
- GROUNDWATER CONTOUR (masl)
- INFERRED DIRECTION OF GROUNDWATER FLOW

0 10 20
1:500 METRES

REFERENCE(S)
BASE MAP TAKEN FROM SCHAEFFER DZALDOV BENNETT LTD., DATED JUNE, 2013, DELIVERED IN FORMAT PDF

NOTE
EXISTING ORTHOGRAPHIC IMAGE UNDERLAIN PROPOSED REDEVELOPMENT SURVEY PLAN

CLIENT
FIRST CAPITAL ASSET MANAGEMENT (FCAM) LP

CONSULTANT
GOLDER

YYYY-MM-DD	2020-09-03
DESIGNED	
PREPARED	JPR
REVIEWED	DPD
APPROVED	

PROJECT
HYDROGEOLOGICAL ASSESSMENT
PROPOSED REDEVELOPMENT OF 895 LAWRENCE AVE EAST
NORTH YORK, ONTARIO

TITLE
BOREHOLE LOCATION PLAN
GROUNDWATER FLOW 31 MAY 2020

PROJECT NO.	CONTROL	REV.	FIGURE
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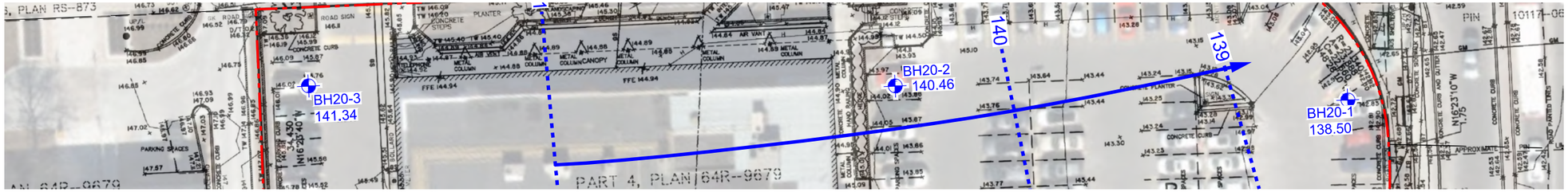

W

E

SOIL PATTERN LEGEND AND GENERIC SHADING

- ORGANICS / TOPSOIL
- FILL
- SAND
- SAND TRACE SILT
- SILTY SAND
- SILTY GRAVELLY SAND
- SILT
- SANDY SILT
- GRANULAR TILL
- SILT TILL
- SILTY CLAY TILL
- SILTY SAND / SANDY SILT TILL

PLAN LEGEND

- Borehole With Monitoring Well
- Borehole

SECTION WELL SYMBOLS

- BH1 — Borehole ID
- Recorded Static Water Level
- Screen
- 10 — 'N Value

NOTES:

TO BE READ IN CONJUNCTION WITH REPORTING WITHIN WHICH ILLUSTRATION IS BOUND. LOCATION AND ELEVATIONS OF FIELD VERIFIED WELLS ARE SUBJECT TO REVISION.

BOUNDARIES BETWEEN SOIL STRATA HAVE BEEN DETERMINED ONLY AT WELL AND TEST WELL LOCATIONS. BETWEEN THE WELLS AND TEST WELLS, BOUNDARIES ARE NOT PROVEN BUT ARE ASSUMED FROM GEOLOGICAL EVIDENCE.

0 10 20 30 m
1:500

CLIENT
FIRST CAPITAL ASSET MANAGEMENT (FCAM) LP

CONSULTANT
GOLDER

YYYY-MM-DD	2020-09-03
DESIGNED	
PREPARED	JPR
REVIEWED	DPD
APPROVED	

PROJECT
HYDROGEOLOGICAL ASSESSMENT
PROPOSED REDEVELOPMENT OF 895 LAWRENCE AVE EAST
NORTH YORK, ONTARIO

TITLE
STRATIGRAPHIC CROSS-SECTION

PROJECT NO.	CONTROL	REV.	FIGURE
19129918	0002	----	3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

APPENDIX A

Important Information and Limitations

IMPORTANT INFORMATION AND LIMITATIONS OF THIS REPORT

Standard of Care: Golder Associates Ltd. (Golder) has prepared this report in a manner consistent with that level of care and skill ordinarily exercised by members of the engineering and science professions currently practising under similar conditions in the jurisdiction in which the services are provided, subject to the time limits and physical constraints applicable to this report. No other warranty, expressed or implied is made.

Basis and Use of the Report: This report has been prepared for the specific site, design objective, development and purpose described to Golder by the Client. The factual data, interpretations and recommendations pertain to a specific project as described in this report and are not applicable to any other project or site location. Any change of site conditions, purpose, development plans or if the project is not initiated within eighteen months of the date of the report may alter the validity of the report. Golder cannot be responsible for use of this report, or portions thereof, unless Golder is requested to review and, if necessary, revise the report.

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The report is of a summary nature and is not intended to stand alone without reference to the instructions given to Golder by the Client, communications between Golder and the Client, and to any other reports prepared by Golder for the Client relative to the specific site described in the report. In order to properly understand the suggestions, recommendations and opinions expressed in this report, reference must be made to the whole of the report. Golder can not be responsible for use of portions of the report without reference to the entire report.

Unless otherwise stated, the suggestions, recommendations and opinions given in this report are intended only for the guidance of the Client in the design of the specific project. The extent and detail of investigations, including the number of test holes, necessary to determine all of the relevant conditions which may affect construction costs would normally be greater than has been carried out for design purposes. Contractors bidding on, or undertaking the work, should rely on their own investigations, as well as their own interpretations of the factual data presented in the report, as to how subsurface conditions may affect their work, including but not limited to proposed construction techniques, schedule, safety and equipment capabilities.

Soil, Rock and Ground Water Conditions: Classification and identification of soils, rocks, and geologic units have been based on commonly accepted methods employed in the practice of geotechnical engineering and related disciplines. Classification and identification of the type and condition of these materials or units involves judgment, and boundaries between different soil, rock or geologic types or units may be transitional rather than abrupt. Accordingly, Golder does not warrant or guarantee the exactness of the descriptions.

Special risks occur whenever engineering or related disciplines are applied to identify subsurface conditions and even a comprehensive investigation, sampling and testing program may fail to detect all or certain subsurface conditions. The environmental, geologic, geotechnical, geochemical and hydrogeologic conditions that Golder interprets to exist between and beyond sampling points may differ from those that actually exist. In addition to soil variability, fill of variable physical and chemical composition can be present over portions of the site or on adjacent properties. The professional services retained for this project include only the geotechnical aspects of the subsurface conditions at the site, unless otherwise specifically stated and identified in the report. The presence or implication(s) of possible surface and/or subsurface contamination resulting from previous activities or uses of the site and/or resulting from the introduction onto the site of materials from off-site sources are outside the terms of reference for this project and have not been investigated or addressed.

Soil and groundwater conditions shown in the factual data and described in the report are the observed conditions at the time of their determination or measurement. Unless otherwise noted, those conditions form the basis of the recommendations in the report. Groundwater conditions may vary between and beyond reported locations and can be affected by annual, seasonal and meteorological conditions. The condition of the soil, rock and groundwater may be significantly altered by construction activities (traffic, excavation, groundwater level lowering, pile driving, blasting, etc.) on the site or on adjacent sites. Excavation may expose the soils to changes due to wetting, drying or frost. Unless otherwise indicated the soil must be protected from these changes during construction.

Sample Disposal: Golder will dispose of all uncontaminated soil and/or rock samples 90 days following issue of this report or, upon written request of the Client, will store uncontaminated samples and materials at the Client's expense. In the event that actual contaminated soils, fills or groundwater are encountered or are inferred to be present, all contaminated samples shall remain the property and responsibility of the Client for proper disposal.

Follow-Up and Construction Services: All details of the design were not known at the time of submission of Golder's report. Golder should be retained to review the final design, project plans and documents prior to construction, to confirm that they are consistent with the intent of Golder's report.

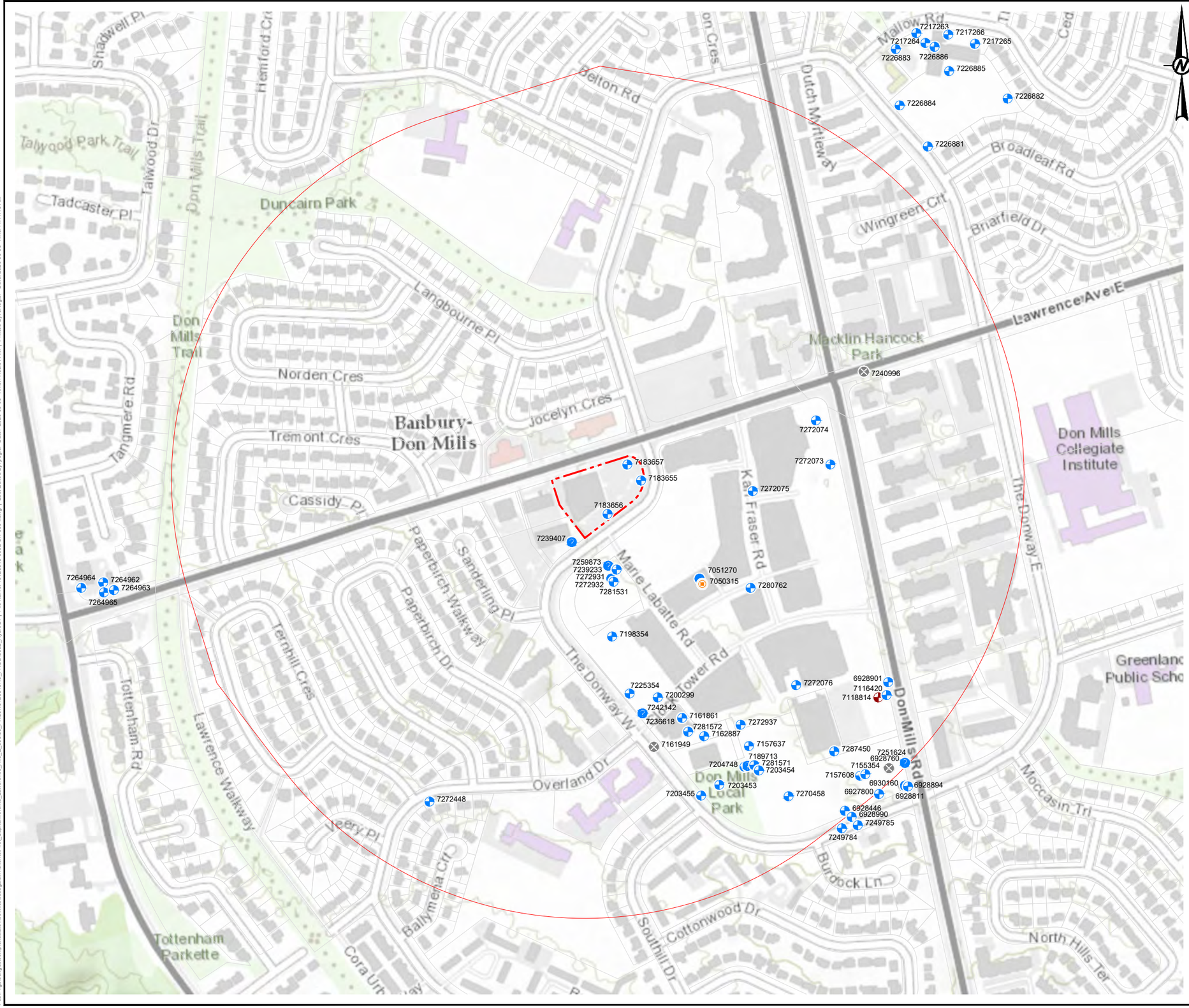
During construction, Golder should be retained to perform sufficient and timely observations of encountered conditions to confirm and document that the subsurface conditions do not materially differ from those interpreted conditions considered in the preparation of Golder's report and to confirm and document that construction activities do not adversely affect the suggestions, recommendations and opinions contained in Golder's report. Adequate field review, observation and testing during construction are necessary for Golder to be able to provide letters of assurance, in accordance with the requirements of many regulatory authorities. In cases where this recommendation is not followed, Golder's responsibility is limited to interpreting accurately the information encountered at the borehole locations, at the time of their initial determination or measurement during the preparation of the Report.

Changed Conditions and Drainage: Where conditions encountered at the site differ significantly from those anticipated in this report, either due to natural variability of subsurface conditions or construction activities, it is a condition of this report that Golder be notified of any changes and be provided with an opportunity to review or revise the recommendations within this report. Recognition of changed soil and rock conditions requires experience and it is recommended that Golder be employed to visit the site with sufficient frequency to detect if conditions have changed significantly.

Drainage of subsurface water is commonly required either for temporary or permanent installations for the project. Improper design or construction of drainage or dewatering can have serious consequences. Golder takes no responsibility for the effects of drainage unless specifically involved in the detailed design and construction monitoring of the system.

APPENDIX B

Water Well Database Records



MAP KEY

PLAN LEGEND

DEVELOPMENT BOUNDARY WITH 500 m OFFSET

SANDPOINT / DEWATERING PIEZOMETER

DRILLED OVERBURDEN WELL

TEST OR OBSERVATION WELL

MONITORING NEST CENTROID

REFERENCES & DISCLAIMERS

MINISTRY OF ENVIRONMENT WATER WELL INFORMATION SYSTEM, QUEEN'S PRINTER. LOCATION AND ELEVATIONS OF MAPPED WELLS ARE SUBJECT TO REVISION BASED ON DRILL RECORD OR FIELD VERIFICATION.

ALIGNMENT OF ORTHOGRAPHIC IMAGERY IS APPROXIMATED TO SELECT FEATURES ON DATUM. AWAY FROM POINTS OF ALIGNMENT THE ORTHOGRAPHIC IMAGE MAY BE DIMENSIONALLY SKEWED OR PROJECTED OFF THE MAP DATUM PLANE.

0 100 200 300 m

1:5000

PLOTTED 11X17" TABLOID

PROJECTION IS UTM NAD 83 ZONE 17

CLIENT

FIRST CAPITAL ASSET MANAGEMENT (FCAM) LP

PROJECT

HYDROGEOLOGICAL AND GEOTECHNICAL EXPLORATION
PROPOSED REDEVELOPMENT OF 895 LAWRENCE AVE EAST
NORTH YORK, ONTARIO

TITLE

MINISTRY RECORDED WELLS

CONSULTANT

GOLDER

YYYY-MM-DD	2020-09-03
DESIGNED	
PREPARED	JPR
REVIEWED	DPD
APPROVED	

PROJECT NO.	CONTROL	REV.	FIGURE
19129918	0002	----	4

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

25 mm

0

Path: \\golder.gds\complexdata\toffice\mississauga\sim\Client\First_Capital\Toronto_Lawrence_Ave_E_895\99_PROJ\19129918\40_PROD\0002_HydroGi | File Name: 19129918-0002-CH-0004.dwg | Last Edited By: jregier Date: 2020-09-03 Time:11:38:01 AM | Printed By: JRegier Date: 2020-09-03 Time:11:41:46 AM

LABEL	CON LOT	DATE mmm-yr	EASTING NORTHING	ELEV masl	WTR FND mbgl	Qu	SCR TOP mbgl	LEN m	SWL mbgl	RATE L/min	TIME min	PL mbgl	DRILLER METHOD	TYPE STAT	WELL NAME DESCRIPTION OF MATERIALS
6927800		Mar-04	633460 4843470	127.1			4.9	-3.0	NR				6607 -	OW -	**MOE# 6927800 TAG#A010211** 0.0 BRWN SAND GRVL FILL 3.0 BRWN SAND 7.9
6928446		Jun-04	633415 4843448	146.3			13.1	-6.1	NR				6809 OTH	OW -	**MOE# 6928446 TAG#A011041** 0.0 BRWN SAND SILT 2.1 BRWN SILT SAND 4.9 GREY SILT 7.9 BRWN SAND 18.0 GREY SILT 19.5
6928760		Feb-05	633473 4843504	143.3					NR				6607 BR	AB NU	**MOE# 6928760** 0.0
6928811		Feb-05	633498 4843480	89.6	12.2	Un	16.8	-1.5	NR				6607 -	OW -	**MOE# 6928811 TAG#A021364** 0.0 BRWN SILT SAND 1.5 BRWN SAND 13.7 GREY SILT CLAY 18.3
6928894		Mar-05	633494 4843481	144.2	12.5	Fr	11.6	-6.4	NR				6607 BR	- -	**MOE# 6928894 TAG#A021364** 0.0 BRWN SAND 17.7 GREY CLAY SILT 18.0
6928901		Feb-05	633472 4843617	140.5	7.0	Fr	5.2	-3.0	NR				6607 -	OW -	**MOE# 6928901 TAG#A021374** 0.0 BRWN SAND DRY 7.0 BRWN SAND WBRG 7.6 GREY CLAY SILT DNSE 8.2
6928990		Apr-05	633424 4843440	146.6			11.9	-6.1	NR				1129 OTH	OW -	**MOE# 6928990 TAG#A025755** 0.0 BRWN SAND SILT WBRG 15.8 BRWN SAND LOOS DNSE 17.4 GREY SILT DNSE 18.0
6930160		Apr-06	633492 4843480	144.2			16.5	-1.5	NR				6607 BR	AB -	**MOE# 6930160 TAG#A021364** 0.0
7050315		Sep-07	633224 4843753	143.0	0.9	Fr			NR				6926 OTH	- DW	**MOE# 7050315 TAG#A058475** 0.0 GREY SILT SAND DRY 2.1 GREY SILT SAND SLTY 7.0
7051270		Sep-07	633224 4843753	143.0					NR				6926 -	- -	**MOE# 7051270 TAG#A058475** 0.0 GREY SILT TILL SAND 2.1 GREY SILT TILL SAND 7.0
7116420		Oct-08	633470 4843600	140.8			5.2	-3.4	NR				6032 BR	OW MO	**MOE# 7116420 TAG#A021374** 0.0 WHTE HARD 0.3 BRWN SILT CLAY DNSE 5.8 BRWN SAND CSND SOFT 7.6 GREY SILT CLAY DNSE 8.5
7118814		Sep-08	633459 4843597	141.4	7.9	Fr			NR				6607 -	TH MO	**MOE# 7118814 TAG#A078548** 0.0 BRWN SAND GRVL CLAY 1.5 BRWN MSND DNSE 9.1 GREY SILT CLAY DNSE 9.4
7155354		Oct-10	633442 4843496	143.6			9.8	-3.0	NR				6032 -	OW MO	**MOE# 7155354 TAG#A093909** 0.0 BRWN SAND GRVL PCKD 0.9 BRWN SAND SILT HARD 12.8
7157608		Dec-10	633435 4843494	143.9			11.0	0.0	NR				7215 RC	TH TH	**MOE# 7157608 TAG#A108050** 0.0 BRWN FILL 0.6 BRWN SAND SLTY 11.0
7157637		Nov-10	633289 4843533	146.3			10.7	0.0	NR				7215 RC	TH TH	**MOE# 7157637 TAG#A108048** 0.0 BRWN FILL CGVL SAND 0.9 BRWN SAND 1.8 BRWN TILL SILT GRVL 4.3 GREY TILL SILT GRVL 7.6 GREY TILL SILT GRVL 9.1 GREY SILT SAND WBRG 10.7
7161861		Feb-11	633201 4843570	146.3	6.1	Un	9.1	-3.0	NR				6607 BR	OW MO	**MOE# 7161861 TAG#A110331** 0.0 BRWN SAND GRVL FILL 0.6 GREY SILT CLAY DNSE 4.6 GREY SILT SAND DNSE 6.1 GREY SAND LOOS 12.2

LABEL	CON LOT	DATE mmm-yr	EASTING NORTHING	ELEV masl	WTR FND mbgl Qu	SCR TOP LEN mbgl m	SWL mbgl	RATE L/min	TIME min	PL mbgl	DRILLER METHOD	TYPE STAT	WELL NAME DESCRIPTION OF MATERIALS
7161949		Mar-11	633164 4843532	147.5			NR				7215 -	AB -	**MOE# 7161949** 0.0
7162887		Nov-11	633230 4843546	146.3		11.6 -3.4	NR				7247 BR	OW MO	**MOE# 7162887 TAG#A095122** 0.0 BLCK WSTE 7.9 BRWN GRNT PCKD 25.0 BRWN FILL SILT GRVL 4.6 GREY SILT GRVL SNDY 6.1 BRWN MSND SILT DNSE 10.7 GREY SILT SAND DNSE 14.9
7183655		Jun-12	633147 4843882	143.6		1.8 -1.5	NR				7241 OTH	TH TH	**MOE# 7183655 TAG#A133618** 0.0 BRWN SAND GRVL LOOS 0.3 BRWN SAND SILT LOOS 3.0 GREY SILT CLAY DNSE 3.4
7183656		Jun-12	633103 4843838	144.2		2.4 -3.0	NR				7241 OTH	TH TH	**MOE# 7183656 TAG#A133617** 0.0 BRWN SAND GRVL LOOS 0.3 BRWN SILT SAND LOOS 2.4 GREY SILT SAND LOOS 5.5
7183657		Jun-12	633129 4843903	143.6		3.0 -3.0	NR				7241 OTH	TH TH	**MOE# 7183657 TAG#A133467** 0.0 BRWN SAND GRVL LOOS 0.3 BRWN SILT CLAY DNSE 3.4 GREY SILT CLAY DNSE 6.1
7189713		Jul-12	633287 4843507	146.6			NR				6607 -	- -	**MOE# 7189713 TAG#A132975** 0.0
7198354		Feb-13	633109 4843677	146.9	8.5 Un	7.6 -3.0	NR				7501 RC	TH TH	**MOE# 7198354 TAG#A143121** 0.0 BRWN SILT SAND LOOS 4.6 BRWN SILT SAND DNSE 7.6 GREY SAND SILT DNSE 10.7
7200299		Mar-13	633169 4843597	146.6	10.7 Un	10.7 -3.0	NR				7501 RC	TH TH	**MOE# 7200299 TAG#A143176** 0.0 BRWN CLAY SILT SAND 10.7 BRWN SAND SILT LOOS 13.7
7203453		Jun-13	633250 4843482	146.9		10.7 -3.0	NR				7238 BR	OW TH	**MOE# 7203453 TAG#A146066** 0.0 BRWN FILL GRVL PCKD 1.5 BRWN CLAY SILT HARD 4.6 GREY SILT SAND HARD 9.1 GREY SILT HARD CLAY 13.7
7203454		Jun-13	633302 4843501	146.6		15.2 -1.5	NR				7238 BR	OW TH	**MOE# 7203454 TAG#A146056** 0.0 BRWN FILL GRVL PCKD 1.5 BRWN CLAY HARD GRVL 6.1 BRWN SILT SAND DNSE 10.7 GREY SILT CSND SOFT 13.7 GREY SAND SILT SOFT 16.8
7203455		Jun-13	633226 4843468	147.5		10.7 -3.0	NR				7238 BR	OW TH	**MOE# 7203455 TAG#A146067** 0.0 BRWN FILL GRVL PCKD 1.5 BRWN CLAY SILT HARD 4.6 GREY SILT SAND HARD 9.1 GREY SILT CLAY HARD 13.7
7204748		Jul-13	633283 4843506	146.6	12.2 Un	24.4 -1.5	NR				7238 OTH	OW TH	**MOE# 7204748 TAG#A146062** 0.0 GREY SAND SILT 10.7 GREY SAND SILT 23.2 GREY SILT CLAY 25.3 GREY SAND SILT 25.9
7225354		Jun-14	633132 4843602	147.2		7.6 -1.5	7.9	5	7	8.8	1663 RC	TH TH	**MOE# 7225354 TAG#A146978** 0.0 BRWN TPSL 0.3 BRWN FILL 1.5 BRWN CLAY GRVL 5.5 GREY CLAY GRVL SILT 7.0 BRWN SILT SAND GRVL 9.1
7236618		Nov-14	633149 4843576	147.2			NR				6926 -	- -	**MOE# 7236618 TAG#A162886** 0.0
7239233		Oct-14	633103 4843770	145.7			NR				7230 -	- -	**MOE# 7239233 TAG#A170981** 0.0

LABEL	CON LOT	DATE mmm-yr	EASTING NORTHING	ELEV masl	WTR FND mbgl Qu	SCR TOP LEN mbgl m	SWL mbgl	RATE L/min	TIME min	PL mbgl	DRILLER METHOD	TYPE STAT	WELL NAME DESCRIPTION OF MATERIALS
7239407		Apr-14	633056 4843801	146.0			NR				6809 -	- -	**MOE# 7239407 TAG#A152289** 0.0
7240996		Feb-15	633440 4844025	139.6	1.5 Un		NR				7247 -	AB -	**MOE# 7240996** 0.0
7242142		Apr-15	633149 4843576	147.2			NR				6926 -	- -	**MOE# 7242142 TAG#A162886** 0.0
7249784		Jul-15	633411 4843425	147.2	14.3 Un	13.7 -3.0	NR				6607 BR	OW TH	**MOE# 7249784 TAG#A179876** 0.0 0.3 SAND TILL 2.1 SAND 16.8
7249785		Jul-15	633432 4843429	146.9	13.7 Un	13.7 -3.0	NR				6607 BR	OW TH	**MOE# 7249785 TAG#A179875** 0.0 0.3 SAND TILL 2.1 SAND 16.8
7251624		Oct-15	633494 4843511	143.0			NR				6607 -	- -	**MOE# 7251624 TAG#A192859** 0.0
7259873		Nov-15	633104 4843770	145.7			NR				7230 -	- -	**MOE# 7259873 TAG#A199749** 0.0
7270458		May-16	633341 4843467	146.9		9.1 -3.0	NR				6032 BR	OW MO	**MOE# 7270458 TAG#A194307** 0.0 BRWN SAND SILT DNSE 4.6 GREY SILT SAND DNSE 10.4 GREY SILT SAND DNSE 12.2
7272073		Aug-16	633396 4843903	142.0		5.2 -3.0	NR				7241 RC	- -	**MOE# 7272073 TAG#A205727** 0.0 BRWN CLAY 3.7 GREY CLAY 8.2
7272074		Aug-16	633377 4843961	141.7		1.5 -3.0	NR				7241 RC	- -	**MOE# 7272074 TAG#A205728** 0.0 BRWN SAND GRVL WBRG 4.6
7272075		Aug-16	633294 4843868	142.3		4.9 -3.0	NR				7241 RC	- -	**MOE# 7272075 TAG#A205729** 0.0 BRWN SAND GRVL WBRG 3.7 GREY SAND SILT WBRG 7.6 GREY SAND SILT TILL 7.9
7272076		Aug-16	633351 4843613	142.3		5.2 -3.0	NR				7241 RC	- -	**MOE# 7272076 TAG#A205731** 0.0 BRWN TILL SILT CLAY 6.1 GREY TILL SILT SAND 8.2
7272448		Sep-16	632869 4843460	144.2		1.5 -1.5	NR				6902 -	OW MO	**MOE# 7272448 TAG#A184387** 0.0
7272931		Jul-16	633115 4843765	145.7	4.3 Un	5.5 -3.0	NR				6875 RC	OW MO	**MOE# 7272931 TAG#A199861** 0.0 BLCK WSTE GRVL 0.3 GREY TPSL SAND LOOS 1.8 GREY SILT FSND HARD 3.4 BRWN CSND FSND WBRG 7.0 GREY SILT CLAY DNSE 8.5
7272932		Jul-16	633108 4843753	146.0	7.6 Un	21.6 -1.5	NR				6875 RC	- -	**MOE# 7272932 TAG#A199862** 0.0 GREY GRVL WSTE 0.3 GREY TPSL SILT SAND 1.8 GREY SILT FSND HARD 3.4 BRWN CSND FSND SILT 7.0 GREY SILT CLAY SAND 11.6 GREY CLAY SILT FSND 22.9
7272937		Jul-16	633278 4843561	146.0	7.6 Un	9.1 -3.0	NR				6875 RC	OW MO	**MOE# 7272937 TAG#A199863** 0.0 BRWN TPSL SAND CLAY 1.8 BRWN SILT CLAY FSND 4.6 BRWN FSND SILT DNSE 8.8 BRWN SAND GRVL SILT 11.6 GREY CLAY SILT SOFT 11.9
7280762		Aug-16	633291 4843741	141.7		6.1 -3.0	NR				7241 RC	- -	**MOE# 7280762 TAG#A205730** 0.0 BRWN SAND GRVL 6.1 GREY SAND SILT 9.1
7281531		Jun-16	633111 4843749	146.0		6.1 -3.0	NR				6032 BR	OW MO	**MOE# 7281531 TAG#A202410** 0.0 BRWN SAND GRVL SOFT 2.4 BRWN SILT SAND DNSE 6.1 GREY SAND SILT DNSE 9.1

LABEL	CON LOT	DATE mmm-yr	EASTING NORTHING	ELEV masl	WTR mbgl	FND Qu	SCR TOP mbgl	LEN m	SWL mbgl	RATE L/min	TIME min	PL mbgl	DRILLER METHOD	TYPE STAT	WELL NAME DESCRIPTION OF MATERIALS
7281571		Jun-16	633296 4843508	146.6			18.3	-3.0	NR				6032 BR	OW MO	**MOE# 7281571 TAG#A202433** 0.0 GREY SILT GRVL DNSE 16.8 BRWN SAND SILT WBRG 21.3
7281572		NR	633209 4843552	146.3			10.7	-3.0	NR				6032 BR	OW MO	**MOE# 7281572 TAG#A202410** 0.0 GREY SILT SAND DNSE 10.7 BRWN SAND WBRG 13.7
7287450		Aug-16	633401 4843526	144.2			18.3	-3.0	NR				6032 BR	OW MO	**MOE# 7287450 TAG#A202384** 0.0 BRWN SAND SILT DNSE 16.8 BRWN SAND DNSE 21.3

QUALITY:		TYPE:		USE:				METHOD :	
Fr	Fresh	WS	Water Supply	CO	Comercial	NU	Not Used	CT	Cable Tool
Mn	Mineral	AQ	Abandoned Quality	DO	Domestic	IR	Irrigation	JT	Jetting
Sa	Salty	AS	Abandoned Supply	MU	Municipal	AL	Alteration	RC	Rotary Conventional
Su	Sulphur	AB	Abandonment Record	PU	Public	MO	Monitoring	RA	Rotary Air
--	Unrecorded	TH	Test Hole or Observation	ST	Stock	-	Not Recorded	BR	Boring

Easting and Northings UTM NAD 83 Zone 17, Translated from Recorded UTM NAD, subject to Field Verified Location or Improved Location Accuracy.

APPENDIX C

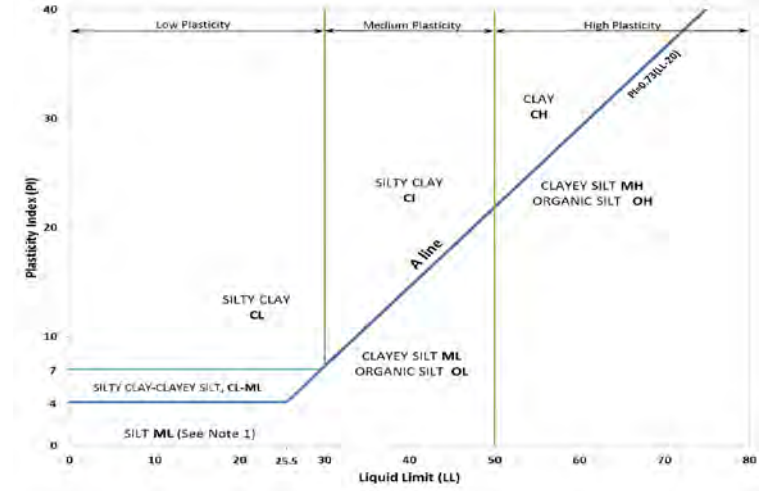
Borehole Logs

METHOD OF SOIL CLASSIFICATION

The Golder Associates Ltd. Soil Classification System is based on the Unified Soil Classification System (USCS)

Organic or Inorganic	Soil Group	Type of Soil		Gradation or Plasticity	$Cu = \frac{D_{60}}{D_{10}}$	$Cc = \frac{(D_{30})^2}{D_{10} x D_{60}}$	Organic Content	USCS Group Symbol	Group Name
INORGANIC (Organic Content ≤30% by mass)	COARSE-GRAINED SOILS (>50% by mass is larger than 0.075 mm)	GRAVELS (>50% by mass of coarse fraction is larger than 4.75 mm)	Gravels with ≤12% fines (by mass)	Poorly Graded	<4	≤1 or ≥3	≤30%	GP	GRAVEL
				Well Graded	≥4	1 to 3		GW	GRAVEL
			Gravels with >12% fines (by mass)	Below A Line	n/a			GM	SILTY GRAVEL
				Above A Line	n/a			GC	CLAYEY GRAVEL
		SANDS (≥50% by mass of coarse fraction is smaller than 4.75 mm)	Sands with ≤12% fines (by mass)	Poorly Graded	<6	≤1 or ≥3		SP	SAND
				Well Graded	≥6	1 to 3		SW	SAND
			Sands with >12% fines (by mass)	Below A Line	n/a			SM	SILTY SAND
				Above A Line	n/a			SC	CLAYEY SAND

Organic or Inorganic	Soil Group	Type of Soil	Laboratory Tests	Field Indicators					Organic Content	USCS Group Symbol	Primary Name
				Dilatancy	Dry Strength	Shine Test	Thread Diameter	Toughness (of 3 mm thread)			
INORGANIC (Organic Content ≤30% by mass)	FINE-GRAINED SOILS (≥50% by mass is smaller than 0.075 mm)	SILTS (Non-Plastic or PI and LL plot below A-Line on Plasticity Chart below)	Liquid Limit <50	Rapid	None	None	>6 mm	N/A (can't roll 3 mm thread)	<5%	ML	SILT
				Slow	None to Low	Dull	3mm to 6 mm	None to low	<5%	ML	CLAYEY SILT
				Slow to very slow	Low to medium	Dull to slight	3mm to 6 mm	Low	5% to 30%	OL	ORGANIC SILT
			Liquid Limit ≥50	Slow to very slow	Low to medium	Slight	3mm to 6 mm	Low to medium	<5%	MH	CLAYEY SILT
				None	Medium to high	Dull to slight	1 mm to 3 mm	Medium to high	5% to 30%	OH	ORGANIC SILT
		CLAYS (PI and LL plot above A-Line on Plasticity Chart below)	Liquid Limit <30	None	Low to medium	Slight to shiny	~ 3 mm	Low to medium	0% to 30% **(see Note 2)**	CL	SILTY CLAY
			Liquid Limit 30 to 50	None	Medium to high	Slight to shiny	1 mm to 3 mm	Medium		CI	SILTY CLAY
			Liquid Limit ≥50	None	High	Shiny	<1 mm	High		CH	CLAY
HIGHLY ORGANIC SOILS (Organic Content >30% by mass)		Peat and mineral soil mixtures							30% to 75%	PT	SILTY PEAT, SANDY PEAT
		Predominantly peat, may contain some mineral soil, fibrous or amorphous peat							75% to 100%		PEAT



Note 1 – Fine grained materials with PI and LL that plot in this area are named (ML) SILT with slight plasticity. Fine-grained materials which are non-plastic (i.e. a PL cannot be measured) are named SILT.
Note 2 – For soils with <5% organic content, include the descriptor "trace organics" for soils with between 5% and 30% organic content include the prefix "organic" before the Primary name.

Dual Symbol — A dual symbol is two symbols separated by a hyphen, for example, GP-GM, SW-SC and CL-ML.
For non-cohesive soils, the dual symbols must be used when the soil has between 5% and 12% fines (i.e. to identify transitional material between "clean" and "dirty" sand or gravel.
For cohesive soils, the dual symbol must be used when the liquid limit and plasticity index values plot in the CL-ML area of the plasticity chart (see Plasticity Chart at left).

Borderline Symbol — A borderline symbol is two symbols separated by a slash, for example, CL/CI, GM/SM, CL/ML.
A borderline symbol should be used to indicate that the soil has been identified as having properties that are on the transition between similar materials. In addition, a borderline symbol may be used to indicate a range of similar soil types within a stratum.

ABBREVIATIONS AND TERMS USED ON RECORDS OF BOREHOLES AND TEST PITS

PARTICLE SIZES OF CONSTITUENTS

Soil Constituent	Particle Size Description	Millimetres	Inches (US Std. Sieve Size)
BOULDERS	Not Applicable	>300	>12
COBBLES	Not Applicable	75 to 300	3 to 12
GRAVEL	Coarse Fine	19 to 75 4.75 to 19	0.75 to 3 (4) to 0.75
SAND	Coarse Medium Fine	2.00 to 4.75 0.425 to 2.00 0.075 to 0.425	(10) to (4) (40) to (10) (200) to (40)
SILT/CLAY	Classified by plasticity	<0.075	< (200)

MODIFIERS FOR SECONDARY AND MINOR CONSTITUENTS

Percentage by Mass	Modifier
>35	Use 'and' to combine major constituents (*i.e.,* SAND and GRAVEL)
> 12 to 35	Primary soil name prefixed with "gravelly, sandy, SILTY, CLAYEY" as applicable
> 5 to 12	some
≤ 5	trace

PENETRATION RESISTANCE

Standard Penetration Resistance (SPT), N:

The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) required to drive a 50 mm (2 in.) split-spoon sampler for a distance of 300 mm (12 in.). Values reported are as recorded in the field and are uncorrected.

Cone Penetration Test (CPT)

An electronic cone penetrometer with a 60° conical tip and a project end area of 10 cm^2 pushed through ground at a penetration rate of 2 cm/s. Measurements of tip resistance (q_t), porewater pressure (u) and sleeve frictions are recorded electronically at 25 mm penetration intervals.

Dynamic Cone Penetration Resistance (DCPT); N_d:

The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) to drive uncased a 50 mm (2 in.) diameter, 60° cone attached to "A" size drill rods for a distance of 300 mm (12 in.).

PH: Sampler advanced by hydraulic pressure
PM: Sampler advanced by manual pressure
WH: Sampler advanced by static weight of hammer
WR: Sampler advanced by weight of sampler and rod

SAMPLES

AS	Auger sample
BS	Block sample
CS	Chunk sample
DD	Diamond Drilling
DO or DP	Seamless open ended, driven or pushed tube sampler – note size
DS	Denison type sample
GS	Grab Sample
MC	Modified California Samples
MS	Modified Shelby (for frozen soil)
RC	Rock core
SC	Soil core
SS	Split spoon sampler – note size
ST	Slotted tube
TO	Thin-walled, open – note size (Shelby tube)
TP	Thin-walled, piston – note size (Shelby tube)
WS	Wash sample

SOIL TESTS

w	water content
PL , w_p	plastic limit
LL , w_L	liquid limit
C	consolidation (oedometer) test
CHEM	chemical analysis (refer to text)
CID	consolidated isotropically drained triaxial test[1]
CIU	consolidated isotropically undrained triaxial test with porewater pressure measurement[1]
D_R	relative density (specific gravity, Gs)
DS	direct shear test
GS	specific gravity
M	sieve analysis for particle size
MH	combined sieve and hydrometer (H) analysis
MPC	Modified Proctor compaction test
SPC	Standard Proctor compaction test
OC	organic content test
SO_4	concentration of water-soluble sulphates
UC	unconfined compression test
UU	unconsolidated undrained triaxial test
V (FV)	field vane (LV-laboratory vane test)
γ	unit weight

1. Tests anisotropically consolidated prior to shear are shown as CAD, CAU.

NON-COHESIVE (COHESIONLESS) SOILS

Compactness[2]

Term	SPT 'N' (blows/0.3m)[1]
Very Loose	0 to 4
Loose	4 to 10
Compact	10 to 30
Dense	30 to 50
Very Dense	>50

1. SPT 'N' in accordance with ASTM D1586, uncorrected for the effects of overburden pressure.
2. Definition of compactness terms are based on SPT 'N' ranges as provided in Terzaghi, Peck and Mesri (1996). Many factors affect the recorded SPT 'N' value, including hammer efficiency (which may be greater than 60% in automatic trip hammers), overburden pressure, groundwater conditions, and grainsize. As such, the recorded SPT 'N' value(s) should be considered only an approximate guide to the soil compactness. These factors need to be considered when evaluating the results, and the stated compactness terms should not be relied upon for design or construction.

Field Moisture Condition

Term	Description
Dry	Soil flows freely through fingers.
Moist	Soils are darker than in the dry condition and may feel cool.
Wet	As moist, but with free water forming on hands when handled.

COHESIVE SOILS

Consistency

Term	Undrained Shear Strength (kPa)	SPT 'N'[1,2] (blows/0.3m)
Very Soft	<12	0 to 2
Soft	12 to 25	2 to 4
Firm	25 to 50	4 to 8
Stiff	50 to 100	8 to 15
Very Stiff	100 to 200	15 to 30
Hard	>200	>30

1. SPT 'N' in accordance with ASTM D1586, uncorrected for overburden pressure effects; approximate only.
2. SPT 'N' values should be considered ONLY an approximate guide to consistency; for sensitive clays (e.g., Champlain Sea clays), the N-value approximation for consistency terms does NOT apply. Rely on direct measurement of undrained shear strength or other manual observations.

Water Content

Term	Description
w < PL	Material is estimated to be drier than the Plastic Limit.
w ~ PL	Material is estimated to be close to the Plastic Limit.
w > PL	Material is estimated to be wetter than the Plastic Limit.

LIST OF SYMBOLS

Unless otherwise stated, the symbols employed in the report are as follows:

I. GENERAL

π	3.1416
ln x	natural logarithm of x
$\log_{10}$	x or log x, logarithm of x to base 10
g	acceleration due to gravity
t	time

II. STRESS AND STRAIN

γ	shear strain
Δ	change in, e.g. in stress: $\Delta\sigma$
ε	linear strain
ε_v	volumetric strain
η	coefficient of viscosity
υ	Poisson's ratio
σ	total stress
σ'	effective stress ($\sigma' = \sigma - u$)
σ'_{vo}	initial effective overburden stress
$\sigma_1, \sigma_2, \sigma_3$	principal stress (major, intermediate, minor)
σ_{oct}	mean stress or octahedral stress $= (\sigma_1 + \sigma_2 + \sigma_3)/3$
τ	shear stress
u	porewater pressure
E	modulus of deformation
G	shear modulus of deformation
K	bulk modulus of compressibility

III. SOIL PROPERTIES

(a) Index Properties

$\rho(\gamma)$	bulk density (bulk unit weight)*
$\rho_d(\gamma_d)$	dry density (dry unit weight)
$\rho_w(\gamma_w)$	density (unit weight) of water
$\rho_s(\gamma_s)$	density (unit weight) of solid particles
γ'	unit weight of submerged soil ($\gamma' = \gamma - \gamma_w$)
D_R	relative density (specific gravity) of solid particles ($D_R = \rho_s / \rho_w$) (formerly G_s)
e	void ratio
n	porosity
S	degree of saturation

* Density symbol is ρ. Unit weight symbol is γ where $\gamma = \rho g$ (i.e. mass density multiplied by acceleration due to gravity)

(a) Index Properties (continued)

w	water content
w_l or LL	liquid limit
w_p or PL	plastic limit
I_p or PI	plasticity index = $(w_l - w_p)$
NP	non-plastic
w_s	shrinkage limit
I_L	liquidity index = $(w - w_p) / I_p$
I_C	consistency index = $(w_l - w) / I_p$
e_{max}	void ratio in loosest state
e_{min}	void ratio in densest state
I_D	density index = $(e_{max} - e) / (e_{max} - e_{min})$ (formerly relative density)

(b) Hydraulic Properties

h	hydraulic head or potential
q	rate of flow
v	velocity of flow
i	hydraulic gradient
k	hydraulic conductivity (coefficient of permeability)
j	seepage force per unit volume

(c) Consolidation (one-dimensional)

C_c	compression index (normally consolidated range)
C_r	recompression index (over-consolidated range)
C_s	swelling index
C_α	secondary compression index
m_v	coefficient of volume change
c_v	coefficient of consolidation (vertical direction)
c_h	coefficient of consolidation (horizontal direction)
T_v	time factor (vertical direction)
U	degree of consolidation
σ'_p	pre-consolidation stress
OCR	over-consolidation ratio = σ'_p / σ'_{vo}

(d) Shear Strength

τ_p, τ_r	peak and residual shear strength
ϕ'	effective angle of internal friction
δ	angle of interface friction
μ	coefficient of friction = tan δ
c′	effective cohesion
c_u, s_u	undrained shear strength ($\phi = 0$ analysis)
p	mean total stress $(\sigma_1 + \sigma_3)/2$
p′	mean effective stress $(\sigma'_1 + \sigma'_3)/2$
q	$(\sigma_1 - \sigma_3)/2$ or $(\sigma'_1 - \sigma'_3)/2$
q_u	compressive strength $(\sigma_1 - \sigma_3)$
S_t	sensitivity

Notes: 1 $\tau = c' + \sigma' \tan \phi'$

2 shear strength = (compressive strength)/2

PROJECT: 19129918 (1000)

LOCATION: See Figure 2

RECORD OF BOREHOLE: BH20-1

BORING DATE: March 19, 2020

SHEET 1 OF 2

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 63kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m; SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○)	HYDRAULIC CONDUCTIVITY, k, cm/s; WATER CONTENT PERCENT (Wp, W, Wl)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		GROUND SURFACE		142.90							
		ASPHALT (~130 mm thick)		0.00							Concrete
		FILL - (SP/GP) SAND and GRAVEL, some fines; brown; non-cohesive, moist		0.13							
				142.47	1	SS	12				
		(CL) SILTY CLAY, some sand, trace gravel; brown (TILL); oxidation stains; cohesive, w<PL, very stiff		0.43							
1					2	SS	18				50 mm Diameter Monitoring Well
				141.53							
		(ML) sandy SILT, trace gravel; brown to grey (TILL); non-cohesive, moist, dense to very dense		1.37							
					3	SS	30				
2					4	SS	57				
3					5	SS	50/ 0.1				
		- Becomes grey at a depth of about 3.3 m									
				138.96							
4		(CL-ML) SILTY CLAY to CLAYEY SILT, trace sand, trace gravel; grey (TILL); cohesive, w<PL, hard		3.94							Bentonite Seal ▽ June 16, 2020
					6	SS	46				
5											
				137.34							
		(ML) sandy SILT, trace gravel; grey (TILL); non-cohesive, moist, very dense		5.56							
6					7	SS	50/ 0.13				
7											
					8	SS	50/ 0.13				
8											
				134.37							
		(CL-ML) SILTY CLAY to CLAYEY SILT, trace sand, trace gravel; grey (TILL); cohesive, w<PL, hard		8.53							Sand
9					9	SS	50/ 0.07				
											Silica Sand Filter and Screen
				132.90							
10		*CONTINUED NEXT PAGE*									

CME 75 Truck Mounted Rig
140 mm Solid Stem Augers

DEPTH SCALE
1 : 50

GOLDER

LOGGED: AD/SS
CHECKED: RA

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PROJECT: 19129918 (1000)

RECORD OF BOREHOLE: BH20-1

SHEET 2 OF 2

LOCATION: See Figure 2

BORING DATE: March 19, 2020

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 63kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp W Wl) (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
10		*--- CONTINUED FROM PREVIOUS PAGE ---*									
	CME 75 Truck Mounted Rig / 140 mm Solid Stem Augers	(SM) SILTY SAND, some gravel; grey; non-cohesive, moist, very dense		10.00							
				132.16	10A / ~~10B~~	SS	50/ 0.13				
11		(CL-ML) SILTY CLAY to CLAYEY SILT, some sand, some gravel; grey (TILL); cohesive, w<PL, hard		10.74							Silica Sand Filter and Screen
				131.39							
		(ML) sandy SILT, some gravel; grey (TILL); non-cohesive, moist, very dense		11.51							
12					11	SS	50/ 0.05				
				129.92							
13		(CL-ML) SILTY CLAY to CLAYEY SILT, trace to some sand, trace gravel; grey (TILL); cohesive, w<PL, hard		12.98							
					12	SS	50/ 0.07				
14											Cave/Bentonite
15											
					13	SS	50/ 0.13				
16											
					14	SS	50/ 0.05				
17		END OF BOREHOLE		125.93 16.97							
		NOTES:									
		1. Borehole caved at a depth of about 11.3 mbgs upon completion of drilling.									
18		2. Groundwater level measured in monitoring well as follows:									
		Date / Depth(m) / Elev. (m) 13/05/2020 / 4.4 / 138.5 21/05/2020 / 4.4 / 138.5 05/06/2020 / 4.4 / 138.5 16/06/2020 / 4.4 / 138.5									
19											
20											

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AD/SS

CHECKED: RA

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PROJECT: 19129918 (1000)

RECORD OF BOREHOLE: BH20-2

SHEET 1 OF 2

LOCATION: See Figure 2

BORING DATE: March 19 to 24, 2020

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 63kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp W Wl) (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		144.00							
0	140 mm I.D. Hollow Stem Augers	ASPHALT (~130mm thick)		0.00							Concrete
		FILL - (SP/GP) SAND and GRAVEL, some fines; brown; non-cohesive, moist, loose		0.13 143.64 0.36	1	SS	6				
1		(CL) SILTY CLAY, some sand, trace gravel; brown (TILL); oxidation stains, cohesive, w<PL, firm to stiff			2	SS	10				50 mm Diameter Monitoring Well
				142.63							
		(ML) sandy SILT, trace gravel; brown (TILL), oxidation stains; non-cohesive, moist, very dense		1.37	3	SS	65				
2					4	SS	50/ 0.07				
3					5	SS	50/ 0.13				▽ June 16, 2020
				140.11							
4	CME 75 Truck Mounted Rig	(CL) SILTY CLAY, some sand, trace gravel; grey (TILL); cohesive, w<PL, hard		3.89	6	SS	42				
5											Bentonite Seal
				138.44							
		(SM) SILTY SAND, some gravel; grey; non-cohesive, moist, very dense		5.56							
6	98 mm Dia Tricone - Mud Rotary Drilling				7	SS	80			M	
7				136.91							
		(ML) sandy SILT, trace gravel; grey (TILL); non-cohesive, moist, very dense		7.09							
					8	SS	56				
8											
9					9	SS	54				
10		*CONTINUED NEXT PAGE*									

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AD/SS

CHECKED: RA

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PROJECT: 19129918 (1000)

RECORD OF BOREHOLE: BH20-2

SHEET 2 OF 2

LOCATION: See Figure 2

BORING DATE: March 19 to 24, 2020

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 63kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ●, rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
10	CME 75 Truck Mounted Rig 98 mm Dia Tricone - Mud Rotary Drilling	*--- CONTINUED FROM PREVIOUS PAGE ---*									
10		(ML) sandy SILT, trace gravel; grey (TILL); non-cohesive, moist, very dense									
11					10	SS	51				
				132.34							Bentonite Seal
		(CL-ML) SILTY CLAY to CLAYEY SILT, trace to some sand, trace to some gravel; grey (TILL); cohesive, w<PL, hard		11.66							
12					11	SS	74				
13											Sand
14					12	SS	50/0.1				
15											
					13	SS	50/0.1				Silica Sand Filter and Screen
16											
17				126.98	14	SS	50/0.1				
		END OF BOREHOLE		17.02							
18		NOTE: 1. Groundwater level measured in monitoring well as follows: Date / Depth(m) / Elev. (m) 13/05/2020 / 3.5 / 140.5 21/05/2020 / 3.9 / 140.1 05/06/2020 / 3.8 / 140.2 16/06/2020 / 3.7 / 140.3									
19											
20											

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AD/SS

CHECKED: RA

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PROJECT: 19129918 (1000)

LOCATION: See Figure 2

RECORD OF BOREHOLE: BH20-3

BORING DATE: March 27, 2020

SHEET 1 OF 2

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 63kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp W WI) (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		145.80							
0	140 mm I.D. Hollow Stem Augers	ASPHALT (~130 mm thick)		0.00							Concrete
		FILL - (SP/GP) SAND and GRAVEL, trace fines; brown; non-cohesive, moist, compact		0.13	1	SS	23				
				145.06							
1		(ML) sandy SILT, trace gravel; brown (TILL), oxidation stains; non-cohesive, moist, compact to dense		0.74	2	SS	18				50 mm Diameter Monitoring Well
2					3	SS	37				
					4	SS	44				
				142.90							
3		(CL-ML) SILTY CLAY to CLAYEY SILT, some sand, trace gravel; grey (TILL); cohesive, w<PL, cohesive, w<PL, hard		2.90	5	SS	31				
4											Bentonite Seal ▽ June 16, 2020
					6	SS	30				
5	CME 75 Truck Mounted Rig										
				140.24							
		(SM/ML) SILTY SAND to sandy SILT, some gravel; grey (TILL); non-cohesive, moist, dense to very dense		5.56							
6					7	SS	31				
7	98 mm Dia Tricone - Mud Rotary Drilling										
					8A	SS	76				
				137.88							
8		(ML) sandy SILT, grey; non-cohesive, wet, very dense		7.92	8B						
				137.19							
		(ML) SILT, trace to some sand, trace gravel; grey; slight plasticity; non-cohesive, moist, dense		8.61							Sand
9					9	SS	40				Silica Sand Filter and Screen
10		*CONTINUED NEXT PAGE*									

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AD/SS

CHECKED: RA

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PROJECT: 19129918 (1000)

RECORD OF BOREHOLE: BH20-3

SHEET 2 OF 2

LOCATION: See Figure 2

BORING DATE: March 27, 2020

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 63kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp W Wl) (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
10		*--- CONTINUED FROM PREVIOUS PAGE ---*									
10	CME 75 Truck Mounted Rig 98 mm Dia Tricone - Mud Rotary Drilling	(ML) SILT, trace to some sand, trace gravel; grey; slight plasticity; non-cohesive, moist, dense									
11					10	SS	38				Silica Sand Filter and Screen
				134.14							
		(ML) sandy SILT, trace gravel; grey (TILL); non-cohesive, moist, very dense		11.66							
12					11	SS	50/ 0.13				
13											
				131.86	12A						
14		(CL-ML) SILTY CLAY to CLAYEY SILT, trace to some sand, trace gravel; grey (TILL); cohesive, w<PL, hard		13.94	12B	SS	57				Bentonite
15											
16					13	SS	91/ 0.25				
				128.91	14	SS	50/ 0.13				
17		END OF BOREHOLE		16.89							
		NOTE: 1. Groundwater level measured in monitoring well as follows: Date / Depth(m) / Elev. (m) 13/05/2020 / 4.5 / 141.3 21/05/2020 / 4.5 / 141.3 05/06/2020 / 4.5 / 141.3 16/06/2020 / 4.5 / 141.3									
18											
19											
20											

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AD/SS

CHECKED: RA

GTA-BHS 001 S:\CLIENTS\FIRST_CAPITAL\TORONTO_LAWERENCE_AVE_E_895\02_DATA\GINT\TORONTO_LAWERENCE_AVE_E_895.GPJ GAL-MIS.GDT 6/18/20

PROJECT: 19129918 (1000)

RECORD OF BOREHOLE: BH20-4

SHEET 1 OF 2

LOCATION: See Figure 2

BORING DATE: March 25, 2020

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 63kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp W Wl) (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		GROUND SURFACE		143.60							
	140 mm I.D. Hollow Stem Augers	ASPHALT (~130 mm thick)		0.00							Concrete
		FILL - (SP/GP) SAND and GRAVEL, some fines; brown; non-cohesive, moist, loose		0.13 143.22	1	SS	9				
		FILL - (ML) sandy CLAYEY SILT, trace gravel; black, trace organic matter; cohesive, w~PL, stiff		0.38 142.61							
1		(ML) sandy SILT, trace gravel; brown (TILL), oxidation stains; non-cohesive, moist, compact to very dense		0.99	2	SS	14				50 mm Diameter Monitoring Well
					3	SS	30				
2					4	SS	58				
		(CL-ML) SILTY CLAY to CLAYEY SILT, some sand, trace gravel; grey (TILL); cohesive, w<PL, very stiff		140.70 2.90	5	SS	25				June 16, 2020
3											
4		(ML) sandy SILT, some gravel; grey (TILL); non-cohesive, moist, dense to very dense		139.56 4.04	6	SS	46				Bentonite Seal
5	CME 75 Truck Mounted Rig										
6	98 mm Dia Tricone - Mud Rotary Drilling				7	SS	67				
7		- Gravelly between the depths of about 7.6 m and 7.9 m			8	SS	50/0.1				
8											
		(SM) SILTY SAND, some gravel; grey; non-cohesive, wet, very dense		135.07 8.53							Sand
9					9	SS	74				Silica Sand Filter and Screen
10		*CONTINUED NEXT PAGE*									

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AD/SS

CHECKED: RA

GTA-BHS 001 S:\CLIENTS\FIRST_CAPITAL\TORONTO_LAWERENCE_AVE_E_895\02_DATA\GINT\TORONTO_LAWERENCE_AVE_E_895.GPJ GAL-MIS.GDT 6/18/20

PROJECT: 19129918 (1000)

LOCATION: See Figure 2

RECORD OF BOREHOLE: BH20-4

SHEET 2 OF 2

BORING DATE: March 25, 2020

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 63kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp W Wl) (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		--- CONTINUED FROM PREVIOUS PAGE ---									
10	CME 75 Truck Mounted Rig 98 mm Dia Tricone - Mud Rotary Drilling	(ML) sandy SILT, some gravel; grey (TILL); non-cohesive, moist to wet, very dense		133.47 10.13	10	SS	50/ 0.13		○		Silica Sand Filter and Screen
11											
				132.09							
12		(CL-ML) SILTY CLAY to CLAYEY SILT, trace to some sand, trace gravel; grey (TILL); cohesive, w<PL, hard		11.51	11	SS	50/ 0.07		○		
13											
14					12	SS	50/ 0.13		○		Bentonite
15											
					13	SS	50/ 0.13		○		
16											
17					14	SS	98/ 0.25		○		
				126.43							
		END OF BOREHOLE		17.17							
18		NOTE: 1. Groundwater level measured in monitoring well as follows: Date / Depth(m) / Elev. (m) 13/05/2020 / 3.3 / 140.3 21/05/2020 / 3.3 / 140.3 05/06/2020 / 3.3 / 140.3 16/06/2020 / 3.3 / 140.3									
19											
20											

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AD/SS

CHECKED: RA

GTA-BHS 001 S:\CLIENTS\FIRST_CAPITAL\TORONTO_LAWERENCE_AVE_E_895\02_DATA\GINT\TORONTO_LAWERENCE_AVE_E_895.GPJ GAL-MIS.GDT 6/18/20

PROJECT: 19129918 (1000)

RECORD OF BOREHOLE: BH20-5

SHEET 1 OF 2

LOCATION: See Figure 2

BORING DATE: March 26, 2020

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 63kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp W Wl) (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		144.60							
0	140 mm I.D. Hollow Stem Augers / 98 mm Dia Tricone - Mud Rotary Drilling	ASPHALT (~130 mm thick)		0.00							Concrete
		FILL - (SP/GP) SAND and GRAVEL, some fines; brown; non-cohesive, moist, compact		0.13 144.27							
		(ML) sandy SILT, trace to some gravel; brown (TILL), oxidation stains, non-cohesive, moist, compact to very dense		0.33	1	SS	23				
1					2	SS	31				50 mm Diameter Monitoring Well
					3	SS	61				
2		- Boulders encountered between the depths of about 2.2 m and 2.3 m			4	SS	100/ 0.15				
				141.86							
		(SM/ML) SILTY SAND to sandy SILT, trace to some gravel; brown to grey; non-cohesive, moist to wet, dense to very dense		2.74	5	SS	48				
3											June 16, 2020
4											
					6	SS	89/ 0.28				
5											Bentonite Seal
6					7	SS	50/ 0.13				
7		- Grey at a depth of about 7.0 m									
		- Gravelly seam between the depths of about 7.6 m and 7.8 m			8	SS	50/ 0.13			M	
8				136.07							
		(CL-ML) SILTY CLAY to CLAYEY SILT, trace to some sand, trace gravel; grey (TILL); cohesive, w<PL, hard		8.53							
9					9	SS	50/ 0.13				
10		*CONTINUED NEXT PAGE*									

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AD/SS

CHECKED: RA

GTA-BHS 001 S:\CLIENTS\FIRST_CAPITAL\TORONTO_LAWERENCE_AVE_E_895\02_DATA\GINT\TORONTO_LAWERENCE_AVE_E_895.GPJ GAL-MIS.GDT 6/18/20

PROJECT: 19129918 (1000)

RECORD OF BOREHOLE: BH20-5

SHEET 2 OF 2

LOCATION: See Figure 2

BORING DATE: March 26, 2020

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 63kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ●, rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		--- CONTINUED FROM PREVIOUS PAGE ---									
10	CME 75 Truck Mounted Rig 98 mm Dia Tricone - Mud Rotary Drilling	(CL-ML) SILTY CLAY to CLAYEY SILT, trace to some sand, trace gravel; grey (TILL); cohesive, w<PL, hard									Bentonite Seal
10					10	SS	50/ 0.1				
11											
12					11	SS	50/ 0.13				Sand
13											
14					12	SS	50/ 0.13				
15					13	SS	50/ 0.05				Silica Sand Filter and Screen
16											
17				127.58	14	SS	50/ 0.1				
		END OF BOREHOLE		17.02							
18		NOTE: 1. Groundwater level measured in monitoring well as follows: Date / Depth(m) / Elev. (m) 13/05/2020 / 3.6 / 141.0 21/05/2020 / 3.5 / 141.1 05/06/2020 / 3.6 / 141.0 16/06/2020 / 3.6 / 141.0									
19											
20											

DEPTH SCALE

1 : 50

GOLDER

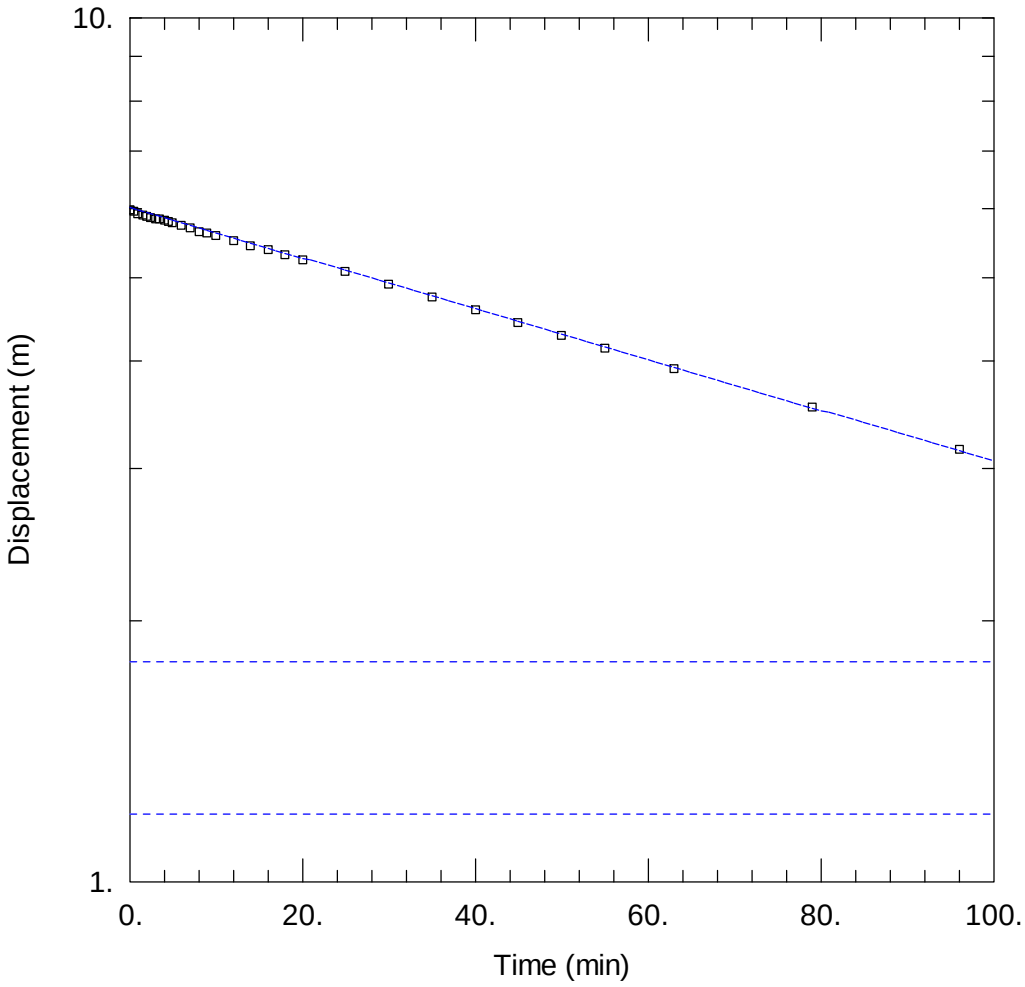
LOGGED: AD/SS

CHECKED: RA

GTA-BHS 001 S:\CLIENTS\FIRST_CAPITAL\TORONTO_LAWERENCE_AVE_E_895\02_DATA\GINT\TORONTO_LAWERENCE_AVE_E_895.GPJ GAL-MIS.GDT 6/18/20

APPENDIX D

K-Tests



WELL TEST ANALYSIS

Data Set: \...\895 Lawrence BH20-1.aqt
Date: 09/15/20 Time: 18:24:07

PROJECT INFORMATION

Company: Golder
Project: 19129918
Location: 895 Lawrence
Test Well: BH20-1
Test Date: May 13, 2020

AQUIFER DATA

Saturated Thickness: 10. m Anisotropy Ratio (Kz/Kr): 1.

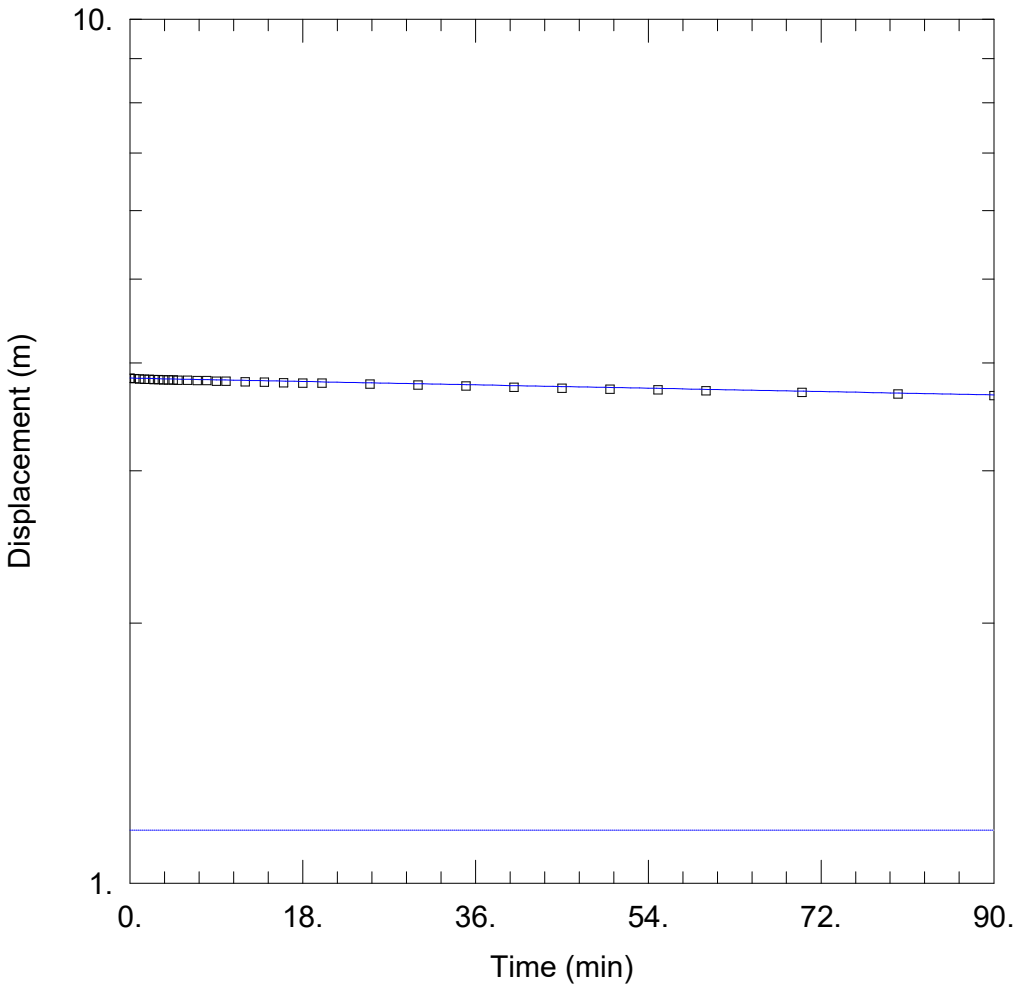
WELL DATA (BH20-1)

Initial Displacement: 5.98 m
Total Well Penetration Depth: 7.8 m
Casing Radius: 0.025 m
Static Water Column Height: 7.8 m
Screen Length: 3. m
Well Radius: 0.07 m
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 1.064E-7 m/sec y0 = 6.029 m



WELL TEST ANALYSIS

Data Set: \...\895 Lawrence BH20-2.aqt
Date: 09/03/20 Time: 08:06:25

PROJECT INFORMATION

Company: Golder
Project: 19129918
Location: 895 Lawrence
Test Well: BH20-2
Test Date: May 13, 2020

AQUIFER DATA

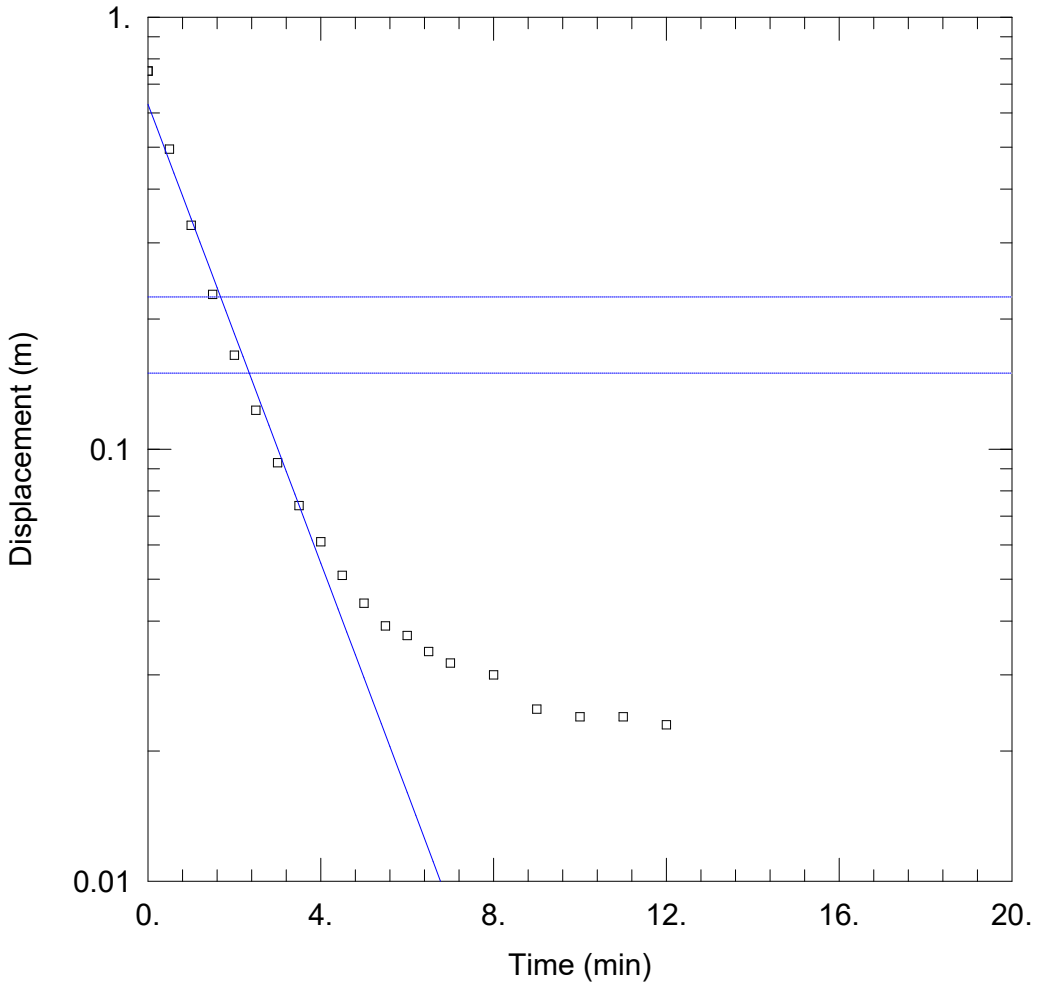
Saturated Thickness: 10. m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH20-2)

Initial Displacement: 3.84 m
Total Well Penetration Depth: 13.26 m
Casing Radius: 0.025 m
Static Water Column Height: 13.26 m
Screen Length: 3. m
Well Radius: 0.05 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 3.493E-9 m/sec
y0 = 3.841 m



WELL TEST ANALYSIS

Data Set: \...\895 Lawrence BH20-3.aqt
Date: 09/03/20 Time: 08:06:42

PROJECT INFORMATION

Company: Golder
Project: 19129918
Location: 895 Lawrence
Test Well: BH20-1
Test Date: May 13, 2020

AQUIFER DATA

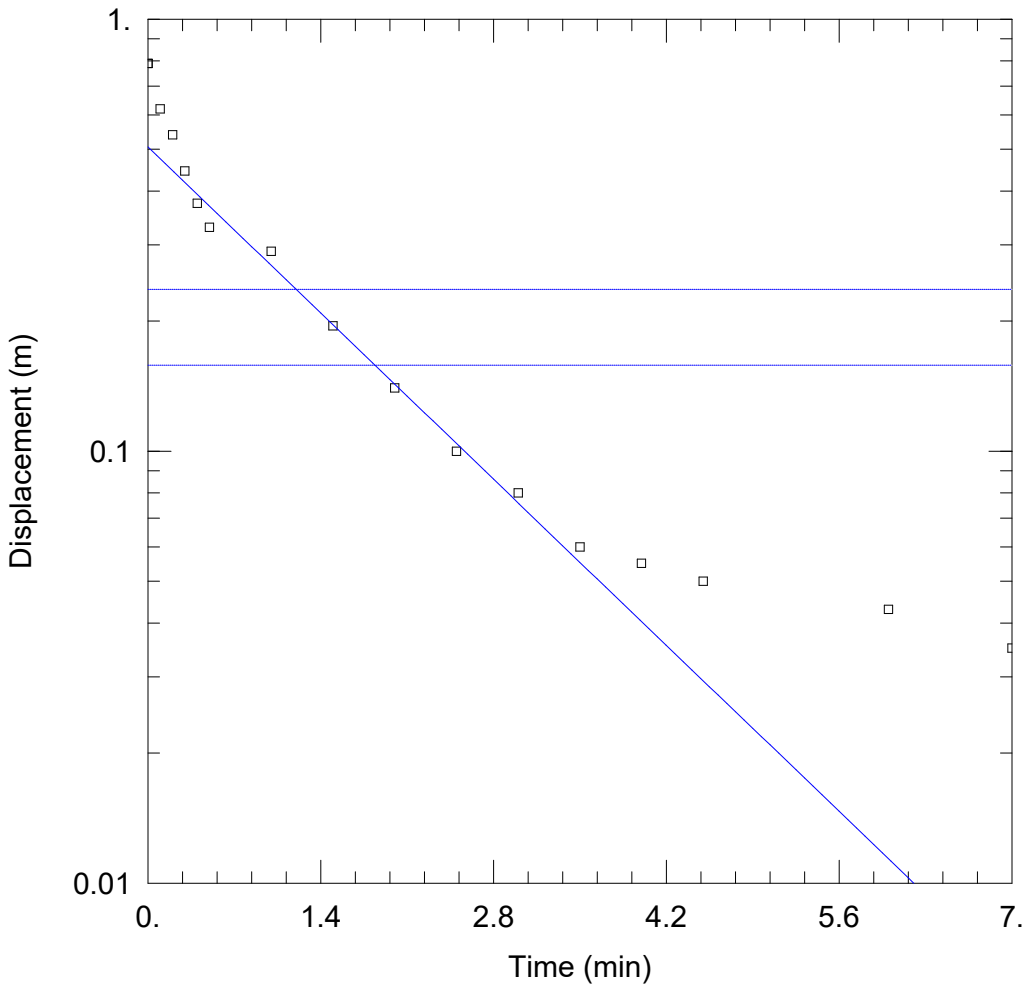
Saturated Thickness: 10. m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH20-3)

Initial Displacement: 0.75 m
Total Well Penetration Depth: 7.74 m
Casing Radius: 0.025 m
Static Water Column Height: 7.74 m
Screen Length: 3. m
Well Radius: 0.05 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 3.439E-6 m/sec
y0 = 0.6287 m



WELL TEST ANALYSIS

Data Set: \...\895 Lawrence BH20-4.aqt
Date: 09/03/20 Time: 08:06:57

PROJECT INFORMATION

Company: Golder
Project: 19129918
Location: 895 Lawrence
Test Well: BH20-1
Test Date: May 13, 2020

AQUIFER DATA

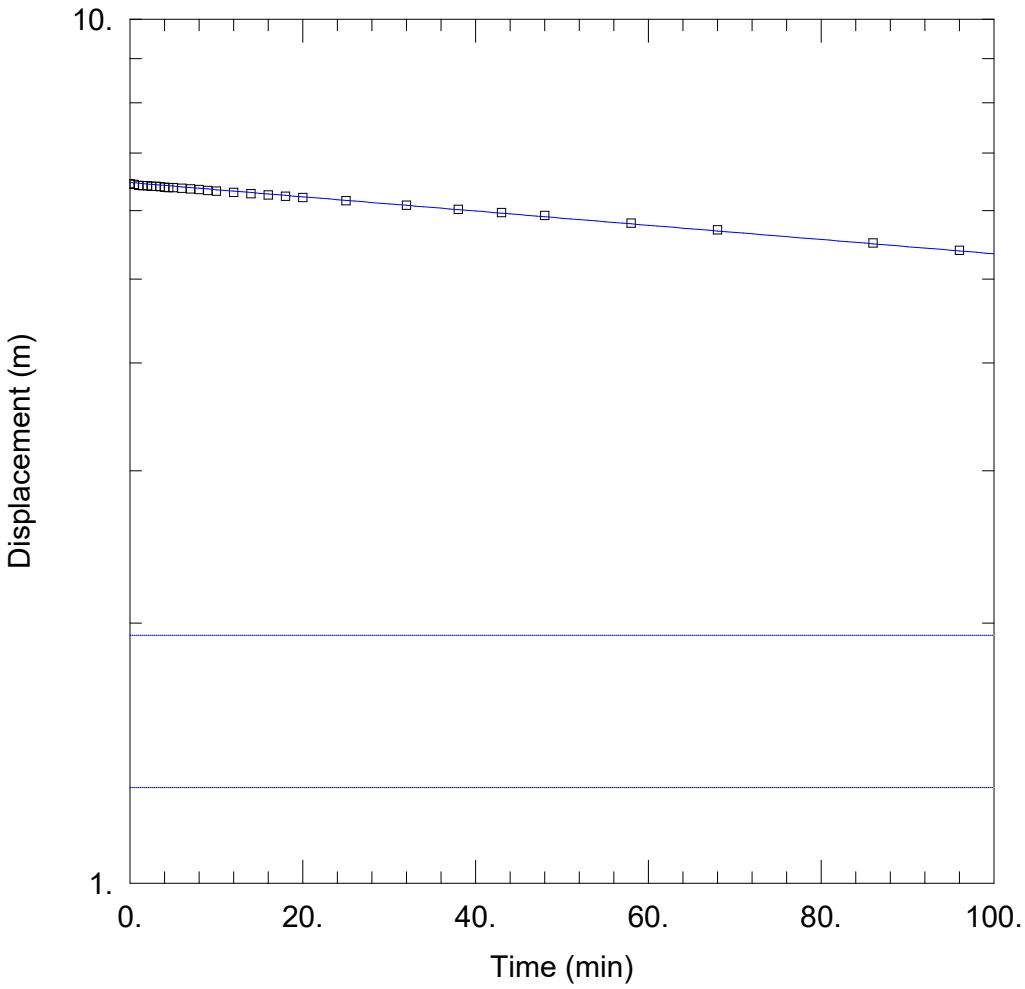
Saturated Thickness: 10. m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH20-4)

Initial Displacement: 0.79 m Static Water Column Height: 8.49 m
Total Well Penetration Depth: 8.49 m Screen Length: 3. m
Casing Radius: 0.025 m Well Radius: 0.05 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 3.645E-6 m/sec y0 = 0.5058 m



WELL TEST ANALYSIS

Data Set: \...\895 Lawrence BH20-5.aqt
Date: 09/03/20 Time: 08:07:11

PROJECT INFORMATION

Company: Golder
Project: 19129918
Location: 895 Lawrence
Test Well: BH20-5
Test Date: May 13, 2020

AQUIFER DATA

Saturated Thickness: 15. m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH20-5)

Initial Displacement: 6.45 m Static Water Column Height: 13.21 m
Total Well Penetration Depth: 13.21 m Screen Length: 3. m
Casing Radius: 0.025 m Well Radius: 0.05 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 1.153E-8 m/sec y0 = 6.469 m

APPENDIX E

Laboratory Data

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: GOLDER ASSOCIATES LTD.
100 SCOTIA COURT
WHITBY, ON L1N8Y6
(905) 723-2727
ATTENTION TO: Aaron Beard
PROJECT: 19129918
AGAT WORK ORDER: 22T913504
MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer
TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor
WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Lab Manager
DATE REPORTED: Jul 13, 2022
PAGES (INCLUDING COVER): 14
VERSION*: 3

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*Notes

VERSION 3:Version 3 supersedes work order 22T913504 , Version 2, issued July 12, 2022. Filtered samples removed.

AGAT Laboratories

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CANADA L4Z 1Y2
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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 22T913504

PROJECT: 19129918

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Aaron Beard

SAMPLING SITE:895 Lawrence Ave E

SAMPLED BY:A. Beard

E. Coli (Using MI Agar)

DATE RECEIVED: 2022-06-27

DATE REPORTED: 2022-07-13

			SAMPLE DESCRIPTION:	**21-3**
			SAMPLE TYPE:	**Water**
			DATE SAMPLED:	**2022-06-27 13:00**
Parameter	**Unit**	**G / S**	**RDL**	**4029462**
Escherichia coli	CFU/100mL	200		0

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CIty of Toronto Storm Sewer Discharge
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

4029462 Escherichia coli RDL = 1 CFU/100mL.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 22T913504

PROJECT: 19129918

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Aaron Beard

SAMPLING SITE:895 Lawrence Ave E

SAMPLED BY:A. Beard

Sewer Use - Toronto Sanitary and Combined Sewer Use By-law - Organic

DATE RECEIVED: 2022-06-27

DATE REPORTED: 2022-07-13

					SAMPLE DESCRIPTION:	21-3
					SAMPLE TYPE:	Water
					DATE SAMPLED:	2022-06-27 13:00
Parameter	Unit	G / S: A	G / S: B	RDL	4029462	
Oil and Grease (animal/vegetable) in water	mg/L	150		0.5	<0.5[<A]	
Oil and Grease (mineral) in water	mg/L	15		0.5	<0.5[<A]	
Methylene Chloride	mg/L	2	0.0052	0.0003	<0.0003[<B]	
trans-1,3-Dichloropropylene	mg/L	0.14	0.0056	0.0003	<0.0003[<B]	
cis- 1,2-Dichloroethylene	mg/L	4	0.0056	0.0002	<0.0002[<B]	
Chloroform	mg/L	0.04	0.002	0.0002	<0.0002[<B]	
Benzene	mg/L	0.01	0.002	0.0002	<0.0002[<B]	
Trichloroethylene	mg/L	0.4	0.0076	0.0002	<0.0002[<B]	
Toluene	mg/L	0.016	0.002	0.0002	<0.0002[<B]	
Tetrachloroethylene	mg/L	1	0.0044	0.0001	<0.0001[<B]	
Ethylbenzene	mg/L	0.16	0.002	0.0002	<0.0002[<B]	
1,1,2,2-Tetrachloroethane	mg/L	1.4	0.017	0.0002	<0.0002[<B]	
1,2-Dichlorobenzene	mg/L	0.05	0.0056	0.0002	<0.0002[<B]	
1,4-Dichlorobenzene	mg/L	0.08	0.0068	0.0002	<0.0002[<B]	
Xylenes (Total)	mg/L	1.4	0.0044	0.0002	<0.0002[<B]	
PCBs	mg/L	0.001	0.0004	0.0002	<0.0002[<B]	
Pentachlorophenol	mg/L	0.005	0.002	0.0005	<0.0005[<B]	
Di-n-butyl phthalate	mg/L	0.08	0.015	0.0005	<0.0005[<B]	
3,3'-Dichlorobenzidine	mg/L	0.002	0.0008	0.0001	<0.0001[<B]	
Bis(2-Ethylhexyl)phthalate	mg/L	0.012	0.0088	0.0005	<0.0005[<B]	
Total PAHs	mg/L	0.005	0.002	0.0003	<0.0003[<B]	
Nonylphenols	mg/L	0.02	0.001	0.001	<0.001[<B]	
Nonylphenol Ethoxylates	mg/L	0.2	0.01	0.01	<0.01[<B]	

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 22T913504

PROJECT: 19129918

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Aaron Beard

SAMPLING SITE:895 Lawrence Ave E

SAMPLED BY:A. Beard

Sewer Use - Toronto Sanitary and Combined Sewer Use By-law - Organic

DATE RECEIVED: 2022-06-27

DATE REPORTED: 2022-07-13

			SAMPLE DESCRIPTION:	21-3
			SAMPLE TYPE:	Water
			DATE SAMPLED:	2022-06-27 13:00
Surrogate	**Unit**	**Acceptable Limits**		**4029462**
Toluene-d8	% Recovery	50-140		98
4-Bromofluorobenzene	% Recovery	50-140		77
Decachlorobiphenyl	%	50-140		82
2,4,6-Tribromophenol	%	50-140		79
2-Fluorophenol	%	50-140		85
Chrysene-d12	%	50-140		84
phenol-d6 surrogate	%	50-140		79

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to City of Toronto Sanitary and Combined Sewers Discharge, B Refers to CIty of Toronto Storm Sewer Discharge
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

4029462 Oil and Grease animal/vegetable is a calculated parameter. The calculated value is the difference between Total O&G and Mineral O&G.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
Note: The result for Benzo(b+j)Flouranthene is the total of the Benzo(b)&(j)Flouranthene isomers because the isomers co-elute on the GC column.
Total PAHs is calculated as sum of Anthracene, Benzo(a)pyrene, Benzo(a)anthracene, Benzo(e)pyrene*, Benzo(b+j)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene, Chrysene, Dibenz(a,h)anthracene, Dibenzo(a,i)pyrene*, Dibenzo(a,j) Acridine*, 7H-Dibenzo(c,g)carbazole*, Fluoranthene, Indeno(1,2,3-cd)pyrene, Perylene, Phenanthrene and Pyrene.
*-not accredited parameters.
Nonylphenols is a calculated parameter. The calculated value is the sum of Nonylphenol (NP) and 4n-Nonylphenol (4n-NP).
Nonylphenol Ethoxylates is a calculated parameter. The calculated value is the sum of Nonylphenol Monoethoxylate (NP1EO) and Nonylphenol Diethoxylate (NP2EO).
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 22T913504

PROJECT: 19129918

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Aaron Beard

SAMPLING SITE:895 Lawrence Ave E

SAMPLED BY:A. Beard

BOD5

DATE RECEIVED: 2022-06-27

DATE REPORTED: 2022-07-13

				SAMPLE DESCRIPTION:	**21-3**
				SAMPLE TYPE:	**Water**
				DATE SAMPLED:	**2022-06-27 13:00**
Parameter	**Unit**	**G / S: A**	**G / S: B**	**RDL**	**4029462**
Biochemical Oxygen Demand, Total	mg/L	15	300	2	<2[<A]

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to CIty of Toronto Storm Sewer Discharge, B Refers to City of Toronto Sanitary and Combined Sewers Discharge
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Halifax (unless marked by *)

Certified By:

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
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Certificate of Analysis

AGAT WORK ORDER: 22T913504

PROJECT: 19129918

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Aaron Beard

SAMPLING SITE:895 Lawrence Ave E

SAMPLED BY:A. Beard

Sewer Use - Toronto Sanitary and Combined Sewer Use By-law - Inorganics

DATE RECEIVED: 2022-06-27

DATE REPORTED: 2022-07-13

					SAMPLE DESCRIPTION:	21-3
					SAMPLE TYPE:	Water
					DATE SAMPLED:	2022-06-27 13:00
Parameter	**Unit**	**G / S: A**	**G / S: B**	**RDL**		**4029462**
pH	pH Units	6.0-11.5	6.0-9.5	NA		7.87
Fluoride	mg/L	10		0.05		<0.05[<A]
Total Phosphorus	mg/L	10	0.4	0.02		0.05[<B]
Cyanide, SAD	mg/L	2	0.02	0.002		<0.002[<B]
Phenols	mg/L	1.0	0.008	0.001		0.005[<B]
Chromium VI	mg/L	2	0.04	0.002		<0.002[<B]

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to City of Toronto Sanitary and Combined Sewers Discharge, B Refers to CIty of Toronto Storm Sewer Discharge
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

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Certificate of Analysis

AGAT WORK ORDER: 22T913504

PROJECT: 19129918

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Aaron Beard

SAMPLING SITE:895 Lawrence Ave E

SAMPLED BY:A. Beard

Sewer Use - Toronto Sanitary and Combined Sewer Use By-law - Inorganics (Filtered)

DATE RECEIVED: 2022-06-27

DATE REPORTED: 2022-07-13

					SAMPLE DESCRIPTION:	21-3
					SAMPLE TYPE:	Water
					DATE SAMPLED:	2022-06-27 13:00
Parameter	**Unit**	**G / S: A**	**G / S: B**	**RDL**		**4029514**
Total Phosphorus	mg/L	10	0.4	0.02		0.02[<B]
Total Suspended Solids	mg/L	350	15	10		<10[<B]
Total Aluminum	mg/L	50		0.010		<0.010[<A]
Total Antimony	mg/L	5		0.020		<0.020[<A]
Total Arsenic	mg/L	1	0.02	0.015		<0.015[<B]
Total Cadmium	mg/L	0.7	0.008	0.005		<0.005[<B]
Total Chromium	mg/L	4	0.08	0.020		<0.020[<B]
Total Cobalt	mg/L	5		0.010		<0.010[<A]
Total Copper	mg/L	2	0.04	0.020		<0.020[<B]
Total Lead	mg/L	1	0.12	0.020		<0.020[<B]
Total Manganese	mg/L	5	0.05	0.020		<0.020[<B]
Total Molybdenum	mg/L	5		0.020		<0.020[<A]
Total Nickel	mg/L	2	0.08	0.030		<0.030[<B]
Total Selenium	mg/L	1	0.02	0.002		0.003[<B]
Total Silver	mg/L	5	0.12	0.020		<0.020[<B]
Total Tin	mg/L	5		0.020		<0.020[<A]
Total Titanium	mg/L	5		0.010		<0.010[<A]
Total Zinc	mg/L	2	0.04	0.020		<0.020[<B]

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to City of Toronto Sanitary and Combined Sewers Discharge, B Refers to CIty of Toronto Storm Sewer Discharge
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 22T913504

PROJECT: 19129918

ATTENTION TO: Aaron Beard

SAMPLING SITE:895 Lawrence Ave E

SAMPLED BY:A. Beard

Microbiology Analysis

RPT Date: Jul 13, 2022			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
E. Coli (Using MI Agar)															
Escherichia coli	4029410		0	0	NA										

Comments: NA - % RPD Not Applicable.

Certified By:

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 22T913504

PROJECT: 19129918

ATTENTION TO: Aaron Beard

SAMPLING SITE:895 Lawrence Ave E

SAMPLED BY:A. Beard

Trace Organics Analysis

RPT Date: Jul 13, 2022			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Sewer Use - Toronto Sanitary and Combined Sewer Use By-law - Organic															
Methylene Chloride	4020287		<0.0003	<0.0003	NA	< 0.0003	105%	50%	140%	102%	60%	130%	87%	50%	140%
trans-1,3-Dichloropropylene	4020287		<0.0003	<0.0003	NA	< 0.0003	100%	50%	140%	97%	60%	130%	105%	50%	140%
cis- 1,2-Dichloroethylene	4020287		<0.0002	<0.0002	NA	< 0.0002	112%	60%	130%	85%	60%	130%	119%	60%	130%
Chloroform	4020287		<0.0002	<0.0002	NA	< 0.0002	103%	50%	140%	85%	60%	130%	97%	50%	140%
Benzene	4020287		<0.0002	<0.0002	NA	< 0.0002	88%	50%	140%	71%	60%	130%	100%	50%	140%
Trichloroethylene	4020287		<0.0002	<0.0002	NA	< 0.0002	106%	50%	140%	94%	60%	130%	75%	50%	140%
Toluene	4020287		<0.0002	<0.0002	NA	< 0.0002	70%	50%	140%	83%	60%	130%	89%	50%	140%
Tetrachloroethylene	4020287		<0.0001	<0.0001	NA	< 0.0001	75%	50%	140%	73%	60%	130%	100%	50%	140%
Ethylbenzene	4020287		<0.0002	<0.0002	NA	< 0.0002	85%	50%	140%	89%	60%	130%	89%	50%	140%
1,1,2,2-Tetrachloroethane	4020287		<0.0002	<0.0002	NA	< 0.0002	106%	50%	140%	92%	60%	130%	111%	50%	140%
1,2-Dichlorobenzene	4020287		<0.0002	<0.0002	NA	< 0.0002	97%	50%	140%	92%	60%	130%	94%	50%	140%
1,4-Dichlorobenzene	4020287		<0.0002	<0.0002	NA	< 0.0002	98%	50%	140%	92%	60%	130%	101%	50%	140%
PCBs	4038015		< 0.0002	< 0.0002	NA	< 0.0002	104%	50%	140%	98%	50%	140%	77%	50%	140%
Pentachlorophenol	3983715		< 0.0005	< 0.0005	NA	< 0.0005	85%	50%	140%	79%	50%	140%	84%	50%	140%
Di-n-butyl phthalate	3983715		< 0.0005	< 0.0005	NA	< 0.0005	74%	50%	140%	85%	50%	140%	79%	50%	140%
3,3'-Dichlorobenzidine	3983715		< 0.0001	< 0.0001	NA	< 0.0001	79%	30%	130%	89%	30%	130%	86%	30%	130%
Bis(2-Ethylhexyl)phthalate	3983715		< 0.0005	< 0.0005	NA	< 0.0005	85%	50%	140%	78%	50%	140%	85%	50%	140%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 22T913504

PROJECT: 19129918

ATTENTION TO: Aaron Beard

SAMPLING SITE:895 Lawrence Ave E

SAMPLED BY:A. Beard

Water Analysis

RPT Date: Jul 13, 2022			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Sewer Use - Toronto Sanitary and Combined Sewer Use By-law - Inorganics															
pH	4028923		7.58	7.71	1.7%	NA	101%	90%	110%						
Fluoride	4036006		<0.05	<0.05	NA	< 0.05	113%	70%	130%	108%	80%	120%	94%	70%	130%
Total Phosphorus	4037272		0.10	0.10	0.0%	< 0.02	99%	70%	130%	98%	80%	120%	NA	70%	130%
Cyanide, SAD	4029462	4029462	<0.002	<0.002	NA	< 0.002	102%	70%	130%	105%	80%	120%	106%	70%	130%
Phenols	4033548		0.001	<0.001	NA	< 0.001	102%	90%	110%	102%	90%	110%	107%	80%	120%
Chromium VI	4026830		<0.002	<0.002	NA	< 0.002	102%	70%	130%	105%	80%	120%	107%	70%	130%
Sewer Use - Toronto Sanitary and Combined Sewer Use By-law - Inorganics (Filtered)															
Total Phosphorus	4037272		0.10	0.10	0.0%	< 0.02	99%	70%	130%	98%	80%	120%	NA	70%	130%
Total Suspended Solids	4032212		25	24	NA	< 10	102%	80%	120%						
Total Aluminum	4029823		0.056	0.051	NA	0.012	109%	70%	130%	101%	80%	120%	116%	70%	130%
Total Antimony	4029823		<0.020	<0.020	NA	< 0.020	100%	70%	130%	94%	80%	120%	101%	70%	130%
Total Arsenic	4029823		<0.015	<0.015	NA	< 0.015	95%	70%	130%	86%	80%	120%	91%	70%	130%
Total Cadmium	4029823		<0.005	<0.005	NA	< 0.005	100%	70%	130%	95%	80%	120%	97%	70%	130%
Total Chromium	4029823		<0.020	<0.020	NA	< 0.020	102%	70%	130%	93%	80%	120%	96%	70%	130%
Total Cobalt	4029823		<0.010	<0.010	NA	< 0.010	101%	70%	130%	87%	80%	120%	97%	70%	130%
Total Copper	4029823		0.024	0.025	NA	< 0.020	102%	70%	130%	91%	80%	120%	95%	70%	130%
Total Lead	4029823		<0.020	<0.020	NA	< 0.020	107%	70%	130%	95%	80%	120%	100%	70%	130%
Total Manganese	4029823		<0.020	<0.020	NA	< 0.020	101%	70%	130%	89%	80%	120%	98%	70%	130%
Total Molybdenum	4029823		0.034	0.039	NA	< 0.020	100%	70%	130%	99%	80%	120%	103%	70%	130%
Total Nickel	4029823		<0.030	<0.030	NA	< 0.030	102%	70%	130%	86%	80%	120%	95%	70%	130%
Total Selenium	4029823		<0.002	<0.002	NA	< 0.002	98%	70%	130%	94%	80%	120%	94%	70%	130%
Total Silver	4029823		<0.020	<0.020	NA	< 0.020	98%	70%	130%	86%	80%	120%	94%	70%	130%
Total Tin	4029823		<0.020	<0.020	NA	< 0.020	101%	70%	130%	92%	80%	120%	99%	70%	130%
Total Titanium	4029823		<0.010	<0.010	NA	< 0.010	107%	70%	130%	84%	80%	120%	89%	70%	130%
Total Zinc	4029823		<0.020	<0.020	NA	< 0.020	100%	70%	130%	94%	80%	120%	92%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate NA: results are under 5X the RDL and will not be calculated.

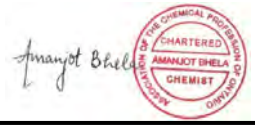
Matrix spike NA: Spike level < native concentration. Matrix spike acceptance limits do not apply and are not calculated.

BOD5

Biochemical Oxygen Demand, Total	4029462	<2	<2	NA	< 2	88%	70%	130%	

Comments: If RPD value is NA, the results of the duplicates are less than 5x the RDL and the RPD will not be calculated.

Certified By:



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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 22T913504

PROJECT: 19129918

ATTENTION TO: Aaron Beard

SAMPLING SITE:895 Lawrence Ave E

SAMPLED BY:A. Beard

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration

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SAMPLED BY:A. Beard

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Oil and Grease (animal/vegetable) in water	VOL-91-5011	EPA SW-846 1664A & SM 5520	GRAVIMETRIC
Oil and Grease (mineral) in water	VOL-91-5011	EPA SW-846 1664A & SM 5520	GRAVIMETRIC
Methylene Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
trans-1,3-Dichloropropylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5001	modified from EPA 5030B & EPA 8260D	CALCULATION
Toluene-d8	VOL-91- 5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91- 5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
PCBs	ORG-91-5112	modified from EPA SW-846 3510C & 8082A	GC/ECD
Decachlorobiphenyl	ORG-91-5112	modified from EPA SW846 3510C & 8082A	GC/ECD
Pentachlorophenol	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS
Di-n-butyl phthalate	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS
3,3'-Dichlorobenzidine	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS
Bis(2-Ethylhexyl)phthalate	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS
Total PAHs	ORG-91-5114	modified from EPA 3510C and EPA 8270E	CALCULATION
2,4,6-Tribromophenol	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS
2-Fluorophenol	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS
Chrysene-d12	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS
phenol-d6 surrogate	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS
Nonylphenols	ORG-91-5122	modified ASTM D7485-16	CALCULATION

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 22T913504

PROJECT: 19129918

ATTENTION TO: Aaron Beard

SAMPLING SITE:895 Lawrence Ave E

SAMPLED BY:A. Beard

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Nonylphenol Ethoxylates	ORG-91-5122	modified ASTM D7485-16	CALCULATION
Water Analysis			
Biochemical Oxygen Demand, Total	INOR-121-6023	SM 5210 B	INCUBATOR
pH	INOR-93-6000	modified from SM 4500-H+ B	PC TITRATE
Fluoride	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Total Phosphorus	INOR-93-6022	modified from SM 4500-P B and SM 4500-P E	SPECTROPHOTOMETER
Cyanide, SAD	INOR-93-6051	modified from MOECC E3015; SM 4500-CN- A, B, & C	TECHNICON AUTO ANALYZER
Phenols	INOR-93-6072	modified from SM 5530 D	LACHAT FIA
Chromium VI	INOR-93-6073	modified from SM 3500-CR B	LACHAT FIA
Total Suspended Solids	INOR-93-6028	modified from EPA 1684,ON MOECC E3139,SM 2540C,D	BALANCE
Total Aluminum	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Antimony	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Arsenic	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Cadmium	MET -93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Chromium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Cobalt	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Copper	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Lead	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Manganese	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Molybdenum	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Nickel	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Selenium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Silver	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Tin	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Titanium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Zinc	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS

AGAT Laboratories

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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 22T913504

Cooler Quantity: 1 large

Arrival Temperatures: 5.0 | 5.7 | 4.6

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes: 100se ice

Report Information:

Company: Golder WSP

Contact: Aaron Beard

Address: 100 Scotia Crt

Phone: 226-220-7520 Fax:

Reports to be sent to:

1. Email: Aaron_Beard@golder.com
2. Email: Syed_Ali@golder.com

Regulatory Requirements:

(Please check all applicable boxes)

☐ Regulation 153/04

Table ___ *Indicate One*

☐Ind/Com
☐Res/Park
☐Agriculture

Soil Texture *(Check One)*

☐Coarse
☐Fine

☐ Excess Soils R406

Table ___ *Indicate One*

☐ Regulation 558

☐ CCME

☒ Sewer Use

☐Sanitary ☐Storm

City Toronto *Region*

☐ Prov. Water Quality Objectives (PWQO)

☐ Other

Indicate One

Is this submission for a Record of Site Condition? ☐ Yes ☒ No

Report Guideline on Certificate of Analysis ☐ Yes ☒ No

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT

**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:

Project: 19129918

Site Location: 895 Lawrence Ave E

Sampled By: A. Beard

AGAT Quote #: PO:

Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☒ No ☐

Company: Golder

Contact: Syed Ali

Address: Syed_Ali@golder.com

Email: 100 Scotia Crt

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC (Y/N)	Metals & Inorganics (O. Reg 153)	Metals - ☐ CrVI, ☐ Hg, ☐ HWSB (O. Reg 153)	BTEX, F1-F4 PHCs (O. Reg 153)	PAHs (O. Reg 153)	PCBs (O. Reg 153)	VOC (O. Reg 153)	Aroclors	Landfill Disposal Characterization TCLP: TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs (O. Reg 558)	Excess Soils SPLP Rainwater Leach SPLP: ☐ Metals ☐ VOCs ☐ SVOCs (O. Reg 406)	Excess Soils Characterization Package pH, ICPMS Metals, BTEX, F1-F4 (O. Reg 406)	Corrosivity: Include Moisture ☐ Sulphide ☐	SUB - City Toronto	TSS - Filtered	Metals - Filtered	Tot Phosphorus - Filtered			Potentially Hazardous or High Concentration (Y/N)
BH21-3	27/06/22	1:00 PM	27	GW	Filtered B bottles													X	X	X	X			
		AM PM																						
		AM PM																						
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Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Aaron Beard	27/06/22	19:00	Amber D. [signature]		

'22 JUN 27 7:07 PM

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Nº: T - 133672

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