

Erin Mills Twon Centre Proposed Mixed-Use Development 5100 Erin Mills Parkway, Missisauga, Ontario

## Type of Document:

Geotechnical Investigation

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# 1. Introduction

This report presents the results of a Geotechnical Investigation carried out at the Erin Mills Town Centre located at 5100 Erin Mills Parkway in Mississauga, Ontario. The Site, which covers an area of about 12.4 acres, is situated at the northwest corner of the existing Erin Mills Town Centre in the City Mississauga, Ontario.

EXP Services Inc. (EXP) understands that the proposed development will comprise of a total of nine (9) residential towers (with some commercial space) and a parkland area. The proposed structures will be between 20 and 44 storeys in height. The development will include three (3) levels of underground parking (P3 is assumed to extend up to 10 m below ground surface). The site is currently occupied in part by a single-storey commercial building along with paved surface parking and landscape areas.

EXP carried out a preliminary geotechnical investigation at the Erin Mills Town Centre in the spring of 2020. At that time, a total of twenty (20) boreholes were advanced to depths ranging from about 1.5 to 6.7 m throughout the entire Erin Mills Town Centre area. The findings were presented in our report BRM-00257769-A1 dated March 27, 2020. In the fall of 2022, a supplementary geotechnical investigation (Report BRM-00257769-G0 dated November 10, 2022) was carried out when six (6) boreholes were advanced to about 10.1 to 13.8 m below existing grade. The logs for previous boreholes that fall within the boundary of the current site are included in Appendix C.

The purpose of this investigation was to determine the subsurface conditions at the site by drilling a limited number of new and deeper boreholes and based on this information, supplemented by information obtained in the preliminary investigation, to provide geotechnical engineering guidelines for the design and construction of the proposed development. Specifically, recommendations and/or comments regarding foundation type, allowable bearing pressures, groundwater conditions, excavation and backfill, slab-on-grade construction, permanent drainage requirements and earthquake considerations were to be provided.

The information contained in this report in no way reflects the environmental aspects of the soil and groundwater as this is beyond our terms of reference. The comments and recommendations given in this report are based on the assumption that the above-described design concept will proceed into construction. If changes are made either in the design phase or during construction, this office must be retained to review these modifications. The result of this review may be a modification of our recommendations or the requirement of additional field or laboratory work to check whether the changes are acceptable from a geotechnical viewpoint.

A Phase II Environmental Site Assessment (ESA) and Hydrogeological Investigation were carried out concurrently with the Geotechnical Investigation. The findings of the Phase II ESA and Hydrogeological investigation will be reported under separate covers.



# 2. Procedure

The fieldwork for this investigation was carried out during the period of January 4 to 22, 2024. A total of fourteen (14) boreholes, Boreholes 201 to 214, were drilled for the Geotechnical Investigation at the approximate locations shown on the attached Borehole Location Plan (Drawing No. 1). The boreholes were extended to depth of about 15.3 to 15.9 m below existing ground surface.

Prior to the commencement of drilling operations, Ontario OneCall was contacted for clearing underground services in the investigation areas. In addition, a private locator was also retained to scan around each borehole location to minimize the risk of contacting any buried utilities.

All boreholes were advanced using a drill rig adapted for soil sampling purposes owned and operated by a specialist drilling contractor. A representative of EXP was present throughout the drilling operations to monitor and direct the drilling and sampling operations, logged the borings, made groundwater observations during and upon completion of drilling, processed the recovered samples and prepared the borehole logs. Representative samples of the subsurface soils were recovered at regular intervals using conventional 50 mm O.D. split spoon sampling equipment driven in accordance with Standard Penetration Test (SPT) procedures (ASTM D1586). Coring of the shale bedrock was carried out using a HQ size core barrel at all borehole locations. All split spoon and rock core samples were returned to EXP's Brampton laboratory for testing which included moisture content, unit weight determinations and grain size analysis on selected samples.

Water level observations were carried out in the open boreholes during the course of the fieldwork. Subsequent water level observations were carried out in a monitoring well installed in each borehole for Phase II ESA and Hydrogeological purposes.

The locations of the boreholes were established in the field by EXP personnel based on a drawing provided by the client. Ground surface elevations (Geodetic) at each borehole location was derived from SOKKIA TopNET Live RTK Network with the use of a SOKKIA GCX3 Controller.



# 3. Surface Conditions

## 3.1 Soil

The detailed soil profile encountered in each borehole and the results of laboratory moisture content determinations are indicated on the attached borehole logs. It should be noted the soil boundaries indicated on the borehole logs are inferred from non-continuous sampling and observations during drilling. These boundaries are intended to reflect approximate transition zones for the purpose of geotechnical design and should not be interpreted as exact planes of geological change.

The "Notes on Sample Descriptions" and "Explanatory Sheet to Core Log" preceding the borehole logs form an integral part of and should be read in conjunction with this report.

The following is a brief description of the soil conditions encountered during the investigation:

3.1.1 Asphalt and Topsoil

Asphalt with thickness ranging from about 70 to 140 mm was encountered at the surface of Boreholes 201, 202, 203, 204, 205, 206 and 209D.

At the ground surface of Boreholes 207, 210, 211, 212, 213 and 214D, topsoil cover with thickness ranging from about 100 to 200 mm was encountered.

At Borehole 208, a topsoil layer of about 125 mm thick was encountered below the surficial pebble layer.

## 3.1.2 Fill

Fill, comprising sand and gravel, silty sand and clayey silt was encountered below the asphalt or topsoil at all borehole locations. The fill extends to depths ranging from about 0.7 to 2 m below existing ground surface (El. ~176.1 to 173.3 m).

## 3.1.3 Silt

The fill in Borehole 205 is underlain by a silt deposit which is brown to grey in colour, contains a trace of clay and gravel. It is in a dense to very dense state of compactness (recorded 'N'-values of 41 to over 100) and extends to a depth of about 8.5 m below existing grade (El. ~166.8 m).

#### 3.1.4 Sandy Silt to Silty Sand

A sandy silt to silty sand deposit was encountered below the fill in Borehole 206. This deposit is brown in colour and is in a compact state of compactness. The sandy silt to silty sand extends to a depth of about 2.5 m below existing ground surface (El. ~173.5 m).



## 3.1.5 Silt Till

A silt till deposit was encountered below the silt in Borehole 205, below the sandy silt to silty sand in Borehole 206 and below the fill in the remaining boreholes. The silt till is generally reddish brown in colour, contains some clay, a trace of sand with a trace of shale fragments at lower level of the deposit. It has moisture contents of about 5 to 11 percent of dry mass and is in a dense to very dense state of compactness (recorded 'N'-values of 38 to over 100). The silt till extends to depths of about 2.6 to 10.1 m below existing ground surface (El. ~174.2 to 165.2 m).

Grain size analyses were carried out on seven (7) representative samples recovered from the boreholes. The test results are presented in Appendix A and summarized in Table 1 below:

Sample	Depth (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Description
BH203 SS2	0.8 - 1.4	0.0	3.7	83.8	12.5	Silt, some Clay, trace Sand
BH205 SS5	3.1 – 3.7	0.7	11.8	79.9	7.6	Silt, some Sand, trace Clay & Gravel
BH205 SS8	7.6 - 8.0	3.6	50.8	42.6	3.0	Sand & Silt, trace Clay & Gravel
BH207 SS3	1.5 – 2.1	0.0	4.8	68.0	27.2	Clayey Silt, trace Sand
BH211 SS2	0.8 - 1.4	0.0	2.4	73.1	24.5	Clayey Silt, trace Sand
BH212 SS4	2.3 – 2.8	0.0	6.5	78.8	14.7	Silt, some Clay, trace Sand
BH214 SS7	4.6 – 5.0	0.0	12.7	80.0	7.3	Silt, some Sand, trace Clay

## Table 1: Summary of Grain Size Analysis Results

## 3.1.6 Shale Bedrock

Shale bedrock of the Queenston Formation was encountered below the silt till at all borehole locations. The approximate elevation for the bedrock encountered in each borehole is presented in the individual borehole and core logs and summarized in Table 2 on the following page.

Approximately 4.7 to 12.6 m of shale bedrock was cored in the boreholes and the detailed findings from the rock cores are presented in the respective rock core logs for each borehole. Based on the rock core information, the shale bedrock comprises about 62 to 98% shale, 1 to 11% limestone, 1 to 26% siltstone and 1 to 2% clay seams. The core recovery ranged from 92 to 100%. The Rock Quality Designation (RQD), a rock quality indicator, is defined as the sum of core lengths of 100 mm or greater divided by the total length of the drill run. The recorded RQD ranged from about 0 to 100% with the lower values recorded in the weathered or rubble zones within the shale bedrock. In general, the RQD values beyond the weathered or rubble zones ranged from about 56 to 100%, indicating a fair quality. The shale bedrock generally consists of moderately soft bedded red shale with some limestone interbeds and is highly weathered in the upper zones and becomes sound with depth. All 14 deep boreholes were terminated in the shale bedrock at depths ranging from about 15.3 to 15.9 m below existing ground surface (El. 161.6 to 159.8 m).



Borehole No.	Top of Borehole Elevation (m)	Approximate Depth to Shale Bedrock below Existing Grade/Elevation (m)
201	176.84	~2.7 / ~174.1
202	176.76	~2.6 / 174.2
203	176.31	~3.4 / ~172.9
204	176.51	~3.3 / ~173.2
205	175.26	~10.1 / ~165.2
206	176.02	~4.6 / ~171.4
207	176.12	~3.0 / ~173.1
208	176.52	~3.2 / ~173.3
209D	176.87	~3.1 / ~173.8
210	176.76	~3.2 / ~173.6
211	176.86	~3.2 / ~173.7
212	176.12	~4.0 / ~172.1
213	176.15	~4.7 / ~171.4
214D	175.97	~5.8 / ~170.2

#### Table 2: Summary of Shale Bedrock Level

The Queenston Formation consists of red shale with interbeds of limestone and siltstone. Typically, the hard layers comprise about 15 to 20 percent of the unit. The hard layers are usually less than about 100 to 150 mm thick, but some layers are much thicker. The thicker layers have been observed to be as much as 750 to 900 mm at other sites. The layers are actually lenses and they can vary significantly in thickness over short distances.

Stress relief features such as folds and faults are common in the Queenston Formation. In these features the rock is heavily fractured and sheared and contains layers of shale rubble and clay. Due to the fracturing, these features may also be groundwater conduits, which could result in excessive water flow into excavations. Weathering is much deeper than the surrounding rock in these features and often there can be a lateral displacement of the stress relief features resulting in sound un-weathered bedrock overlying fractured and weather bedrock. The stress relief features are usually in the order of 4 to 6 m wide, but the depth can vary from 4 to 5 m to in excess of 10 m. Such zones were not encountered in the boreholes cored at the site.



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## 3.2 Groundwater Condition

Groundwater conditions were assessed by taking readings in open holes during the course of the fieldwork and in monitoring wells installed in selected boreholes. Short-term groundwater level observations are recorded on the attached borehole logs and summarized in Table 3 below.

Borehole	Date of	Well Depth	Depth to Groundwater Level Below Existing Grade/Elevation (m)			
Number	Completion	(m)	January 29, 2024	February 4, 2024		
202	January 18, 2024	~7.2 (~169.6)	~5.9 (~170.8)	~6.0 (~170.8)		
203	January 19, 2024	~6.9 (~169.4)	~6.5 (~169.8)	~6.2 (~170.2)		
205	January 12, 2024	~15.4 (~159.9)	~5.3 (~169.9)	~5.6 (~169.7)		
207	January 11, 2024	~15.5 (~160.6)	~6.1 (~170.0)	~5.1 (~108.4)		
209D	January 15, 2024	~15.2 (~161.7)	~7.9 (~169.0)	~8.0 (~168.9)		
2095	January 15, 2024	~6.9 (~170.0)	No Free Water (>170.0)	No Free Water (>170.0)		
212	January 5, 2024	~15.4 (~160.7)	~5.7 (~170.4)	~5.8 (~170.3)		
214D	January 4, 2024	~15.7 (~160.3)	~6.1 (~169.9)	~6.3 (~169.7)		
2145	January 4, 2024	~6.1 (~169.9)	~5.9 (~170.1)	~6.0 (~170.0)		

### Table 3: Summary of Observed Groundwater Levels

Seasonal fluctuations in groundwater levels should be anticipated.

Groundwater conditions are discussed in detail in the hydrogeological study report which was issued under separate cover.



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# 4. Engineering Discussion and Recommendations

The site is part of the existing Erin Mills Town Centre located at 5100 Erin Mills Parkway in Mississauga, Ontario. The proposed development, which covers an area of about 12.4 acres, is situated at the northwest corner of the Erin Mills Town Centre in the City Mississauga, Ontario.

EXP understands that the proposed development will comprise of a total of nine (9) residential towers (with some commercial space) and a parkland area. All proposed structures will be between 20 and 44 storeys in height. The development will include three (3) levels of underground parking (P3 is assumed to extend up to 10 m below ground surface). The site is currently occupied in part by a single-storey commercial building along with paved surface parking and landscape areas.

The following recommendations are provided for preliminary consideration. When the development plan is finalized, additional boreholes and testing may be required to refine the preliminary recommendations provided.

## 4.1 Foundation

Based on the findings in the 14 boreholes, shale bedrock was encountered between El. ~174.1 m in Borehole 201 and El. ~165.2 m in Borehole 205 – a bedrock level differential of about 9 m. In general, the average bedrock level was found to be around El. 173.5 m in the central part of the site, dipping down to El. ~170.2 m in Borehole 214 (towards the southwest) and to El. ~165.2 m in Borehole 205 (towards the northeast).

For the proposed condominium structures with 3 levels of common below grade parking, the anticipated lowest basement level (P3) will be set at about 10 m below grade. The footings are therefore expected to be at about 1.5 m below the P3 slab, i.e. ~11.5 m below existing ground level ~El. ~164.5 m (assuming existing grade is at El. ~176.0 m).

At this level, the footings will be well into the shale bedrock except for Borehole 205 which is just into the shale bedrock. The proposed structures may be supported on conventional spread and strip footings founded on the sound shale bedrock below any disturbed or weathered zones. Based on the rock core information, the footings in the vicinity of Borehole 205 may have to be extended to below the weathered/fractured zones to at least El. ~162.5 m to found on sound shale. A factored ULS bearing value of 3750 kPa can be used for the footing design. The SLS bearing value does not apply for foundations founded on sound shale bedrock. All footing bases must be hand cleaned and evaluated by this office at the time of construction. In the event where rubble zones, faults, etc. are encountered in the shale bedrock, the footings would have to be lowered to competent rock.



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During excavation, care is needed to avoid fracturing, loosening or softening the shale at the foundation level. Loose, broken or remolded shale under the foundation, unless removed, may cause excessive differential settlements. Shale bedrock, immediately above the foundation level (thickness of about 1 m) should be removed carefully at the latest possible stage before concreting and construction to minimize exposure to the weather and to reduce the risk of rock slab heave resulting from high horizontal stresses. Footing bases should be protected by a concrete skim coat (~50 mm thick) if concrete placement does not occur on the same day after excavation.

## 4.2 Foundation General

Footings which are to be placed at different elevations should be located such that the higher footing is set below a line drawn up at 10 horizontal to 7 vertical from the near edge of the lower footing. This concept should also be applied to excavations for new foundations in relation to existing footings or underground services.



FOOTINGS NEAR SERVICE TRENCHES OR AT DIFFERENT ELEVATIONS

All footings exposed to seasonal freezing conditions should be protected from frost action by at least 1.2 m of soil cover or equivalent insulation for frost protection, depending on the final grade requirements. There is no official rule governing the required founding depth for footings below unheated basement floors. Certainly it will not be greater than the 1.2 m required in Southern Ontario for exterior footings. Unmonitored experience in the last few years indicates that a shallower depth ranging from about 0.82 to 0.9 m for interior footings and 0.4 m for wall footings has been successful where 2 or more basement levels apply. Adjacent to air shafts and entrance and exit doors, a footing depth of 1.2 m below floor surface level is required or, alternatively, insulation protection must be provided.

The total and differential settlements of well designed and constructed footings placed on sound shale bedrock in accordance with the above recommendations are expected to be 12 mm and 6 mm, respectively.



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It should be noted that the recommended bearing capacity has been calculated by EXP from the borehole information for the design stage only. The investigation and comments are necessarily ongoing as new information on underground conditions becomes available. For example, it should be appreciated modification to the bearing levels may be required if unforeseen subsoil conditions are revealed after the excavation is exposed to full view or if final design decisions differ from those assumed in this report. As stated before, the results of this geotechnical study should therefore be regarded as very preliminary at best due to the limited number of boreholes drilled to the required depth for the proposed development.

## 4.3 Temporary Shoring

Based on the anticipated building elevations and assumed plans for excavation to extend to the property boundaries, site constraints will not allow for an open cut excavation. Therefore, temporary shoring and localized shallow excavations will be required during footing and elevator pit installations.

The shoring should be designed to resist lateral load imposed by the adjacent soils and surcharge loadings. A shoring system comprising soldier pile and lagging, may be considered for the proposed development. A stiffer system, such as caisson walls, should be considered for groundwater cut-off purposes as well as to support the existing structures and roadways.

For a soldier pile and lagging system through the sand layer, the space behind the lagging boards must be filled with concrete sand. The lagging boards should retain all soil while allowing groundwater seepage from wet sand seams to drain from behind. Dewatering of the sand will be required if the seepages and significant and caused the sand to wash into the excavation.

Assuming that the lagging boards will be installed in 1.2 m lifts, the filter fabric should be nailed to the excavated face of the lowest lagging and then line the fabric up behind the lagging in a continuous sheet. At the junction of the upper lagging, the spaces should be filled with filter fabric so that no soil particles can escape from behind the lagging boards.

Unshored excavation heights should not exceed 1.2 m in the excavation as per the Occupational Health and Safety Act. However, the side slopes should be flattened where instability is noted.

The temporary shoring of the soil boundaries for this project should be designed on the basis of the state-of-the-art information given in the fourth edition of the Canadian Foundation Engineering Manual (CFEM).

A rectangular pressure distribution as outlined in the CFEM can be used for calculating the earth pressures. If the shoring system does not extend up to the top of the ground, the sloped bank should either be treated as a surcharge to the shoring system or alternatively, a higher K<sub>a</sub> value, reflecting the sloping ground, should be used.



The parameters that are considered to be applicable for this project and have been used successfully on many other deep excavations in the greater Toronto area, are as follows:

Earth pressure coefficient

- = 0.25 (where small movements are permissible)
- = 0.35 (where utilities, roads, sidewalks must be protected from significant movement, or where vibration from traffic is a factor)
- = 0.40 (where adjacent building footings or movement sensitive services,
   i.e., gas and water mains, are above a line 60 degrees from the
   horizontal extending from the bottom edge of the excavation)

Approximate soil unit weight (γ)	= 22.0 kN/m <sup>3</sup>
Approximate soil unit weight of shale	= 24.5 kN/m <sup>3</sup>
Bond resistance for rock anchors in sound shale	= 400 kPa

It should be noted that water bearing sand seams exist in the native deposits at this site and as such, the tieback holes should be cased to minimize loss of soil during tieback installation.

The recommended design parameters should be confirmed by load testing a number of anchors to 200% design load in accordance with the current edition of the CFEM. As a minimum for this site, at least four (4) anchor load tests should be carried out to verify the capacity of the anchors. The design for the production anchors should then be modified based on the test results, where necessary. All remaining anchors must be installed in similar procedures and proof tested to 1.33 times the design load.

It is recommended that the contract have a performance specification limiting movement. A maximum of 13 mm is generally acceptable for a street where movement sensitive utilities are not nearby. Otherwise, the engineering departments of the utility companies must be contacted to assess what movement is acceptable. Anchor spacing and elevation, and the timing of the excavation and anchoring operations are critical in determining the movements.

During winter months, the shoring walls should be covered with thermal blankets to prevent frost penetration behind the shoring system which may result in unacceptable movements.

EXP should be retained to review the shoring design, to monitor installation and testing of the system, and to monitor the shoring movements during all phases of the excavation. Inclinometers should be installed at locations where sensitive buildings or services lie close to the excavation. Careful monitoring is needed in any shored excavation, especially when buildings are located in close proximity. This is necessary not only to anticipate when and if additional support is needed, but also to provide data to meet claims from adjacent property owners. In this regard, it is essential that detailed precondition surveys be carried out on adjacent buildings.



#### 4.4 Earth Pressure

The lateral earth pressure acting on basement walls may be calculated from the following equation:

	р	=	K (γ h + q)
where	р	=	lateral earth pressure in kPa acting at depth h;
	К	=	earth pressure coefficient a value of 0.4 is recommended;
	γ	=	unit weight of retained soil, a value of 22 kN/m <sup>3</sup> is recommended
	h	=	depth to point of interest in m; and
	q	=	equivalent value of any surcharge on the ground surface in kPa.

The above expression assumes that the perimeter drainage system is effective to prevent hydrostatic pressure build-up behind the perimeter walls.

If water is retained such as in the case of tanking the underground structure, submerged unit weight can be used for the retained soil below the groundwater table and full hydrostatic pressure should be added. The lateral earth pressures acting on basement walls may be calculated from the following expression:

	р	=	$K(\gamma h_1 + \gamma' h_2 + q) + \gamma_w h_2$
where	р	=	lateral earth pressure in kPa acting at depth h;
	К	=	earth pressure coefficient a value of 0.4 is recommended;
	γ	=	unit weight of retained soil, a value of 22 kN/m <sup>3</sup> may be assumed
	$h_1$	=	depth in meters above the water table
	γ'	=	effective unit weight of soil, a value of 12 kN/m <sup>3</sup> may be assumed
	γw	=	unit weight of water (10 kN/m <sup>3</sup> )
	h <sub>2</sub>	=	depth in metres below the water table; and
	q	=	equivalent value of surcharge on the ground surface in kPa

The basement walls should be designed to resist hydrostatic pressure imposed by the recorded groundwater level. All basement walls must be waterproofed up to 1 m below the final exterior grade or at grade as per manufacturer's recommendations.



## 4.5 Excavation and Groundwater Control

Excavation for the proposed structure with 4 basement levels can be carried out utilizing conventional hydraulic type backhoe and must be carried out in accordance with the latest edition of the Occupational Health and Safety Act (OHSA). The soil encountered at this site can be classified as follows:

•	Fill	Туре З
•	Silt	Type 3
•	Sandy Silt to Silty Sand (above groundwater table or dewatered)	Туре 3
•	Sandy Silt to Silty Sand (below groundwater table)	Type 4
•	Silt Till	Type 2
•	Shale Bedrock	Type 1

Excavation into shale bedrock is expected to be carried out by heavy dozers and backhoes equipped with ripping teeth. Because of the presence of hard limestone layers within the shale bedrock, rock breaking equipment will likely be required for removal in some areas. The trimming of excavation faces is generally carried out using a backhoe equipped with ripping teeth and/or vibrating breaker point. In mass excavation, it is possible to lift limestone slabs at joints and cracked edges and continue on with ripping and digging.

It should be noted that cobbles and boulders exist in glacial till deposits and their presence could influence the progress of excavation. Consequently, provisions should be made in the contract documents to cover any delays caused by boulder obstructions.

Some seepage of free water perched in the fill or from the more pervious seams within the native soil should be anticipated during construction. It should be possible to control and remove any such seepage by pumping from temporary sumps and ditches. Where water bearing sand seams are encountered on the side slopes, the area should be covered with filter fabric and a layer of riprap size rocks to allow drainage and to minimize surface erosion. The extent and requirements would have to be evaluated during the excavation.

## 4.6 Floor Slab and Permanent Drainage

Preliminary project information indicates that the P3 basement floor slab will be set at about 10 m below grade, i.e. El. ~166.0 m assuming the existing grade is at El. 176.0 m. At this level, the P3 slab is expected to be set in shale bedrock except for Borehole 205 which will be set in the very dense silt till. For slab-on-grade construction on shale bedrock, all disturbed or broken rock should be removed from the underfloor area. The silt till should be proof-rolled and any soft area identified should be sub-excavated. Any over excavated areas should be brought up to design grades using approved materials described in the "Backfill Considerations" section of this report.



A 200 mm layer of 19 mm clear crushed stone should be placed between the prepared subgrade and the floor slab to serve as a moisture barrier.

The conventional method in handling permanent drainage for the proposed structure with 3 levels of basement is to install a network of perimeter and underfloor drainage systems to collect groundwater in a sump and discharged into the City system. Recently the City is reviewing each discharge application using a more stringent guideline on the groundwater quality and quantity. The hydrogeological study will address the groundwater issues for this site.

If there is capacity in the City sewer, the groundwater quality meets the City of Mississauga stormwater guidelines and is allowed to discharge into the City system, the groundwater can be collected in a sump before being discharged. Since the excavation will probably come up to the boundary limits, commercially available wall drains, such as SITEDRAIN HQ240 by American Wick Drain or equivalent, will be required. The drains should extend continuously and from about 1.0 m below ground level to the base of the excavation. Prior to placing the wall drains, a Terrafix 600R or equivalent filter fabric should be nailed to the shoring wall to minimize the risk of plugging the wall drains.

A suggested perimeter drainage system against shoring is shown on the enclosed Drawing No. 18: Suggested Exterior Drainage Against Shoring System. Full coverage of the basement walls is recommended.

A solid pipe should be installed to within 1 m of the exterior wall to collect seepage from the wall drains. Underfloor drains and perimeter drains should not be connected into the same collector pipe. See Drawing Nos. 18 and 19 for a recommended perimeter and underfloor drainage systems, respectively. Further comments can be provided once design plans are finalized.

Shale bedrock can deteriorate and swell if it is submerged in water. As such, in order to minimize the risk of water accumulation under the slab, underfloor drainage pipes are recommended. As a minimum, a row of weeping tile should be placed within all utility trenches to remove any water seepages present in the bedrock. Depending on the spacing of the utility trenches, additional rows may be required. This can be evaluated once the foundation and mechanical pipe layouts are available. Since the underfloor drains will be installed in shale bedrock, clear stone or HPB may be used as backfill in the trenches. A minimum drain slope should suffice since the water can develop its own gradient within the drainage line. All underfloor drains should be connected to the interior sumps for removal off site.

The weeping tile should be connected into the storm sump for removal off site. The layout and details of the underfloor drainage system should be reviewed by this office prior to construction.



To minimize the risk of groundwater penetrating through the concrete, considerations can be given to waterproofing the walls in addition to the use of drainage boards. Around the perimeter of the building the ground surface should be sloped on a positive grade away from the structure to promote surface water run-off and reduce groundwater infiltration adjacent to the foundations.

The raft foundation option will have to be utilized if foundation drainage into the City's sewer system is not allowed. In this case, the basement needs to be designed as a watertight structure. For raft foundation, underfloor weeping tiles should not be installed under the raft slab and perimeter wall drains will not be required. If underground services are to be located above the raft, a layer of clear stone can be used on top of the raft foundation and a slab on grade placed over this clear stone layer. The foundation walls and the raft should be designed to resist full hydrostatic pressures and uplift based on the design groundwater level as determined in the Hydrogeological Study report.

## 4.7 Backfill Considerations

Given that the floor slab will be within the shale bedrock, 19 mm clear limestone can be used for backfilling under the floor slab.

If Granular B is used, it should be placed in maximum lift thickness of 200 mm in the loose state. Each lift should be compacted to at least 95% standard Proctor maximum dry density before subsequent lifts are placed. The degree of compaction achieved in the field should be checked by in-place density tests. 19 mm clear limestone do not require compaction.

## 4.8 Earthquake Considerations

The recommendations for the geotechnical aspects to determine the earthquake loading for design using the OBC 2012 (R2019) are presented below.

## 4.8.1 Subsoil Conditions

The subsoil and groundwater information at this site have been examined in relation to Section 4.1.8.4 of the OBC 2012 (R2019). The subsoils generally consist of fill, silt, sandy silt to silty sand, silt till and shale bedrock. The foundation of the proposed structures with 3 levels of underground parking will be supported on sound shale bedrock.

## 4.8.2 Depth of Boreholes

Table 4.1.8.4.A. Site Classification for Seismic Site Response in OBC 2012 (R2019) indicated that to determine the site classification, the average properties in the top 30 m (below the lowest basement level) are to be used. The boreholes advanced at this site terminated at depths of about 15.3 to 15.9 m below existing grade. Therefore, the site classification recommendation would be based on the available information as well as our interpretation of conditions below the boreholes based on our knowledge of the soil conditions in the area.



#### 4.8.3 Site Classification

Based on the above assumptions and currently available information, the Site Class for the proposed structure with 4 levels of underground parking is "B" as per Table 4.1.8.4.A, Site Classification for Seismic Site Response, OBC 2012 (R2019).

### 4.9 Subsurface Concrete Structures

Two (2) native soil samples were analyzed for pH and sulphate concentrations and the test results are summarized in Table 4 below:

### Table 4: Summary of pH and Sulphate Test Results

Sample Identification	Sample Location	рН	Sulphate (µg/g)
BH202 SS2 (5614359)	Borehole 202 – 0.8 to 1.0 m	7.45	13
BH205 SS6 (5614371)	Borehole 205 – 4.6 to 5.2 m	7.50	49

The sulphate content of the sample analyzed indicates a negligible degree of sulphate attack on buried concrete structures. The Certificate of Analysis is included in Appendix B.

For information regarding the selection of cement type for subsurface concrete structures, reference is made to CSA Standard CAN 3-A23.



## 5. General Comments

The information presented in this report is based on a limited investigation designed to provide information to support an overall assessment of the current geotechnical conditions of the subject property. The conclusions presented in this report reflect site conditions existing at the time of the investigation.

The comments given in this report are intended only for the guidance of design engineers. The number of boreholes required to determine the localized underground conditions between boreholes affecting construction costs, techniques, sequencing, equipment, scheduling, etc. could be greater than has been carried out for design purposes. Contractors bidding on or undertaking the works should, in this light, decide on their own investigations as well as their own interpretations of the factual borehole results so that they may draw their own conclusions as to how the subsurface conditions may affect them.

The information contained in this report in no way reflects on the environmental aspects of the soils, which has not been addressed in this report, since this is beyond our terms of reference. More specific information with respect to the conditions between samples or the lateral and vertical extent of materials may become apparent during excavation operations. The interpretation of the borehole information must, therefore, be validated during excavation operations not observed during this investigation may become apparent; should this occur, EXP should be contacted to assess the situation and additional testing and reporting may be required. EXP has qualified personnel to provide assistance in regard to future geotechnical issues related to this property.

EXP Services Inc. should be retained for a general review of the final design and specifications to verify that this report has been properly interpreted and implemented. If not accorded the privilege of making this review, EXP Services Inc. will assume no responsibility for interpretation of the recommendations in the report.

We trust this report is satisfactory for your purposes. Should you have any questions or comments, please do not hesitate to contact this office.

Yours truly,

**EXP** Services Inc.

Kevin W. Y. Leung, M. Sc. P. Eng. Senior Engineer, Geotechnical Division



Stephen S. M. Cheng, P. Eng. Discipline Manager, Geotechnical Division

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# Drawings

Borehole Location Plan Borehole and Core Logs Suggested Exterior Drainage Against Shoring System Drainage and Backfill Recommendations





# **Notes On Sample Descriptions**

# **Drawing 1A**

1. All sample descriptions included in this report follow the Canadian Foundations Engineering Manual soil classification system. This system follows the standard proposed by the International Society for Soil Mechanics and Foundation Engineering. Laboratory grain size analyses provided by EXP Services Inc. also follow the same system. Different classification systems may be used by others; one such system is the Unified Soil Classification. Please note that, with the exception of those samples where a grain size analysis has been made, all samples are classified visually. Visual classification is not sufficiently accurate to provide exact grain sizing or precise differentiation between size classification systems.

	ISSMFE SOIL CLASSIFICATION											
CLAY		SILT			SAND			GRAVEL			COBBLES	BOULDERS
	FINE	MEDIUM	COAR	SE FIN	E MED	IUM COAR	SE FIN	IE IV	IEDIUM	COARSE		
	0.002 	0.006 	0.02 	0.06 I EQUIVA	0.2 I	0.6 I AIN DIAMETI	2.0   ER IN MI	6.0 I LLIMETR	20 	) 60	20	00
	PLASTIC) TO			FI	NE		URS	5. FINE				
SILT (P	NUNPLASTIC)					SAND			GRAV	VEL		

- UNIFIED SOIL CLASSIFICATION
- 2. Fill: Where fill is designated on the borehole log it is defined as indicated by the sample recovered during the boring process. The reader is cautioned that fills are heterogeneous in nature and variable in density or degree of compaction. The borehole description may therefore not be applicable as a general description of site fill materials. All fills should be expected to contain obstruction such as wood, large concrete pieces or subsurface basements, floors, tanks, etc.; none of these may have been encountered in the boreholes. Since boreholes cannot accurately define the contents of the fill, test pits are recommended to provide supplementary information. Despite the use of test pits, the heterogeneous nature of fill will leave some ambiguity as to the exact composition of the fill. Most fills contain pockets, seams, or layers of organically contaminated soil. This organic material can result in the generation of methane gas and/or significant ongoing and future settlements. Fill at this site may have been monitored for the presence of methane gas and, if so, the results are given on the borehole logs. The monitoring process does not indicate the volume of gas that can be potentially generated nor does it pinpoint the source of the gas. These readings are to advise of the presence of gas only, and a detailed study is recommended for sites where any explosive gas/methane is detected. Some fill material may be contaminated by toxic/hazardous waste that renders it unacceptable for deposition in any but designated land fill sites; unless specifically stated the fill on this site has not been tested for contaminants that may be considered toxic or hazardous. This testing and a potential hazard study can be undertaken if requested. In most residential/commercial areas undergoing reconstruction, buried oil tanks are common and are generally not detected in a conventional geotechnical site investigation.
- 3. Till: The term till on the borehole logs indicates that the material originates from a geological process associated with glaciation. Because of this geological process the till must be considered heterogeneous in composition and as such may contain pockets and/or seams of material such as sand, gravel, silt or clay. Till often contains cobbles (60 to 200 mm) or boulders (over 200 mm). Contractors may therefore encounter cobbles and boulders during excavation, even if they are not indicated by the borings. It should be appreciated that normal sampling equipment cannot differentiate the size or type of any obstruction. Because of the horizontal and vertical variability of till, the sample description may be applicable to a very limited zone; caution is therefore essential when dealing with sensitive excavations or dewatering programs in till materials.

## **Explanatory Sheet To Core Log**

<u>Column No.</u>		D	<u>escription</u>								
1	Elevation of Geotechnical Boundary										
2	Depth of Geotechnical Boundary in Borehole										
3	Geological Symbol for Rock or Soil Material										
4	General Descrip types, frequenc	General Description of Geotechnical Unit: Quantitative description including rock type (s), percentage of rock types, frequency and sizes of interbeds, colour, texture, weathering, strength and general joint spacing									
5-11	Joint (Discontir	nuity) Characteristics									
5	Number of Joints in Set: A rock mass can be intersected by a number of joint sets of varying orientations										
6	Joint Type:	B = Bedding J	loint	F = Fault							
		C = Cross Join	nt	S = Shear Plane							
7	Orientation: On orientated core	ly variations in dip c F = Flat D = Dipping V = Vertical	an be identifi = 0 = 20 = 50	ed in core; dip direction is - 20° - 50° - 90°	obtained from field mapping or						
8	Joint Spacing:	This is an approximat VW = Vc W = W M = M C = C VC = V	e measure of ery Wide ide oderate lose ery Close	spacing between joints in s = >3 m = 1 to 3 m = 30 cm to 1 m = 5 to 30 cm = <5 cm	specific joint sets						
9	Roughness										
		RU = Rough I $RP = Rough F$ $SU = Smooth$ $SP = Smooth$ $LU = Slickens$ $LP = Slickens$	Undulating Planar Undulating Planar sided Undula <sup>,</sup> ided Planar	ting							
10	Filling:				<u>Approximate <math>\phi_r</math></u>						
		T = Tight, har O = Oxidation SA = Slightly S = Sandy par Si = Sandy an NC = Non sof SO = Softenin SC = Swelling	d, non soften altered; clay ticles; clay fr d silty' minor tening clays ( g clays (<5 n g clay fillings	ing ning only free ee - clay (<5 mm) im) (<5 mm)	$25^{\circ} - 35^{\circ}$ $25^{\circ} - 30^{\circ}$ $25^{\circ} - 35^{\circ}$ $20^{\circ} - 25^{\circ}$ $16^{\circ} - 24^{\circ}$ $12^{\circ} - 16^{\circ}$ $6^{\circ} - 12^{\circ}$						
11	Aperture: Estin	mated size of joint op	ening								
12	Degree of Weat	thering of Rock Mate Unweathered Slightly weathered Moderately weathered Highly weathered	rial = no signs o = partial dis = total disco = total disco	of discolouration or oxidation scolouration; fractures (join plouration plouration; typically friable	on ts) typically oxidized & pitted						
		Completely weathered	= resembles	s soil; rock structure usually	y preserved						

#### **Explanatory Sheet To Core Log**

#### Column No.

#### **Description**

h of I	Rock Material		Approx.Uniaxial Compressive Strength
	Very High strength	= specimen can only be chipped by geological hammer	>200 MPa
	High strength	= specimen requires a number of blows to fracture it: cannot be scrapped with a pocket knife	50 – 200 MPa
	Medium strength	= specimen can be fractured by a single blow of geological hammer; can be scrapped with pocket knife, not peeled	15 – 50 MPa
	Low strength	= shallow indentations made with a firm blow of geological hammer; can be peeled by pocket knife with difficulty	4 – 15 MPa
	Very low strength	= crumbles under firm blow with point of geological hammer; can be peeled by pocket knife	1 – 4 MPa

14

Fracture Frequency: Number of natural joints occurring over a metre length of core. All natural joints are counted irrespective of the number of joint sets.

	Fracture Frequency		Joint Spacing	
Π	<0.3/m	=	Very wide	= 3 m
	0.3-1/m	=	Wide	= 1 - 3 m
	1-3/m	=	Moderate	= 30  cm - 1  m
	3 - 20/m	=	Close	= 5 - 30 cm
	>20/m	=	Very Close	= <5 cm

- 15 Run Number: Drill run number
- 16 Core Recovery: Core recovery is the total length of core pieces, irrespective of their individual lengths, obtained in a core run and expressed as a percentage of the length of that core run.
- Rock Quality Designation (RQD): The total length of those pieces of sound core which are 10 cm or greater in 17 length in a core run expressed as a percentage of the total length of that core run. Sound pieces of rack are those pieces separated by natural breaks and not machine breaks or subsequent artificial breaks.

RQD	Rock Mass Classification (After Deere)
0 - 25%	very poor
25-50%	poor
50-75%	fair
75-90%	good
90-100%	excellent
Water Recovery: The	estimated water returning out of the casing

- 18
- 19 Water Colour: The colour of the water returning out of the casing

oject: ocation:	Geotechnical Investigation Erin Mills Town Centre, 51	00 Erin	Mills	Parkw	ay, MIssis	ssaug	a, Ontario	Sheet No	1	of _1
ate Drill	ed: January 19 - 22. 2024		- Aug	er Sample			Combustible \ Natural Moist	/apour Reading ure	×	]
rill Type	Hollow Stem Augers		- SP Dyr	⁻ (N) Value amic Cone ⊺	rest <u>O</u>		Plastic and Li	quid Limit		-0
atum:	Geodetic		She Fiel	lby Tube d Vane Test		S S	% Strain at Fa	ailure	€	•
Soil/Rock Symbol	Soil Description	ELEV. m	Depth (m)	20 near Strength	SPT (N Value) 40 60	80 kPa	Combustible Va 25 Natural Mo Atterberg Lin	apour Reading (ppm) 50 75 isture Content % nits (% Dry Weight)	Sample	Natura Unit Weigł kN/m
	~115 mm <b>ASPHALT</b> over <b>FILL</b> - sand and gravel granular, brown moist	176.84 ~176.3	0	18 Ö		200	<b>X X</b>			
	FILL - clayey silt, trace sand, reddish brown, moist	~175.8	1	Č	) 50/1 <u>00</u> mm		×			
	reddish brown, dense to very dense	_	2		50/125 mm		×			
	- trace shale fragments SHALE BDEROCK - Queenston	~174.1	3		50/7 <u>5</u> mm					
	Formation, occasional limestone and sandstone layers, reddish brown	<u>!</u>								
	See Core Log for Details		5 6 7 8 9 10 11 12 13							
	End of Borehole	~161.4								
tes:			=		vn		Elapsed Time	Water Level (m)	Но	l ble Oper to (m)

			ROCK CORE	LC	<u>)</u> G	)							B	H	<b>20</b> '	1		
PROJ Geo LOCA 5100 CLIEN	ECT itechni TION D Erin IT	cal Inv Mills P	estigation arkway, Mississauga, Ontario	ORIEN Vertic DATE \$ 01/22 DRILLE	TATIC al STAR /23 ER	DN TED	E C	176.8 0MP 01/22	ATION 3 Lete 2/23 Typ	N (m) ED		OATUM Geode OGGEI D. Pan	tic D BY chal ARREL		PRO. GTF DRAV	JECT R-002 WING 2/ ET	NUM 57769 NUM A	9-1- 195
The	Muzz	o Grou	p of COmpanies	Davis	Drilli	ng	С	ME 5	5 - T	rack		HQ				1 o	f 2	<del></del>
ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	NO. OF SETS			SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	1
74.3	-		See Borehole Log for Details															
73.8 73.7 73.7	-3		QUEENSTON FORMATION	1	F B	V F	C C	RU RU						1	100	75	95	
'3.3 '3.3 '3.0	- - - -		Shale with interbedded siltstone, and clay layers. Shale (78%) thinly bedded or laminated, red							-								
2.9	<b>4</b> 		slightly weathered to ~7.2 and between moderately weathered and unweathered below. Limestone (6%) fine grained, grev, medium	1	B F	F	C M	RU RP						2	100	91	100	
2.4 2.4 2.3	5		Siltstone (14%) fine grained, grey, medium strength, unweathered.		F	V												
1.8 1.5	- - - -		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.	~					so	180								
1.2 1.1 1.0	-6		4.5 m, 6.3 m and 6.5 m. Clay (2%) layers, heavily weathered, very low strength were noted at ~5.5 m, 5.9 m and 6.4	1 v 1	В	F	VC VC	RP RP	NC	20 mm				3	100	56	90	
0.9 0.8 0.6	- - - -		Rubble layers, heavily weathered, very low strength were noted at ~5.1m (50 mm) and 6 m (40 mm).	5.3	F F	v v			NC	70 mm								
0.4 0.4 0.3 0.3	-7			1	в	F	C	RP						4	100	90	100	
0.1 0.1 9.6 9.6	- - - -						M	SU							100	50	100	1
9.5 9.3 9.0 8.9	-8																	
8.7 8.5 8.1	-  - -			1	в	F	W	SU						5	100	100	100	
67.7 67.6	9 9											-						
67.2 67.1	-																	T
6.8 6.8				1	в	F	W W	SP SP						6	100	100	100	

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		<b>ROCK CORE</b>	LC	)G								E	BH	20	1		
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Muzz	o Grou	p of COmpanies	Davis	Drilli	ing	C	ME 5	5 - T	rack		HQ		-		20	f 2	
o DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	NO. OF SETS			SPACING SPACING			APERTURE C		STRENGTH		RUN NUMBER	RECOVERY (%)	17 LKQD	B WATER RECOVERY (%)	
-		4	5	0		0	9	10		12	13	14	15	10	17	10	
- - - 11		QUEENSTON FORMATION Shale with interbedded siltstone, and clay															
-		Shale (78%) thinly bedded or laminated, red low strength, alternating between heavily and slightly weathered to ~7.2 and between moderately weathered and unweathered below		В	F	w	SP						7	100	100	100	hat
- <b>12</b>		Limestone (6%) fine grained, grey, medium strength, unweathered Siltstone (14%) fine grained, grey, medium strength, unweathered				W	SP										
-13		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals. Vertical fractures were noted at ~3.1 m, 4.4 4.5 m 6.3 m and 6.5 m	m,														-
-		Clay (2%) layers, heavily weathered, very lo strength were noted at ~5.5 m, 5.9 m and 6.4 m. Rubble layers, heavily weathered, very low	w 1	В	F	W	SP SP						8	100	100	100	ŭ
<b>14</b>		m (40 mm).	0.3														
-15			1	В	F	WW	SP SP						9	100	100	100	Red
-		End of Borehole at 15.4 m															
-16																	
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3     4     5     6     7     8     10     11     12     13     14     15     16       1     B     F     W     SP     W     SP     W     10     11     12     13     14     15     16       1     B     F     W     SP     W     SP     W     10     11     12     13     14     15     16       1     B     F     W     SP     W     SP     W     10     1     12     13     14     15     16       1     B     F     W     SP     W     SP<!--</td--><td>CONCOUNCE COUNCE     COUNCECTURE     COUNCECTURE<td>COUNT COUNT COUNT</td></td></td>	RECONCLUE LECON       RECONCLUE LECONCLUE LECONCULUE       RECONCULUE LECONCULUE       Vertical       Vertical       Data Stratter       OMPLIER       Diff Mills Parkway, Mississauga, Ontario       Diff Mills Parkway, Mississauga, Ontario       Diff Companies       Diff Companies       Diff Companies       Joint CHARACCERISTICS       State of Companies       Joint CHARACCERISTICS       Joint Characceristeristic and the colspan="2">Joint Characceristic and the 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Muzzo Group of COmpanies     DBILLER     DBILLER     DBILLER     DBILLER     DBILLER       1     B     5     6     7     8     9     11     12     13     14     15     16       2     3     4     5     6     7     8     10     11     12     13     14     15     16       1     B     F     W     SP     W     SP     W     10     11     12     13     14     15     16       1     B     F     W     SP     W     SP     W     10     11     12     13     14     15     16       1     B     F     W     SP     W     SP     W     10     1     12     13     14     15     16       1     B     F     W     SP     W     SP </td <td>CONCOUNCE COUNCE     COUNCECTURE     COUNCECTURE<td>COUNT COUNT COUNT</td></td>	CONCOUNCE COUNCE     COUNCECTURE     COUNCECTURE <td>COUNT COUNT COUNT</td>	COUNT

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Date Drilled: Drill Type: Datum:	January 17 - 18, 2024 Hollow Stem Augers Geodetic		_	Auger SPT (I Dynan Shelby Field \	Sample N) Value nic Cone Tube /ane Te	e Tes	t	<u> </u>			Cor Nat Plas Unc % S Per	mbus tural stic a drain Strain netro	stible V Moistu and Liq ed Tria n at Fa meter	'apour re juid Lir ixial at ilure	Readir nit	ng H	□ × ⊕	-0
sroundwater Soil/Rock Symbol	Soil Description	ELEV.	Depth (m)	Shea	20 Ir Streng	SP1 40 th	" (N Va	ilue) 60	80	kPa	Com At	nbust 25 Natu tterbe	tible Va 5 ral Moi: erg Limi	pour R 50 sture C its (% [	eading 75 ontent Dry Wei	(ppm) % ght)	Sample	Natural Unit Weight kN/m <sup>3</sup>
	See Core Log for Details	~176.2 ~176.1 ~176.1 ~174.2 ~173.7 ~173.7	1 2 3 4 5 6 7 7 8 8 9 10 11 11 12 13 14			50 50 50					> ×							22.0
X 1   MC	- End of Borehole	~161.3	15															
Notes: 1. Borehole advanced using a specialist drillir 2. This drawing forms GTR-00257769-H0); b before use by others.	to completion at ~15.5 m depth by conventional soil sampling g subcontractor. For borehole definitions, see notes prior to l part of and must be read in conjunction with the subject repo porehole data requires interpretation assistance by exp profes	g methods logs. rt (Ref. No.: ssional staff			<b>В</b> га	) ) )		). n	•	Jar Fel	Elar Tiu nuary bruary	psed me 29, y 4,	2024 2024		Water Level (m) ~5.9 ~6.0		Ho	le Open to (m) Well Well

			ROCK CORE		) <u>G</u>	Ì							B	H	20	2		
PROJ Geo OCA	ECT otechni TION	ical Inv	estigation	ORIEN Vertic	TATIC cal STAR	DN TED	E	176.8	ATION 3 LETE	I (m) D	D	ATUM Geodet OGGEE	ic ) BY		PRO GTF DRA	JECT R-002 WING	NUM 5776 NUN	1 <b>BE</b> 39-1 <b>MB</b> 1
510 LIEN	0 Erin IT	Mills P	arkway, Mississauga, Ontario	01/18	5/23 ER			01/18	3/23 TYPI	E _	С	D. Pano ORE B	chal ARREL	-	SHE	3/ ET	۹ د م	
Ine (	Muzz	o Grou	p of COmpanies	Davis	join Join	ng <b>「CHA</b>			5 - 11 STIC	чск S						10	12	
- ELEVATION (m	v DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	G NO. OF SETS	o JOINT TYPE		∞ SPACING	د ROUGHNESS	DNITING	L APERTURE (mm)	12 WEATHERING	C STRENGTH	FRACTURE	15 RUN NUMBER	B RECOVERY (%)	002 17	B WATER RECOVERY (%)	-
74.3	-																	Ŧ
	-		See Borehole Log for Details															
73.7 73.6	-3		QUEENSTON FORMATION		F	v									100	76	05	t
73.5 73.4 73.3	-		Shale with interbedded siltstone, and clay layers.	1	F B	F	C C	RU RU							100	/0	90	-
73.2 72.6 72.5	- <b>4</b> - -		Shale (78%) thinly bedded or laminated, red low strength, alternating between heavily an slightly weathered to ~5.0 m and between moderately weathered and unweathered below.	d 1	В	F	С	RU				_		2	98	94	100	
	-		Limestone (9%) fine grained, grey, medium strength, unweathered				С	RP										
71.9 71.8	5		Siltstone (13%) fine grained, grey, medium strength, unweathered.															
71.5 71.5	-	<del></del>	Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
71.0	-		Vertical fractures were noted at ~3.2 m, 3.3 and 8.0 m.	m		_	0							2	100	100	100	
70.9 70.7 70.6	-6				В		M	SU							100		100	
	-																	
70.1 69.9 69.8	- - - <b>-</b>																	Γ
69.7 69.6																		
69 1	-			1	В	F	M C	SU SU						4	100	98	100	
68.8 68.8	8				F	v												
68.6 68.4	-																	$\left  \right $
	-																	
67.8 67.7	-9			1	В	F	W W	SU SP						5	100	100	100	
67.4 67.3	-																	
66 0	-																	+
66.7 66.5	-10																	
00.5	_			1	В	F	W	SP						6	100	100	100	

			ROCK CORE	LC	)G	Ì							B	BH .	202	2		
PROJ Geo LOCA 510 CLIEN	ECT otechni TION 0 Erin IT	ical Inv Mills P	estigation arkway, Mississauga, Ontario	ORIEN Vertic DATE \$ 01/18 DRILLE	TATIC al STAR /23 ER	TED	C D	176.8 0MP 01/18 RILL	LETE 3/23 TYPI	N (m) ED		DATUM Geodet OGGED D. Pano CORE BA	ic ) BY chal ARREL	-	PRO. GTF DRAV	JECT R-002 WING 3/ ET	NUM 5776 NUN A	9-1- 186
The E	Muzz	o Grou	p of COmpanies	Davis	JOINT	ng FCHA		TERI	5 - 11 STIC	ruck S				~	(%	2 0	12 (@	-
ELEVATION (I	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE	RUN NUMBER	RECOVERY (%	RQD	WATER RECOVERY (%	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
66.1 65.9	- - 11		QUEENSTON FORMATION Shale with interbedded siltstone, and clay				vv	SP										
65.3 65.3 65.0 64.9 64.4	- - - 		layers. Shale (78%) thinly bedded or laminated, red low strength, alternating between heavily and slightly weathered to ~5.0 m and between moderately weathered and unweathered below. Limestone (9%) fine grained, grey, medium strength, unweathered	ả 1	В	F	W W	SP SP						7	100	100	100	
64.4 63.9 63.6	-13		Siltstone (13%) fine grained, grey, medium strength, unweathered. Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals. Vertical fractures were noted at ~3.2 m, 3.3 and 8.0 m.	m														
63.3 63.1 62.9	- - - - - - - - - - - - - - - -			1	В	F	W W	SP SP						8	100	100	100	
62.2 62.1 61.7 61.6				1	в	F	W W	SP SP						9	100	100	100	
61.3	-		End of Borehole at 15.5 m															ŀ
	17																	

Project No.	<u>GTR-00257769-H0</u>	go		D	OI	en	OIE	)	Ζ	U.	<b>5</b> Dra	wing I	No		4
Project:	Geotechnical Investigation										S	heet I	No	1_	of <u>1</u>
Location:	Erin Mills Town Centre, 51	00 Erin	Mil	ls F	arkw	ay, M	lssiss	saug	ja, C	Onta	ario				
Data Drilladi	January 17 10 2024		- A	uger S	Sample		۵	3	C	Combu	stible Va	pour Re	ading		•
Date Drilled.	Hollow Stem Augers		- s	PT (N	) Value	oct	0 8	2	P	Plastic	and Liqu	id Limit	ŀ		-0
Dilli Type.	Geodetic		- s	helby	Tube	631	I		U %	Indrair 6 Strai	ned Triax n at Failu	ial at ure		€	ł
Datum.			_ Fi	ield Va	ane Test			5	P	enetro	ometer				•
iroundwater Soii/Rock Symbol	Soil Description	ELEV. m	Depth (m)	Shear	20 Strength	SPT (N Va 40	ilue) 60	80 kPa	C a	ombus 2: Natu Atterb	tible Vap 5 5 ural Moist erg Limits	our Read 50 ure Cont s (% Dry	ding (ppm) 75 tent % Weight)	Sample	Natural Unit Weight kN/m <sup>3</sup>
~14	0 mm ASPHALT over	176.31	0		3	100 6	2	200	>	1) (	0 2	20	30		
	$\mathbf{L}$ - sand and gravel granular, wn, moist	~175.7 ~175.3			L C	45				X	(			H	
FIL	L - clayey silt, trace sand, dish brown, moist		ľ			0	79/25	50 mm		×					
SIL — redo	<b>.T TILL</b> - some clay, trace sand, dish brown, very dense	_	2				(	3		×					
- tra	ace shale fragments	_				50/25 m	m			х					
_	- -	_	3			50/125 n	าทา			x					
SH	Coring Commenced	~172.9													
For	mation, occasional limestone and	_	4												
			5												
			6												
		_	7												
		_													
		_	8												
		_													
			9												
	See Core Log for Details	_													
			10												
		_													
		_	12												
		_													
		_	13												
			14												
			15												
		100 7													
	End of Borehole														
									E	lapsed		W	ater evel	Ho	le Open
Notes:					Ρ	xr	7		lanuai	Time	2024		m) 6.5		to (m) Well
1. Borehole advanced using a specialist drill     2. This drawing forms	a to completion at ~15.7 m depth by conventional soil samplin ing subcontractor. For borehole definitions, see notes prior to s part of and must be read in conjunction with the subject core	g methods logs. ort (Ref. No ·			C	ハ	).	F	ebrua	ary 4,	2024	~	6.2		Well
GTR-00257769-H0); before use by others.	borehole data requires interpretation assistance by exp profe	ssional staff				I									
					Brar	nptoi	n								

			ROCK CORE	LC	<u>)</u> G	<b>)</b>							B	Η	20	3		
ROJI Geo OCA 5100	ECT techni TION D Erin T	ical Inv Mills P	estigation arkway, Mississauga, Ontario	ORIEN Vertic DATE \$ 01/19 DRILLI	TATIC al STAR /23 ER	TED		176.3 01/19 01/19	ATION 3 LETE 3/23 TYPE	l (m) D		ATUM Geodet DGGEE D. Pano DRE B/	ic ) BY chal ARREL		PRO. GTF DRAV	JECT R-002 WING 4/ ET	NUM 5776 NUN A	181 19-1 18
The E	Muzz	o Grou	p of COmpanies		JOINT	ng FCH/			5 - Tr STICS	uck S	<u>ן</u> ט			~	(%)	10	f 2 (%)	
	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	NO. OF SETS					EILLING	APERTURE (mm)		STRENGTH			B RECOVERY		B WATER RECOVERY	
73.3	-3		4		0		0	3						15	10		10	t
70.0	-		See Borehole Log for Details															
72.9 72.8 72.6	-		QUEENSTON FORMATION	1	В	F	C C	RU RU						1	100	0	95	F
72.6	-4		Shale with interbedded siltstone, and clay															
71.7	- - - - -		Shale (74%) thinly bedded or laminated, red low strength, alternating between heavily an slightly weathered to ~4.5 m and between moderately weathered and unweathered below.	d 1	В	F	M C	RU RP						2	98	87	95	
71.6 71.3	-5		Limestone (6%) fine grained, grey, medium strength, unweathered															
71.2 71.2	- - -		Siltstone (19%) fine grained, grey, medium strength, unweathered.		F	V												┢
/1.1 71.0 70 0	-  -		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to		F	V												
10.0			very close intervals. Vertical fractures were noted at ~5.1 m. 5.2	m. 1	В	F	с	RP						3	100	90	100	
70.0	-6		5.4 m, 6.4 m, 6.8 m, 7.0 m, 7.2 m, 8.4 m, 11 m and 13.4 m.	.6			С	RP						_				
59.9 59.7	-																	
69.6 69.4					F	V												┢
59.3 59.1	-7				F													
59.0 58.9				1	F B	F	с	RP						4	100	62	100	
68.8 68.8	-						М	SU										
58.6 58.5	-8																	
68.0	-				F													┢
67.9 67.6	-				1													
67.6 67.3				1	Б	- -	C	611						5	95	94	100	
67.3 67.1							Ŵ	SP							00			
67.0	-																	
6.5 6 4	-																	╞
56.2 56.2	-10																	
	-			1	P	F	\٨/	SD						6	100	100	100	
-	-						Ŵ	SP							100			
5.4	-																	

Investigation         S Parkway, Mississauga, Ontario         oup of COmpanies         GENERAL DESCRIPTION         QUEENSTON FORMATION         Shale with interbedded siltstone, and clay layers.         Shale (74%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.5 m and between moderately weathered and unweathered below.         Limestone (6%) fine grained, grey, medium strength, unweathered.         Siltstone (19%) fine grained, grey, medium strength, unweathered.         Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.	ORIEN Vertic DATE : 01/19 DRILLI Davis S U O O Z 5	FATIC al STAR /23 R Drillin JOINT G F F	Provide the second seco	SPACING SPACING C	LEVA 176.3 OMPI 01/19 RILL ME 75 TERIS SS NHO OQ 9	TION LETE /23 TYPE 5 - Tr STIC: 9 NITILI 10	I (m) uuck uuck 11 11 11		ATUM Geodeti OGGED D. Panc ORE BA HQ HQ HL SN BA LS LS	bal BY chal ARREL ARREL 14	LIN NUMBER	PROJ GTR DRAV SHEE (%) XHEE (%) 46	2 of 0025 0025 0025 04 2 of 002 17	B RECOVERY (%) 2 MOUNT C MOUNT
GENERAL DESCRIPTION GENERAL DESCRIPTION GUEENSTON FORMATION GUEENS	Davis SLUS O O N 5	F	Parallel Par	SPACING SPACI		b - Tr STICS 91 LICING	uck APERTURE (mm) 11		HQ S1KENGTH	P FRACTURE	LINN NUMBER	형 RECOVERY (%)	2 of 002 17	B RECOVERY (%)
4         QUEENSTON FORMATION         Shale with interbedded siltstone, and clay layers.         Shale (74%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.5 m and between moderately weathered and unweathered below.         Limestone (6%) fine grained, grey, medium strength, unweathered         Siltstone (19%) fine grained, grey, medium strength, unweathered.         Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.	<u>N</u> 5 1	F B	5 7 V F	S C W	6 8	E 10		<u>&gt;</u> 12	50 13		15	16	22 17	≥₩ 18
QUEENSTON FORMATION  Shale with interbedded siltstone, and clay layers.  Shale (74%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.5 m and between moderately weathered and unweathered below.  Limestone (6%) fine grained, grey, medium strength, unweathered.  Siltstone (19%) fine grained, grey, medium strength, unweathered.  Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.	1	F	V	CW	0.0									
Siltstone (19%) fine grained, grey, medium strength, unweathered Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.	1	F	V F	cw	0.5									
Limestone (6%) fine grained, grey, medium strength, unweathered Siltstone (19%) fine grained, grey, medium strength, unweathered. Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.					SP SP						7	100	97	100
planar to smooth undulating and at wide to very close intervals.														
Hertical fractures were noted at ~5.1 m, 5.2 r     5.4 m, 6.4 m, 6.8 m, 7.0 m, 7.2 m, 8.4 m, 11.     m and 13.4 m.     Hertical fractures were noted at ~5.1 m, 5.2 r	n, 6	F	V F	M	SP SP						8	100	98	100
	1	В	F	W W	SP SP						9	100	100	100
End of Borehole at 15.7 m														
	End of Borehole at 15.7 m	End of Borehole at 15.7 m	End of Borehole at 15.7 m	End of Borehole at 15.7 m	End of Borehole at 15.7 m	End of Borehole at 15.7 m	End of Borehole at 15.7 m	End of Borehole at 15.7 m	End of Borehole at 15.7 m	End of Borehole at 15.7 m	End of Borehole at 15.7 m	End of Borehole at 15.7 m	End of Borehole at 15.7 m	End of Borehole at 15.7 m

Project No. Project: Location:	GTR-00257769-H0       LOG OT DOTCTIOIC       ZO4         Geotechnical Investigation       Drawing No.       5         Genter Mills Town Centre, 5100 Erin Mills Parkway, MIssissauga, Ontario       Sheet No.       1 of 1														
Date Drilled: Drill Type: Datum:	January 19 - 22, 2024 Hollow Stem Augers Geodetic	- A - S - S - F	uger Sample SPT (N) Value Dynamic Cone Shelby Tube Sield Vane Tes	Test —		Combustib Natural Mo Plastic and Undrained % Strain a Penetrome	× ÷	-0							
	Soil Description         Omm ASPHALT over         - sand and gravel granular,         n, moist         - clayey silt, trace sand,         ish brown, moist         T TILL - some clay, trace sand,         ish brown, very dense         ce shale fragments         Coring Commenced         ALE BDEROCK - Queenston         nation, occasional limestone and         istone layers, reddish brown         See Core Log for Details	ELEV. m 176.51 ~175.8 ~175.5 ~173.2	(ii) the second	20 Shear Strengt	SPT (N Value) 40 60 100 50/75 mm 65/75 m 50/125 mm 50/125 mm		Combustible 25 Natural Atterberg 10 X X X X	e Vapour Reading (ppm 50 75 Limits (% Dry Weight) 20 30		Natural Unit Weight kN/m <sup>3</sup>					
	- End of Borehole	~160.8													
Notes: 1. Borehole advanced using a specialist drillin 2. This drawing forms GTR-00257769-H0); b before use by others.	to completion at ~15.7 m depth by conventional soil sampling g subcontractor. For borehole definitions, see notes prior to l part of and must be read in conjunction with the subject repo porehole data requires interpretation assistance by exp profes	g methods ogs. rt (Ref. No.: sional staff		<b>ё</b> С Вга	XP.		Elapsed Time	Water Level (m)	Hc	le Open to (m)					

	ROCK CORE LOG											<b>H</b>	1 204						
PROJ Gec LOCA 510 CLIEN	ECT otechni TION 0 Erin IT	ical Inv Mills P	estigation Parkway, Mississauga, Ontario	ORIEN Vertio DATE 01/22 DRILL	TATIC cal STAR 2/23 ER	DN TED	C	176.5 01/22 01/22	LETE 2/23 TYPE	I (m) D E		ATUM Geodet OGGEE D. Pano ORE B/	ic ) BY chal ARREL	-	PRO GTF DRA SHE	NUM 5776 NUN A	<b>1ВЕ</b> ;9-Н ИВЕ		
(m) NOI	muzz		p of COmpanies	SETS	JOIN JOIN		ARAC	SES	STIC:	ack S	ERING	HQ	JRE ENCY	MBER	ERY (%)	10	ERY (%)		
- ELEVAT		د SYMBO	GENERAL DESCRIPTION	PO. OF	DOINT T	2 ORIENT	∞ SPACIN	ه Rough	DNITIII 10	THERTL (mm)	12 WEATHI	13 STRENG	FRACTL FREQUE	NN NN 15	16 RECOVE	О В 17	8 WATER RECOVE		
74.0	-																	-	
	-3		See Borehole Log for Details																
73.2 73.1 73.1	- - 		QUEENSTON FORMATION	1	B F	F V	C C	RU RU						1	100	0	95	-	
73.0 72.9 72.9	- - 		Shale with interbedded siltstone, and clay layers.		F	v													
72.6 72.6 72.3 72.2	- - - -		Shale (74%) thinly bedded or laminated, red low strength, alternating between heavily an slightly weathered to ~4.9 and between moderately weathered and unweathered below.	d 1	B F	F V	M C	RU RP						2	100	90	100	,	
71.7	-		Limestone (3%) fine grained, grey, medium strength, unweathered		F	v													
71.5 71.4	-5		Siltstone (22%) fine grained, grey, medium strength, unweathered.		F	v												-	
71.0 71.0	-		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.																
70.8 70.7	6		Vertical fractures were noted at ~ 3.5 m, 3.9 m, 4.3 m, 4.8 m, 5.1 m, 6.5 m, 7.0 m, 9.6 m and 10.5 m.	1	В	F	C C	RP RP						3	100	92	100	'	
70.4 70.4 70.3	-		A Rubble layers, heavily weathered, low strength was noted at ~10.1 m (110 mm).		   														
70.2	-																		
69.8 69.5	- 7				F	V													
69.1 69.0	-			1	В	F	C C	RP SU			-			4	100	83	100	'	
68.7 68.7	- - - 0																		
68.4 68.4	-																	+	
68.0 67.9	-																		
67.6 67.5	- 9			1	В	F	M M	SU SP						5	100	100	100	'  (	
67.4 67.3	-																		
67.2 66.9 66.8	-				F	V												+	
66.8 66.7 66.5	-10													•					
66.4	-			1	В	F	М	SP						6	100	97	100	<u></u>	

		KUCK CORE	LC	JG	J	1.				BH 204									
	cal Inv	ORIEN	TATIC	ON	Ē			l (m)	D	ATUM	ic	T							
IECTINI	cal INV	esuyauun	DATE 9	aı STAR	TED	- c	170.5		D	-	OGGEF	10 BY		GTR-0025776					
) Erin	Mills P	arkway, Mississauga, Ontario	01/22	/23			01/22/23				D. Pano	chal		5A					
Т			DRILLE	R		D	RILL	TYP	E	C	ORE B/	ARREL		SHE	ET				
Muzzo	o Grou	p of COmpanies	Davis	Drilli	ng F CH/		ME 5	5 - T	rack		HQ				2 o	f 2	<b>—</b>		
EPTH (m)	MBOL	GENERAL DESCRIPTION	D. OF SETS	DINT TYPE			DUGHNESS	FLING	PERTURE (	EATHERING	<b>FRENGTH</b>	RACTURE REQUENCY	UN NUMBER	ECOVERY (%)	aD	ATER ECOVERY (%)			
<u> </u>	S 3	1	Ž	5	ō	° SF	8	10	11 11	3	5 13	ビビ 14	15	16	17	<b>≥</b> 22 18			
<u> </u>	3	4	5	0		0	3	10		12	13	14	15	10	17	10			
		QUEENSTON FORMATION		F	V	IVI	5P												
-11		Shale with interbedded siltstone, and clay layers.																	
-		low strength, alternating between heavily and slightly weathered to ~4.9 and between moderately weathered and unweathered below.	1																
-12		Limestone (3%) fine grained, grey, medium strength, unweathered	1	В	F	W W	SP SP						7	100	100	100	1		
-		suisione (22%) tine grained, grey, medium strength, unweathered. Discontinuities: bedding joints are rough																	
-13		planar to smooth undulating and at wide to very close intervals.																	
		m, 4.3 m, 4.8 m, 5.1 m, 6.5 m, 7.0 m, 9.6 m and 10.5 m.	1	R	F	M	SP						Q	100	07	100			
-		strength was noted at ~10.1 m (110 mm).				M	SP							100	51	100			
-14																			
-15			1	В	F	W	SP SP						9	100	100	100			
-																			
		End of Borehole at 15.7 m											<u> </u>				-		
-16																			
-																			
-17																			
_19																			
	CT echni ION Erin Muzza (W) HLd30 2 -11 -12 -13 -14 -15 -16 -17	CT echnical Inv Fin Mills P Muzzo Grou (W) HLago 2 3 -11 -12 -13 -14 -16 -17	Contraction Contraction         Contraction	Image: Contract of the second seco	Image: Control of the second strength	INCOMPOSITION CONCRETE TARTED ORIENTATION Vertical         DATE STARTED 01/12/273         DRILLER Davis Drilling         Uszo Group of COmpanies       DRILLER Davis Drilling         General Description       Signature       Vertical of the second secon	CT       CRECT Control       CRECT Control       Filter Control       Filter Control       Filter Control       Filter Control       Filter Control       Control	CT       ORIENTATION       ELEVA         cechnical Investigation       ORIENTATION       ELEVA         ION       DATE STARTED       COME         Erin Mills Parkway, Mississauga, Ontario       01/22/23       01/22/23         Image: Comp of COmpanies       Davis Drilling       CME         Image: Comp of COmpanies       Davis Drilling       CME         Image: Comp of COmpanies       Image: Comp of COmpanies       Image: Comp of COmpanies       Image: Comp of COmpanies         Image: Comp of COmpanies       Image: Comp of Companies       Image: Comp of Companies       Image: Comp of Companies       Image: Comp of Comp of Companies       Image: Comp of Comp	INCOMPARIANCE CONCLUE LEVATION       INCOMPARIANCE CONCLUE LEVATION       Vertical Investigation       ION     Comparises       DRILLER       OUEENSTON FORMATION       F    V       M       Spale (74%) think bedded or laminated, red. logicately weathered and unweathered below.       Discontinuities: bedding joints are rough mean to smoth mudulating and at wide to very close intervals.       Discontinuities: bedding joints are rough mean to smoth mudulating and at wide to very close intervals. <th <="" colspan="2" td=""><td>CT     ORIENTATION     ELEVATION (m)       rechnical investigation     Orizon     Date Started     176.5       Erin Mills Parkway, Mississauga, Ontario     Drillz C23     OMLLER     ORIENTATION       Wuzzo Group of COmpanies     Datius Drilling     DRILL TYPE       Unit CHARACCTERISTICS     Sing to some the som</td><td>CONT CHARACTERISTICS       CONT CHARACTERISTICS       Comparise       Davis Drilling       CME E5 - Track       OW Comparise       Comparise       Comparise       OW Comparise       Comparise</td><td>CT     COUNT CLARCE VIEW     COUNT CLARCE VIEW     COUNT CLARCE VIEW     Count Clarce       ION     DATE STARTED     01/22/23     0.722/23     0.722/23     0.722/23       UP     Davis Drilling     OWE 55: Track     HQ       View Count     View Starten     OWE 55: Track     HQ       UP     Davis Drilling     Sign of 7 8 8     Sign of 7 8 8     Sign of 7 8 8       UP     Sign of 7 8 8       UP     Sign of 7 8 8       Shale registron FORMATION     Shale registron FORMATION     F     V     M     SP       Shale registron FORMATION     F     V     M     SP     F       Shale registron FORMATION     F     SP     SP     F       Shale registron FORMATION     F     SP     SP     F       Shale registregistron FORMATION     F     SP</td><td>CT     COUNT     COUNT     COUNT     COUNT     Count     Count       CM     DATE     STARTED     01/22/23     01/22/23     0.0782170       Muzzo Group of COmpanies     ONIT     ONIT     CARE BARREL     D.Panchal       Muzzo Group of COmpanies     ONIT     ONIT     CARE CARREL     D.Panchal       State     GENERAL DESCRIPTION     State     State     State     State       State     GENERAL DESCRIPTION     F     V     M     SP       State     GENERAL DESCRIPTION     F     V     M     SP       State     GENERAL DESCRIPTION     State     State     State     State       State     GENERAL DESCRIPTION     F     V     M     SP       State     GENERAL DESCRIPTION     F     V     M     SP       State     GENERAL DESCRIPTION     F     V     SP     ST<td>CT     ORIENTATION     ELEVATION (m)     DATUM       centred investigation     Vertical     Vertical     T6.5     COMPLETED     Locadelic       CIN     DATE STARTED     01/22/23     D1/22/23     D.Panchall     D.Panchall       Muzzo Group of COmpanies     DRILLER     DRILER     DRILLER     DRILLER     DRILLER</td><td>CT     ORENTATION     ELEVATION (m)     DATUM     Geodetic       CM     Vertical     Vertical     PRO, OPPLETED     DATUM     Geodetic       Enn Mile Parkway, Mississauga, Ontario     01/22/23     D1/22/23     D Panchai     D Panchai       Muzz Group of COmpanies     DRILLER DRILLER     DRILLER     DRILER     DRILLER     DRILLER     <t< td=""><td>CT     ORIENTATION     ELEVATION (m)     DATUM     PROJECT       christian     Vertician     0717-022     ComPLETED     LOGODE DY     PROJECT       CON     DATUS \$7ATED     01/22/23     01/22/23     DATUS \$7ATED     DATUS</td><td>CT     OPERATION     ELEVATION (m)     DATUM (rotading)     OPENDECT NUM (rotading)       Control     Vertical     17.8     Decodetic     PROJECT NUM (rotading)       Ern Mile Parkway, Mississauga, Ontario     D12223     D0 (rotage)     D0 (rotage)       Muzzo Goup of Companies     Denut LFR Durits Drilling     Control     Decodetic     PROJECT NUM (rotage)       State     GENERAL DESCRIPTION     Direct And Companies     State     Control     Control     Control       State     GENERAL DESCRIPTION     State     F     V     M     SP     State     Stat</td></t<></td></td></th>	<td>CT     ORIENTATION     ELEVATION (m)       rechnical investigation     Orizon     Date Started     176.5       Erin Mills Parkway, Mississauga, Ontario     Drillz C23     OMLLER     ORIENTATION       Wuzzo Group of COmpanies     Datius Drilling     DRILL TYPE       Unit CHARACCTERISTICS     Sing to some the som</td> <td>CONT CHARACTERISTICS       CONT CHARACTERISTICS       Comparise       Davis Drilling       CME E5 - Track       OW Comparise       Comparise       Comparise       OW Comparise       Comparise</td> <td>CT     COUNT CLARCE VIEW     COUNT CLARCE VIEW     COUNT CLARCE VIEW     Count Clarce       ION     DATE STARTED     01/22/23     0.722/23     0.722/23     0.722/23       UP     Davis Drilling     OWE 55: Track     HQ       View Count     View Starten     OWE 55: Track     HQ       UP     Davis Drilling     Sign of 7 8 8     Sign of 7 8 8     Sign of 7 8 8       UP     Sign of 7 8 8       UP     Sign of 7 8 8       Shale registron FORMATION     Shale registron FORMATION     F     V     M     SP       Shale registron FORMATION     F     V     M     SP     F       Shale registron FORMATION     F     SP     SP     F       Shale registron FORMATION     F     SP     SP     F       Shale registregistron FORMATION     F     SP</td> <td>CT     COUNT     COUNT     COUNT     COUNT     Count     Count       CM     DATE     STARTED     01/22/23     01/22/23     0.0782170       Muzzo Group of COmpanies     ONIT     ONIT     CARE BARREL     D.Panchal       Muzzo Group of COmpanies     ONIT     ONIT     CARE CARREL     D.Panchal       State     GENERAL DESCRIPTION     State     State     State     State       State     GENERAL DESCRIPTION     F     V     M     SP       State     GENERAL DESCRIPTION     F     V     M     SP       State     GENERAL DESCRIPTION     State     State     State     State       State     GENERAL DESCRIPTION     F     V     M     SP       State     GENERAL DESCRIPTION     F     V     M     SP       State     GENERAL DESCRIPTION     F     V     SP     ST<td>CT     ORIENTATION     ELEVATION (m)     DATUM       centred investigation     Vertical     Vertical     T6.5     COMPLETED     Locadelic       CIN     DATE STARTED     01/22/23     D1/22/23     D.Panchall     D.Panchall       Muzzo Group of COmpanies     DRILLER     DRILER     DRILLER     DRILLER     DRILLER</td><td>CT     ORENTATION     ELEVATION (m)     DATUM     Geodetic       CM     Vertical     Vertical     PRO, OPPLETED     DATUM     Geodetic       Enn Mile Parkway, Mississauga, Ontario     01/22/23     D1/22/23     D Panchai     D Panchai       Muzz Group of COmpanies     DRILLER DRILLER     DRILLER     DRILER     DRILLER     DRILLER     <t< td=""><td>CT     ORIENTATION     ELEVATION (m)     DATUM     PROJECT       christian     Vertician     0717-022     ComPLETED     LOGODE DY     PROJECT       CON     DATUS \$7ATED     01/22/23     01/22/23     DATUS \$7ATED     DATUS</td><td>CT     OPERATION     ELEVATION (m)     DATUM (rotading)     OPENDECT NUM (rotading)       Control     Vertical     17.8     Decodetic     PROJECT NUM (rotading)       Ern Mile Parkway, Mississauga, Ontario     D12223     D0 (rotage)     D0 (rotage)       Muzzo Goup of Companies     Denut LFR Durits Drilling     Control     Decodetic     PROJECT NUM (rotage)       State     GENERAL DESCRIPTION     Direct And Companies     State     Control     Control     Control       State     GENERAL DESCRIPTION     State     F     V     M     SP     State     Stat</td></t<></td></td>		CT     ORIENTATION     ELEVATION (m)       rechnical investigation     Orizon     Date Started     176.5       Erin Mills Parkway, Mississauga, Ontario     Drillz C23     OMLLER     ORIENTATION       Wuzzo Group of COmpanies     Datius Drilling     DRILL TYPE       Unit CHARACCTERISTICS     Sing to some the som	CONT CHARACTERISTICS       CONT CHARACTERISTICS       Comparise       Davis Drilling       CME E5 - Track       OW Comparise       Comparise       Comparise       OW Comparise       Comparise	CT     COUNT CLARCE VIEW     COUNT CLARCE VIEW     COUNT CLARCE VIEW     Count Clarce       ION     DATE STARTED     01/22/23     0.722/23     0.722/23     0.722/23       UP     Davis Drilling     OWE 55: Track     HQ       View Count     View Starten     OWE 55: Track     HQ       UP     Davis Drilling     Sign of 7 8 8     Sign of 7 8 8     Sign of 7 8 8       UP     Sign of 7 8 8       UP     Sign of 7 8 8       Shale registron FORMATION     Shale registron FORMATION     F     V     M     SP       Shale registron FORMATION     F     V     M     SP     F       Shale registron FORMATION     F     SP     SP     F       Shale registron FORMATION     F     SP     SP     F       Shale registregistron FORMATION     F     SP	CT     COUNT     COUNT     COUNT     COUNT     Count     Count       CM     DATE     STARTED     01/22/23     01/22/23     0.0782170       Muzzo Group of COmpanies     ONIT     ONIT     CARE BARREL     D.Panchal       Muzzo Group of COmpanies     ONIT     ONIT     CARE CARREL     D.Panchal       State     GENERAL DESCRIPTION     State     State     State     State       State     GENERAL DESCRIPTION     F     V     M     SP       State     GENERAL DESCRIPTION     F     V     M     SP       State     GENERAL DESCRIPTION     State     State     State     State       State     GENERAL DESCRIPTION     F     V     M     SP       State     GENERAL DESCRIPTION     F     V     M     SP       State     GENERAL DESCRIPTION     F     V     SP     ST <td>CT     ORIENTATION     ELEVATION (m)     DATUM       centred investigation     Vertical     Vertical     T6.5     COMPLETED     Locadelic       CIN     DATE STARTED     01/22/23     D1/22/23     D.Panchall     D.Panchall       Muzzo Group of COmpanies     DRILLER     DRILER     DRILLER     DRILLER     DRILLER</td> <td>CT     ORENTATION     ELEVATION (m)     DATUM     Geodetic       CM     Vertical     Vertical     PRO, OPPLETED     DATUM     Geodetic       Enn Mile Parkway, Mississauga, Ontario     01/22/23     D1/22/23     D Panchai     D Panchai       Muzz Group of COmpanies     DRILLER DRILLER     DRILLER     DRILER     DRILLER     DRILLER     <t< td=""><td>CT     ORIENTATION     ELEVATION (m)     DATUM     PROJECT       christian     Vertician     0717-022     ComPLETED     LOGODE DY     PROJECT       CON     DATUS \$7ATED     01/22/23     01/22/23     DATUS \$7ATED     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OPPLETED     DATUM     Geodetic       Enn Mile Parkway, Mississauga, Ontario     01/22/23     D1/22/23     D Panchai     D Panchai       Muzz Group of COmpanies     DRILLER DRILLER     DRILLER     DRILER     DRILLER     DRILLER <t< td=""><td>CT     ORIENTATION     ELEVATION (m)     DATUM     PROJECT       christian     Vertician     0717-022     ComPLETED     LOGODE DY     PROJECT       CON     DATUS \$7ATED     01/22/23     01/22/23     DATUS \$7ATED     DATUS</td><td>CT     OPERATION     ELEVATION (m)     DATUM (rotading)     OPENDECT NUM (rotading)       Control     Vertical     17.8     Decodetic     PROJECT NUM (rotading)       Ern Mile Parkway, Mississauga, Ontario     D12223     D0 (rotage)     D0 (rotage)       Muzzo Goup of Companies     Denut LFR Durits Drilling     Control     Decodetic     PROJECT NUM (rotage)       State     GENERAL DESCRIPTION     Direct And Companies     State     Control     Control     Control       State     GENERAL DESCRIPTION     State     F     V     M     SP     State     Stat</td></t<>	CT     ORIENTATION     ELEVATION (m)     DATUM     PROJECT       christian     Vertician     0717-022     ComPLETED     LOGODE DY     PROJECT       CON     DATUS \$7ATED     01/22/23     01/22/23     DATUS \$7ATED     DATUS	CT     OPERATION     ELEVATION (m)     DATUM (rotading)     OPENDECT NUM (rotading)       Control     Vertical     17.8     Decodetic     PROJECT NUM (rotading)       Ern Mile Parkway, Mississauga, Ontario     D12223     D0 (rotage)     D0 (rotage)       Muzzo Goup of Companies     Denut LFR Durits Drilling     Control     Decodetic     PROJECT NUM (rotage)       State     GENERAL DESCRIPTION     Direct And Companies     State     Control     Control     Control       State     GENERAL DESCRIPTION     State     F     V     M     SP     State     Stat

Ρ	roje	ct No.	<u>дтк-00257769-но</u>	g o	f	В	0	rel	hc	οle	)	2	05	<b>D</b> ra	wing	No		6
Ρ	Project: Geotechnical Investigation													. 8	Sheet	No	<u>1</u> (	of <u>1</u>
L	ocat	ion:	Erin Mills Town Centre, 510	00 Erin	M	ills F	Park	way,	MIs	Siss	aug	a, C	Onta	rio				
-		Duille de	January 12, 2024		_	Auger	Sample	e			3	C	ombus	tible Va	apour R	eading		
		Drillea:	Hollow Stom Augors		_	SPT (I	' N) Valu	e o Toot	_	0	3	P	lastic a	nd Liqu	e uid Limit	.	⊢^	-0
	n III i Natur	ype. n.	Geodetic		-	Shelby	/ Tube	e rest				U %	ndraine Strain	ed Triax at Fail	kial at ure		0	
	alui				-	Field ∖	/ane Te	est		S		P	enetror	neter				
Groundwater	Soil/Rock	o)IIII0	Soil Description	ELEV. m 175.26	Depth (m)	Shea	20 ar Streng	SPT (1 40 gth 100	N Value) 60	) 8 2(	80 kPa 00		ombusti 25 Natur Atterbe 10	ble Vap al Mois rg Limit	oour Rea 50 ture Cor s (% Dr <u></u> 20	ding (ppm 75 ntent % / Weight) 30	Sample (	Natural Unit Weight kN/m <sup>3</sup>
5	2	~70 → <b>FILI</b> ↓brow	mm <b>ASPHALT</b> over L - sand and gravel granular, <i>4</i> /n, moist /	~174.9		Ê	3	8					× ;	× ,				
		FILI	└ - clayey silt, trace sand, dark	~173.3	1		22 0	<b>)</b>					×	× K				
		SIL grav dens	<b>T</b> - some sand, trace clay, trace el, brown, moist, dense to very _ se					41 Ö					×					
		F	-		3				54 O					×				
			-	-	4				5% O				>	<				
		- beo	coming more sandy, grey & wet w ∼5.5 m depth		6													
					7					č	, ,		>	<				
			-	_	8						97/2	50 mm	`	ĸ				
		SIL redd	<b>T TILL</b> - some clay, trace sand, ish brown, very dense	~166.8	9			50/1	25 mm				¥					
				~165.2	10													
.GDI 3/20/24		Form	action, occasional limestone and - stone layers, reddish brown Coring Commenced	~164.5	11			\$0/7 (	5 mm								zz	
UGS.GPJ NEW			-	-	12													
0//09h_bh_L			See Core Log for Details	_	14													
UZEXP Z			-	~150 9	15													
קאפו			End of Borehole															
_اد 	<u> </u>			]		· · · ·					Elapsed				Vater .evel	Но	le Open to (m)	
Notes: 1. Borehole advanced to completion at ~15.4 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs. 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.							B	<b>EX</b>	(P	).	Ji F	January 29, 2024 February 4, 2024			-	(m) ~5.3 ~5.6		Well Well
					Brampton													
			ROCK CORE	<u>: L(</u>	)G	Ì							B	H	20	5		
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PROJ Geo OCA	ECT techni TION	cal Inv	estigation	ORIEN Verti DATE	TATIC cal STAR		E	175.3 OMP	ATION 3 Lete	N ( <del>m)</del> ED		DATUM Geodet	ic ) BY		PRO. GTF DRA	JECT R-002 WING	NUM 5776 NUN	1 <b>BE</b> 19-1 <b>1</b> BI
5100	) Erin I <b>T</b>	Mills P	arkway, Mississauga, Ontario	01/12	2/23 ER			01/12 RILL	2/23 <b>TYP</b>	E	-	D. Pano CORE B/	chal ARREL	-	SHEI	6/ ET	<u>م</u>	
The	Muzzo	o Grou	p of COmpanies	Davi	s Drilli JOIN	ng <b>F CH/</b>		TERI	5 - T STIC	rack S		HQ				10	f 1	Т
ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	2
5.0	. 2	3	4	5	6		8	9	10	11	12	13	14	15	16	1/	18	+
-	-  -		See Borehole Log for Details															
4.5 4.4 4.1	11		QUEENSTON FORMATION	1	B F	F	VC C	RU RP						1	92	0	90	
4.0	-		Shale with interbedded siltstone, and clay layers.															
3.6 3.6	-12		Shale (62%) thinly bedded or laminated, re low strength, alternating between heavily ar slightly weathered to ~11.7 m and between moderately weathered and unweathered below.	d, nd 1	F B	V F	C C	RP SU						2	100	78	100	
3.1 3.0 2.8 2.7	- - - -		Limestone (11%) fine grained, grey, medius strength, unweathered Siltstone (26%) fine grained, grey, medium	m	F	v												
2.1	-13		strength, unweathered. Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
1.9 1.8 1.7	- - - -		Vertical fractures were noted at ~ 11.0 m, 1 m, 12.5 m, 13.4 m and 14.2 m. A Clay (1%) layer, heavily weathered, very strength was peted at ~12.5 m	11.6 1 Iow	F B	V F	M M	SU SP	NC	50 mm				3	100	87	100	
1.0 1.2 1.2 1.1	-14 		A Rubble layer, heavily weathered, low strength was noted at ~10.8 m (80 mm).		F	v								-				
0.9 0.7 0.6 0.5	-15			1	в	F	VC C	SP SP						4	100	71	100	
9.9 9.8	-		End of Porcholo et 15.4 m															
	-		Enu ol dorenole at 15.4 m															
-	-16																	
-	17																	
-	- - - -																	
-	-18																	

roject:	Geotechnical Investigation											_	:	Shee	et No	o	<u>1</u>	of <u>1</u>
ocation:	Erin Mills Town Centre, 51	00 Erin	M	ills F	Parkv	vay	ν, Μ	lssi	SSa	auga	, Or	ita	rio					
-t- D-ill-d			-	Augers	Sample						Corr	bus	tible V	apou	Read	ling		
ate Drilled:	January 11, 2024		-	SPT (N	I) Value	<b>T</b> 4		0	) 🖂		Plas	tic a	and Liq	re Juid Li	mit	I		-0
rili Type:			-	Dynam Shelby	Tube	Test		_			Und % S	raine trair	ed Tria n at Fa	ixial a ilure	t		€	)
alum.	Geodelic		-	Field V	ane Te	st			S		Pen	etro	meter				<b></b>	•
Soil/Rock Symbol	Soil Description	ELEV. m	Depth (m)	Shea	20 r Streng	SPT 40 th 100	(N Va	lue) 60	80	kPa	Com Att	bust 25 Vatur erbe 10	ible Va ral Moi erg Lim	pour F 50 sture ( its (% 20	Readin 7 Conter Dry W 3	g (ppm) 5 nt % eight) 0	Sample	Natura Unit Weigh kN/m
~90 FILI	mm <b>ASPHALT</b> over sand and gravel granular, /n, moist	~175.5	0	13	Ö						×		×					
FILI	clayey silt, trace sand, ish brown, moist ■DY SILT to SILTY SAND -	~174.6	1	0	24								X					
-som grav	e sand pockets, trace clay, trace el, brown, moist, compact	~173.5	2		v		47						x K					
_redd	ish brown, dense to very dense	-	3						9	<sup>3/225 1</sup>	hirn	×						
- trac	ce shale fragments		4			50/	125 n	m				,						
SH4	Coring Commenced		5				U					•						
Forn	nation, occasional limestone and Istone layers, reddish brown	_	6															
		_	7															
		_	8															
			a															
		-																
	See Core Log for Details		10															
		_	11															
			12															
		-	13															
			14															
		-	15															
<u></u>	End of Borehole	-~160.5																
			   								EI				Wat	er	<u> </u>	le Opor
								_			⊢iap Tin	sed 1e			Lev	el		ne open to (m)

			ROCK CORE	E LC	) <b>G</b>	Ì							B	BH	20	6		
PROJE Geot	ECT techn	ical Inv	estigation	ORIEN Vertic	TATIC al	ON	Ē	<b>LEVA</b> 176.0		N (m)		DATUM Geode	ic		PRO. GTF	JECT R-002	NUM 5776	в 9-
5100		Mille D	Parkway Mississauga Optaria	DATE S	STAR	TED	C	OMP		D		LOGGEE	) BY		DRA	WING		1B
LIEN	T		artway, mississauga, Ontario	DRILLI	ER		D	RILL	TYPI	E	-	CORE B	ARREL	-	SHE	ET	-	-
The	Muzz	o Grou	p of COmpanies	Davis	Drilli	ng <b>「 CH/</b>		ME 5	5 - TI STIC	rack S		HQ			1	10	f 2	Т
ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	_
71.8			See Borehole Log for Details															
71.4			QUEENSTON FORMATION											-				╞
'1.1 '1.1 '0.9	-5		Shale with interbedded siltstone, and clay	1	B	F	VC C	RU RP						1	100	88	95	
70.9 70.7 70.6	- - -		layers. Shale (86%) thinly bedded or laminated, red low strength, alternating between heavily ar slightly weathered to ~5 5 m and between	d, Id														
70.1	-6		moderately weathered and unweathered below.	1	B F	F V	C C	RP RP						2	100	73	100	
9.9 9.8 9.6	•		strength, unweathered Siltstone (8%) fine grained, grey, medium		F	V												
9.5 9.4 9.3	-		strength, ùnweathered. Discontinuities: bedding joints are rough		F													
9.1	-7		very close intervals. Vertical fractures were noted at ~6.0 m, 6.2	m,	F F	V V												
68.4			6.5 m, 6.9 m, 7.2 m, 7.4 m, 8.2 m, 10.1 m a 12.1 m. Rubble layers, heavily weathered, very low	nd 1	B F	F V	C C	RP RP						3	100	70	100	
58.4 58.0	-8		10.3 m (160 mm).															
67.9 67.8					F													
57.3	-9			1	в	F	C M	RP SU						4	100	97	100	
6.9 6.8	• • • <del>-</del>																	
6.1 6.1	-10				F	v												
5.7 5.7	• • • •			1	В	F	C M	SU SU						5	100	73	100	
5.3	-11																	
64.9 64.7 64.6	- - - -																	╞
4.4	-12				F	V								6	100	92	100	

			ROCK CORE		<u>)</u> G								B	H	20	6		
PROJ Geo LOCA	ECT otechni TION	ical Inv	estigation	ORIEN Verti	ITATI cal STAR		E C	176.0	ATION ) LETE	N ( <u>m)</u> ED		ATUM Geodet OGGED	ic BY		PRO. GTF DRA	JECT R-002 WING	NUM 5776 NUN	1 <b>BE</b> 9-⊢ <b>/IBE</b>
CLIEN The	IT Muzzo	o Grou	p of COmpanies	DRILL	ER s Drilli	ing	D	ME 5	2/23 <b>TYP</b> 55 - T	E rack	c	D. Pand ORE BA HQ			SHEI	2 o	4 f 2	
ELEVATION (m)	o DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	NO. OF SETS			SPACING SPACING	ROUGHNESS	STIC	APERTURE 0 (mm)		STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	
1 63.8	- 2	3	4	5	6		8 M	9 SP	10	11	12	13	14	15	16	1/	18	
53.7 53.6	-						101											
52.5 52.4			Shale with interbedded slitstone, and clay layers. Shale (86%) thinly bedded or laminated, red low strength, alternating between heavily an slightly weathered to ~5.5 m and between moderately weathered and unweathered below. Limestone (4%) fine grained, grey, medium	i, Id 1	в	F	W W	SP SP						7	100	100	100	
2.2 2.1 1.8	<b>14</b>		strength, unweathered Siltstone (8%) fine grained, grey, medium strength, unweathered. Discontinuities: bedding joints are rough															_
51.5 51.5 51.4	- - - - -		planar to smooth undulating and at wide to very close intervals. Vertical fractures were noted at ~6.0 m, 6.2 6.5 m, 6.9 m, 7.2 m, 7.4 m, 8.2 m, 10.1 m a	m, nd 1	в	F	W	SP						8	100	100	100	
50.9			Rubble layers, heavily weathered, very low strength were noted at ~9.9 m (80 mm) and 10.3 m (160 mm).															
0.0			End of Borehole at 15.6 m															
	<b>17</b>																	
	- - - - - - - - - - - - - - - - - - -																	
	- 19																	
	- - 																	

oject:	Geotechnical Investigation	1							S	heet No.		of _1
ocation:	Erin Mills Town Centre, 51	00 Erin	Mi	lls Parl	way,	MIssis	sauga	, Onta	ario			
			-	Auger Samr				Combu	stible Va	pour Reading		]
ate Drilled:	January 10 - 11, 2024		- :	SPT (N) Val	ue	0		Natural Plastic	Moisture and Liqu	e id Limit 🛛 🚽	×	0
rill Type:	Hollow Stem Augers		- :	Dynamic Co Shelby Tube	ne lest			Undrair % Strai	ned Triax n at Failu	ial at ıre	ŧ	,
atum:	Geodelic		_	Field Vane 1	est	I	S	Penetro	ometer			
Soil/Rock Symbol	Soil Description	ELEV.	Depth (m)	20 Shear Stre	SPT (N 40 ngth	Value) 60	80 kPa	Combus 2: Natu Atterb	tible Vap 5 5 ural Moist erg Limits	our Reading (ppm) 50 75 ure Content % 5 (% Dry Weight) 20 20	Sample	Natura Unit Weigh kN/m
~200	mm <b>TOPSOIL</b> over	176.12	0	Ô			200			×		21.4
reddi	ish brown, moist	~175.1	1	21					Ŷ			
SIL I reddi	ish brown, dense to very dense	_			48							
_		-	2		50/15	) Omm		×				
	a abala fragmanta	- 470.4			50/12	) 5 mm		×				
	Coring Commenced		3		Č	>		×			Z	
Form	ation, occasional limestone and	_	4									
	stone layers, reduisit brown	-										
		-	5									
		-										
		]	6									
		_	7									
		-										
		-	8									
		1										
	See Core Log for Details		9									
		_	10									
		-										
		-	11									
		]	12									
		_										
		-	13									
		-										
			14									
		_	15									
	End of Borehole	~160.6										
					• • •			Elapsec Time		Water Level (m)	Ho	ble Oper to (m)
ites: Borehole advanced t	to completion at ~15.5 m depth by conventional soil samplin	ng methods		(	ЭХ	р.	Jar Fel	iuary 29, oruarv 4	2024 2024	~6.1		Well Well
This drawing forms p FR-00257769-H0); b	p successful action. For porenoire deminitions, see notes prior to part of and must be read in conjunction with the subject rep- orehole data requires interpretation assistance by exp profe	ort (Ref. No.: essional staff				1			_VL T			
, ,												

			ROCK CORE	LC	) <b>G</b>	)							B	H	20	7		
PROJEC Geote LOCATI 5100	CT echni ION Erin	cal Inve Mills Pa	estigation arkway, Mississauga, Ontario	ORIEN Vertio DATE 01/12	TATIC cal STAR /23	ON TED	E	176.1 01/11	ATION 1 Lete 1/23	N ( <del>m)</del> ED		OATUM Geodel OGGEI D. Pan	tic <b>) BY</b> chal		PRO. GTF DRA	JECT R-002 WING 8/	NUM 5776 NUN A	<b>IBE</b> ;9-Н ИВЕ
CLIENT The M	⁄luzza	o Grou	p of COmpanies	DRILL Davis	E <b>R</b> 3 Drilli	ng		DRILL CME 5	<b>TYP</b> 5 - T	E rack	C	HQ	ARREL	•	SHEI	<b>ЕТ</b> 1 о	f 2	
ELEVATION (m)	o DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	NO. OF SETS			SPACING SPACING			APERTURE 0 (mm)		STRENGTH			RECOVERY (%)	17 KOD	B WATER RECOVERY (%)	WATER COLOUR
173.6	2		7		0		0	5						15	10	17	10	+
173.1	3		See Borehole Log for Details															
			Shale with interbedded siltstone, and clay	1	В	F	C C	RU RP						1	100	100	95	Red
171.8	4		Shale (73%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to $\sim$ 3.4 m and between moderately weathered and unweathered below.	3 1	В	F	C C	RP RP						2	100	82	100	Red
171.7 171.7 171.6 171.4 171.3	5		Limestone (3%) fine grained, grey, medium strength, unweathered Siltstone (24%) fine grained, grey, medium strength, unweathered.		F F									-				
171.2 170.8 170.6			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.	m	F	V												
170.4 170.0 170.0 169.8 169.6	6		5.0 m, 5.3 m, 5.6 m, 6.8 m, 9.2 m, 12.4 m, 13.4 m and 14.8 m.	1	B	F	C C	RP SU						3	100	85	100	Red
169.4 169.2 169.0	7				F	v												
168.9 168.8 168.6 168.5 168.5	•			1	В	F	C M	SU SU						4	100	93	100	Red
168.0 167.9	8																	
167.5 167.2 167.1 167.1 167.0 166.9 166.7	9			1	B F	F	W M	SU SP						5	100	97	100	Red
166.2 166.2 166.2	10													6	100	100	100	, pr
167.2 167.1 167.0 166.9 166.7 166.7 166.2 166.2 165.9 165.9	9 10			1	F	F	M	SP						6	100		100	100 100

			ROCK CORE	LC	)G	Ì							B	BH	20	7		
PROJI Geo LOCA	ECT techni	ical Inv	estigation	ORIEN Verti	TATIO cal STAR		E	176.1	TION 1 LETF	N (m)		DATUM Geodet	iic D BY		PRO. GTF	JECT R-002 WING	NUM 5776	BE 9-⊢ 1BF
5100 CLIEN	0 Erin IT	Mills P	arkway, Mississauga, Ontario	01/1 <sup>2</sup> DRILL	/23 ER		D	01/11 RILL	1/23 <b>TYP</b>	E	-	D. Pan	chal ARREI	-	SHE	8/ ET	4 60	
Î ne	Muzz	o Grou	p of COmpanies	Davis	JOIN	ng FCHA		TERI	STIC	rack S		HQ		~	(%	20	12 @	
	o DEPTH (m)	• SYMBOL	GENERAL DESCRIPTION	NO. OF SETS	JOINT TYPE		• SPACING	P ROUGHNESS		APERTURE (mm)		STRENGTH	FRACTURE FREQUENCY		RECOVERY (	RQD	B WATER RECOVERY (	
1			4	5	0		w	s SP	10	11		13	14	15	10	17	18	
64.9 54.8			QUEENSTON FORMATION Shale with interbedded siltstone, and clay layers.															
54.5 54.4 54.3			Shale (73%) fining bedded of faminated, red low strength, alternating between heavily an slightly weathered to ~3.4 m and between moderately weathered and unweathered below. Limestone (3%) fine grained, grey, medium	d 1	В	F	W C	SP SU						7	100	93	100	
+.0 3.9 3.8 3.8 3.7 3.7	- - - - - -		strengtn, unweathered Siltstone (24%) fine grained, grey, medium strength, unweathered. Discontinuities: bedding joints are rough planar to smooth undulating and at wide to															
3.4 2.8 2.7	-13		Very close intervals. Vertical fractures were noted at ~4.5 m, 4.8 $5.0$ m, $5.3$ m, $5.6$ m, $6.8$ m, $9.2$ m, $12.4$ m, 13.4 m and 14.8 m.	m, 1	B	F	М	SU						8	100	93	100	
2.6																		-
51.7 51.5 51.4 51.3				1	FB	VF	М	SP						9	100	95	100	
1.0 0.9 0.6	- - - -		End of Borehole at 15.5 m				111											
-	-16																	
-	- - 17																	
-	- - - - - - - - - - - - - - - - - - -																	

Project No.	GTR-00257769-H0	Š									Dra	awing	No	1	9 .f 1
Project: Location:	Erin Mills Town Centre, 51	IO0 Erin	М	ills	Park	Nav.	MI	ssiss	sauda	. Ont	: ario	Sneet	NO	<u> </u>	or <u>I</u>
						, <b>,</b>				,					
Date Drilled:	January 10, 2024		_	Auger	Sample				3	Combu Natura	ustible V Il Moistu	apour Re re	eading	×	
Drill Type:	Hollow Stem Augers			SPT ( Dynar	N) Value nic Cone	e Test			2 -	Plastic Undrai	and Liq	uid Limit xial at	I		-0
Datum:	Geodetic		-	Shelb Field '	y Tube √ane Te	st				% Stra Penetr	in at Fa ometer	ilure		€	)
				1				Ę	5	Combu			-l'		
Groundwate Soil/Rock Symbol	Soil Description	ELEV. m	Depth (m)	She	20 ar Streng	SPT ( 40 th 100	N Valu 60	e) ) ;	80 kPa	Nat Atter	25 tural Mois perg Limi	50 sture Con ts (% Dry 20	75 tent % Weight)	Sample	Natural Unit Weight kN/m <sup>3</sup>
~10	0 mm <b>PEBBLE</b> over	~176.3	0	ð								X			
FIL	L - clayey silt, trace sand,	~175.4	1		18							x			
SIL	<b>TTILL</b> - some clay, trace sand,	4			Ŭ			74/250	mm		×				22.0
	aisn brown, very dense	_	2			50/1	25 mm				×				
- tra	ace shale fragments	-					0			×				Z	
	Coring Commenced	~173.3	3			50/2	25 mm O			×				Z	
SH	ALE BDEROCK - Queenston	/													
san	dstone layers, reddish brown		4												
		_	5												
		_													
		_	6												
		-													
		-	7												
		-													
		-	8												
			9												
		_													
	See Core Log for Details	_	10												
		_													
		-	11												
		-													
		-	12												
		-													
		-	13												
			14												
		_													
		_	15												
		~160.8													
	End of Borehole														
			]	•						Elapse Time	d	N L	/ater evel	Ho	le Open to (m)
Notes: 1. Borehole advance using a specialist dril 2. This drawing form GTR-00257769-H0); before use by others	d to completion at ~15.7 m depth by conventional soil sampli ling subcontractor. For borehole definitions, see notes prior to s part of and must be read in conjunction with the subject rep borehole data requires interpretation assistance by exp profe	ng methods b logs. wort (Ref. No.: essional staff		•	<b>в</b> га	X	ton	).					(m)		

			ROCK CORE	LC	<u>)</u> G	Ì							B	H	20	8		
PROJ Geo LOCA 510 CLIEN	ECT otechni TION 0 Erin IT	ical Inv Mills P	estigation 'arkway, Mississauga, Ontario	ORIEN Vertic DATE \$ 01/10 DRILLE	TATIC al STAR /23 ER	DN TED	C	176.5 OMP 01/10 RILL	<b>LETE</b> 0/23 <b>TYP</b>	N (m) ED E	L	OATUM Geodet OGGEE D. Pano CORE B	ic ) BY chal ARREL	-	PRO. GTF DRA	JECT R-002 WING 9, ET	<b>NUM</b> 5776 <b>NUN</b> A	IBER 9-HC IBEF
The	Muzz	o Grou	p of COmpanies	Davis	Drilli JOINT	ng <b>「 CH/</b>		ME 5	5 - T STIC	rack S		HQ	1			1 0	f 2	~
ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUF
1 173.8	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
175.0	-3		See Borehole Log for Details															
173.3 173.2 173.2 172.9	- - - -		QUEENSTON FORMATION	1	В	F	C C	RU RU						1	100	53	100	Red
172.8 172.5 172.5 172.4 172.3	- <b>4</b> - - -		layers. Shale (87%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.1 m and between moderately weathered and unweathered below.	1	B F	FV	C C	RU RP						2	100	88	100	Red
171.9 171.9 171.7 171.6	5		Limestone (3%) fine grained, grey, medium strength, unweathered Siltstone (9%) fine grained, grey, medium strength unweathered		F	V												
171.3 171.2	-		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
170.9 170.8 170.5	-6		Vertical fractures were noted at ~4.4 m, 4.7 r 6.4 m, 7.1 m, 8.4 m, 10.8 m and 14.6 m. A Clay (1%) layer, heavily weathered, very lo	n, 1 w	В	F	M C	RP RP						3	100	93	100	Red
170.4 170.1 170.1	- - - -				F	v												
169.8 169.6	-7				F	v												
169.2 169.1 169.0 168.9 168.8 168.8 168.7				1	В	F	C M	RP SU						4	100	70	100	Red
168.1 168.0	- - -				F	v												
167.8 167.6 167.3	- 9 -			1	В	F	C M	SU SP						5	100	95	100	Red
3./oi	-																	
166.5 166.3	- 10 			1	в	F	W	SP SP						6	100	97	100	Red

<sup>®</sup> \* exp.

			ROCK CORE	LC	)G								В	H	208	8		
Geo Geo LOCA 510	ECT otechni TION 0 Erin	ical Inv Mills P	estigation arkway, Mississauga, Ontario	ORIEN Vertio DATE 01/10	TATIC cal STAR 1/23	ON TED	C	176.5 0MP 01/10	TION 5 LETE 0/23	1 (m) D	L	Geodet	ic ) BY chal		GTF DRAV	JECT 2-002 WING 9/	NUM 5776 NUN A	1 <b>BE</b> 9-1- <b>1BE</b>
The	Muzz	o Grou	p of COmpanies	DRILL	= <b>R</b> 5 Drilli	ng	C	ME 5	5 - T	⊨ rack		HQ	ARREL		SHE	=1 2 o	f 2	
ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	NO. OF SETS			SPACING SPAC		STIC	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	-
65.8 65.7 65.4 65.2	- <b>11</b> - - - -		QUEENSTON FORMATION Shale with interbedded siltstone, and clay layers.		F	V												
64.4 64.2	- <b>12</b>		In the or with the second of t	d 1	в	F	W W	SP SP						7	100	100	100	
63.8 63.7 63.5 63.4 63.2	-13		Siltstone (9%) fine grained, grey, medium strength, unweathered. Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.	m,														
63.1 62.7 62.6	- - - <b>14</b>		A Clay (1%) layer, heavily weathered, very lost strength was noted at ~15.7 m.	ow 1	В	F	WW	SP SP						8	100	100	100	
61.6				1	F	V	м	SP						9	100	93	100	
61.5 61.4 61.3 61.2 61.1	- - - - - -						VC	SU	NC	. 50								
60.9 60.8 60.8	- <b>16</b>		End of Borehole at 15.7 m							mm								
	- <b>17</b>  																	



			<b>ROCK CORE</b>	LC	)G	Ì							Bl	H 2	209	D		
PROJ Gec LOCA 510 CLIEN The	ECT otechni TION 0 Erin IT	ical Inv Mills P	estigation arkway, Mississauga, Ontario	ORIEN Vertio DATE \$ 01/15 DRILLI	TATIC cal STAR 5/23 ER			176.9 0MP 01/10 01/10 01/10	<b>ATIO</b> 9 7 1 1 5/23 5/23 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	N (m) ED E		DATUM Geodet LOGGEE D. Pano CORE B/	ic ) BY chal ARREL	-	PRO GTF DRA SHE	JECT R-002 WING 10 ET	NUM 5776 NUN A	<b>BER</b> 9-H0 <b>BER</b>
(	WIGZZ					T CH	ARAC	TERI	STIC	S								R
ELEVATION (m	o DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	4 NO. OF SETS	a JOINT TYPE			ROUGHNESS	2 FILLING	APERTURE (mm)	C WEATHERING	13 STRENGTH		5 RUN NUMBER	B RECOVERY (%	D 17	B WATER RECOVERY (%	B WATER COLOI
<b>1</b> 74.4	_		<b>.</b>					<u> </u>										13
	-		See Borehole Log for Details															
173.8 173.7	3 		QUEENSTON FORMATION		F	v												5
173.7 173.4	-		Shale with interbedded siltstone, and clay	1	B	F	VC C	RU RU						1	100	68	95	Re
173.3 173.0	-		layers.															
173.0 172.7 172.6	4 		low strength, alternating between heavily and slightly weathered to ~4.4 m and between moderately weathered and unweathered below.	1	F	V	С	RU						2	100	92	100	led
			Limestone (1%) fine grained, grey, medium strength, unweathered				M	RP										E CE
			Siltstone (1%) fine grained, grey, medium strength, unweathered.															
	-		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to															
171.5 171.4	-		Vertical fractures were noted at ~3.2 m, 3.5 r	n,														
171.1 171.0	-		4.2 m, 6.2 m and 6.7 m.	1	В	F	М	RP						3	100	98	100	ked
170.7	6				F	v	С	RP										
170.6 170.5	-																	
170.4	-				F	v												
170.0	-7																	
169.6	-			1	в	F	с	RP						4	100	97	100	Sed
169.4	-						С	SU										
169.0 168.9	-8																	
168.9 168.8	-																	
168.7 168.5 168.3	-																	
168.3	•			1	в	F	w	SU						5	100	100	100	Sed
	-						W	SP										
167.5 167.3	-																	
167.1 167 1	-																	
166.8 166.8	-10																	
166.5				1	В	F	М	SP						6	100	100	100	Red

			ROCK CORE	LC	) <u>G</u>	)							E	BH	l 2	09	D		
PROJ Geo OCA 510 CLIEN The	ECT otechni TION 0 Erin IT Muzzo	ical Inv Mills P o Grou	estigation arkway, Mississauga, Ontario p of COmpanies	ORIEN Vertic DATE \$ 01/15 DRILLE Davis	rational Star /23 R Drilli		E C D C	176.9 0MP 01/15 RILL	<b>LETE</b> 5/23 <b>TYPI</b> 55 - TI	N (m) ED E rack		DATUM Geodet LOGGED D. Pano CORE BA HQ	ic BY chal	EL		PRO. GTR DRAV	JECT 2-002 WING 10 ET 2 o	NUM 5776 NUN A f 2	9-H
ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	NO. OF SETS				ROUGHNESS	STIC	APERTURE 0 (mm)	WEATHERING	STRENGTH	FRACTURE	FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	
1	2	3	4	5	6	7	8	9	10	11	12	2 13	14	1	15	16	17	18	
66.2 66.1 65.9 65.7	- - 11		QUEENSTON FORMATION Shale with interbedded siltstone, and clay				IVI	54						-					-
65.5 65.4 65.1 65.0			Shale (98%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.4 m and between moderately weathered and unweathered below. Limestone (1%) fine grained, grey, medium strength, unweathered	1	в	F	M M	SP SP		-					7	100	97	100	
64.6 64.5 64.3 64.1 63.9 63.7			Siltstone (1%) fine grained, grey, medium strength, unweathered. Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.	n															
53.3 53.1	- - - - - - - - - - - - - - - - - - -		4.2 m, 6.2 m and 6.7 m.	1	В	F	W W	SP SP							8	100	100	100	
52.6 52.5 52.4 52.3				1	в	F	W W	SP SP							9	100	100	100	
61.6	-		End of Borehole at 15.3 m																-
	16																		
	- - 																		
	- - - - - - - - - - - - - - - - - - -																		

Project No.	<u>дтк-00257769-но</u> Log о	Borehole 209S	11
Project: Location:	Geotechnical Investigation Erin Mills Town Centre, 5100 Erin	Sheet No1 Iills Parkway, MIssissauga, Ontario	of _1_
Date Drilled:	January 15, 2024	Auger Sample Combustible Vapour Reading Natural Moisture SPT (N) Value O	×
Drill Type:	Hollow Stem Augers	Dynamic Cone Test Undrained Triaxial at Shelby Tube % Strain at Failure	⊕
Datum:	Geodetic	Field Vane Test S Penetrometer	<b>▲</b>
Groundwater Soil/Rock Symbol	Soil Description ELEV. m 176.87	SPT (N Value)         Combustible Vapour Reading (ppm)           20         40         60         80           Shear Strength         kPa         Atterberg Limits (% Dry Weight)           100         200         10         20	Natural Unit Weight kN/m <sup>3</sup>
	See Log of Borehole 209D for Details End of Borehole End of Borehole		
		Elapsed Water	Hole Open
Notes: 1. Borehole advanced a specialist drilling sub 2. This drawing forms GTR-00257769-H0); I before use by others.	I to completion at ~6.1 m depth by conventional soil sampling methods using contractor. For borehole definitions, see notes prior to logs. part of and must be read in conjunction with the subject report (Ref. No.: borehole data requires interpretation assistance by exp professional staff	Brampton	to (m) Well Well

oject:	Geotechnical Investigation									She	et No. 1		of 1
cation:	Erin Mills Town Centre, 51	00 Erin	Μ	ills I	Parkv	vay,	MIssis	sauga	, Ontai	rio		_	
			_						Combust	ible Vanou	r Reading	Г	1
te Drilled:	<u>January 8 - 9, 2024</u>		_	Auger	Sample		0		Natural N	<i>libie vapou</i> <i>I</i> oisture	riceding	×	
ll Type:	Hollow Stem Augers		_	Dynar	nic Cone	Test			Plastic a Undraine	nd Liquid L d Triaxial a	imit – at		-0
tum:	Geodetic		_	Shelby Field	y Tube /ane Tes	t		■ ★	% Strain Penetron	at Failure neter			
			_	1				5	Combusti	hle Vanour I	Reading (nom)	1	
oil/Rock	Soil Description	ELEV. m	epth (m)	Shea	20 ar Strenat	SPT (I <u>40</u> h	N Value) 60	80 kPa	25 Natura Atterber	50 al Moisture g Limits (%	75 Content % Dry Weight)	Sample	Natur Unit Weigi
∞ ∞ ~15(	0 mm TOPSOIL over	176.76	0	I		100		200	10	20	30		kN/m
FILI	L - clayey silt, trace sand,	~176.0		0						×		Ű	21.4
- SIL	<b>T TILL</b> - some clay, trace sand,		1				Ö		×			V	
redd	lish brown, very dense	-				50/1	oomm O		×				
		-	2			50/2	25 mm						
- tra	ce shale fragments	-							X				1
	Coring Commenced	~173.6	3			50/1	00 mm Ö		x				
SH/	ALE BDEROCK - Queenston	/										ſ	
Forn sand	nation, occasional limestone and distone layers, reddish brown	_	4										
	,,,	_											
		_	5										
		_											
		_	6										
		_											
		_	7										
		_											
		_	8										
		_											
		_	9										
	See Core Log for Details	_											
		_	10										
		_											
		_	11										
		-											
		_	12										
		_											
		_	13										
		_											
		_	14										
		_											
		_	15										
		~161 0											
	End of Borehole												
I		<u> </u>	j						Elapsed		Water	Ho	ble Oper
es: lorehole advanced ig a specialist drillir his drawing forms	I to completion at ~15.7 m depth by conventional soil samplin ng subcontractor. For borehole definitions, see notes prior to part of and must be read in conjunction with the subject repr	ig methods logs. ort (Ref. No.:			́е	X	p.		Time		(m)		to (m)

PROJECT Geotechnical Investigation       DRIENTATION Vertical       ELEVATION Partical       DATUM Geodetic         LOCATION S100 Erin Mills Parkway, Mississauga, Ontario       DATE STARTED 01/09/23       COMPLETED 01/09/23       D. Panchal         CLENT The Muzzo Group of COmpanies       DRILL TYPE Davis Drilling       DRILL TYPE CME 55 - Track       CORE BARREL HQ         (i)       (i)       (i)       (i)       (i)       (i)       (i)         (i)       (i)       (i)       (i)       (i)       (i)       (i)       (i)         (ii)       (iii)       (iiii)       (iiii)       (iiiii)       (iiiii)       (iiiiii)       (iiiiiiiii)       (iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	PROJE GTR-( DRAWI	JECT NUMB R-00257769- WING NUMB 12A	MBE
Image: original contraction       Derivative original contraction       Derivative original contraction       Image: contraction       Image: contraction originalin	SHEET	ET 1 of 2	MBE
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	(%)	(%)	
123456789101112131418173.4QUEENSTON FORMATION173.41BFCRU173.4Shale with interbedded siltstone, and clay173.4Shale with interbedded siltstone, and clay173.4Shale (78%) thinly bedded or laminated, red, low strength, alternating between heavily and silghtly weathered to ~4.5 m and between moderately weathered and unweathered171.9Siltstone (15%) fine grained, grey, medium strength, unweathered.171.9Siltstone (15%) fine grained, grey, medium strength, unweathered.171.2Siltstone (15%) fine grained, grey, medium strength, unweathered.171.3Siltstone (15%) fine grained, grey, medium strength, unweathered.171.3Si	RECOVERY	R RQD WATER RECOVERY	
3       See Borehole Log for Details       1       B       F       C       RU       1         173.6       Image: Constraint of the set	<u>, 16</u>	1/ 18	5 1
173.6       Image: Constraint of the second se			
173.4       Image: State with interbedded siltstone, and clay layers.       Image: State with interbedded siltstone, and state with and state with interbedded siltstone, and state with interbedded s	100 1	100 95	5 0
172.8       -4       IIIII Shale (78%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.5 m and between moderately weathered and unweathered below.       1       B       F       C       RP M       SU       2         171.9			
171.9 171.9 171.7 5 171.7 171.7 171.3 171.2 170.8 6 170.8 170.7 170.8 170.7 170.8 170.7	100 1	100 100	
171.3       Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.         171.2       Vertical fractures were noted at ~3.6 m and 1 B F M SU 13.5 m.         170.8       6         170.7       Image: Strength of the strengt of the strength of the strength of the str			
171.2 Vertical fractures were noted at ~3.6 m and 1 B F M SU SP 33 170.8 6			
	100 1	100 100	
169.8 <b>/</b> 1111 169.7 <b>1</b> B F M SP 4 4	100 1	100 100	
168.7 168.5 168.4			
167.8 <b>9 1</b> B F W SP <b>1 1 1 1 1 1 1 1 1 1</b>	100 1	100 100	
167.1       167.1       167.1       167.0       166.9       10			
	100 1	100 100	

<sup>\*</sup> exp.

			ROCK CORE		)G	<b>j</b>							В	Η	21	0		
PROJ Geo LOCA 510	ECT itechni TION D Erin	cal Inv Mills P	estigation arkway, Mississauga, Ontario	ORIEN Vertic DATE \$ 01/09	al TAR 23	ON TED	C	176.8 01/09	ATION 3 LETE 9/23	N (m) ED	D	ATUM Geodet OGGEE D. Pano	ic ) BY chal		PRO. GTF DRA	JECT R-002 WING 12	NUM 5776 NUN A	і <b>ВЕ</b> 9-Н <b>ЛВЕ</b>
CLIEN The	I <b>T</b> Muzzo	o Grou	p of COmpanies	DRILLE Davis	<b>R</b> Drilli	ng	D C	ME 5	<b>TYP</b> 5 - T	E rack	C	ore B/ HQ	ARREL		SHEI	ET 2 o'	f 2	
ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	NO. OF SETS			RACING Shares		STIC	APERTURE 0 (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	1
166.3 165.9 165.9	-11		QUEENSTON FORMATION Shale with interbedded siltstone, and clay layers.															
65.2 65.2 64.9	- - - - 		Shale (78%) thinly bedded or laminated, red low strength, alternating between heavily and slightly weathered to ~4.5 m and between moderately weathered and unweathered below.	й 1	В	F	WW	SP SP						7	100	100	100	
JT.U	 - - - -		Siltstone (15%) fine grained, grey, medium strength, unweathered Siltstone (15%) fine grained, grey, medium strength, unweathered.		F	v												
64.0 63.8	-13		planar to smooth undulating and at wide to very close intervals. Vertical fractures were noted at ~3.6 m and 13.5 m.	1	В	F	м	SP						8	100	100	100	
63.2 63.1							М	SP										
62.2 62.1	- - - -																	
61.6 61.4	-15			1	В	F	W W	SP SP						9	100	100	100	
61.0	- - - - - 16		End of Borehole at 15.7 m															
	- 10 - - - - -																	

F	Project I	No.	<u>GTR-00257769-H0</u>	g o	f	B	or	eh	ole		211	Draw	ing No		13
F	Project: ocatior	ı.	Geotechnical Investigation Erin Mills Town Centre, 51	1 100 Erin	M	ills I	Parkv	/av. M	Ississa	uda	Ontar	Sh Tio	eet No.	<u> </u>	of <u>1</u>
					_	Auger	Sample	iay, wi	<u>ISSISSU</u>	uga	Combust	ible Vapo	our Reading		
[	Date Dri	illed:	January 8, 2024		_	SPT (	N) Value		οÖ		Natural M Plastic ar	loisture nd Liquid	Limit	X	-0
	Drill Typ	e:	Hollow Stem Augers		_	Dynar Shelb	nic Cone y Tube	Test			Undraine % Strain	d Triaxia at Failure	lat e	$\oplus$	
[	Datum:		Geodetic		_	Field \	/ane Tes	t	S		Penetron	neter			
	Soil/Rock Symbol		Soil Description	ELEV. m	Depth (m)	Shea	20 ar Strengt	SPT (N Val 40 6 100	lue) 60 80 200	kPa	Combustit 25 Natura Atterber 10	ole Vapou 50 al Moistur g Limits ( 20	r Reading (ppm) 75 e Content % % Dry Weight) 30	Sample	Natural Unit Weight kN/m <sup>3</sup>
		~150 - <b>FILL</b> redd	) mm <b>TOPSOIL</b> over - clayey silt, trace sand, ish brown, moist	~175.9	0	Ő		55				×			21.4
		SILT _redd	<b>T TILL</b> - some clay, trace sand, ish brown, very dense	_	2			50/150 m	m		×				
		- trac	ce shale fragments		3			50/150 m	n n		×				
		- <b>SHA</b> Form	ALE BDEROCK - Queenston nation, occasional limestone and listone layers, reddish brown	/ _ _	4			•							
LOZEXP 2577694_BH_LOGS.GPJ NEW.GD1 3/20/24		-	See Core Log for Details		5 6 7 8 9 10 11 12 13 14 15										
	Notes: 1. Borehole a using a speci 2. This drawi	advanced ialist drillin	to completion at ~15.4 m depth by conventional soil samplin g subcontractor. For borehole definitions, see notes prior to part of and must be read in conjunction with the subject rep	ng methods logs. ort (Ref. No.:			<sup>с</sup> е	xp	Э.		Elapsed Time		Water Level (m)	Ho	le Open to (m)
	GTR-002577 before use by	769-H0); b y others.	orehole data requires interpretation assistance by exp profe	essional staff			Bra	nptor	ו						

			ROCK CORE		)G	j							B	H	21	1		
Geot Geot LOCA 5100	ECT techni TION ) Erin	ical Inv Mills P	estigation arkway, Mississauga, Ontario	ORIEN Vertic DATE \$ 01/08	TATIC al STAR /23	DN TED	C	176.9 0 <b>MP</b> 01/08	ATION EETE 3/23	I (m) D		DATUM Geodet OGGEE D. Pano	ic BY chal		GTF DRA	JECT R-002 WING 13	NUM 5776 NUN A	іВ ;9- ЛВ
The	Muzz	o Grou	p of COmpanies	DRILL	Drilli	ng	C	ME 5	5 - T	- rack		HQ		-		1 o	f 2	_
ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	NO. OF SETS					STIC	APERTURE 0 (mm)	WEATHERING	STRENGTH	FRACTURE	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	
1 74.4	- 2	3	4	5	6	1	8	9	10	11	12	13	14	15	16	1/	18	
73 7-	-3		See Borehole Log for Details															
73.6 73.5 73.3	- - - -		QUEENSTON FORMATION	1	B F	F	C C	RU RP						1	94	94	90	
73.1	- <b>4</b>		Shale (87%) thinly bedded or laminated, red low strength, alternating between heavily an slightly weathered to ~5.8 and between moderately weathered and unweathered below. Limestone (6%) fine grained, grey, medium	l, d 1	F B	V F	C M	RP SU						2	100	90	100	
-	-5		Siltstone (7%) fine grained, grey, medium strength, unweathered. Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
71.2	-6		Vertical fractures were noted at ~3.6 m, 4.2 and 6.9 m.	m   1	в	F	M C	SU SU						3	100	97	100	
70.0 69.9	- - - <b>7</b>				F	v												
69.4 69.2	- - - -			1	В	F	M M	SU SP						4	100	100	100	
69.0 68.9	-8																	
68.3 68.3	- - - - -			1	В	F	W	SP						5	100	100	100	
67.7 67.6 67.3							vv	54										
67.2 66.7 66.7	-10																	

			ROCK CORE		<u>)</u>	G									<u>3</u> F	12	21 <sup>·</sup>	1		
PROJ	ECT	cal Inv	estigation	ORIE	NTA ticel	TIO	N	E	176 C		N (m)	1	MUTAC	ic					NUM	BE
			esugation	DATE	STA	ART	ED	c	OMP		ED	-		BY			DRAN	NING	NUN	9-1 IBE
510	0 Erin	Mills P	arkway, Mississauga, Ontario	01/0	)8/23	3			01/08	3/23			D. Pan	chal				13	A	
CLIEN	Muzz	o Grou	n of COmpanies	Dav	L <b>ER</b> ris Dr	rillin	a		MF 5	<b>TYP</b> 5 - T	E rack	0	HO	ARRE	EL	1	SHEE	בד 2 סי	f 2	
-					JOI	INT	CHA	RAC	TERI	STIC	S									2
ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	NO OF SETS			ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)		STRENGTH	FRACTURE		RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOU
1	2	3	4	5		6	7	8	9	10	11	12	13	14		15	16	17	18	19
166.2	-		QUEENSTON FORMATION	1	E	в	F	W	SP SP											
165.9	-11		Shale with interbedded siltstone, and clay layers.																	
165.2 165.1 164.8	- - - 		Shale (87%) thinly bedded or laminated, red low strength, alternating between heavily an slightly weathered to ~5.8 and between moderately weathered and unweathered below.	l, d 1	E	в	F	W	SP							7	100	100	100	Red
164.8	- - - -		Siltstone (7%) fine grained, grey, medium strength, unweathered.																	
163.8	-13		planar to smooth undulating and at wide to very close intervals. Vertical fractures were noted at ~3.6 m, 4.2 and 6.9 m.	m																
163.4 163.2 162.8	- - - 			1	E	B	F	W W	SP SP							8	100	100	100	Rec
162.8	- - - -																			
162.2 161.9 161.8	-15			1	E	в	F	W W	SP SP							9	100	100	100	Red
161.5	-  -		End of Borehole at 15.4 m																	
	- <b>16</b> 																			
	- - <b>17</b> - -																			
	- - - 18																			

Project: Location:	Geotechnical Investigation Erin Mills Town Centre, 57	n 100 Erin	Mills Par	kway, MIssis	sauga	, Ontario	heet No. <u>1</u>	of1
Date Drilled:	lanuary 5, 2024		Auger Sam	ple	$\boxtimes$	Combustible Va	oour Reading	
Drill Type	Hollow Stem Augers		- SPT (N) Va Dynamic C	alue O	0	Plastic and Liqui	d Limit 📙	0
Datum:	Geodetic		Shelby Tub Field Vane	e Test	S	% Strain at Failu Penetrometer	arat ire	⊕
5roundwater Soil/Rock Symbol	Soil Description	ELEV. m	E 20	SPT (N Value) 40 60 ength	80 kPa	Combustible Vapo 25 5 Natural Moistu Atterberg Limits	our Reading (ppm) 0 75 ure Content % (% Dry Weight)	Natura Unit Weight
~12 FIL	5 mm <b>TOPSOIL</b> over L - clayey silt, trace sand, dish brown, moist	176.12	° Ö		200		<ul> <li>30</li> </ul>	20.5
SIL redo	<b>TTILL</b> - some clay, trace sand, dish brown, very dense	~175.1 	2	Ö 58		* *		
— — — —	ice shale fragments	_	3	39 50/125 mm		× ×		
<b>SH</b>	ALE BDEROCK - Queenston mation, occasional limestone and dstone layers, reddish brown Coring Commenced	~172.1	4	50/75 mm				
	See Core Log for Details		6 7 8 9 10 11 12 13 14					
Notes: 1. Borehole advance using a specialist drill 2. This drawing form: GTR-00257769-H0); before use by others	d to completion at ~15.4 m depth by conventional soil sampling subcontractor. For borehole definitions, see notes prior to spart of and must be read in conjunction with the subject reportehole data requires interpretation assistance by exp profe	ing methods b logs. vort (Ref. No.: essional staff	S.	exp.	Jan Fet	Elapsed Time Juary 29, 2024 Jruary 4, 2024	Water Level (m) ~5.7 ~5.8	Hole Open to (m) Well Well

			ROCK CORE	: LC	)G	j							В	SH .	21	2		
Geo Geo OCA 5100	ECT techni TION D Erin T	ical Inv Mills P	estigation arkway, Mississauga, Ontario	ORIEN Vertic DATE \$ 01/05 DRILLI	TATIC cal STAR 5/23 ER	DN TED	E C	LEVA 176.1 OMP 01/05 RILL	LETE	I (m) D E		DATUM Geodet DGGGED D. Pano CORE BA	ic BY chal ARREL	-	PRO GTF DRA SHE	JECT 2-002 WING 14 ET	NUM 5776 NUN A	1В ;9- ИВ
E	Muzz	o Grou	o of COmpanies	Davis v					5 - 11 STIC	S	UC D	HQ	<u>ج</u>	R	(%)	10	(%)	
	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	NO. OF SET	JOINT TYPE	ORIENTATI	SPACING	ROUGHNES	FILLING	APERTURE (mm)	WEATHERII	STRENGTH	FRACTURE		RECOVERY	RQD	WATER	
<b>1</b> '1.9	2	3	4 See Borehole Log for Details	5	6	7	8	9	10	11	12		14	15	16	17	18	+
1.5	-		QUEENSTON FORMATION														<u> </u>	_
'1.1 '1.0	-5		Shale with interbedded siltstone, and clay layers.	1	В	F	C C	RU RP						1	100	74	95	+
0.7 0.7 0.5 0.4	6		Shale (71%) thinly bedded or laminated, re low strength, alternating between heavily and slightly weathered to ~5.7 m and between moderately weathered and unweathered below.	d, nd 1	В	F	C C	RP RP	NC	20 mm				2	100	100	100	)
0.0 0.0 9.6	- - - -		Limestone (3%) fine grained, grey, medium strength, unweathered Siltstone (25%) fine grained, grey, medium strength, unweathered.		F					-								
9.5 9.5 9.3 9.3	-7		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.						NC NC	20 mm 60 mm								
9.1 9.0 8.7 8.7	- - - -		Vertical fractures were noted at ~6.6 m, 7.1 7.6 m, 9.1 m and 10.2 m. A Clay (1%) layers, heavily weathered, very low strength were noted at ~5.4 m, 6.6 m a	m, 1	F B F	V F V	C C	RP SU		_				3	100	74	100	,
8.6 8.5 8.3 8.1	-8		6.8 m.															_
57.6 57.6	-			1	в	F	W	SU						4	100	89	100	,
6.9 6.8 6.7 6.5	9 - - - -				F	V												
6.0 5.7	-10			1	F	V	м	SP						5	100	91	100	)
5.1 5.0	-11						W	SP										
64.7	- - - -12			1	В	F	w	SP						6	100	100	100	)

				L(	JG	J								BF	12	212	2		
ROJI	ECT		restigation	ORIEN	TATIO	ON	E			N (m)	D	ATUM	ic			PRO		NUM	iBl o
			esugation	DATE	STAR	TED	c	OMP		D			BY		+	DRA	NING	NUN	9- /E
5100	0 Erin	Mills P	Parkway, Mississauga, Ontario	01/05	6/23			01/05	5/23			D. Pano	chal				14	A	_
	IT M···=-		n of COmpanies	DRILLI	ER	nc	D		TYP	E	C		ARR	EL		SHEE	T	f 0	
me	iviuzz			Davis	JOIN	rig <u>C</u> H/			STIC	S				Т			20	12	Γ
	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	NO. OF SETS	A JOINT TYPE		• SPACING	P ROUGHNESS	E FILLING	APERTURE (mm)		STRENGTH	FRACTURE			RECOVERY (%)	rad	B WATER RECOVERY (%)	
	2	3	4	5	6	1	8	y	10	11	12	13	14	•	15	16	17	18	
3.9	-		QUEENSTON FORMATION																
3.7	-																		
3.4	-		Shale with interbedded siltstone, and clay layers.																+
3.0	-13		Shale (71%) thinly bedded or laminated, rec low strength, alternating between heavily an slightly weathered to ~5.7 m and between moderately weathered and unweathered below.	l, d 1	в	F	w	SP							7	100	100	100	
	14		Limestone (3%) fine grained, grey, medium strength, unweathered Siltstone (25%) fine grained, grey, medium				W	SP											
∠.∪ 1.9	- - - -		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.																
1.1	-15		Vertical fractures were noted at ~6.6 m, 7.1 7.6 m, 9.1 m and 10.2 m. A Clay (1%) layers, heavily weathered, very	m, 1	В	F	W W	SP SP							8	100	100	100	
0.9 0.7	- - -		low strength were noted at ~5.4 m, 6.6 m ar 6.8 m. End of Borehole at 15.4 m	ld															
ļ	-																		
-	-16																		
- - - - - - - - - - - - - - - - 	-17																		
- - - - - - - - - - - - - - - - - - -	 																		
- - - - - - - - - - - - - - - - - - -	- - 																		
- - - - - - - - - - - - - - - - 																			

Project No.	GTR-00257769-Н0	g o	f	Bc	breh	ole	21	3 <sub>Dra</sub>	wing No.		15
Project:	Geotechnical Investigation							S	heet No.	1	of 1
Location:	Erin Mills Town Centre, 51	00 Erin	Μ	ills Pa	rkway, M	Ississa	luga, Or	tario			
										_	
Date Drilled:	January 4 - 5, 2024		-	Auger Sar	nple		Corr Natu	ibustible Va iral Moistur	ipour Reading e	×	]
Drill Type:	Hollow Stem Augers		_	SPT (N) V Dynamic (	alue Cone Test	00	Plas	tic and Liqu	iid Limit		-0
Datum:	Geodetic		-	Shelby Tu	be T		% S	train at Fail	ure	€	)
Datam.			-	Field Vane	e lest	S	Pen	etrometer		-	•
vater ock ool		FI FV	(u		SPT (N Va	lue)	Com	bustible Vap 25	our Reading (ppm) 50 75	) )	Natural
Soil/R Symt	Soil Description	m	Depth	20 Shear St	40 rength	60 80	kPa Att	latural Moist erberg Limit	ture Content % s (% Dry Weight)	Sam	Weight kN/m <sup>3</sup>
~15	0 mm TOPSOIL over	176.15	0	10 Ö	100	200		10 Z	20 30		21.8
redo	L - clayey silt, trace sand,	~175.4				70/275 mm		$\mathbf{v}$			22.5
redo	<b>T TILL</b> - some clay, trace sand, lish brown, compact to very dense		1				00/075 mm				22.5
			2				90/2/311111 <b>O</b> X	(			
		_			50/50 m	m	×	•			
		_	3		50/50 m	m					
		_			50/125 m	nn					
tra	ce shale fragments	_	4		0						
	Coring Commenced	~171.4			50/100 m	nn -	×			zz	
SH	ALE BDEROCK - Queenston		5								
sand	dstone layers, reddish brown										
			6								
			7								
		_	8								
		_									
		_	9								
		_									
4	See Core Log for Details	_	10								
		_									
			11								
			12								
		_									
		_	13								
		_									
H692			14								
52		_									
		~160.9	15								
ewe	End of Borehole										
			] T					<u>                                      </u>	Water	<u>≓</u>   ,.	
Noto-:					$\sim$		Elap Tin	sed ne	Level (m)	Ho	to (m)
1. Borehole advanced using a specialist drilli	to completion at ~15.3 m depth by conventional soil samplin ng subcontractor. For borehole definitions see notes prior to	g methods logs.			EX (	J.					
2. This drawing forms GTR-00257769-H0);	part of and must be read in conjunction with the subject report borehole data requires interpretation assistance by exp profes	ort (Ref. No.: ssional staff			1						
before use by others.				В	ramptor	า					

			ROCK CORE	LC	)G	j							B	H	21	3		
Gec Gec LOCA 510	ECT otechni TION 0 Erin	ical Inv Mills P	estigation arkway, Mississauga, Ontario	ORIEN Vertic DATE \$ 01/05	r <b>ATIC</b> al STAR /23	JN TED	C	176.2 01/05	ATION 2 Lete 5/23	i (m) :D		ATUM Geodet OGGEE D. Pano	ic ) BY chal		GTF DRA	JECT R-002 WING 15	NUM 5776 NUN A	188 19-1 181
CLIEN The	<b>IT</b> Muzzo	o Grou	p of COmpanies	DRILLE	<b>ER</b> Drilli	na	D	ME 5	<b>TYP</b> 5 - T	E rack	C	ORE B/ HQ	ARREL		SHE	ET 1 o	f 2	
(m) NO	Ê			ŝETS			ARAC	SSE	STIC	S	RING	E	RE NCY	MBER	:RY (%)		RY (%)	
- ELEVAT	о DEPTH (	SYMBOL	GENERAL DESCRIPTION	NO. OF				P ROUGH		APERTU (mm)	3 WEATHE	STRENG			RECOVE	D 17	RECOVE	
72.0	-				0		0	5						15	10	17	10	t
	-		See Borehole Log for Details															
71.4	-		QUEENSTON FORMATION															╞
	-5		Shale with interhedded eiltetene, and elev	1	В	F	M M	RU RP						1	100	100	95	
70.9 70.9	-		layers.		F	V												
70.7	-		Shale (78%) thinly bedded or laminated, red low strength, alternating between heavily and slightly weathered to ~5.6 and between	Ŕ														
70.4 70.4	-6		moderately weathered and unweathered below.	1	в	F	с	RP	NC NC	20 mm				2	100	97	100	1
70.2 70.2 69.8	-		Limestone (2%) fine grained, grey, medium strength, unweathered				М	SU		mm								
69.7	-  -		Siltstone (20%) fine grained, grey, medium strength, unweathered.															
	-		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to															┢
69.1 69.1	-7	ĪЩ	very close intervals.						NC	20 mm								
69.0 68.9	-		Clay (1%) layers, heavily weathered, very lov	N 1	B	F	C	SU						3	100	90	100	
68.8 68.7	-		m.	, .			M	SP										
68.6 68.4	-8																	
	-																	┢
67.5	-																	
67.3	-9			1	В	F	w	SP						4	100	100	100	
67.0 66.9	-					'	Ŵ	SP							100		100	
	-																	
66.3	-																	╀
66.2																		
65.7	-				_									5	100	100	100	
65.6	-			1	B	F	W W	SP SP							100		100	
	-11																	
	-																	╞
64.5	-																	
04.4	_ 12				_	_									100	100	100	
•	-			1	В	F	VV	SP						6	100	100	100	

			ROCK CORE	<u> </u>	DG	)							B	BH .	21	3		
PROJ	ECT	ical Inv	estigation	ORIE		ON	E	176 1		N (m)	D	Geoder	ic		PRO		NUM	IBE ൭_⊔
LOCA	TION		esugation	DATE	STAR	TED	c	OMP	∠ ′LETE	D	L	OGGEE	) BY		DRA	WING	NUN	<b>ABE</b>
510	0 Erin	Mills P	arkway, Mississauga, Ontario	01/0	5/23			01/05	5/23			D. Pan	chal			15	A	
	IT M······	- Cr	n of COmpanies	DRILL	ER	inc.	D		TYPI	E	C		ARREL	-	SHE	ET		
The	IVIUZZ		p of COmpanies	Dav	JOIN	T CH/			STIC	S						20		
ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	ľ
3.9 3.8	-		QUEENSTON FORMATION				W	SP										
3.0 3.2	_		Shale with interbedded siltstone, and clay layers.															
2.9			Shale (78%) thinly bedded or laminated, red low strength, alternating between heavily an slightly weathered to ~5.6 and between moderately weathered and unweathered below.	l, d														-
2.4 2.3	-		Limestone (2%) fine grained, grey, medium strength, unweathered	1	B	F	M W	SP SP						7	100	100	100	6
	14 - - -		Siltstone (20%) fine grained, grey, medium strength, unweathered. Discontinuities: bedding joints are rough															
1 2			A Vertical fracture was noted at ~5.3 m.	1	В	F	м	SP						8	100	100	100	
1.2 0.9	-15		Clay (1%) layers, heavily weathered, very lo strength were noted at ~5.8 m, 5.9 m and 7. m.	w 0			М	SP										
	- 																	
	-17																	
	- 																	
	- - - - - 19																	
	- - - - - - - - - - - - - - -																	

	Project No.	<u>GTR-00257769-H0</u>	g o	f	Bo	or	eh	ole		214[	) awing No	1	6
	Project:	Geotechnical Investigation Frin Mills Town Centre 51	00 Frin	Mi	lls P	arkw	av M	Ississ	auda	 Ontario	Sheet No	<u>1</u> c	of <u>1</u>
	Location.			1011			uy, w	100100	uugu	, ontario			
	Date Drilleo	d: January 4, 2024		_	Auger S	ample			]	Combustible V Natural Moistu	′apour Reading ire	×	
	Drill Type:	Hollow Stem Augers		_	Dynamic	c Cone T	Test			Plastic and Liq Undrained Tria	juid Limit axial at		-0
	Datum:	Geodetic		_	Shelby T Field Va	Fube ne Test				% Strain at Fa Penetrometer	ilure		
	oundwater Soil/Rock Symbol	Soil Description	ELEV. m	Depth (m)	Shear	20 Strength	SPT (N Va 40	llue) 60 8	0 kPa	Combustible Va 25 Natural Mois Atterberg Limi	pour Reading (ppm) 50 75 sture Content % its (% Dry Weight)	Sample	Natural Unit Weight
7	ت ج F re	100 mm <b>TOPSOIL</b> over ILL - clayey silt, trace sand, - ddish brown, moist	175.97 ~	0	Ô	29	100	20	0		20 30		21.7
	S Tre	ILT TILL - some clay, trace sand, ddish brown, compact to very dense - -	_	2		>	50/50 m	74 O		×			
		- race shale fragments below ~3.5 m epth - -		3 4 5			50/75.m 50/100 m 50/75.m	m	<sup>7275-mm</sup>	× × × ×			
	22222 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Coring Commenced HALE BDEROCK - Queenston ormation, occasional limestone and andstone layers, reddish brown	_~170.2 ~169.9 _	6									
24		-	-	8 9 10									
NEW.GDT 3/20/2		See Core Log for Details	-	11 12									
H BH LOGS.GPJ		-	-	13									
L02EXP 257769		-	-	14 15									
AGWG		End of Borehole	~160.1										
	Notes: 1. Borehole advar using a specialist 2. This drawing fo GTR-00257769-b before use by othe	nced to completion at ~15.9 m depth by conventional soil sampling drilling subcontractor. For borehole definitions, see notes prior to l rms part of and must be read in conjunction with the subject repo I0); borehole data requires interpretation assistance by exp profes ers.	g methods ggs. t (Ref. No.: sional staff		••••••••••••••••••••••••••••••••••••••	е Вrar	<b>X</b> mptor	<b>).</b>	Jan Feb	Elapsed Time uary 29, 2024 oruary 4, 2024	Water Level (m) ~6.1 ~6.3	Ho t	le Open o (m) Well Well

			RUCK CORE	: L(	JG	J							Ы	12	.14	Ū		
<b>PROJ</b> Geo	ECT techn	ical Inv	estigation	ORIEN Vertio	TATIC cal	ON	Ē	LEVA 176.0	ATION D	l (m)		Geodet	ic	T	GTF	JECT R-002	NUM 5776	1 <b>B</b> 1 9-1
OCA	TION		5	DATE	STAR	TED	C	OMP	LETE	D	L	OGGEL	BY		DRA	WING	NUN	ЛВ
510	0 Erin I <b>T</b>	Mills P	arkway, Mississauga, Ontario	01/04	/23 <b>-R</b>			01/04	4/23 <b>TYP</b>	=		D. Pano	chal		SHE	16 FT	A	
The	Muzz	o Grou	p of COmpanies	Davis	Drilli	ng		ME 5	5 - Ti	rack		HQ		_		1 o	f 2	_
EVATION (m)	EPTH (m)	MBOL	GENERAL DESCRIPTION	0. OF SETS			ACING		SIIC	PERTURE	EATHERING	RENGTH	RACTURE	JN NUMBER	ECOVERY (%)	Q	ATER ECOVERY (%)	
립 1	2	XS	4	<u>2</u>	2	5	R S S	RC	문 10	₽£ 11	<u>3</u> 12	LS 13		ר 22	16	17	<u>≷₩</u> 18	+
<b>.</b> 70.3	-							J			12							+
-	6		See Borenole Log for Details															
69.9			QUEENSTON FORMATION															+
-	-			1	в	F	C	RU						1	100	88	95	
•			Shale with interbedded siltstone, and clay				С	RP							<u> </u>			+
59.0 58.9 58.8 58.7	7 7		Shale (91%) thinly bedded or laminated, re low strength, alternating between heavily as slightly weathered to ~6.6 and between moderately weathered and unweathered below.	d, nd	-	_						E		0	100	07	100	
58.6 58.4	-		Limestone (1%) fine grained, grey, medium strength, unweathered		В	F	M	SP							100	97		
58.1 58.1	-8		Siltstone (8%) fine grained, grey, medium strength, unweathered.															
-	- - - -		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to close intervals.															+
67.0 6.9	-9			1	в	F	W	SU						3	100	100	100	
6.6 6.5	- - -						vv	57										
-																		
-	- - -																	
65.3 65.2	-			1	B	F	W W	SP SP						4	100	100	100	
-	-11																	
64.5 64.4	-																	
64.0	-12			1	в	F	w	SP						5	100	100	100	
53.9 53.7 53.6	- - -						W	SP										
63.0	-13														<u> </u>	<u> </u>		+
62.8	-																	
-	-			1	В	F	W	SP						6	100	100	100	

			ROCK CORE	Ľ	0	G	Ì						Bł	12	214	D		
PROJ Geo LOCA 510 CLIEN	ECT itechni TION D Erin IT	ical Inv Mills P	estigation 'arkway, Mississauga, Ontario	ORIE Ver DATI 01/ DRIL	ENT/ rtica E S1 04/2 LEF	ATIC II TAR 23 R	DN TED	E C D	176.0 OMP 01/04 RILL	LETE 1/23 TYP	N (m) D E	DATUM         PROJECT NU           Geodetic         GTR-002577           LOGGED BY         DRAWING NU           D. Panchal         16A           CORE BARREL         SHEET			NUM 5776 NUN A	<b>BER</b> 9-H0 <b>IBER</b>		
The	Muzz	o Grou	p of COmpanies	Da	vis L JC	Drilli DINT	ng T <b>CHA</b>		ME 5	5 - T STIC	rack S	HQ 				2 0	†2	~
ELEVATION (m)	o DEPTH (m)	» SYMBOL	GENERAL DESCRIPTION						P ROUGHNESS	2 FILLING	APERTURE (mm)	STRENGTH		RUN NUMBER	RECOVERY (%)	12 RQD	B WATER RECOVERY (%)	B WATER COLOUF
-	-				5	0	1	w	SP			13		13	10		10	13
162.0 161.9	-14		Shale with interbedded siltstone, and clay layers.					vv										
161.6 161.6	- - - - -		Shale (91%) thinly bedded or laminated, rec low strength, alternating between heavily an slightly weathered to ~6.6 and between moderately weathered and unweathered below.	ł, id														
	-15		Limestone (1%) fine grained, grey, medium strength, unweathered		1	В	F	W	SP SP					7	100	100	100	Red
160.7 160.5	-		strength, unweathered.															
160.3 160.1	-		planar to smooth undulating and at wide to close intervals.															
	-17 -17 -18 																	
•	-																	

CKCORE 257769H\_ROCK\_LOGS GPJ CORE\_LOG GDT 3/20/24

<sup>®</sup> \* exp.

Project No. Project: Location:	GTR-00257769-H0 Geotechnical Investigatio Erin Mills Town Centre, 5	n 100 Erin	f <sub>Mi</sub>	Borehole	auga	214S Dra s , Ontario	wing No heet No1	0	17 of <u>1</u>
Date Drilled: Drill Type: Datum:	January 4, 2024 Hollow Stem Augers Geodetic			Auger Sample SPT (N) Value O 🖸 Dynamic Cone Test Shelby Tube Field Vane Test		Combustible Va Natural Moisturd Plastic and Liqu Undrained Triax % Strain at Failu Penetrometer	pour Reading e id Limit – ial at ıre	□ × ⊕	-0
Broundwater Soil/Rock Symbol	Soil Description	ELEV. m	Depth (m)	SPT (N Value)           20         40         60         80           Shear Strength         100         200	kPa	Combustible Vap 25 & Natural Moist Atterberg Limits	our Reading (ppm) 50 75 ure Content % 5 (% Dry Weight) 20 20	Sample	Natural Unit Weight kN/m <sup>3</sup>
	See Log of Borehole 214D for Details		1 2 3 4 5 6						
Notes: 1. Borehole advanced	to completion at ~6.1 m depth by conventional soil sampl	ing methods using		*exn	Jan	Elapsed Time nuary 29, 2024	Water Level (m) ~5.9	Ho	le Open to (m) Well
a specialist drilling sub 2. This drawing forms GTR-00257769-H0); t before use by others.	contractor. For borehole definitions, see notes and set prior to log part of and must be read in conjunction with the subject porehole data requires interpretation assistance by exp pro	s. aport (Ref. No.: ofessional staff		Brampton	Fet	oruary 4, 2024	~6.0		Well





### Notes

- 1. Drainage tile to consist of 100 mm (4") diameter weeping tile or equivalent perforated pipe leading to a positive sump or outlet.
- Concrete sand 150 mm (6") top and side of drain. If drain is not on footing, place 100 mm (4 inches) of pea gravel below drain. 20 mm (3/4") clear stone is an alternative provided it is surrounded by an approved filter fabric (Terrafix 600R or equivalent).
- 3. C.S.A. fine concrete aggregate to act as filter material. Minimum 300 mm (12") top and side of tile drain. This may be replaced by an approved filter fabric as indicated in (2).
- 4. Free Draining backfill OPSS Granular B or equivalent compacted to the specified density. Do not use heavy compaction equipment within 450 mm (18") of the wall. Use hand controlled light compaction equipment within 1.8 m (6') of wall.
- 5. Impermeable backfill seal compacted clay, clayey silt or equivalent. If original soil is free-draining, seal may be omitted.
- 6. Do not backfill until wall is supported by basement and floor slabs or adequate bracing.
- 7. Moisture barrier to be at least 200 mm (8") of compacted clear 20 mm (3/4") stone.
- 8. Basement wall to be damp-proofed or waterproofed as per report.
- 9. Exterior grade to slope away from building.
- 10. Slab on grade should not be structurally connected to the wall or footing.
- 11. Underfloor drain invert to be at least 300 mm(12") below underside of floor slab. Drainage tile placed in parallel rows 6 to 8 m (20 to 25') centres one way. Place drain below subgrade with 150 mm(6") of concrete sand on top and sides.
- 12. Do not connect the underfloor drains to perimeter drains.
- 13. If the 20 mm (3/4") stone requires surface blinding, use 6 mm (1/4") clear stone chips.

### DRAINAGE AND BACKFILL RECOMMENDATIONS

(not to scale)

#### EXP Services Inc. 18

GTR-00257769-H0 March 2024

# Appendix A

Grain Size Analysis Results





exp Services Inc. 1595 Clark Boulevard, Brampton Ontario, Canada, L6T 4V1 Telephone: (905) 793-9800 Fax: (905) 793-0641

# Grain Size Analysis & Hydrometer Test Report STO8

Sample Test No.: <u>438426-2</u>

**Report No.:** <u>1</u>

Date Reported: <u>18-Jan-24</u>

Project No.:	<u>gtr-00257769-h0 c300</u>				
Project Name:	Supplemental Geotechnical Investigation (Lab Testing and Reporting)	Grain Size (mm)	% Passing	Grain Size (mm)	% Passing
Grain Size Proporti	on (%)	26.5	100.0	0.0422	77 7
Gravel (> 4.75mm):		20.5	100.0	0.0312	66.0
Sand (> 75µm, < 4.7	5mm): 6.5	19	100.0	0.0205	54.5
Silt (> 2µm), < 75µm	): 78.8	16	100.0	0.0125	40.0
Clay (< 2μm):	14.7	13.2	100.0	0.0090	33.4
Total:	100.0	12.5	100.0	0.0065	27.6
Sample Information		9.5	100.0	0.0033	19.1
Location:	<u>BH 212</u>	6.7	100.0	0.0014	12.7
Sample Method:	<u>SS</u>	4.75	100.0		
Sample No.:	<u>4</u>	2	100.0		
Depth:	<u>2.3 - 2.8 m</u>	0.85	99.6		
Sample Description	: Silt, some Clay, trace Sand; Reddish Brown	0.425	98.6		
Sampled By:	<u>D. P.</u>	0.25	97.6		
Sampling Date:	<u>1/4/2024</u>	0.18	97.0		
Date Received:	<u>1/5/2024</u>	0.15	96.4		
Client Sample ID:		0.075	93.5		
Comments:		0.053	89.0		

UNIFIED SOIL CLASSIFICATION SYSTEM



Project Manager: Kevin Leung

Approved By: Original Signed By

Date Approved: 18-Jan-24

Arcadio Petrola, Lab Supervisor



exp Services Inc. 1595 Clark Boulevard, Brampton Ontario, Canada, L6T 4V1 Telephone: (905) 793-9800 Fax: (905) 793-0641

### **Grain Size Analysis** & Hydrometer **Test Report ST08**

Sample Test No.: <u>438441-2</u>

Report No.: 2

Date Reported: <u>18-Jan-24</u>

Project No.:	<u>gtr-00257769-h0 c300</u>				
Project Name:	Supplemental Geotechnical Investigation (Lab Testing and Reporting)	Grain Size (mm)	% Passing	Grain Size (mm)	% Passing
Grain Size Proporti	o <u>n (%)</u>	26.5	100.0	0.0441	69.0
Gravel (> 4.75mm):		22.4	100.0	0.0326	53.7
Sand (> 75µm, < 4.7	5mm): 12.7	19	100.0	0.0217	39.4
Silt (> 2µm), < 75µm	): <u>80.0</u>	16	100.0	0.0130	27.0
Clay (< 2µm):	7.3	13.2	100.0	0.0094	20.6
Total:	100.0	12.5	100.0	0.0067	15.9
Sample Information		9.5	100.0	0.0033	10.8
Location:	<u>BH 214</u>	6.7	100.0	0.0014	5.7
Sample Method:	<u>SS</u>	4.75	100.0		
Sample No.:	<u>7</u>	2	100.0		
Depth:	<u>4.6 - 5.0 m</u>	0.85	97.1		
Sample Description	: Silt, some Sand, trace Clay; Reddish Brown	0.425	94.5		
Sampled By:	<u>D. P.</u>	0.25	93.0		
Sampling Date:	<u>1/5/2024</u>	0.18	92.2		
Date Received:	<u>1/5/2024</u>	0.15	91.4		
Client Sample ID:		0.075	87.3		
Comments:		0.053	82.6		

UNIFIED SOIL CLASSIFICATION SYSTEM



Project Manager: Kevin Leung

Approved By: Original Signed By

Date Approved: 18-Jan-24

Arcadio Petrola, Lab Supervisor



exp Services Inc. 1595 Clark Boulevard, Brampton Ontario, Canada, L6T 4V1 Telephone: (905) 793-9800 Fax: (905) 793-0641

# Grain Size Analysis & Hydrometer Test Report STO8

Sample Test No.: <u>438707-2</u>

### Report No.: 3

### Date Reported: 22-Jan-24

Project No.:	<u>gtr-00257769-h0 c300</u>				
Project Name:	Supplemental Geotechnical Investigation (Lab Testing and Reporting)	Grain Size (mm)	% Passing	Grain Size (mm)	% Passing
Grain Size Proportio	n (%)	26.5	100.0	0.0492	33.0
Gravel (> 4.75mm):	3.6	22.4	100.0	0.0355	26.4
Sand (> 75µm, < 4.7	50.8 50.8	19	100.0	0.0229	19.9
Silt (> 2µm), < 75µm	: 42.6	16	100.0	0.0135	14.5
Clay (< 2µm):	3.0	13.2	100.0	0.0096	12.0
Total:	100.0	12.5	100.0	0.0068	8.9
Sample Information		9.5	98.8	0.0034	5.0
Location:	<u>BH 205</u>	6.7	97.4	0.0014	2.1
Sample Method:	<u>SS</u>	4.75	96.4		
Sample No.:	<u>8</u>	2	93.4		
Depth:	<u>7.6 - 8.0 m</u>	0.85	89.3		
Sample Description	Sand and Silt, trace Gravel and Clay; Brown	0.425	86.1		
Sampled By:	<u>D. P.</u>	0.25	79.7		
Sampling Date:	<u>1/12/2024</u>	0.18	73.1		
Date Received:	<u>1/12/2024</u>	0.15	66.9		
Client Sample ID:		0.075	45.6		
Comments:		0.053	36.0		

UNIFIED SOIL CLASSIFICATION SYSTEM



Project Manager: Kevin Leung

Approved By: Original Signed By

Date Approved: 22-Jan-24

Arcadio Petrola, Lab Supervisor


exp Services Inc. 1595 Clark Boulevard, Brampton Ontario, Canada, L6T 4V1 Telephone: (905) 793-9800 Fax: (905) 793-0641

## **Grain Size Analysis** & Hydrometer **Test Report ST08**

Sample Test No.: <u>438693-2</u>

Report No.: 4

Date Reported: 22-Jan-24

Project No.:	<u>gtr-00257769-h0 c300</u>													
Project Name:	Supplemental Geotechnical Investigation (Lab Testing and Reporting)	Grain Size (mm)	% Passing	Grain Size (mm)	% Passing									
Grain Size Proportio	on (%)	26.5	100.0	0.0403	86.7									
Gravel (> 4.75mm):		22.4	100.0	0.0294	80.0									
Sand (> 75µm, < 4.7	5mm): 2.4	19	100.0	0.0193	70.5									
Silt (> 2µm), < 75µm	): 73.1	16	100.0	0.0117	58.4									
Clay (< 2μm):	24.5	13.2	100.0	0.0085	52.1									
Total:	100.0	12.5	100.0	0.0062	44.2									
Sample Information		9.5	100.0	0.0032	30.8									
Location:	<u>BH 211</u>	6.7	100.0	0.0014	21.3									
Sample Method:	<u>SS</u>	4.75	100.0											
Sample No.:	<u>2</u>	2	100.0											
Depth:	<u>0.8 - 1.4 m</u>	0.85	99.8											
Sample Description	Clayey Silt, trace Sand; Reddish Brown	0.425	99.4											
Sampled By:	<u>D. P.</u>	0.25	99.0											
Sampling Date:	<u>1/10/2024</u>	0.18	98.8											
Date Received:	<u>1/12/2024</u>	0.15	98.6											
Client Sample ID:		0.075	97.6											
Comments:		0.053	95.5											

UNIFIED SOIL CLASSIFICATION SYSTEM



Project Manager: Kevin Leung

**Approved By:** Original Signed By

Date Approved: 22-Jan-24



exp Services Inc. 1595 Clark Boulevard, Brampton Ontario, Canada, L6T 4V1 Telephone: (905) 793-9800 Fax: (905) 793-0641

## Grain Size Analysis & Hydrometer Test Report STO8

Sample Test No.: <u>438678-2</u>

Report No.: 5

Date Reported: 22-Jan-24

Project No.:	<u>gtr-00257769-h0 c300</u>				
Project Name:	Supplemental Geotechnical Investigation (Lab Testing and Reporting)	Grain Size (mm)	% Passing	Grain Size (mm)	% Passing
Grain Size Proportio	on (%)	26.5	100.0	0.0400	88.0
Gravel (> 4.75mm):		20.5	100.0	0.0294	80.5
Sand (> 75µm, < 4.7	5mm): 48	19	100.0	0.0192	72.1
Silt (> 2µm), < 75µm	): 68.0	16	100.0	0.0112	62.6
Clay (< 2µm):	27.2	13.2	100.0	0.0084	54.6
Total:	100.0	12.5	100.0	0.0061	47.0
Sample Information	20000	9.5	100.0	0.0031	34.0
Location:	BH 207	6.7	100.0	0.0013	22.9
Sample Method:	SS	4.75	100.0	00010	
Sample No.:	3	2	100.0		
Depth:	<u>1.5 - 2.1 m</u>	0.85	98.8		
Sample Description	Clayey Silt, trace Sand; Reddish Brown	0.425	98.1		
Sampled By:	<u>D. P.</u>	0.25	97.7		
Sampling Date:	1/8/2024	0.18	97.1		
Date Received:	1/12/2024	0.15	96.7		
Client Sample ID:		0.075	95.2		
Comments:		0.053	92.9		

UNIFIED SOIL CLASSIFICATION SYSTEM



**Project Manager:** Kevin Leung

Approved By: Original Signed By

Date Approved: 22-Jan-24



exp Services Inc. 1595 Clark Boulevard, Brampton Ontario, Canada, L6T 4V1 Telephone: (905) 793-9800 Fax: (905) 793-0641

## Grain Size Analysis & Hydrometer Test Report STO8

Sample Test No.: <u>438704-2</u>

Report No.: 6

Date Reported: 22-Jan-24

Project No.:	<u>gtr-00257769-h0 c300</u>				
Project Name:	Supplemental Geotechnical Investigation (Lab Testing	Grain Size (mm)	% Passing	Grain Size (mm)	% Passing
Grain Siza Proporti	and Reporting)	26.5	100.0	0.0425	72.7
	<u>/// ( ///)</u>	26.5	100.0	0.0425	13.1
Gravel (> 4.75mm):	0.7	22.4	100.0	0.0313	63.6
Sand (> 75µm, < 4.7	5mm): 11.8	19	100.0	0.0207	52.4
Silt (> 2µm), < 75µm	: 79.9	16	100.0	0.0124	40.8
Clay (< 2µm):	7.6	13.2	100.0	0.0090	33.5
Total:	100.0	12.5	100.0	0.0065	26.0
Sample Information		9.5	99.7	0.0033	12.5
Location:	<u>BH 205</u>	6.7	99.6	0.0014	5.3
Sample Method:	<u>SS</u>	4.75	99.3		
Sample No.:	<u>5</u>	2	98.7		
Depth:	<u>3.1 - 3.7 m</u>	0.85	98.1		
Sample Description	Silt, some Sand, trace Clay and Gravel; Brown	0.425	97.5		
Sampled By:	<u>D. P.</u>	0.25	96.8		
Sampling Date:	<u>1/12/2024</u>	0.18	95.6		
Date Received:	<u>1/12/2024</u>	0.15	94.6		
Client Sample ID:		0.075	87.5		
Comments:		0.053	81.7		

UNIFIED SOIL CLASSIFICATION SYSTEM



**Project Manager:** Kevin Leung

Approved By: Original Signed By

Date Approved: 22-Jan-24



exp Services Inc. 1595 Clark Boulevard, Brampton Ontario, Canada, L6T 4V1 Telephone: (905) 793-9800 Fax: (905) 793-0641

## **Grain Size Analysis** & Hydrometer **Test Report ST08**

Sample Test No.: <u>439055-2</u>

Report No.: 7

Date Reported: 26-Jan-24

Project No.:	<u>gtr-00257769-h0 c300</u>				
Project Name:	Supplemental Geotechnical Investigation (Lab Testing and Reporting)	Grain Size (mm)	% Passing	Grain Size (mm)	% Passing
Grain Size Proportio	n (%)	26.5	100.0	0.0421	76.5
Gravel (> 4 75mm)	<u> </u>	20.3	100.0	0.0421	62.0
Sand (> 75µm. < 4.75	ōmm): 37	10	100.0	0.0311	51.8
Silt (> $2\mu$ m) < $75\mu$ m)	······/· 5./	19	100.0	0.0205	25.2
Clay ( $< 2\mu$ m):	- 83.8 10 5	10	100.0	0.0125	35.5
	12.5	13.2	100.0	0.0090	29.1
lotal:	100.0	12.5	100.0	0.0065	23.0
Sample Information		9.5	100.0	0.0032	16.5
Location:	<u>BH 203</u>	6.7	100.0	0.0014	10.5
Sample Method:	<u>SS</u>	4.75	100.0		
Sample No.:	2	2	100.0		
Depth:	<u>0.8 - 1.4 m</u>	0.85	100.0		
Sample Description:	Silt, some Clay, trace Sand; Reddish Brown	0.425	99.4		
Sampled By:	<u>D. P.</u>	0.25	98.8		
Sampling Date:	1/17/2024	0.18	98.4		
Date Received:	1/17/2024	0.15	98.2		
Client Sample ID:		0.075	96.3		
Comments:		0.053	94.1		

UNIFIED SOIL CLASSIFICATION SYSTEM



Project Manager: Kevin Leung

Approved By: Original Signed By

Date Approved: 26-Jan-24

#### EXP Services Inc. 19

GTR-00257769-H0 March 2024

# Appendix B

Certificate of Analysis





#### CLIENT NAME: EXP SERVICES INC 1595 CLARK BLVD. BRAMPTON, ON L6T4V1 (905) 793-9800 ATTENTION TO: Alessandro Girardo PROJECT: GTR-00257769-H0 AGAT WORK ORDER: 24T116256 SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganic Team Lead TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist DATE REPORTED: Feb 09, 2024 PAGES (INCLUDING COVER): 13 VERSION\*: 1

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

\*Notes

Disclaimer:

- All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may
  incorporate modifications from the specified reference methods to improve performance.
- All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.
- AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.
- This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of
  merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines
  contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.
- For environmental samples in the Province of Quebec: The analysis is performed on and results apply to samples as received. A temperature above 6°C upon receipt, as indicated in the Sample Reception Notification (SRN), could indicate the integrity of the samples has been compromised if the delay between sampling and submission to the laboratory could not be minimized.

#### **AGAT** Laboratories (V1)

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Member of: Association of Professional Engineers and Geoscientists of Alberta	
(APEGA)	
Western Envire Agricultural Laboratory Association (M/EALA)	

Western Enviro-Agricultural Laboratory Association (WEALA) Environmental Services Association of Alberta (ESAA) AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation. Measurement Uncertainty is not taken into consideration when stating conformity with a specified requirement.

Page 1 of 13



# **Certificate of Analysis**

AGAT WORK ORDER: 24T116256 PROJECT: GTR-00257769-H0 5835 COOPERS AVENUE MISSISSAUGA, ONTARIO CANADA L4Z 1Y2 TEL (905)712-5100 FAX (905)712-5122 http://www.aqatlabs.com

#### CLIENT NAME: EXP SERVICES INC

#### SAMPLING SITE:5100 Erin Mills

## SAMPLED BY: O. Reg. 153(511) - Metals & Inorganics (Soil)

**ATTENTION TO: Alessandro Girardo** 

DATE RECEIVED: 2024-01-31								[	DATE REPORTE	ED: 2024-02-09		
			SAMPLE DE	SCRIPTION: MPLE TYPE:	BH202-SS2 Soil	BH205-SS2 Soil	BH205-SS6 Soil	BH209-SS2 Soil	BH203-SS2 Soil	BH211-SS2 Soil		
Parameter	Unit	G/S·A	DAI G/S·B	E SAMPLED: RDI	2024-01-30	2024-01-30 5614370	2024-01-30 5614371	2024-01-30 5614372	2024-01-30 5614373	2024-01-30 5614382		
Antimony	ua/a	1.3	75	0.8	<0.8[ <a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.8[ <a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.8[ <a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	<0.8[ <a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	<0.8[ <a]< td=""><td>&lt;0.8[<a]< td=""><td></td></a]<></td></a]<>	<0.8[ <a]< td=""><td></td></a]<>		
Arsenic	µg/g	18	18	1	6[ <a]< td=""><td>3[<a]< td=""><td>2[<a]< td=""><td>5[<a]< td=""><td>5[<a]< td=""><td>5[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	3[ <a]< td=""><td>2[<a]< td=""><td>5[<a]< td=""><td>5[<a]< td=""><td>5[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	2[ <a]< td=""><td>5[<a]< td=""><td>5[<a]< td=""><td>5[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	5[ <a]< td=""><td>5[<a]< td=""><td>5[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	5[ <a]< td=""><td>5[<a]< td=""><td></td></a]<></td></a]<>	5[ <a]< td=""><td></td></a]<>		
Barium	µg/g	220	390	2.0	70.1[ <a]< td=""><td>51.4[<a]< td=""><td>22.4[<a]< td=""><td>65.7[<a]< td=""><td>72.5[<a]< td=""><td>74.4[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	51.4[ <a]< td=""><td>22.4[<a]< td=""><td>65.7[<a]< td=""><td>72.5[<a]< td=""><td>74.4[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	22.4[ <a]< td=""><td>65.7[<a]< td=""><td>72.5[<a]< td=""><td>74.4[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	65.7[ <a]< td=""><td>72.5[<a]< td=""><td>74.4[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	72.5[ <a]< td=""><td>74.4[<a]< td=""><td></td></a]<></td></a]<>	74.4[ <a]< td=""><td></td></a]<>		
Beryllium	µg/g	2.5	4	0.5	0.8[ <a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>0.8[<a]< td=""><td>0.7[<a]< td=""><td>0.7[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.5[ <a]< td=""><td>&lt;0.5[<a]< td=""><td>0.8[<a]< td=""><td>0.7[<a]< td=""><td>0.7[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.5[ <a]< td=""><td>0.8[<a]< td=""><td>0.7[<a]< td=""><td>0.7[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	0.8[ <a]< td=""><td>0.7[<a]< td=""><td>0.7[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	0.7[ <a]< td=""><td>0.7[<a]< td=""><td></td></a]<></td></a]<>	0.7[ <a]< td=""><td></td></a]<>		
Boron	µg/g	36	120	5	20[ <a]< td=""><td>8[<a]< td=""><td>&lt;5[<a]< td=""><td>14[<a]< td=""><td>18[<a]< td=""><td>17[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	8[ <a]< td=""><td>&lt;5[<a]< td=""><td>14[<a]< td=""><td>18[<a]< td=""><td>17[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<5[ <a]< td=""><td>14[<a]< td=""><td>18[<a]< td=""><td>17[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	14[ <a]< td=""><td>18[<a]< td=""><td>17[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	18[ <a]< td=""><td>17[<a]< td=""><td></td></a]<></td></a]<>	17[ <a]< td=""><td></td></a]<>		
Boron (Hot Water Soluble)	µg/g	NA	1.5	0.10	0.21[ <b]< td=""><td>0.16[<b]< td=""><td>&lt;0.10[<b]< td=""><td>0.11[<b]< td=""><td>0.18[<b]< td=""><td>0.11[<b]< td=""><td></td></b]<></td></b]<></td></b]<></td></b]<></td></b]<></td></b]<>	0.16[ <b]< td=""><td>&lt;0.10[<b]< td=""><td>0.11[<b]< td=""><td>0.18[<b]< td=""><td>0.11[<b]< td=""><td></td></b]<></td></b]<></td></b]<></td></b]<></td></b]<>	<0.10[ <b]< td=""><td>0.11[<b]< td=""><td>0.18[<b]< td=""><td>0.11[<b]< td=""><td></td></b]<></td></b]<></td></b]<></td></b]<>	0.11[ <b]< td=""><td>0.18[<b]< td=""><td>0.11[<b]< td=""><td></td></b]<></td></b]<></td></b]<>	0.18[ <b]< td=""><td>0.11[<b]< td=""><td></td></b]<></td></b]<>	0.11[ <b]< td=""><td></td></b]<>		
Cadmium	µg/g	1.2	1.2	0.5	<0.5[ <a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.5[ <a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.5[ <a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	<0.5[ <a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	<0.5[ <a]< td=""><td>&lt;0.5[<a]< td=""><td></td></a]<></td></a]<>	<0.5[ <a]< td=""><td></td></a]<>		
Chromium	µa/a	70	160	5	26[ <a]< td=""><td>18[<a]< td=""><td>8[<a]< td=""><td>24[<a]< td=""><td>26[<a]< td=""><td>24[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	18[ <a]< td=""><td>8[<a]< td=""><td>24[<a]< td=""><td>26[<a]< td=""><td>24[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	8[ <a]< td=""><td>24[<a]< td=""><td>26[<a]< td=""><td>24[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	24[ <a]< td=""><td>26[<a]< td=""><td>24[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	26[ <a]< td=""><td>24[<a]< td=""><td></td></a]<></td></a]<>	24[ <a]< td=""><td></td></a]<>		
Cobalt	ha/a	21	22	0.8	14.4[ <a]< td=""><td>7.3[<a]< td=""><td>3.3[<a]< td=""><td>15.4[<a]< td=""><td>14.9[<a]< td=""><td>14.3[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	7.3[ <a]< td=""><td>3.3[<a]< td=""><td>15.4[<a]< td=""><td>14.9[<a]< td=""><td>14.3[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	3.3[ <a]< td=""><td>15.4[<a]< td=""><td>14.9[<a]< td=""><td>14.3[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	15.4[ <a]< td=""><td>14.9[<a]< td=""><td>14.3[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	14.9[ <a]< td=""><td>14.3[<a]< td=""><td></td></a]<></td></a]<>	14.3[ <a]< td=""><td></td></a]<>		
Copper	ha/a	92	140	1.0	7.6[ <a]< td=""><td>14.1[<a]< td=""><td>7.3[<a]< td=""><td>9.7[<a]< td=""><td>8.0[<a]< td=""><td>8.8[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	14.1[ <a]< td=""><td>7.3[<a]< td=""><td>9.7[<a]< td=""><td>8.0[<a]< td=""><td>8.8[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	7.3[ <a]< td=""><td>9.7[<a]< td=""><td>8.0[<a]< td=""><td>8.8[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	9.7[ <a]< td=""><td>8.0[<a]< td=""><td>8.8[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	8.0[ <a]< td=""><td>8.8[<a]< td=""><td></td></a]<></td></a]<>	8.8[ <a]< td=""><td></td></a]<>		
Lead	ha/a	120	120	1	9[ <a]< td=""><td>5[<a]< td=""><td>2[<a]< td=""><td>9[<a]< td=""><td>10[<a]< td=""><td>9[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	5[ <a]< td=""><td>2[<a]< td=""><td>9[<a]< td=""><td>10[<a]< td=""><td>9[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	2[ <a]< td=""><td>9[<a]< td=""><td>10[<a]< td=""><td>9[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	9[ <a]< td=""><td>10[<a]< td=""><td>9[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	10[ <a]< td=""><td>9[<a]< td=""><td></td></a]<></td></a]<>	9[ <a]< td=""><td></td></a]<>		
Molybdenum	ha/a	2	6.9	0.5	1.2[ <a]< td=""><td>0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>1.1[<a]< td=""><td>1.1[<a]< td=""><td>0.7[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	0.5[ <a]< td=""><td>&lt;0.5[<a]< td=""><td>1.1[<a]< td=""><td>1.1[<a]< td=""><td>0.7[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.5[ <a]< td=""><td>1.1[<a]< td=""><td>1.1[<a]< td=""><td>0.7[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	1.1[ <a]< td=""><td>1.1[<a]< td=""><td>0.7[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	1.1[ <a]< td=""><td>0.7[<a]< td=""><td></td></a]<></td></a]<>	0.7[ <a]< td=""><td></td></a]<>		
Nickel	hð/ð	82	100	1	31[ <a]< td=""><td>16[<a]< td=""><td>6[<a]< td=""><td>32[<a]< td=""><td>31[<a]< td=""><td>30[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	16[ <a]< td=""><td>6[<a]< td=""><td>32[<a]< td=""><td>31[<a]< td=""><td>30[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	6[ <a]< td=""><td>32[<a]< td=""><td>31[<a]< td=""><td>30[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	32[ <a]< td=""><td>31[<a]< td=""><td>30[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	31[ <a]< td=""><td>30[<a]< td=""><td></td></a]<></td></a]<>	30[ <a]< td=""><td></td></a]<>		
Selenium	hð/ð	1.5	2.4	0.8	<0.8[ <a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.8[ <a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.8[ <a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	<0.8[ <a]< td=""><td>&lt;0.8[<a]< td=""><td>&lt;0.8[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	<0.8[ <a]< td=""><td>&lt;0.8[<a]< td=""><td></td></a]<></td></a]<>	<0.8[ <a]< td=""><td></td></a]<>		
Silver	hð/ð	0.5	20	0.5	<0.5[ <a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.5[ <a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.5[ <a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	<0.5[ <a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	<0.5[ <a]< td=""><td>&lt;0.5[<a]< td=""><td></td></a]<></td></a]<>	<0.5[ <a]< td=""><td></td></a]<>		
Thallium	hð/ð	1	1	0.5	<0.5[ <a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.5[ <a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.5[ <a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	<0.5[ <a]< td=""><td>&lt;0.5[<a]< td=""><td>&lt;0.5[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	<0.5[ <a]< td=""><td>&lt;0.5[<a]< td=""><td></td></a]<></td></a]<>	<0.5[ <a]< td=""><td></td></a]<>		
Uranium	hð/ð	2.5	23	0.50	0.64[ <a]< td=""><td>0.60[<a]< td=""><td>&lt;0.50[<a]< td=""><td>0.64[<a]< td=""><td>0.61[<a]< td=""><td>0.81[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	0.60[ <a]< td=""><td>&lt;0.50[<a]< td=""><td>0.64[<a]< td=""><td>0.61[<a]< td=""><td>0.81[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.50[ <a]< td=""><td>0.64[<a]< td=""><td>0.61[<a]< td=""><td>0.81[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	0.64[ <a]< td=""><td>0.61[<a]< td=""><td>0.81[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	0.61[ <a]< td=""><td>0.81[<a]< td=""><td></td></a]<></td></a]<>	0.81[ <a]< td=""><td></td></a]<>		
Vanadium	hð/ð	86	86	2.0	31.7[ <a]< td=""><td>27.7[<a]< td=""><td>16.9[<a]< td=""><td>31.8[<a]< td=""><td>32.5[<a]< td=""><td>40.8[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	27.7[ <a]< td=""><td>16.9[<a]< td=""><td>31.8[<a]< td=""><td>32.5[<a]< td=""><td>40.8[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	16.9[ <a]< td=""><td>31.8[<a]< td=""><td>32.5[<a]< td=""><td>40.8[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	31.8[ <a]< td=""><td>32.5[<a]< td=""><td>40.8[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	32.5[ <a]< td=""><td>40.8[<a]< td=""><td></td></a]<></td></a]<>	40.8[ <a]< td=""><td></td></a]<>		
Zinc	hð/ð	290	340	5	65[ <a]< td=""><td>37[<a]< td=""><td>19[<a]< td=""><td>67[<a]< td=""><td>71[<a]< td=""><td>61[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	37[ <a]< td=""><td>19[<a]< td=""><td>67[<a]< td=""><td>71[<a]< td=""><td>61[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	19[ <a]< td=""><td>67[<a]< td=""><td>71[<a]< td=""><td>61[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	67[ <a]< td=""><td>71[<a]< td=""><td>61[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	71[ <a]< td=""><td>61[<a]< td=""><td></td></a]<></td></a]<>	61[ <a]< td=""><td></td></a]<>		
Chromium, Hexavalent	µg/g	0.66	8	0.2	<0.2[ <a]< td=""><td>&lt;0.2[<a]< td=""><td>&lt;0.2[<a]< td=""><td>&lt;0.2[<a]< td=""><td>&lt;0.2[<a]< td=""><td>&lt;0.2[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.2[ <a]< td=""><td>&lt;0.2[<a]< td=""><td>&lt;0.2[<a]< td=""><td>&lt;0.2[<a]< td=""><td>&lt;0.2[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.2[ <a]< td=""><td>&lt;0.2[<a]< td=""><td>&lt;0.2[<a]< td=""><td>&lt;0.2[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	<0.2[ <a]< td=""><td>&lt;0.2[<a]< td=""><td>&lt;0.2[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	<0.2[ <a]< td=""><td>&lt;0.2[<a]< td=""><td></td></a]<></td></a]<>	<0.2[ <a]< td=""><td></td></a]<>		
Cyanide, WAD	µg/g	0.051	0.051	0.040	<0.040[ <a]< td=""><td>&lt;0.040[<a]< td=""><td>&lt;0.040[<a]< td=""><td>&lt;0.040[<a]< td=""><td>&lt;0.040[<a]< td=""><td>&lt;0.040[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.040[ <a]< td=""><td>&lt;0.040[<a]< td=""><td>&lt;0.040[<a]< td=""><td>&lt;0.040[<a]< td=""><td>&lt;0.040[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.040[ <a]< td=""><td>&lt;0.040[<a]< td=""><td>&lt;0.040[<a]< td=""><td>&lt;0.040[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	<0.040[ <a]< td=""><td>&lt;0.040[<a]< td=""><td>&lt;0.040[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	<0.040[ <a]< td=""><td>&lt;0.040[<a]< td=""><td></td></a]<></td></a]<>	<0.040[ <a]< td=""><td></td></a]<>		
Mercury	µg/g	0.27	0.27	0.10	<0.10[ <a]< td=""><td>&lt;0.10[<a]< td=""><td>&lt;0.10[<a]< td=""><td>&lt;0.10[<a]< td=""><td>&lt;0.10[<a]< td=""><td>&lt;0.10[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.10[ <a]< td=""><td>&lt;0.10[<a]< td=""><td>&lt;0.10[<a]< td=""><td>&lt;0.10[<a]< td=""><td>&lt;0.10[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<></td></a]<>	<0.10[ <a]< td=""><td>&lt;0.10[<a]< td=""><td>&lt;0.10[<a]< td=""><td>&lt;0.10[<a]< td=""><td></td></a]<></td></a]<></td></a]<></td></a]<>	<0.10[ <a]< td=""><td>&lt;0.10[<a]< td=""><td>&lt;0.10[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	<0.10[ <a]< td=""><td>&lt;0.10[<a]< td=""><td></td></a]<></td></a]<>	<0.10[ <a]< td=""><td></td></a]<>		
Electrical Conductivity (2:1)	mS/cm	0.57	0.7	0.005	0.282[ <a]< td=""><td>1.04[&gt;B]</td><td>1.10[&gt;B]</td><td>0.697[A-B]</td><td>0.486[<a]< td=""><td>0.141[<a]< td=""><td></td></a]<></td></a]<></td></a]<>	1.04[>B]	1.10[>B]	0.697[A-B]	0.486[ <a]< td=""><td>0.141[<a]< td=""><td></td></a]<></td></a]<>	0.141[ <a]< td=""><td></td></a]<>		
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	5	N/A	3.08[A-B]	7.94[>B]	12.8[>B]	12.3[>B]	5.96[>B]	2.08[ <a]< td=""><td></td></a]<>		
pH, 2:1 CaCl2 Extraction	pH Units			NA	7.45	8.10	7.50	7.43	7.40	7.15		



Certified By:



# **Certificate of Analysis**

AGAT WORK ORDER: 24T116256 PROJECT: GTR-00257769-H0 5835 COOPERS AVENUE MISSISSAUGA, ONTARIO CANADA L4Z 1Y2 TEL (905)712-5100 FAX (905)712-5122 http://www.agatlabs.com

#### CLIENT NAME: EXP SERVICES INC

#### SAMPLING SITE:5100 Erin Mills

DATE RECEIVED: 2024-01-31

ATTENTION TO: Alessandro Girardo

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Soil)

#### DATE REPORTED: 2024-02-09

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to Table 1: Full Depth Background Site Condition Standards - Soil -

Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use, B Refers to O. Reg. 406/19 TABLE 2.1: Full Depth Potable Ground Water Condition Volume Independent - RP 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.

5614359-5614382 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio. SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by \*)





# **Certificate of Analysis**

AGAT WORK ORDER: 24T116256 PROJECT: GTR-00257769-H0 5835 COOPERS AVENUE MISSISSAUGA, ONTARIO CANADA L4Z 1Y2 TEL (905)712-5100 FAX (905)712-5122 http://www.agatlabs.com

#### CLIENT NAME: EXP SERVICES INC

#### SAMPLING SITE:5100 Erin Mills

ATTENTION TO: Alessandro Girardo

SAMPLED BY:

					Sulphat	e
DATE RECEIVED: 2024-01-31						DATE REPORTED: 2024-02-09
	:	SAMPLE DES	CRIPTION:	BH202-SS2	BH205-SS6	
		SAM	PLE TYPE:	Soil	Soil	
		DATES	SAMPLED:	2024-01-30	2024-01-30	
Parameter	Unit	G/S	RDL	5614359	5614371	
Sulphate (2:1)	µg/g		2	13	49	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

5614359-5614371 Sulphate was determined on the extract obtained from the 2:1 leaching procedure (2 parts DI water: 1 part soil).

Analysis performed at AGAT Toronto (unless marked by \*)





## **Exceedance Summary**

#### AGAT WORK ORDER: 24T116256 PROJECT: GTR-00257769-H0

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

#### CLIENT NAME: EXP SERVICES INC

#### ATTENTION TO: Alessandro Girardo

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
5614359	BH202-SS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	3.08
5614370	BH205-SS2	ON 406/19 T2.1 RP	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.7	1.04
5614370	BH205-SS2	ON 406/19 T2.1 RP	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	5	7.94
5614370	BH205-SS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.57	1.04
5614370	BH205-SS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	7.94
5614371	BH205-SS6	ON 406/19 T2.1 RP	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.7	1.10
5614371	BH205-SS6	ON 406/19 T2.1 RP	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	5	12.8
5614371	BH205-SS6	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.57	1.10
5614371	BH205-SS6	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	12.8
5614372	BH209-SS2	ON 406/19 T2.1 RP	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.	N/A	5	12.3
5614372	BH209-SS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.57	0.697
5614372	BH209-SS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.	N/A	2.4	12.3
5614373	BH203-SS2	ON 406/19 T2.1 RP	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	5	5.96
5614373	BH203-SS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.	N/A	2.4	5.96



## **Quality Assurance**

#### **CLIENT NAME: EXP SERVICES INC**

#### PROJECT: GTR-00257769-H0

#### SAMPLING SITE:5100 Erin Mills

## AGAT WORK ORDER: 24T116256 **ATTENTION TO: Alessandro Girardo**

#### SAMPLED BY:

Soil Analysis														
RPT Date: Feb 09, 2024		DUPLICATE				REFERE	NCE MA	TERIAL	METHOD	BLANK		MAT	RIX SPI	KE
PARAMETER	Batch Sample	Dup #1	Dup #2	RPD	Method Blank	Measured	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acce Lir	ptable nits
	Id					value	Lower	Upper		Lower	Upper	er	Lower	Upper
O. Reg. 153(511) - Metals & Inor	ganics (Soil)													
Antimony	5615305	<0.8	<0.8	NA	< 0.8	105%	70%	130%	104%	80%	120%	96%	70%	130%
Arsenic	5615305	4	4	NA	< 1	124%	70%	130%	101%	80%	120%	100%	70%	130%
Barium	5615305	133	138	3.7%	< 2.0	106%	70%	130%	102%	80%	120%	113%	70%	130%
Beryllium	5615305	1.0	0.9	NA	< 0.5	106%	70%	130%	117%	80%	120%	93%	70%	130%
Boron	5615305	7	9	NA	< 5	86%	70%	130%	107%	80%	120%	85%	70%	130%
Boron (Hot Water Soluble)	5614359 5614359	0.21	0.21	NA	< 0.10	101%	60%	140%	105%	70%	130%	95%	60%	140%
Cadmium	5615305	<0.5	<0.5	NA	< 0.5	114%	70%	130%	100%	80%	120%	101%	70%	130%
Chromium	5615305	34	35	2.9%	< 5	100%	70%	130%	99%	80%	120%	99%	70%	130%
Cobalt	5615305	12.4	12.7	2.4%	< 0.8	111%	70%	130%	103%	80%	120%	101%	70%	130%
Copper	5615305	17.9	18.7	4.4%	< 1.0	99%	70%	130%	99%	80%	120%	93%	70%	130%
Lead	5615305	15	15	0.0%	< 1	116%	70%	130%	93%	80%	120%	87%	70%	130%
Molybdenum	5615305	<0.5	<0.5	NA	< 0.5	119%	70%	130%	105%	80%	120%	107%	70%	130%
Nickel	5615305	23	24	4.3%	< 1	114%	70%	130%	105%	80%	120%	104%	70%	130%
Selenium	5615305	<0.8	<0.8	NA	< 0.8	121%	70%	130%	102%	80%	120%	101%	70%	130%
Silver	5615305	<0.5	<0.5	NA	< 0.5	105%	70%	130%	101%	80%	120%	97%	70%	130%
Thallium	5615305	<0.5	<0.5	NA	< 0.5	104%	70%	130%	97%	80%	120%	90%	70%	130%
Uranium	5615305	0.87	0.83	NA	< 0.50	124%	70%	130%	108%	80%	120%	108%	70%	130%
Vanadium	5615305	50.1	49.9	0.4%	< 2.0	109%	70%	130%	107%	80%	120%	99%	70%	130%
Zinc	5615305	75	78	3.9%	< 5	108%	70%	130%	102%	80%	120%	100%	70%	130%
Chromium, Hexavalent	5620358	<0.2	<0.2	NA	< 0.2	104%	70%	130%	87%	80%	120%	73%	70%	130%
Cyanide, WAD	5615066	<0.040	<0.040	NA	< 0.040	107%	70%	130%	101%	80%	120%	92%	70%	130%
Mercury	5615305	<0.10	<0.10	NA	< 0.10	120%	70%	130%	102%	80%	120%	108%	70%	130%
Electrical Conductivity (2:1)	5614359 5614359	0.282	0.345	20.1%	< 0.005	89%	80%	120%						
Sodium Adsorption Ratio (2:1) (Calc.)	5614359 5614359	3.08	3.34	8.1%	NA									
pH, 2:1 CaCl2 Extraction	5615975	6.32	6.60	4.3%	NA	102%	80%	120%						

Comments: NA signifies Not Applicable.

pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.

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

Sulphate														
Sulphate (2:1)	5615730	72	72	0.0%	< 2	103%	70%	130%	92%	80%	120%	94%	70%	130%

**Certified By:** 



Page 6 of 13

#### **AGAT** QUALITY ASSURANCE REPORT (V1)

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation. RPDs calculated using raw data. The RPD may not be reflective of duplicate values shown, due to rounding of final results.



## **Quality Assurance**

#### CLIENT NAME: EXP SERVICES INC

#### PROJECT: GTR-00257769-H0

SAMPLING SITE:5100 Erin Mills

#### AGAT WORK ORDER: 24T116256 ATTENTION TO: Alessandro Girardo SAMPLED BY:

## **Trace Organics Analysis**

							· ··· · ·								
RPT Date: Feb 09, 2024				UPLICAT	E	4	REFERE		TERIAL	METHOD	BLANK	SPIKE	MAT	TRIX SPIKE	
PARAMETER	Batch	Sample	Dup #1	Dup #2	RPD	Method Blank	Measured	Acce Lir	eptable nits	Recovery	Acce	eptable nits	Recovery	Acce	ptable mits
							Value	Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	5620834		<0.05	<0.05	NA	< 0.05	71%	50%	140%	85%	50%	140%	73%	50%	140%
Acenaphthylene	5620834		<0.05	<0.05	NA	< 0.05	67%	50%	140%	103%	50%	140%	95%	50%	140%
Acenaphthene	5620834		<0.05	<0.05	NA	< 0.05	95%	50%	140%	100%	50%	140%	83%	50%	140%
Fluorene	5620834		<0.05	<0.05	NA	< 0.05	107%	50%	140%	105%	50%	140%	88%	50%	140%
Phenanthrene	5620834		<0.05	<0.05	NA	< 0.05	83%	50%	140%	75%	50%	140%	93%	50%	140%
Anthracene	5620834		<0.05	<0.05	NA	< 0.05	113%	50%	140%	95%	50%	140%	80%	50%	140%
Fluoranthene	5620834		<0.05	<0.05	NA	< 0.05	108%	50%	140%	88%	50%	140%	75%	50%	140%
Pyrene	5620834		<0.05	<0.05	NA	< 0.05	90%	50%	140%	73%	50%	140%	98%	50%	140%
Benz(a)anthracene	5620834		<0.05	<0.05	NA	< 0.05	113%	50%	140%	73%	50%	140%	78%	50%	140%
Chrysene	5620834		<0.05	<0.05	NA	< 0.05	74%	50%	140%	80%	50%	140%	100%	50%	140%
Benzo(b)fluoranthene	5620834		<0.05	<0.05	NA	< 0.05	106%	50%	140%	85%	50%	140%	73%	50%	140%
Benzo(k)fluoranthene	5620834		<0.05	<0.05	NA	< 0.05	95%	50%	140%	108%	50%	140%	80%	50%	140%
Benzo(a)pyrene	5620834		<0.05	<0.05	NA	< 0.05	83%	50%	140%	100%	50%	140%	75%	50%	140%
Indeno(1,2,3-cd)pyrene	5620834		<0.05	<0.05	NA	< 0.05	101%	50%	140%	95%	50%	140%	80%	50%	140%
Dibenz(a,h)anthracene	5620834		<0.05	<0.05	NA	< 0.05	97%	50%	140%	100%	50%	140%	108%	50%	140%
Benzo(g,h,i)perylene	5620834		<0.05	<0.05	NA	< 0.05	98%	50%	140%	95%	50%	140%	100%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4	4 (with VOC) (	Soil)													
F1 (C6 to C10)	5613514		<5	<5	NA	< 5	86%	60%	140%	105%	60%	140%	102%	60%	140%
F2 (C10 to C16)	5614495		< 10	< 10	NA	< 10	115%	60%	140%	110%	60%	140%	110%	60%	140%
F3 (C16 to C34)	5614495		< 50	< 50	NA	< 50	112%	60%	140%	118%	60%	140%	120%	60%	140%
F4 (C34 to C50)	5614495		< 50	< 50	NA	< 50	72%	60%	140%	83%	60%	140%	81%	60%	140%
O. Reg. 153(511) - VOCs (with	PHC) (Soil)														
Dichlorodifluoromethane	5613514		<0.05	<0.05	NA	< 0.05	108%	50%	140%	102%	50%	140%	85%	50%	140%
Vinvl Chloride	5613514		< 0.02	< 0.02	NA	< 0.02	95%	50%	140%	103%	50%	140%	113%	50%	140%
Bromomethane	5613514		< 0.05	< 0.05	NA	< 0.05	97%	50%	140%	97%	50%	140%	90%	50%	140%
Trichlorofluoromethane	5613514		<0.05	<0.05	NA	< 0.05	103%	50%	140%	91%	50%	140%	110%	50%	140%
Acetone	5613514		<0.50	<0.50	NA	< 0.50	94%	50%	140%	105%	50%	140%	112%	50%	140%
1,1-Dichloroethylene	5613514		<0.05	<0.05	NA	< 0.05	100%	50%	140%	86%	60%	130%	86%	50%	140%
Methylene Chloride	5613514		<0.05	<0.05	NA	< 0.05	108%	50%	140%	96%	60%	130%	94%	50%	140%
Trans- 1,2-Dichloroethylene	5613514		<0.05	<0.05	NA	< 0.05	82%	50%	140%	90%	60%	130%	85%	50%	140%
Methyl tert-butyl Ether	5613514		<0.05	<0.05	NA	< 0.05	69%	50%	140%	97%	60%	130%	72%	50%	140%
1,1-Dichloroethane	5613514		<0.02	<0.02	NA	< 0.02	102%	50%	140%	93%	60%	130%	93%	50%	140%
Methyl Ethyl Ketone	5613514		<0.50	<0.50	NA	< 0.50	105%	50%	140%	94%	50%	140%	110%	50%	140%
Cis- 1,2-Dichloroethylene	5613514		<0.02	<0.02	NA	< 0.02	66%	50%	140%	77%	60%	130%	66%	50%	140%
Chloroform	5613514		<0.04	<0.04	NA	< 0.04	84%	50%	140%	75%	60%	130%	106%	50%	140%
1,2-Dichloroethane	5613514		<0.03	<0.03	NA	< 0.03	78%	50%	140%	67%	60%	130%	97%	50%	140%
1,1,1-Trichloroethane	5613514		<0.05	<0.05	NA	< 0.05	87%	50%	140%	60%	60%	130%	88%	50%	140%
Carbon Tetrachloride	5613514		<0.05	<0.05	NA	< 0.05	101%	50%	140%	88%	60%	130%	81%	50%	140%
		T (\/1)												Dogo 7	7 of 12

#### **AGAT** QUALITY ASSURANCE REPORT (V1)

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## **Quality Assurance**

#### CLIENT NAME: EXP SERVICES INC

#### PROJECT: GTR-00257769-H0

#### SAMPLING SITE:5100 Erin Mills

AGAT WORK ORDER: 24T116256 ATTENTION TO: Alessandro Girardo SAMPLED BY:

## Trace Organics Analysis (Continued)

RPT Date: Feb 09, 2024			DUPLICATE			REFERENCE I			ERENCE MATERIAL METHOD			SPIKE	MATRIX SPIKE		
PARAMETER	Batch	Sample	Dup #1	Dup #2	RPD	Method Blank	Measured	Acce Lir	eptable nits	Recovery	Acce Lir	ptable nits	Recovery	Acce Lir	ptable nits
		iu iu		-			Value	Lower	Upper	_	Lower	Upper	-	Lower	Upper
Benzene	5613514		<0.02	<0.02	NA	< 0.02	67%	50%	140%	109%	60%	130%	91%	50%	140%
1,2-Dichloropropane	5613514		<0.03	< 0.03	NA	< 0.03	70%	50%	140%	102%	60%	130%	87%	50%	140%
Trichloroethylene	5613514		<0.03	< 0.03	NA	< 0.03	82%	50%	140%	100%	60%	130%	98%	50%	140%
Bromodichloromethane	5613514		<0.05	<0.05	NA	< 0.05	88%	50%	140%	86%	60%	130%	93%	50%	140%
Methyl Isobutyl Ketone	5613514		<0.50	<0.50	NA	< 0.50	99%	50%	140%	95%	50%	140%	96%	50%	140%
1,1,2-Trichloroethane	5613514		<0.04	<0.04	NA	< 0.04	80%	50%	140%	90%	60%	130%	100%	50%	140%
Toluene	5613514		<0.05	<0.05	NA	< 0.05	111%	50%	140%	101%	60%	130%	105%	50%	140%
Dibromochloromethane	5613514		<0.05	<0.05	NA	< 0.05	89%	50%	140%	94%	60%	130%	93%	50%	140%
Ethylene Dibromide	5613514		<0.04	<0.04	NA	< 0.04	84%	50%	140%	102%	60%	130%	74%	50%	140%
Tetrachloroethylene	5613514		< 0.05	< 0.05	NA	< 0.05	89%	50%	140%	90%	60%	130%	93%	50%	140%
1,1,1,2-Tetrachloroethane	5613514		<0.04	<0.04	NA	< 0.04	84%	50%	140%	97%	60%	130%	103%	50%	140%
Chlorobenzene	5613514		<0.05	<0.05	NA	< 0.05	76%	50%	140%	104%	60%	130%	81%	50%	140%
Ethylbenzene	5613514		<0.05	<0.05	NA	< 0.05	83%	50%	140%	96%	60%	130%	82%	50%	140%
m & p-Xylene	5613514		<0.05	<0.05	NA	< 0.05	106%	50%	140%	108%	60%	130%	106%	50%	140%
Bromoform	5613514		<0.05	<0.05	NA	< 0.05	92%	50%	140%	90%	60%	130%	85%	50%	140%
Styrene	5613514		<0.05	<0.05	NA	< 0.05	89%	50%	140%	79%	60%	130%	85%	50%	140%
1,1,2,2-Tetrachloroethane	5613514		<0.05	<0.05	NA	< 0.05	98%	50%	140%	94%	60%	130%	90%	50%	140%
o-Xylene	5613514		<0.05	<0.05	NA	< 0.05	99%	50%	140%	91%	60%	130%	104%	50%	140%
1,3-Dichlorobenzene	5613514		<0.05	<0.05	NA	< 0.05	89%	50%	140%	97%	60%	130%	87%	50%	140%
1,4-Dichlorobenzene	5613514		<0.05	<0.05	NA	< 0.05	90%	50%	140%	74%	60%	130%	83%	50%	140%
1,2-Dichlorobenzene	5613514		<0.05	<0.05	NA	< 0.05	83%	50%	140%	75%	60%	130%	103%	50%	140%
n-Hexane	1		< 0.05	< 0.05	NA	< 0.05	93%	50%	140%	85%	60%	130%	101%	50%	140%
4-Bromofluorobenzene	5613514		77	73	5.7%	< 1	NA			NA			106%		
O. Reg. 153(511) - PHCs F1 - F4 (	with PAHs a	and VOC)	(Soil)												
F1 (C6 to C10)	5613514		<5	<5	NA	< 5	86%	60%	140%	105%	60%	140%	102%	60%	140%
O. Reg. 153(511) - PCBs (Soil)															
Polychlorinated Biphenyls	5620362		< 0.1	< 0.1	NA	< 0.1	106%	50%	140%	91%	50%	140%	93%	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:** 

NPopukok

#### **AGAT** QUALITY ASSURANCE REPORT (V1)

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CLIENT NAME: EXP SERVICES INC

PROJECT: GTR-00257769-H0

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

# Method Summary

#### AGAT WORK ORDER: 24T116256

ATTENTION TO: Alessandro Girardo

SAMPLING SITE:5100 Erin Mills		SAMPLED BY:	
PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Arsenic	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Barium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Beryllium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	modified from EPA 6010D and MSA PART 3, CH 21	ICP/OES
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET 93 -6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium, Hexavalent	INOR-93-6068	modified from EPA 3060 and EPA 7196	SPECTROPHOTOMETER
Cyanide, WAD	INOR-93-6052	modified from ON MOECC E3015, SM 4500-CN- I, G-387	SEGMENTED FLOW ANALYSIS
Mercury	MET-93-6103	modified from EPA 7471B and SM 3112 B	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6075	modified from MSA PART 3, CH 14 and SM 2510 B	PC TITRATE
Sodium Adsorption Ratio (2:1) (Calc.)	INOR-93-6007	modified from EPA 6010D & Analytical Protocol	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6075	modified from EPA 9045D, MCKEAGUE 3.11 E3137	PC TITRATE
Sulphate (2:1)	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH



# Method Summary

## CLIENT NAME: EXP SERVICES INC

#### PROJECT: GTR-00257769-H0 SAMPLING SITE:5100 Erin Mills

## AGAT WORK ORDER: 24T116256

**ATTENTION TO: Alessandro Girardo** 

SAMPLING SITE:5100 Erin Mills			
PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluorene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benz(a)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Chrysene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acridine-d9	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Terphenyl-d14	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Polychlorinated Biphenyls	ORG-91-5113	modified from EPA SW-846 3570 & 8082A	GC/ECD
Decachlorobiphenyl	ORG-91-5113	modified from EPA SW-846 3541 & 8082A	GC/ECD
F1 (C6 to C10)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
Toluene-d8	VOL-91- 5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
3 (C16 to C34) VOL-91-5009		modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID



# Method Summary

## CLIENT NAME: EXP SERVICES INC

### PROJECT: GTR-00257769-H0

## AGAT WORK ORDER: 24T116256 ATTENTION TO: Alessandro Girardo

SAMPLING SITE:5100 Erin Mills		SAMPLED BY:	
PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS



# Method Summary

#### CLIENT NAME: EXP SERVICES INC PROJECT: GTR-00257769-H0

## AGAT WORK ORDER: 24T116256 ATTENTION TO: Alessandro Girardo

SAMPLING SITE:5100 Erin Mills		SAMPLED BY:	
PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
1,1,1,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromoform	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene (Cis + Trans)	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	modified from EPA 5035A & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	modified from EPA 5035A & EPA 8260D	(P&T)GC/MS

# A G A T Laboratories

**Report Information:** 

Company:

Contact:

Address:

Phone:

1 Email:

2. Email:

Project:

Site Location:

Sampled By:

AGAT Quote #:

Company:

Contact:

Address:

Email:

Reports to be sent to.

**Project Information:** 

Invoice Information:

1. BH202 - 552

2. BH 202 - 553

3. BH 205 - 551

4. BH205 - 552

5. BH205 - SSG

6. BH209 - 552



5835 Coopers Avenue Mississauga, Ontario L4Z 1Y2 Laboratory Use Only

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Work Order #: \_ 24T116256 Scan here for a Ph: 905.712.5100 Fax: 905.712.5122 quick survey! webearth.agatlabs.com lase-Cooler Quantity: 5.6 **Chain of Custody Record** Arrival Temperatures: If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans) **Regulatory Requirements: Custody Seal Intact:** Yes **No** □N/A EXP SERVICES INC (Please check all applicable hoves) obseice Notes: Regulation 153/04 | K Regulation 406 Sewer Use 1595 CLARK BLKP, BRAMPTON, ON Sanitary Storm **Turnaround Time (TAT) Required:** Table\_ Table 2.1 Res. Indicate One L6T4V1 Ind/Com **Regular TAT** Region 5 to 7 Business Days 905-793-9800 Fax Res/Park Regulation 558 Prov. Water Quality Rush TAT (Rush Surcharges Apply) Agriculture Objectives (PWOO) alessandro, girardo @ exp. com Soil Texture (Check One) 3 Business Davs Next Business CCME Other Coarse Davs Fine OR Date Required (Rush Surcharges May Apply): Indicate One Is this submission for a **Report Guideline on Record of Site Condition? Certificate of Analysis** Please provide prior notification for rush TAT GTR-00257769-HO \*TAT is exclusive of weekends and statutory holidays 5100 ERINMELLS K Yes D No □ Yes □ No For 'Same Day' analysis, please contact your AGAT CPM O. Reg 153 O. Reg O. Reg 406 DOC PO: High Concentration (Y/N) Sample Matrix Legend Please note: If quotation number is not provided, client will be billed full price for analysis B(a)P PCB Field Flitered - Metals, Hg, CrNi, andfill Disposal Characterization TCLP: Regulation 406 SPLP Rainwater Leach Sulphide GW Ground Water Characterization Pac D SVOCs Bill To Same: Yes D No D Oil 0 CrVI, CHg, CHWSB EXP SERVICES INC F1-F4 Ρ Paint DABNs [ ACCOUNTS PATABLE S Soil D VOCS BTEX, /ity: 🖸 Moisture ŠD Sediment Metals & Inorganics Hazardous or BTEX, F1-F4 PHCs APQEXP. COM, KAREN.BURKEDERP. COM SW Surface Water pH. ICPMS Metals. SPLP: C Metals Regulation 406 PCBs: Arocions Potentially Metals -Corrosiv Date Time Comments/ PAHS Sample # of PCBs Y/N VOC ICLP: Sample Identification Sampled Sampled Containers Matrix Special Instructions AM PM 5 Limited Supply 2 0130124 Am V AM 3 211 AM 1 AM 5 5 limited Samole 3 VVV AM PM シ 1 ~ AM ~ AM Limited Sample 2 AM PM 3 V V AM 3 AM 10. 8H211 - 552 2 Limited Sample 1 AM Samples Relinquished By (Print Name and Sign) Date Time 11:53 Dan31 Samples Ralinguished By (Print Name and Sign): Time Date ed By (Print Name and Sign Page Samples Relinquished By (Print Name and Sign Date Samples Received By (Print Name and Sign) Nº: -

Pink

Any and all products and/or services provided by AGAT Labs are pursuant to the terms and conditions as set forth at www.agatlabs.com/termsandconditions unless otherwise agreed in a current written contractual document.

#### EXP Services Inc. 20

GTR-00257769-H0 March 2024

# Appendix C

EXP 2020 Borehole Logs



		g o	f	E	30	D	ſŧ	Э	h	(	b	e	<b>)</b>	E	₽	-	3		11				4
Project No.	<u>DRIVI-00257709-A1</u>	_															Dra	win	g N	0.	_		4
ocation:	5100 Erin Mills Parkway															-	5	nee	et in	0.		<u> </u>	or
	Erin Mills Town Centre																						
Data Drilladi	March 4, 2020		-	Auge	er Sa	ampl	e					$\boxtimes$			Comb	ousti	ble Va	pour	Rea	ding			]
	Solid Stom Augor		-	SPT	(N)	Valu	e -				0	0			Plasti	c an	nd Liqu	ə id Lir	mit		H		
Drill Type:			-	Dyna Shelt	mic by T	ube	el	est							Undra % Str	aineo ain a	d Triax at Failu	ial at ure	t			€	÷
Datum:	Geodetic		-	Field	Var	ne Te	est					s			Penet	trom	neter						•
-×			Ê				S	PT (	N Va	alue	e)				Combi	ustib	le Vap	our R	leadir	ig (p	pm)	n	Natu
Symbo	Soil Description	ELEV. m	epth (	She	2 ear S	20 Stren	, gth	10		60		80	) kPa	┦	Na Atter	atura rberg	al Moist g Limits	ure C s (% I	, Conter Dry W	nt % /eigh	nt)	Sampl	Uni Weig
<u>ه</u> ۲ <b>۵۲:</b> ۲۰۲	<b>SOIL:</b> ~ 100 mm	175.99 ~175.9	0	6			1	00				20	0			10	2	20	3	0			KIN/I
	<b>YEY SILT TILL,</b> trace gravel, shale fragments, reddish brown			Ŏ													>	*				V	
firm t	o very stiff																						
	-		1	Ħ		22 0		Ħ					>				X					V	
	red Queenston Shale Bedrock,	~1/4./																					
[] comp	Dietely weathered.	~174 1		Ħ				Ħ					98/2	54m	m >	<						V	
	END OF BOREHOLE	1																					
				Ħ		Ħ		Ħ															
								H															
				Ħ																			
				Ħ																			
					H		$\square$		H						++					$\left  \right $			

*exp.
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Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	Open

roject	No.	BRM-00257769-A1	·9 0					<i>-</i> 1				•	-	~	•	Drav	wing N	۱o.		5	5
roject		Geotechnical Investigation	n												_	S	neet N	lo.	1	_ of	f _
ocatio	n:	5100 Erin Mills Parkway																			
		Erin Mills Town Centre		_										Com	huotik			odina			
ate D	rilled:	March 4, 2020			Auge	Sample	Э			~				Natu	ral Mo	pisture		aung		$\mathbf{X}$	
orill Tv	pe:	Solid Stem Auger		_	SPT ( Dynai	N) Valu nic Con	e e Te	est			) [2]			Plast	ic and	l Liqui Triavi	d Limit al at		H		-0
)ətum:	I	Geodetic		_	Shelb	y Tube								% St	rain a	t Failu	re			⊕	
aturn.		0000000		_	Field	vane le	est				S			Pene	etrome	eter					
Soil/Rock Symbol		Soil Description	ELEV. m	Jepth (m)	She	20 ar Streng	Si 4 gth	PT ( <b>1</b> 10	N Valı 6	ue) 30	8(	) kP	a	Comb N Atte	oustible 25 atural erberg	e Vapo 5 Moistu Limits	our Read 0 ure Cont (% Dry	ling (pp 75 ent % Weight	)	Sample	Vat U We
,		HALTIC CONCRETE: ~ 120 mm	176.53	0		2	1	00			20	0			10	2	0	30			
+++		NULAR: ~ 150 mm				3								×							
	mois	t, very stiff																			
	Infer	red Queenston Shale Redrock	~175.5	1				H	64/	¥94n 0	ım T					X					
	com	pletely weathered.	475.0				#	50/2	25mm											1	
		END OF BOREHOLE	~1/5.0						<b>)</b>											-	
							#	H													
							Ħ														
							Ħ														
				1																	

t			
	Date	Water Level (m)	Hole Open to (m)
	On Completion	Dry	Open



Project No.	BRM-00257769-A1	3 0	-	_ • • •				Drawing I	No	6	6
<sup>&gt;</sup> roject:	Geotechnical Investigation	1						Sheet I	No. <u>1</u>	_ 0	of <u>1</u>
_ocation:	5100 Erin Mills Parkway										
	Erin Mills Town Centre		_				Combusti	ible Vapour Re	adina		
Date Drilled:	March 4, 2020		_	Auger Sample			Natural N	loisture	ading	×	
Drill Type:	Solid Stem Auger			Dynamic Cone T	est		Plastic ar Undraine	nd Liquid Limit d Triaxial at	H		-0
Datum:	Geodetic		_	Shelby Tube Field Vane Test		∎ \$	% Strain Penetrom	at Failure neter		▲	
vater bol		ELEV.	(u)	5	SPT (N Valu	e)	Combustib 25	ble Vapour Read 50	ling (ppm) 75	ple	Natura
Sound Sym	Soil Description	m	Depth	20 Shear Strength	<u>40 6</u>	0 80 kPa	Natura Atterberg	al Moisture Cont g Limits (% Dry	ent % Weight)	Sam	Weigh kN/m <sup>3</sup>
	HALTIC CONCRETE: ~ 100 mm	175.10 /~175.0	0	14	100	200	10	20	30		
	NULAR: ~ 200 mm	~174.8		0			×				
trace	to some sand, moist, firm to very										
dens	e	-	1	5 O				×			
0										2	
		7		19							
		-170.0	2					×			
	, some sand, to fine sandy silt,	~172.9									
reddi very	sh brown, moist to wet, dense to dense	-		Č				×			
		_	3			00/054					
						90/254m	"" ×				
		-									
			4			97/2	54mm				
								<b>`</b>		4	
		-			50/76mm						
							×		Í Í	2	
		7	5								
		-									
		1	6		50						
- trac	e clay	~168.5			Õ			×			
	END OF BOREHOLE									4	
					+++-			++++			

Date	Water Level (m)	Hole Open to (m)
On Completion March 10, 2020 March 16, 2020 March 19, 2020	1.2 Dry Dry Dry	



Project No.	BRM-00257769-A1	J O	f Borehole	$BH \underset{\text{Drawing No.}}{20}$	21
Project: Location:	Geotechnical Investigation 5100 Erin Mills Parkway			Sheet No	<u>1</u> of <u>1</u>
Date Drilled:	Erin Mills Town Centre		- Auger Sample 🛛	Combustible Vapour Reading	
Drill Type:	Solid Stem Auger		SPT (N) Value     ○ ∅       Dynamic Cone Test     ●       Shelby Tube     ■	Plastic and Liquid Limit Undrained Triaxial at % Strain at Failure	
Datum:	Geodetic		Field Vane Test	Penetrometer	<b></b>
Groundwater Soil/Rock Symbol	Soil Description	ELEV. m 177.19	E         SPT (N Value)           ±         20         40         60         80           b         Shear Strength         k         100         200	Pa Combustible Vapour Reading (ppr 25 50 75 Natural Moisture Content % Atterberg Limits (% Dry Weight) 10 20 30	<sup>1)</sup> and Watural Unit Weight kN/m <sup>3</sup>
TOP CLA	SOIL: ~ 100 mm	-177.1	6	×	





Date	Water Level (m)	Hole Open to (m)
On Completion March 10, 2020 March 16, 2020 March 19, 2020	Dry Dry Dry Dry	5.8



# Project No. GTR-00257769-G0 Log of Borehole 101 Drawing No. 2



Pr	oject:	Geotechnical Investigation	on													:	She	et N	lo	2	of _2
water	bol		ELEV.	(m)	SPT (N Value)					Combustible Vapour Readin 25 50 7					ng (ppn 75	ו) <u>ש</u>	Natural				
Ground	Soil/R Sym	Soil Description	m	Depth	20 40 60 Shear Strength					80	kPa	Nati Atterb	ural Moi erg Lim	sture ( its (%	ture Content % is (% Dry Weight)			Weight kN/m <sup>3</sup>			
Ē	///3		165.11	10								200							30		
		-	~164.4					F	0/100	mm											
		SHALE BEDROCK: Queenston	104.4						Ő						>	<					2
		_ Pormation, registi prown.	-	11																	
		_	_																		
·Η·		_	_	12					50/51r	nm											
		_																			
		END OF BOREHOLE	~162.4																		
																	#				
			1																		
				Ē							<u>++++</u>			E	apsed	1		Wa	iter		l ole Open
	_												l In					Level (m)			to (m)
		NYD											υρ (	Oct 3	31, 2	022		5.7	75		
-	C	λų.																			
		1																			