FCR (Park Lawn) LP and CPPIB Park Lawn Canada Inc.

2150 Lake Shore

Hydrological Review

Issue 01 | May 15, 2020

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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Executive Summary

This hydrological review has been prepared in accordance with the requirements for a Hydrological Review set out by the City of Toronto¹.

The current Master Plan features a range of land uses including a new public park, and a diverse mix of residential, retail, service, entertainment and employment uses and a range of building types. Fifteen towers are proposed on the site with heights ranging from 16 to 70 storeys. The current Master Plan includes 6 phases, each of which includes a basement ranging from 3 to 5 levels to a minimum basement slab elevation of +65.5 meters above sea level (masl) approximately 20 meters below ground surface (mbgs).

Analysis of groundwater discharge has been carried out for each individual development phase (1 to 6) and collectively for phases 1 to 5. The initial analysis has been carried out using available data as discussed in this report and considers an open excavation. Assumptions have been made regarding the benefit of the proposed secant pile perimeter wall and the associated reduction in groundwater discharge based on local experience (i.e., a minimum of 25% of the anticipated discharge without the secant pile perimeter wall). These results are presented in Table 8 and show groundwater discharge ranging from 13 to 18 m³/day for individual development phases, with a combined total of 91 m³/day for all basements.

Based on the current design approach for the basements – secant pile perimeter walls – and the anticipated groundwater inflows, a Private Water Drainage System (PWDS) including drainage below the basement floor and perimeter drainage is suitable. Ministry of Environment (MOE) Permit to Take Water (PTTW) will be required where dewatering volume exceeds 50,000 L/days (50. m^3/day). In addition, Private Water Discharge permit is also required by City of Toronto to discharge water to the municipal storm sewer system. Based on the initial analysis carried out, it is anticipated that PTTW will be required.

This report is based on previous ground investigation work carried out at the site and a review of historical records within and surrounding the site. Although ground investigations have been carried out within the site, ground investigation has yet to be completed specifically for the current proposed development. As a result, analysis in this report is based on available field and lab testing and does not include data obtained from slug tests, pumping tests, or long-term groundwater monitoring. Gaps in the available data for further design stages will be addressed by further site investigation and analysis. The results of these further investigations can be provided to the City of Toronto if required.

¹ Refer to the following City of Toronto website for more detail <<u>https://www.toronto.ca/wp-content/uploads/2018/08/97bb-Hydrological-Review-August-2018.pdf</u>>.

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1 Introduction

1.1 Proposed Development

In October 2019, FCR (Park Lawn) LP and CPPIB Park Lawn Canada Inc. ('the Owners') made an application for an Official Plan Amendment (OPA) in support of a proposed Master Plan for the redevelopment of the 27.7 acre / 11.2 hectare site located on the northeast corner of Park Lawn Road and Lake Shore Boulevard West, municipally known as 2150-2194 Lake Shore Boulevard West and 23 Park Lawn Road site ("the site" or "2150 Lake Shore") as shown in Figure 1.



Figure 1 - Site Location and Boundary

The original Master Plan proposal envisioned a vibrant, mixed-use, transit-oriented redevelopment of the site. The Master Plan included a new Park Lawn GO Station, related TTC transit improvements, a fine-grained network of new streets and connections, a range of new open spaces including a new public park, and a diverse mix of residential, retail, service, entertainment and employment uses.

The current Master Plan features the same variety of land uses with a range of building types that blend forms and uses, and respond to the distinct geometry of the proposed street and block pattern. Fifteen towers are proposed on the site with heights ranging from 16 to 70 storeys, with the tallest towers generally clustered near the GO Station. The towers feature generous separation distances and are interspersed with a range of standalone mid-rise and low-rise building typologies to create a sense of place and urban fabric that appears to have evolved over time.

The current Master Plan includes 6 phases, each of which includes a basement. Phases 1 to 5 include three (3) levels of basement with the lowest basement slab located at +68.7 masl. Phase 6 includes five (5) levels of basement with the lowest basement slab located at +65.5 masl.

1.2 Scope and Limitations

Arup was retained by FCR (Park Lawn) LP and CPPIB Park Lawn Canada Inc to prepare a Hydrological Review for the Zoning By-law Amendment application.

This review has been prepared in accordance with the following:

- Ontario Water Resources Act
- Ontario Regulation 64/16
- Ontario Regulation 387/04
- Toronto Municipal; Code, Chapter 681 Sewers

This report is based on previous ground investigation work at the site. There are gaps in some of the specific requirements from City of Toronto checklist as ground investigation has yet to be carried out at the site for the proposed development. These will be addressed by further site investigation and analysis to inform further design stages. The results of these further investigations can be provided to the City of Toronto if required.

This report summarizes the findings from available relevant investigations and provides an assessment on geology, physical hydrology, a site-specific hydrological model, analysis of available groundwater information, and an analytical assessment of anticipated groundwater inflow into basements.

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Arup's responsibility is limited to a review of the available information at the time of writing this report. The information presented includes assessment of data and to some degree of interpretation of data. Ground and groundwater information may vary between and beyond boreholes.

2 Study Area

The site is located at 2150 Lake Shore Boulevard West (postal code M8V 1A3), in the Etobicoke-Lakeshore area of the Toronto City District of Etobicoke-York. The site is approximately 11.2 hectares and polygonal but broadly triangular in shape. Bounded to the northwest by CN railway line and the Gardener Expressway eastbound off ramp, bounded to the east by Lake Shore Boulevard West, and the southwest by Park Lawn Road.

2.1 Topography

The site is generally flat, with existing elevation across the site typically ranging from approximately +84 masl and +86 masl. Beyond the typical ranges, the site elevation increases several metres at the northern boundary due to fill slopes associated with the adjacent the Canada National Railway and the Gardener Expressway east bound off ramp. Beyond the typical ranges, the site elevation reduces in the southern corner. It should be noted that significant grading to form the final formation level for the proposed development.

2.2 Hydrology

The site is located within the Humber Bay area between the Humber River approximately 800 m to the northeast, and Mimco Creek, approximately 210 m to the southwest, roughly parallel but beyond Park Lawn Road. Lake Ontario is located approximately 250 m to 300 m to the southeast beyond existing residential developments and parklands. The road along the southeastern boundary of the site, Lake Shore Boulevard West, marks the approximate location of the former lakeshore (Toronto Transportation Commission – Contour Map of Toronto District, 1921). This indicates that the existing developments and parkland to the southeast of Lake Shore Boulevard West are largely located on reclaimed land. Historical maximum water levels of Lake Ontario are +75.91 masl and +75.81 masl in 2019 and 2017 respectively.

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3 Geology

3.1 **Published Geological Information**

The map of Quaternary Geology of Toronto and the Surrounding Area (1980), an excerpt of which is presented as Figure 1, indicates that the site is underlain by Older Lake Deposits of silt and clay. Beneath the Older Lake Deposits there is potential for presence of the Older Till consisting of silty clay to silt and clayey sand. Beneath the Quaternary Deposits the bedrock is formed of shale, interbedded with siltstone and occasional limestone.



Figure 2: Regional Geology of Project Site (Quaternary Geology of Toronto and the Surrounding Area, 1980)

3.2 Relevant Reports and Information

A summary of locations of boreholes discussed in the section and used in determining geology and physical hydrology conditions within the study area are presented in drawing LSB-ARP-XX-XX-DR-GE-10000 – see Appendix A.

3.2.1 Relevant Existing Reports

A search of ground investigation information within the site and surrounding area has been carried out using the following resources:

- Ontario Ministry of Transport Foundation Library;
- Ontario Geotechnical Boreholes. Maintained by Ontario Geological Survey (OGS) and the Ministry of Natural Resources (MNR);

- Ontario Well Database. Maintained by the Ministry of the Environment Conservation and Parks; and
- Existing Toronto Development Projects Planning Applications.

Table 1, below, summarizes reports and boreholes that have been considered in preliminary determination of the site-specific geological and physical hydrology conditions.

Source Document Type		Relevant Boreholes		
Ontario Ministry of Transport Foundation	Foundation Investigation Report – 30M11-094 (1970)	BH9 and BH10		
Library	Foundation Investigation Report – 30M11-097 (1970)	BH107 and BH109		
Ontario Geotechnical Boreholes (Maintained by OGS and MNR)	Summary of borehole details including completion date, strata summary, and ground water depth.	604058, 604070, 604069, 655256, 655257, 604066, 604068, 604067, 604054, 604053		
Ontario Well Records Database	Summary of borehole details including completion date, strata summary, and ground water depth.	7285078, 7285077, 7285076, 7263502, 7263501, 7263500, 7259674, 7240357, 7240318, 7240317, 7240313, 7240312, 7240311, 7239937, 7239893, 7239892, 7239725, 7238437, 7238436, 7238435, 7237317, 7237316, 7237315, 7237314, 7237313, 7228463, 7228462, 7228461, 7228460, 7228459, 7228458, 7228457, 7228456, 7228455, 7224069, 7224067, 7224066, 7222642, 7222641, 7222640, 7221374, 7220952, 7217527, 7217526, 7213513, 7213512, 7213466, 7213439, 7213438, 7213437, 7210364, 7208830, 7208829, 7207615, 7207614, 7207613, 7207612, 7207611, 7207610, 7207609, 7206537, 7206536, 7206535, 7206534, 7205802, 7205677, 7204521, 7203995, 7198955, 7198107, 7198106, 7198105, 7195874, 7195873, 7195661, 7193857, 7193856, 7188200, 7188199, 7188198, 7182493, 7181302, 7174363, 7174362, 7174361, 7174360, 7174359, 7174358, 7174357, 7154076, 7137708, 7123282, 7108871, 7046382, 6928586,		

Table 1 - Summary of Available Ground Investigation Reports

Source	Document Type	Relevant Boreholes
Toronto Development Projects Planning Applications	Preliminary Geotechnical Investigation for Proposed High-rise Buildings 2161 to 2165 Lake Shore Boulevard West.	BH13-1 BH13-2 BH13-3 BH13-4

3.2.2 Site Specific Reports

Three site specific geotechnical/environmental reports have been provided:

- Preliminary Geotechnical Investigation, 2150 Lake Shore Boulevard West Toronto, Ontario (CRA, 2013)
- Phase 1 Environmental Site Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario (CRA, 2013)
- Phase 2 Environmental Site Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario (CRA, 2013)
- Phase 2 Environmental Site Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario (SPL, 2013)
- Preliminary Geotechnical Investigation, 2150 Lake Shore Boulevard West Toronto, Ontario (Golder, 2015).
- Phase 2 Environmental Site Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario (Golder, 2015)
- Phase Two Conceptual Site Model, Technical Memorandum, 2150 Lake Shore Boulevard West, Toronto, Ontario (Golder, 2019)

Table 2 below, summarizes the boreholes that have been taken from the abovementioned documents in order to aid in preliminary determination of the sitespecific geological and hydrogeological conditions.

Date	Source	Document Type	Relevant Boreholes and Test Pits
February 2013	Conestoga- Rovers & Associates	Preliminary Geotechnical Investigation, 2150 Lake Shore	MW1-13, MW2-13, MW3-13, MW4-13, MW5-13, MW6-13, MW7-13, MW8-13, MW9-13

Table 2 - Summary of Site-Specific Ground Investigation Reports

Date	Source	Document Type	Relevant Boreholes and Test Pits	
		Boulevard West Toronto, Ontario		
February 2013	Conestoga- Rovers & Associates	Phase 1 Environmental Site Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario	BH2-04, BH3-04, BH4-04, BH5-04, BH6- 04, BH7-04, BH8-04, BH9-04, BH10-04, BH11-04, BH1, BH2, MW1-04, MW2-04, MW3-04, MW5-04, MW6-04, BH201-05, BH202-05, BH203-05, BH204-05 and BH205-05	
July 2013	Conestoga- Rovers & Associates	Phase 2 Environmental Site Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario	BH1-13, BH2-13, BH3-13, BH4-13, BH5- 13, BH6-13, BH101-13, BH102-13, BH103- 13, BH104-13, BH105-13, BH106-13, BH107-13, BH108-13, BH109-13, BH110- 13, BH111-13, BH112-13, BH113-13, BH114-13, BH201-13, BH202-13, BH203- 13, BH204-13, BH205-13, BH206-13, BH207-13, BH208-13, BH209-13, BH210- 13, BH211-13, BH212-13	
December 2013	SPL Consultants	Phase 2 Environmental Site Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario	 BHI-1, BHI-2, BHI-3, BHI-4, BHI-5, BHI-6, BHI-7, BHI-8, BHI-9A, BHI-10, BHI-11, BHI-12, BHI-13, BH1, BH2, BH3, BH4, BH5, BH6, BH7, BH8, BH9, BH10, BH11, BH12, BH13, BH14, BH15, BH16, BH17, BH18, BH19, BH20, BH21, BH22, BH23, BH24, BH25, BH26, BH27, BH28, BH29, BH30, BH31, BH32, BH33, BH34, BH35, BH36, BH37, BH38, BH39, BH40, BH41, BH42, BH43, BH44, BH45, BH46, BH47, BH48, BH49, BH50, BH51, BH52, BH53, BH54, BH55, BH56, BH57, BH58, BH59, BH60, BH61, BH62, BH63, BH64, BH65, BH66, BH67, BH68 	
January 2015	Golder Associates	Preliminary Geotechnical Investigation, 2150 Lake Shore Boulevard West Toronto, Ontario	BH15-1, BH15-2, BH15-3, BH15-4, BH15-5	
January 2015	Golder Associates	Phase 2 Environmental Site	MW14-1, MW14-3, MW14-4, MW14-5 MW14-6, MW14-7	

Date	Source	Document Type	Relevant Boreholes and Test Pits
		Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario	

3.3 Summary of Strata

The ground and groundwater conditions at the site are interpreted from the sitespecific reports and available borehole/well records from within the site. The historical reports from the surrounding area, including adjacent sites, are considered as supporting information, which have been reviewed to confirm the interpreted ground and groundwater conditions and, to identify any potential unfavourable ground conditions not identified from investigations within the site.

Fill

Fill (including topsoil and asphalt) was recorded in the majority of the boreholes within the site. The fill was typically recorded as loose to compact silty sand and sand and gravel, and/or firm to stiff silty clay, with occasional traces of rootlets in the upper 2 m. Fill was typically recorded from ground surface to 2.6 mbgs (+81.36 masl), but up 6.6 m and 10.8 m (+81.29 masl) where associated with the fill slope to the north of the site. Mean average thickness was 2.3 m.

Old Lake Deposits

Old Lake Deposits were recorded in the majority of the boreholes within the site. The old lake deposits were typically recorded as firm to very stiff, silty clay and sandy silt, occasionally silty sand. Old lake deposits were typically recorded between 2.6 m and 7.4 m depth (+81.36 masl and +77.5 masl), but occasionally up to 12 m depth (+75.06 masl). A mean average thickness of 5.7 m was recorded.

Till

Till was recorded intermittently in boreholes within the site. Where encountered the glacial till was typically recorded as very stiff to hard, clayey silt with sand and gravel. Where encountered, depth of till was typically recorded between 6.5 m and 8.0 m (+80 masl and +77.5 masl). A mean average thickness of 3.0 m was recorded.

Shale Bedrock

Shale bedrock was encountered in the majority of the boreholes. The shale was frequently recorded as clay shale with occasional weathered and/or fractured in the upper 0.3 m to 1.2 m. Beyond the upper weathered/fractured zone, RQD values are typically recorded between 50% and 90%, but also ranging from 0% to 100%. Depth to shale bedrock (including the weathered/fractured zone) was recorded between 4.1 m and 15.0 m below ground, with a mean average depth of 7.7 m.

Elevation of shale bedrock was 70.7 masl and 82.6 masl, with a mean average of 78.2 masl.

4 **Physical Hydrology**

4.1 Hydraulic Conductivity

Table 3, below, presents anticipated permeability values based on descriptions within boreholes legs, available particle size distribution data, and experience of similar ground conditions in the area.

Strata	Anticipated Strata Thickness (m)	Typical Hydraulic Conductivity (m/s)
Fill	2.3	1x10 ⁻⁶ to 1x10 ⁻⁷
Old Lake Deposits (silty clay/clayey silt)	5.5	1x10 ⁻⁷ to 1x10 ⁻⁸
Till (silty clay/clayey silt)	3.0	1x10 ⁻⁹ to 1x10 ⁻⁸
Upper Weathered/Fractured Shale	0.7	1x10 ⁻⁷ to 1x10 ⁻⁸
Shale	>100m*	$1 x 10^{-10}$ to $1 x 10^{-8}$
Note:		

Table 3 - Anticipated Permeability

*Thickness of the shale has not been proven, however the Georgian Bay shale is anticipated to be around 200 m in thickness (Westgate et al., 1999).

Based on the above permeabilities, it is expected that the old lake deposits and till will act as aquitards to the overlying soils. As a result, it is anticipated that perched groundwater will be present within the fill overlying the old lake deposits, and/or within the old lake deposits overlying the till.

4.2 Groundwater Levels

Available groundwater information from existing site-specific reports has been reviewed and is summarized below. Table 4, below, presents the groundwater levels recorded in the site-specific investigation reports listed in Table 2.

Well ID	Strata Screened	Top of Screen (mbgs)	Bottom of Screen (mbgs)	Measured Groundwater Depth (mbgs)	Measured Groundwater Elevation (masl)	Date of Measurement
MW14-6	Fill/Silt	0.6	2.9	1.28	82.7*	16 Dec 2014
MW14-4	Silty Sand	1.8	3.7	2.63	81.81*	16 Dec 2014
BH1	Silt	6.1	9.1	3.25	-	22 Oct 2004
BH2	Silt/Silty Clay	4.9	7.5	5.45	-	22 Oct 2004
MW1-13	Silt/Silty Clay	2.7	6.4	0.68	84.27	4 Mar 2013
MW3-13	Silt/Silty Clay	3.7	7.3	2.90	81.93	4 Mar 2013
MW6-13	Silt/Silty Clay	3.0	6.7	0.45	85.75	4 Mar 2013
MW9-13	Silt/Silty Clay	2.7	6.4	2.74	81.7	4 Mar 2013
MW7-13	Silty Clay	3.4	7.0	2.52	84.2	4 Mar 2013
MW4-13	Silty Clay/ weathered Shale Bedrock	1.8	5.2	1.44	82.76	4 Mar 2013
MW2-13	Shale Bedrock	12.5	15.4	9.93	71.53	4 Mar 2013
MW8-13	Shale Bedrock	8.5	10.7	7.94	76.04	4 Mar 2013
MW5-13	Shale Bedrock	11.6	15.4	11.53	73.51	4 Mar 2013
BH1	Silt/Sand	1.8	3.7	2.30	81.80	9 Jan 2017
BH11	Silty Clay/ weathered Shale Bedrock	2.8	4.6	1.60	78.87	9 Jan 2017
BH14	Silty Clay/ weathered Shale Bedrock	5.5	7.4	2.30	81.86	9 Jan 2017
BH19	Silty Clay/ weathered Shale Bedrock	6.4	8.2	7.96	75.05	9 Jan 2017
BH32	Silt/Clay	3.7	5.5	2.93	81.80	9 Jan 2017
BH39	Silty Clay/ weathered Shale Bedrock	5.8	7.6	4.14	80.15	9 Jan 2017

Table 4 - Summary of Measured Groundwater Readings

Well ID	Strata Screened	Top of Screen (mbgs)	Bottom of Screen (mbgs)	Measured Groundwater Depth (mbgs)	Measured Groundwater Elevation (masl)	Date of Measurement
BH45	Silty Clay/ weathered Shale Bedrock	3.5	4.7	2.26	81.55	9 Jan 2017
BH52	Clayey SILT	5.8	7.0	3.62	82.54	9 Jan 2017
BH57	Clayey SILT	6.4	8.2	4.31	83.16	9 Jan 2017
BH62	Clayey SILT	4.8	6.7	2.52	82.22	9 Jan 2017
BH65	Clayey SILT	4.9	6.7	3.72	80.31	9 Jan 2017
BH68	BH Log does not indicate GW installation	-	-	5.95	78.18	9 Jan 2017
BH8	Silty Clay / weathered Shale Bedrock	4.9	6.7	3.36	80.67	9 Jan 2017
BH9	Silty Clay / Till	4.3	6.1	2.16	80.39	9 Jan 2017
MW1-04	Silt clay FILL / TILL	1.5	4.6	15.17	84.45	9 Jan 2017
MW14-5	sandy SILT / silty CLAY	1.2	4.6	5.28	81.34	9 Jan 2017
MW2-04	SILT	1.5	4.6	15.33	84.32	9 Jan 2017
MW5-04	SILT / Sandy SILT	1.5	4.6	15.57	84.28	9 Jan 2017
MW6-04	FILL / SILT	0.9	4.0	15.43	84.41	9 Jan 2017
MW9-13	Clay-Silt	2.7	6.4	2.93	81.51	9 Jan 2017
Notes:	•	-	-	-		-

* Indicates that no surface elevation was provided with the borehole log, and this has been estimated based on adjacent boreholes.

Where elevation could not be estimated a '-' is indicated.

The groundwater monitoring data presented above shows monitoring installations within surficial soils and bedrock. From within the soils, groundwater depth is recorded between 0.45 m and 2.9 m (Elevations of +85.75 masl +81.7 masl) with a mean average of 1.8 m (+83.1 masl). From within the shale bedrock, groundwater depth is recorded between 7.94 m and 11.53 m (Elevations of +76.04 masl +71.53 masl) with a mean average of 1.8 m (+73.69 masl). This observation of separate groundwater regimes indicates perched groundwater within the surficial soils resulting from low permeability soil units slowing infiltration to reach the water table below.

4.3 Groundwater Flow

Given the anticipated low permeability of both the superficial deposits and bedrock at the site, groundwater flow is likely to be limited.

It is anticipated that regional groundwater flow will be largely controlled by Lake Ontario to the southeast and locally influenced by Mimico Creek towards the southwest. At present, no long-term groundwater monitoring is available, however Golder's Phase 2 Conceptual Site Model (2019) provides mapped groundwater contours at the site based on their recorded of groundwater levels. These groundwater contours are shown in Figure 3 below and show groundwater flow in a southeasterly direction through the surficial deposits towards Lake Ontario.



Figure 3 Groundwater contours (January 2017) extracted from Golder (2019).

4.4 **Pumping Tests**

Although pumping tests have not been carried out at the time of writing this report, an analytical assessment of anticipated groundwater discharge from basements has been carried out in order to estimate discharge volumes. Results of the assessments are presented in Section 5.

4.5 Groundwater Quality

A review of historical information has indicated that the site has had a number of historical land uses. 2150 Lake Shore Boulevard West was historically used as farmland. Within the site there have been five brickyards operating, the largest until

the 1930s, making bricks from local sandy clay. Other early industries included Carson Cement Block and Humber Coal and Supply. Environmental Assessments for the site (Golder, 2019) also highlighted past land uses with potentially contaminating activities that included use or storage of the following: solvents, sulphuric acid, hydrocarbons, PCBs, and metals. The site has also been used for storage of ammunition from World War II and as a sanitary landfill.

Following demolition of the Cookie factory structure, soil remediation was carried out in 2018 to target a number of identified contaminants, whilst further delineation of remaining contaminants was carried out. Remediation included excavation and removal of identified 'hot spots' and disused storage tanks. Groundwater quality testing was carried out as part of the Environmental Site Assessment and noted that the reported concentrations for contaminants discussed above were subsequently within applicable site condition standards (Golder, 2019).

The City of Toronto Sewers By-Law (Municipal Code, Chapter 681) sets limits on what can be discharged into the sewer system (Table 1 - Limits for Sanitary and Combined Sewers Discharge; and Table 2 - Limits for Storm Sewer Discharge). Although this information is not currently available for the site, further groundwater quality sampling and testing for the purpose of groundwater discharge will be carried out as part of further investigation at the site. This data can be provided to the City of Toronto if required.

5 Groundwater Extraction and Discharge

5.1 **Proposed Basements**

Figure 4 below presents the current basement layout with different phases shown. It is currently understood that the basements will be formed using perimeter secant pile walls and basement slabs with permanent drainage. The use of a secant pile wall is expected to significantly reduce the volume of groundwater inflow into the basements that will be picked up by a drainage system, allowing for a drained solution rather than permanent groundwater extraction or a fully waterproofed design. The permanent groundwater drainage system will be designed at the detailed design stage. Foundations for the towers are expected to be within the shale bedrock which was encountered between 70.7 masl and 82.6 masl.



Figure 4 - Basement Phase Layout

It is understood at the time of writing this report that basement phases may be excavated sequentially, and therefore not all basements may be excavated at the same time. Because of this, groundwater inflow has been provided for each basement individually, but also for phase 1 to 5 as a single basement for the purposes of long-term consideration. The basement for Phase 6 is considered separately owing to its relative isolation and increased depth.

5.2 Analytical Assessment

At the time of writing this report, pumping tests and long-term groundwater monitoring data was not available. As a result, analytical assessment to determine the volume of groundwater inflow into basements, and therefore groundwater discharge has been carried out based on anticipated permeability values from soil descriptions in borehole logs, particle size distribution data, and experience with similar local ground conditions. The analytical assessment of dewatering has used the equivalent well method as detailed below. For the analysis, groundwater level has been assumed to be 1 m below ground surface.4.1

5.2.1 Effective Radius

In order to determine anticipated groundwater inflow into the basements using analytical methods, the basement footprints must first be converted to an effective radius. This approach is presented by Mansur & Kauffman (1962) and is outlined below.

$$r_e = \sqrt{\frac{ab}{\pi}}$$

Where:

 $r_e =$ Effective Radius

a = Width of excavation

b = Length of excavation

Equivalent well radius has been determined for each basement, and for basements 1-5 combined.

Basement Phase	Measured Perimeter (m)	Effective Radius (m)	
Phase 1	502	71	
Phase 2	590	83	

Table 5 - Effective Radius

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Basement Phase	Measured Perimeter (m)	Effective Radius (m)
Phase 3	597	84
Phase 4	443	62
Phase 5	365	51
Phase 6	250	35
Phase 1-5	1280	181
Note: the above measured per	imeter values discount 'shared pe	erimeter' between different

phases (e.g., the shared perimeter between Phase 1 and Phase 3 seen in Figure 4)

5.2.2 Radius of Influence

Zone of influence has been calculated using the Sichardt method for unconfined aquifers. This method uses an empirical approach based on drawdown and permeability.

$$R_0 = Cs\sqrt{K}$$

Where:

 R_0 = Radius of influence

C = Shape factor

s = Drawdown

K = Hydraulic conductivity

Anticipated final formation level above the basements is anticipated to vary between approximately +85.5 masl and +89 masl with the current design of the proposed basements anticipated to vary between approximately +65.5 masl and +73 masl. With consideration for the thickness and permeability of each deposit, characteristic permeability value for the soil within which the basements are to be constructed has been determined for analysis. For the purposes of analysing ground water inflow, boundary elevation was set at +55 m (approximately 10 m below the bottom of the lowest basement).

Based on the above, mean average anticipated permeability for the analyzed area is between 2.0×10^{-8} m/s and 2.0×10^{-7} m/s. Based on recorded groundwater elevations, for the purposes of analysis groundwater was assumed to be 1 m below ground surface. Table 6 presents the maximum radius of influence

Basement Phase	Anticipated Groundwater Drawdown within the Excavation (m)	Maximum Radius of Influence (m)
Phase 1	17.5	94
Phase 2	16	104
Phase 3	17.5	107
Phase 4	17	84
Phase 5	14	71
Phase 6	20.5	62
Phase 1-5	16.5	200

Table 6 - Radius of Influence

It should be noted that the radius of influence has been calculated assuming the groundwater inflow into the basement is through unimpeded strata, and no benefit is taken from the earth retaining structure.

5.2.3 Drainage and Discharge

Anticipated groundwater flow into the basement excavation has been calculated using the approach presented by Mansur and Kauffman (1962) for unconfined aquifers. This method uses an empirical approach based on drawdown with an excavation, hydraulic conductivity, radius of influence, and radius of excavation.

$$Q = \pi K \frac{(H^2 - h_w^2)}{\ln\left(\frac{2R_0}{r_w}\right)}$$

Where:

Q =Total discharge

K = Hydraulic conductivity

H = Height of water table at radius of influence

 h_w = Height of water table within well (excavation)

 R_0 = Radius of influence

 R_w = radius of well (excavation)

Based on the above the following discharge volumes have been determined for the case where groundwater is allowed to enter the excavation unimpeded (i.e. no

benefit taken from the anticipated secant pile wall around the boundary of basements).

Basement Phase	Minimum Anticipated Groundwater Discharge (m ³ /d) (unfactored)	Maximum Anticipated Groundwater Discharge (m ³ /d) (unfactored)	Maximum Anticipated Groundwater Discharge (m ³ /d) (factored)
Phase 1	5	47	70
Phase 2	4	41	62
Phase 3	5	49	73
Phase 4	4	38	57
Phase 5	3	34	51
Phase 6	3	34	51
Phase 1-5	21	209	313
Note: Factored groundwater	discharge includes a Factor of S	Safety of 1.5	1

Table 7 - Anticipated Groundwater Discharge

In addition to the anticipated groundwater discharge presented above, consideration should be made for large rainfall events that may result in a considerable amount of additional water being required to be pumped from excavations.

5.3 Private Water Drainage Systems

For the proposed development it is understood that current design includes secant pile walls around the perimeter of the basements. This construction technique, although not fully waterproof, is expected to significantly reduce groundwater inflow into the basements and therefore reduce the required discharge of groundwater.

Considering the above construction approach, it is recommended that a sub-floor Private Water Drainage System (PWDS) be included in the design together with perimeter drainage to capture groundwater inflow.

5.4 Groundwater Discharge Assessment

During the construction of the basements it is anticipated that the groundwater level will have to be lowered below the bottom of the proposed excavation. Based on the analysis in the above sections, it is anticipated that for preliminary design purposes of temporary works (i.e., during construction) a factored groundwater discharge is anticipated to range between 51 m³/d and 73 m³/d for each basement. Full details are presented in Table 7

Quantifying the volume of groundwater entering the basement with a perimeter secant pile wall in place remains difficult due to the influence of construction quality and detailing during the detailed design stage. However, based on local experience it is recommended that for initial design purposes the PWDS should consider at a minimum 25% of the factored anticipated groundwater discharge presented in Table 7. Results of groundwater discharge considering the benefit of the secant pile perimeter wall are presented in Table 8, below. As design progresses, on-site permeability testing should be carried out to further refine the anticipated groundwater discharge volumes.

Basement Phase	Maximum Anticipated Groundwater Discharge (m ³ /d) with Secant Pile Perimeter Wall (factored)
Phase 1	18
Phase 2	15
Phase 3	18
Phase 4	14
Phase 5	13
Phase 6	13
Phase 1-5	78
Note:	
Factored groundwater discharge includ	les a Factor of Safety of 1.5
Above groundwater discharge assumes	s 25% of factored analysis result due to benefit of secant pile wall.

Table 8 -	- Anticinated	Groundwater	Discharge	with Sec	ant Pile	Perimeter	Wall
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5.5 Groundwater Permitting

5.5.1 **Permit to Take Water**

Permit to Take Water (PTTW) requirements for construction site dewatering are set out in the Environmental Protection Act and as amended in O.Reg.63/16 and discussed in the Water Taking Environmental Activity and Sector Registry (EASR) User Guide. In accordance with these regulations two types of PTTW are available:

- 1. Where anticipated groundwater taking is between 50,000 L/day and 400,000 L/day (50 m³/day and 400 m³/day) a PTTW obtained through an online application is required.
- 2. Where anticipated groundwater taking exceeds 400,000 L/day (400 m³/day) a full PTTW is required.

The maximum anticipated groundwater discharge during construction activities was estimated to be between 51 m³/d (51,000 L/d) and 73 m³/d (73,000 L/d) for

each basement or $364 \text{ m}^3/\text{d}$ (364,000 L/d) collectively. Therefore, a PTTW obtained through an online application with the MECP is expected to be sufficient.

The maximum anticipated groundwater discharge from the PWDS was estimated to be between $13 \text{ m}^3/\text{d} (13,000 \text{ L/d})$ and $18 \text{ m}^3/\text{d} (18,000 \text{ L/d})$ for each basement or $91 \text{ m}^3/\text{d} (91,000 \text{ L/d})$ collectively. Therefore, a PTTW obtained through an online application with the MECP is expected to be sufficient. It is however recommended that in-situ permeability testing be carried out on site to refine the anticipated groundwater volumes. Records of groundwater discharge during construction phase should also be reviewed in order to verify long term PWDS and PTTW requirements.

5.5.2 Water Discharge Permits

In addition to the PTTW, water discharge permits are required during construction phase and operation phase of the building prior to discharge of any collected groundwater or rainwater into the City sewer system. During construction phase this includes obtained groundwater and collected rainwater, whilst during operation phase, this includes water collected by the PWDS.

A Long-Term Private Water Discharge Approval (LTPWDA) will be required where discharge of water from the PWDS into the sanitary/combined sewer is anticipated. Where granted, this type of approval will need to be renewed yearly. Section 2 and Section 4 of the Toronto Municipal Code Chapter 681 Sewers details requirements for discharge approval.

5.6 **Review of Taking and Discharging Impacts**

A review of the impacts of groundwater taking and discharge on the natural environmental and City sewage works has been carried out. Anticipated volumes of water to be taken and discharged are presented in the above sections, and fall within requirements for City permitting (PTTW and LTPWDA). As discussed in Section 4.5 groundwater quality sampling and testing for the purpose of groundwater discharge will be carried out as part of further investigation at the site. This data can be provided to the City of Toronto if required.

The site is located within the Humber Bay area between the Humber River approximately 800 m to the northeast, and Mimco Creek, approximately 210 m to the southwest, roughly parallel but beyond Park Lawn Road. Lake Ontario is located approximately 250 m to 300 m to the south. Table 6 presents the anticipated radius of influence resulting from taking water and indicates that all surface water features re located beyond the radius of influence.

Based on the available information, an initial review indicates that settlement of the surrounding area resulting from taking over water is expected to be insignificant – in part because of the shallow depths to rock and in part because of the existing soil

conditions. Detailed assessment will be carried out during further design stages of the project.

6 **Proposed Mitigation and Monitoring**

A monitoring and mitigation plan will be required prior to commencement of construction dewatering. It is anticipated that this plan will be developed in conjunction with the dewatering contractor, and will involve:

- Monitoring of background water levels at the site, either by using existing groundwater monitoring boreholes or by installing new wells.
- Identification of sensitive receptors, including offsite groundwater abstractions and sensitive structures (buildings, infrastructure, major utilities, etc.).
- Installation of groundwater monitoring wells and instrumentation to monitor ground movements, where appropriate, between the dewatering site and sensitive receptors.
- Setting trigger and action levels these monitoring points.
- Developing mitigation plans outlining how to control or mitigate against excessive drawdown, for example by recharging groundwater.

7 Summary and Further Work

This hydrological review has been prepared in accordance with the requirements for a Hydrological Review set out by the City of Toronto.

The current Master Plan features a range of land uses including a new public park, and a diverse mix of residential, retail, service, entertainment and employment uses and a range of building types. Fifteen towers are proposed on the site with heights ranging from 16 to 70 storeys. The current Master Plan includes 6 phases, each of which includes a basement ranging from 3 to 5 levels to a minimum basement slab elevation of +65.5 masl (approximately 20 mbgs).

Analysis of groundwater discharge has been carried out for each individual development phase (1 to 6) and collectively for phases 1 to 5. The initial analysis has been carried out using available data as discussed in this report and considers an open excavation (Table 7). Assumptions have been made regarding the benefit of the proposed secant pile perimeter wall and the associated reduction in groundwater discharge based on local experience (I.e. a minimum of 25% of discharge without the secant pile perimeter wall). These results are presented in

Table 8 and show groundwater discharge ranging from 13 to 18 m^3/day for individual development phases.

Based on the current design approach for the basements – secant pile perimeter walls – a Private Water Drainage System (PWDS) including drainage below the basement floor and perimeter drainage is suitable.

This report is based on previous ground investigation work carried out at the site and a review of historical records within and surrounding the site. Although ground investigations have been carried out within the site, ground investigation has yet to be completed specifically for the current proposed development. As a result, analysis in this report is based on available field and lab testing and does not include data obtained from slug tests, pumping tests, or long-term groundwater monitoring. Gaps in the available data for further design stages will be addressed by further site investigation and analysis. The results of these further investigations can be provided to the City of Toronto if required.

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Borehole Location Plan





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50	26	100/ 150mm	100/ 150mm	2-2-2-2		3-3-4-4	5-7-14-14	5-6-9-11		3-3-6-7	6-3-3-3	6-7-7-8	2-2-2-3		Blows pe 6 in. / 15 cm or RQD						
1	I	100	100	4	1	7	21	5	1	9	ი	4	4	z	Penetration		₩E				B
		0			(•	~		-	•	- • -		•	10 20	(blows		ē	ST .	PQ .		
Bentonite Seal →			6.40 m-			Screen			Sand	2.70 m-	Bentonite Seal +	3/4/2013	WL 0.68 m		rr test (Cu) △ Field Titvity (S) □ Lab Water content (%) Atterberg limits (%) N° Value s / 12 in -30 cm)		- WATER LEVEL	- SHELBY TUBE	- PQ size continue coring		

ND OF BOREHOLE RUN.3 1 IND OF BOREHOLE RUN.3 10.52 m bgs Borehole terminated at 10.52 m bgs Borehole at 7.0 as mgs Borehole at 7.0 as mgs Borehole terminated at 10.52 m bgs Borehole at 7.0 as mgs Borehole at 7.0 as mgs Borehole terminated at 10.52 m bgs Borehole at 7.0 as mgs Borehole at 7.0 as mgs Borehole at Cl denotes Gravel, and Al denotes Gravel, and Cl denotes Gravel, and Al denotes Gravel, an	GROUND SURFACE	DESCRIPTION OF SOIL AND BEDROCK	<u>y 28, 2013</u> DATE	der Meulen	ake Shore Blvd.	lez Canada I	
			E (FINISH):	CHECKED BY:	West, Toronto	Inc.	BOREHOLE No. ELEVATION:
ـــــــــــــــــــــــــــــــــــــ		State Type and	Janu	S.S			
0		Recovery	Jary 28	hahan			MV 4.95
ō		Moisture	8, 201	igian			m 11-13
e N		Content Blows per 6 in. / 15 cm or RQD	ß				
1	z	Penetration Index/SCR		κE		Ē	ω
	10 20 30 40 5	Shear test (Cu Sensitivity (S) Water con M _p M, Atterberg M ^m , N ^m Value (blows / 12 in		- WATE	ST - SHEL	GEND	Page: 2
	50 60 70 80 90	i) △ Fie Itent (%) limits (%) 30 cm)		ER LEVEL	BY TUBE		of 2
		5 č			Pillin	5	ORT
		· · ·					
GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/14/13							

REFERENCE No .:	081211						_		ENCLOSURE No.: 2				
		ELEVATION:	l i	81.4	6 m			μ					
CLIENT:	Mondelez Canada Inc.							Ē	GEND				
PROJECT:	Preliminary Geotechnica	I Investigation							PQ - PQ size continue coring				
LOCATION:	2150 Lake Shore Blvd. \	Vest, Toronto							ST - SHELBY TUBE RC - ROCK CORE				
DESCRIBED BY:	K. Vander Meulen	CHECKED BY:	S	. Shah	angia	an		₩ E	- WATER LEVEL				
DATE (START):	January 29, 2013	DATE (FINISH):	2	anuary	29,	2013							
Depth (bgs) Elevation (m)	Stratigraphy SOLESCR	D BEDROCK	State	Number	Recovery	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR	$ \begin{array}{l lllllllllllllllllllllllllllllllllll$				
eet Metres 81.46	GROUN	O SURFACE			%			z	10 20 30 40 50 60 70 80 90				
0.08 81.38	ASPHALT : 75 min ML-SILT, some cla brown, moist	y, very loose, light		\$S-1	100	20	6-2-2-3	4	• • • • • • • • • • • • • • • • • • •	100000			
	CL-SILTY CLAY, t plasticity, grey, mo Gr : 0%, Sa : 4%, t	ace sand, stiff, low ist Si : 81%, Cl : 15%		\$S-2	62	20	3-5-6-8	1					
<u> </u>			 0	ې د د	100	17	2-2-6-8	œ					
<u></u>				\$S-4	100	17	3-5-8-8	13	•				
			 	ў ъ	100	16	4-5-8-9	13	•				
	ML-SILT, trace cla moist	y, compact, grey,	J 🖂	ő ő	100	17	4-6-7-9	13	•				
4.88 76.58	CL-SILTY CLAY, t stiff, plastic, grey, i	ace sand and gravel, noist	 0	\$S-7	62	15	2-4-6-6	10	8				
_+_L_+_L_ 	soft, very moist to	vet	 	°S'-&	62	24	3-1-3-2	4	0				
6.86 74.60	SHALE (GEORGI/ FORMATION), hig weathered (inferre	N BAY hly to completely 1). grey, very moist to	- L><	9-Si	75	σ	3-11-44-67	55	O Bertonite Seal				
	SHALE (GEORGI/ FORMATION), wit imestone siltstone to thinly laminated 0.3 m highly fractures) a vertical fractures) a 25.4 mm clay sear	NN BAY 1 interbedded , fissile, thinly-bedded grey red rock (horizontal & t 6.89 m depth 1 at 7.16 m depth	 	UN-1	70	I	o	I					
	50 mm vertical fract 50 mm fracture wit 50 mm vertical fract 76 mm highly fract 7.77 m depth	ture at 7.32 m depth h clay at 7.37 m depth ture at 7.52 m depth ture at 7.52 m depth	꼬	UN-2	90	1	45	1					
	ENU OF SC Borehole Borehole '		, , , , , , , , , , , , , , , ,	····		25.4 mm lir	et Metres 81.46 G 100 mm frac m depth 13 mm clay	Depth (bgs) Elevation (m) Stratigraphy	DATE (START): <u>January 29, 2013</u>	SCRIBED BY: K. Vander Meuler	COJECT: Preliminary Geote	CLIENT: Mondelez Canada	
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vation : 81.46 m) Depth (m) Elev. (m) 9.93 71.53	terminated at 15.34 m bgs dry to 6.9 m bgs otes below ground surface and Ci denotes Gravel, nd Ciay respectively nd Ciay respectively					estone 9.23 m depth	ROUND SURFACE tured rock with clay at 8.01 seam at 9.04 m depth	L AND BEDROCK	DATE (FINISH):	CHECKED BY:	chnical Investigation Blvd. West. Toronto	Inc.	BOREHOLE No.: ELEVATION:
		RUN-6 100 58	I	RUN-5 100 64	RUN4 100 - 85	RUN-3 100 86	%	State Type and Number Recovery Moisture Content or 5 0 00 Rog cr	January 29, 2013	S. Shahangian			MW2-13 81.46 m
			Sand	112.50 m- Bentonite Grout + 13.10 m-	I		N 10 20 30 40 50 60 70 80 90	Per I of Shear test (C), / tratta SC Sensitiv(S) □ Lab / tratta SC Sensitiv(S) □ Lab / C Water content (%) Pended W, W, Attractoreg limits (%) (blows / 12 in-30 cm)		I RC - ROCK CORE	 PQ - PQ size continue coring ST - SHELBY TUBE 	LEGEND	BOREHOLE REPORT
	++WELL 081211-INSCRA.(PJ INSPEC_SOL GD	F 3/14/13	++++++++++++++++++++++++++++++++++++++			Feet Met	Depth (bgs)	DATE	DESCE	PROJE	CLIEN	
DIL LOG WITH GRAPH	++WELL 081211-INSCRAC - 6.86 77.97 FORMATION), FORMATION), FORMATION), Weathered (infer GRAP FORMATION), SHALE (GEOR OR PARAMATION), FORMATION), FORMATION), FORMATION), FORMATION), FORMATION), FORMATION, FO	PJ INSPEC_SOL.GD	r 3/14.13				Feet Metres 84.83 GR0	Depth (bgs) Elevation (m) Stratigraphy	DATE (START): January 31, 2013	DESCRIBED BY: K. Vander Meulen	PROJECT: Preliminary Geotechn LOCATION: 2150 Lake Shore Blyc	CLIENT: Mondelez Canada Inc	
Hinty-bedded to thinky laminated, grey Hinty-bedded to thin	HALE (GEORGIAN BAY FORMATION), highly to completely roture (inferred), with clay inclusion, grey FORMATION), with clay inclusion, grey FORMATION), with interbedded		r 3/14.13		2.13 82.70 trace sand, blackgrey, brick fragments CL-SILTY CLAY, soft, low plasticity, brown, moist		Feet Metres 84.83 GROUND SURFACE	Depth (bgs) Elevation (m) Stratigraphy SOLE SCRIPTION BEDROOF CK State	DATE (START): <u>January 31, 2013</u> DATE (FINISH):	DESCRIBED BY: K. Vander Meulen CHECKED BY:	PROJECT: Preliminary Geotechnical Investigation	CLIENT: Mondelez Canada Inc.	BOREHOLE No.: ELEVATION:
Image: Second	+WELL GEORGIAN BAY FORMATION, highly to completely weathered (intered), with clay inclusion, grey FORMATION), with interbedded FORMATION), with interbedded RUN-1 90 38	PJ INSPEC_SOLGD	r 3/14/13 		2.13 82.70 trace sand, black/grey, brick fragments CL-SILTY CLAY, soft, low plasticity, brown, moist SS-4 100 20 2-1-3-	SS-2 100 17 5-5-5-	Feet Metres 84.83 GROUND SURFACE % - 0.15 84.68 50 TOPSOIL 150 mm - - 0.15 84.68 50 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	Depth (bgs) Elevation (m) Stratigraphy SUL AND BEDROOF State Type and Number Recovery Moisture Content Or 5 cn Recovery	DATE (START): <u>January 31, 2013</u> DATE (FINISH): <u>January 31, 2013</u>	DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian	PROJECT: Preliminary Geotechnical Investigation	CLIENT: Mondelez Canada Inc.	BOREHOLE No.: MW3-13 ELEVATION: 84.83 m

SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/14/13

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				74.22		84.83	Elevation (m)	ART):	ED BY:	-				CENO
				,,,,,,,,,,,,	,,,,,,,,,,,,,,,,,,,,,,,		Stratigraphy	Janu	K.V	215	Prel	Mon	P)
	(Surrace elevation Date Depth 3/4/2013 2.90	 Borehole termi Borehole dry ui 'bgs' denotes b Ground Water Me 	END OF BOREHO	80 mm fractured rc	80 mm highly fract 7.98 m depth 80 mm of fractured horizontal fracture 50 mm fractured rc	GROUN	DESCR SOIL ANI	Jary 31, 2013	ander Meulen	0 Lake Shore Blvd. V	iminary Geotechnica	delez Canada Inc.		081211
	n : 84.83 m) (m) Elev. (m) 81.93	nated at 10.61 m bgs pon completion ielow ground surface <u>asurements</u> :	Ē	ock at 10.14 m depth	ured rock with clay at I rock ıck	D SURFACE	IPTION OF D BEDROCK	DATE (FINISH)	CHECKED BY:	Nest, Toronto	I Investigation		BOREHOLE N	
					2		State Type and	Ja	s					
					Ž ω		Number	nuary	Shaha				84.8	
					100	%	Recovery	31.2	angia				3 m	
					1		Moisture Content	2013	5				- 1 3	
					76		Blows per 6 in. / 15 cm or RQD							
					1	z	Penetration Index/SCR		ME			Ē	ω	
						10	(blo● ^{,™} , ™ _Os he		ð	RC	PQ	GEN	_ A	ENC
						20 30	ar tes sitiviti Wate Atter "N" V		-	י . מ ה	ά	D		LOS
			-		B	40	st (Cu berg 2 in		VATE		Qsi		i Ō	L R
				-	entor	50 60) limits		RL	C BY J	ze co		F 🗖	No.:
			-	10.61	ite s	70 8	n) (%)		EVEL		ontinu		ੂ ਨ	Ĩ
				3	eal	00 90					le co		⊳ ₩	
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			<u> </u>		+		5.18 79.02		┶┶┶				L 0.91 83.29	- 0.15 84.05	Feet Metres 84.20	Depth (bgs) Elevation (m)	DATE (START):	DESCRIBED BY:	LOCATION:	PROJECT:	CI IENT:		REFERENCE NO
		,,,,,,,,,,,				,,,,,,,,,,,,,,,,,				\square	$\langle \rangle \rangle$					Stratigraphy	Fet	K	215	Pre	M		ı.
 Borehole termin Borehole dry to 	END OF BOREHO	13 mm highly fractu depth	50 mm vertical frac 13 mm horizontal a 6.89 m depth	at 6.23 m depth 13 mm clay scam ¢ 25 mm highly fract	13 mm horizontal a 5.84 m depth 40 mm horizontal fi	FORMATION), with Imestone, siltstone to thinly laminated, 100 mm section of depth		SHALE (GEORGIA FORMATION), higi weathered (inferred grey		Gr : 0%, Sa : 2%, S	CL-SILTY CLAY, tr plasticity, brown, m	very moist to wet, s oxidized	ML-SILT, trace clay moist	ASPHALT : 125 mi SW-GW SAND & C compact, brown, m	GROUN	DESCR SOIL AND	oruary 1, 2013	Vander Meulen	50 Lake Shore Blvd. V	liminary Geotechnica	ndelez Canada Inc	e	117100
nates at 8.23 m bgs 5.2 m bgs	E	ured rock at 6.91 m	ture at 6.4 m depth ind vertical fracture at	at 6.33 m depth Jred rock at 6.36 m	nd vertical fracture acture with clay infill	n interbedded , fissile, thinly-bedded grey limestone at 5.82 m	NIBAY	N BAY nly to completely 1), with clay inclusion,		si : 69%, CI : 29%	oist	ilightly dilatant, slightly	r, loose, dark brown,	n SRAVEL (FILL), oist, cobbles	O SURFACE	D BEDROCK	DATE (FINISH):	CHECKED BY:	Vest, Toronto	I Investigation		BOREHOLE No ELEVATION:	
		RUN		RUN		RUN			ss-	10	≥ss-	Ss-	ss-	-ss ss		State Type and	Feb	S.S					
		-3 10		- <u>2</u> 8		-1 10			5 10		4 8	3 10	8	~ ~	%	Recovery	uary (hahan				MV 4.20	
		0		1		0 I	α	, 10 , 10	0 31		2 23	0 21	22	4		Moisture	, 2013	gian				V4-1 3	
		30		45		80	13-14-25/ 75mm	24-15-25-30	3-4-5-7		5-5-7-8	3-4-4-5	4-4-5-4	10-11-11-9		Blows per 6 in. / 15 cm or RQD							
		I		I		1	001	40	Q		12	œ	9	22	z	Penetration Index/SCR		K E			-	B	
		8		Bentonite Seal →			5.20 m		0 Screen			→ O → O → →	C Bentonite Seal→ WL 1.44 m−	0 0.30 m -	10 20 30 40 50 60 70 80 90	Shear test (Cu) ∆ Field Sensitivitys (Cu) ⊥ Lab Water content (%) w Water content (%) w Water content (%) w Water content (%)		- WATER LEVEL	ST - SHELBY TUBE	PQ - PQ size continue coring	CEND	Page: <u>1</u> of <u>2</u>	ENCLOSURE NO.: 4

		Feet Metres 84.20 GROU	Depth (bgs) Elevation (m) Stratigraphy Stratigraphy Support Elevation Elevation Elevation Elevation Elevation Elevation	DATE (START): February 1, 2013	DESCRIBED BY: K. Vander Meulen	LOCATION: 2150 Lake Shore Blvd	PROJECT: Preliminary Geotechni	CLIENT: Mondelez Canada Inc		REFERENCE No.: 081211
4 82.76	l CI denotes Gravel, lay respectively l <u>easurements</u> : on : 84.20 m) h (m) Elev (m)	ND SURFACE	ND BEDROCK	DATE (FINISH):	CHECKED BY:	. West, Toronto	cal Investigation		BOREHOLE No.: ELEVATION:	-
			Type and	Febr	S. S				φ	
		%	Recovery	uary 1	nahang				MW	
			Moisture Content	2013	jian				n 14-13	
			Blows per 6 in. / 15 cm or RQD							
		z	Penetration Index/SCR		×			Ē	ω	
		10 20 30 40 50 60 70 80 90	Shear test (Cu) △ Field Sensitivity (%) □ Lab Water content (%) w_t. A techerg limits (%) w_t. V techerg limits (%) (blows / 12 in-30 cm)		- WATER LEVEL	RC - ROCK CORE	PQ - PQ size continue coring	GEND	Page: 2 of 2	ENCLOSURE No.: 4
SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/14.13		Feet Mt	- Depth (bgs)	DATE	DESC	LOCA	PROJ	CLIEN		

REFERENCE No.:	081211							ENCLOSU	JRE No.: 5
		BOREHOLE No.:	85.0	MW5)4 m	- 1 3		BC	Page	
CLIENT: Monde	lez Canada Inc.						E	END	
PROJECT: Prelimi	nary Geotechnical Inv	estigation						- PC	Q size continue coring
LOCATION: 2150 L	ake Shore Blvd. West	Toronto						RC - RC	HELBY TUBE OCK CORE
DESCRIBED BY: K. Van	der Meulen	CHECKED BY:	S. Shah	nangia		l	₩E.	- W.	ATER LEVEL
DATE (START): Februa	iry 4, 2013	DATE (FINISH):	Februar	y 4, 2	013				
Depth (bgs) Elevation (m) Stratigraphy	DESCRIPT SOIL AND B		Type and Number	Recovery	Moisture Content	Blows per 6 in. / 15 cm or RQD	Index/SCR	Shear test Sensitivity O Water M ^a , W, Atterb	(Cu) △ Field /(S) □ Lab r content (%) r content (%) suer 2 in-30 cm)
et Metres 85.04	GROUND SU	JRFACE		%			z	10 20 30	40 50 60 70 80 90
0.10 84.94	OPSOIL : 100 mm /L-SILT, trace clay, lo widized	ose, brown, moist,	SS-1	50	18	3-3-3-5	თ	0	0.30 m —
			SS-2	50	18	3-2-3-4	UT	•	
			SS-3	50	15	2-3-2-4	σ	0	
	ompact, highly oxidize	ă	SS-4	62	16	0-12-15-23	27	•	
	Irey		SS-5	100	14	8-12-13-13	25	•	
	2L-SILTY CLAY, stiff, p	olastic, grey, moist	SS-6	100	22	4-5-6-6	±	-	
	irm, plastic, very moist		SS-7	100	27	2-3-3-3	6	0	
	ioft, very moist to wet 3r : 1%, Sa : 7%, Si : 4	5%, Cl : 47%	SS-8	100	28	2-1-2-3	ω		■ Bentonite Seal
6.40 78.64	SHALE (GEORGIAN B CORMATION), highly the reathered (inferred), with the second	AY o completely vith clay inclusion.	SS-9	82	13	20-8-17-23/ 75mm	25	•	
	10 mm of highly fractur SHALE (GEORGIAN B CORMATION), with int ORMATION, siltstone, fis- o thinly laminated, gre 00 mm of highly fractur 00 cmm of highly fractur	ed rock AY erbedded sile, thinly-bedded sile, thinly-bedded y rred rock at 7.37	RUN-1	75	I	o	1		
	5 mm clay seam at 8. 3 mm clay seam at 8. 5 mm clay seam at 8. 5 mm clay seam at 8.	26 m depth 31 m depth 59 m depth 72 m depth	RUN-2	100	1	74	I		

				12						1	
15.39		└╶╴┨┑╸╴┨┑╸╴┨┱╸╴┨	<u></u>	et Metres	Depth (bgs)	DATE (ST.	DESCRIB	LOCATION	PROJECT		REFEREN
69.65				85.04	Elevation (m)	ART):	ED BY:	-			CE No.
*************	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Stratigraphy	Febr	K. S	2150	Mon)
50 mm vertical frac	50 mm fracture at .	25 mm vertical frac	25 mm highly horiz fractures at 9.33 m 25 mm vertical frac 25 mm clay seam a 25 mm clay seam a 25 mm clay seam a vertical fracture at	GROUNI 80 mm vertical frac	DESCR SOIL AND	uary 4, 2013	ander Meulen) Lake Shore Blvd. V	delez Canada Inc.		081211
ture at 14.21 m depth	3.75 m depth	ture at 10.9 m depth	ontal and vertical depth ture at 9.76 m depth at 10.06 m depth to 57 m depth to 57 m depth	D SURFACE ture at 8.84 m depth) BEDROCK	DATE (FINISH)	CHECKED BY:	Vest, Toronto	Investigation	ELEVATION:	
	_	_			State						8
RUN-6	RUN-5	RUN-4	RUN-3		Type and Number	Februa	S. Sha			85.	
100	100	96	100	%	Recovery	ry 4,	hangi			04 m	
I	I	I	I		Moisture Content	2013	an				5
77	86	06	70		Blows per 6 in. / 15 cm or RQD						
I	I	I	I	z	Penetration Index/SCR		K 🗄] [Ē	σ	1
				- 10	(blo ^v Tosshe		RC	ST	GEN	R R	ENC
Bentonite Seal	Screen	WL 11.53 m 3/4/2013 11.60 m Sand			ear test (Cu) △ Field Institvity (S) □ Lab Water content (%) (, Attroberg limits (%) (, "Vr Value ows / 12 in30 cm)		- ROCK CORE - WATER LEVEL	- SHELBY TUBE		Page: <u>2</u> of <u>2</u>	CLOSURE No.: 5
	50 mm vertical fracture at 14.21 m depth RUN-6 100 77 Bentonite Seal Bentonite Seal 15.40 m-	50 mm fracture at 13.75 m depth RUN-5 100 86 50 mm vertical fracture at 14.21 m depth RUN-6 100 77 50 mm vertical fracture at 14.21 m depth RUN-6 100 77 Bentonite Seal +- 113.70 m 113.70 m 113.70 m 113.70 m 113.70 m 113.70 m 113.70 m 113.70 m 113.70 m 113.70 m 113.70 m 113.70 m 113.70 m	25 mm vertical fracture at 10.9 m depth RUN-4 96 90 WL 11.53 m	25 mm highly horizontal and vertical fractures at 9.35 m depth RUN-3 100	S5.04 GROUND SURFACE % N 10 20 30 40 50 60 70 60 90 80 mm vertical fracture at 0.37 m depth 25 mm lay seam at 10.06 m depth RUN-3 100 <	BEevalue Stratigraphy Str	RTY: Energy A. 2013 DATE (FINISH): February A. 2013 Statigraphy DESCRIPTION OF SOLA ND BEDROCK Site and Site and Solution subprocessing fractures at 9.33 m depth Site and Solution subprocessing fractures at 9.33 m depth N R Moistures fractures at 0.57 m depth N 10.20.9.0.40.50.60.70.9.9.9 25 mm vertical fracture at 10.57 m depth RUN-4 Site and Solution fracture at 13.75 m depth RUN-4 Site and Solution fracture at 13.75 m depth RUN-5 Site and Solution fracture at 14.21 m depth Site and RUN-5 Site and Solution fracture at 13.75 m depth Site and Solution fracture at 14.21 m depth Site and RUN-5 Site and Solution fracture at 14.21 m depth Site and Solution fractures at 3.31 m depth Site and Solution fractures at 3.	DBY: K. Vander Meulen CHECKED BY: S. Shahangan W. R PROCKORE R1): February 4. 2013 DATE (FINISH): February 4. 2013 WITER LEVEL R2): Solut And DEDOCK Baye model GROUND SURFACE GROUND SURFACE Ground and workical 25 mm kighty horizonal and vortical 15 mm kighty horizonal and vortical 70 - Ground and workical 25 mm kighty horizonal and vortical 70 - N 10 an output with the facture at 0.5 m depth 25 mm vortical facture at 10.5 m depth RUN-3 100 - 70 - Monor (12, a) on m 25 mm vortical facture at 10.5 m depth RUN-3 100 - 70 - Monor (12, a) on m 25 mm vortical facture at 10.5 m depth RUN-4 96 - 70 - Monor (12, a) on m 25 mm vortical facture at 13.75 m depth RUN-4 96 - 90 - Monor (11, a) m - 30 mm vortical facture at 13.75 m depth RUN-5 100 - 90 - - - - - - - - - - - -	2150 Lake Shore Bind, West, Toronto Sinahangan Image: Sinahangan	Mondeler Clanada Inc. LEEUE Pelinnary Geolechnical Investigation CHECKED BY: S. Shahangan S. Stratigraphy Pelinnary Geolechnical Investigation CHECKED BY: S. Shahangan S. SHLEW TUE BY: V. Vander Maulan CHECKED BY: S. Shahangan S. SHLEW TUE BY: SOLL AND BEDROCK S. Shahangan W. TERLEY IVE Secontine coming GROUND SUBFACE S. Shahangan W. TERLEY IVE W. WEEKING(S) W. WEEKING(S) 25: GROUND SUBFACE S. Shahangan W. WEEKING(S) W. WEEKING(S) 26: Sold and variod Sold variod Sold variod Sold variod 27: Sold variod Sold variod Sold variod Sold variod 27: Sold variod Sold variod Sold variod Sold variod 26: Sold variod Sold variod Sold variod Sold variod Sold variod 27: Sold variod Sold variod Sold variod Sold variod Sold variod Sold variod 27: Sold variod Sold variod Sold variod Sold variod Sold variod variod Sold variod	BORKHOLL No.: Imms-13 BORHOLL No.: BORKHOLL No.: Imms-13 Bork BORKHOLL No.: Monder: Canada In: Fag: 2 d.2 d.

EICH Mondise: Description: Mondise: Description: Mondise: Description: Page: 1 Page: L Page: Page	SOIL LOG WITH GRAPH+WELL 081	1211-INSCRA.GPJ INSPEC	C_SOL.GDT 3/12/13							<u> </u>						
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O.: MWE-13 EGEND Page: 1 r Page:	IN BAY interbedded grey ured rock with clay at ured rock at 8.59 m	NN BAY hly to completely d), with clay inclusion,	tic, very moist	tiff, low plasticity, grey,	-	v. compact. grev.	un, piasuc, grey, moisc		FILL), trace clay, st, oxidized id. compact. brown.	DSURFACE	D BEDROCK	DATE (FINISH	CHECKED BY	I Investigation		BOREHOLE N ELEVATION:
MWG-13 EOREHOLE REPORT B6.20 m Page: 1 of 2 Page: 1 of 2 Page: 1 of 2 <td>7</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>State</td> <td></td> <td>0</td> <td></td> <td></td> <td>0 .:</td>	7										State		0			0 .:
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Image:	70	100	92	92	100	100	100	62	82	%	Recovery	ry 5, 2	hangia			20 m
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Page: <u>1</u> of <u>2</u> Page: <u>1</u> of <u>2</u> Page: <u>1</u> of <u>2</u> PA - PQ size continue cori Sensitivity (S) La Autoreorg limits (S) Autoreorg linits (S) Autoreorg limits (S) Autoreorg linits (S) A	I	σ	ი <u>კ</u>	9 26	1	12	9	13	8	z	Penetration Index/SCR		∀ ⊟	\square	Ē	ω
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						Date Depth (m) Elev. (m) 3/4/2013 0.45 87.75	 Borehole terminates at 10.36 m bgs Borehole dry to 7.3 m bgs 'bgs' denotes below ground surface <u>Ground Water Measurements</u>: (Surface elevation : 68.20 m) 	END OF BOREHOLE	with clay infill at 9.65 m depth 25 mm fracture with clay at 9.86 m depth 100 mm highly fractured rock at 9.94 m depth 152 mm vertical fracture at 10.06 m	101 mm fractured rock at 9.23 m depth with clay infill at 9.5 m depth	GROUND SURFACE	DESCRIPTION OF SOIL AND BEDROCK	DATE (FINISH)	Vander Meulen CHECKED BY:	50 Lake Shore Blvd. West, Toronto	liminary Geotechnical Investigation	ndelez Canada Inc.	BOREHOLE No ELEVATION:	081211
										RUN-2 100 50	%	State Type and Number Recovery Moisture Content Or 75 ni ss QD	February 5, 2013	S. Shahangian				.: MW6-13 86.20 m	
									10.36 m	!	N 10 20 30 40 50 60 70 80 90	$\begin{array}{c c} rinc & Shear test\left(Cu\right) & \bigtriangleup & Field \\ Sensitivity\left(S\right) & Curr\left(W_{S}\right) & Lab \\ etx(S_{S}) & Water content\left(W_{S}\right) & Lab \\ W_{S}, W_{H}, deteberg limits\left(W_{S}\right) & Urr\left(S\right) \\ W_{S}, W_{H}, Urr\left(S_{S}\right) & Urr\left(S\right) \\ Ubows / U_{U}, Un, O cm\right) \end{array}$		- WATER LEVEL	ST - SHELBY TUBE	PQ - PQ size continue coring	LEGEND	BOREHOLE REPORT	ENCLOSURE No.: 6
SOIL LOG WITH G	RAPH+WELL 091211-INSCI 		C_SOL GDT 3/1	213	-+++++-	·					Feet Metres 86.72	Depth (bgs) Elevation (m) Stratigraphy	DATE (START): <u>Februar</u>	DESCRIBED BY: K. Vande	LOCATION: 2150 Lai	PROJECT: Prelimins	CLIENT: Mondele		REFERENCE No.:
50	FARLE (GEORGIAN BAY FORMATION), highly to completely Farle FARLE (GEORGIAN BAY FARLE (GEORGIAN FARLE (GEORGIAN FARLE (GEORGIAN FARLE (GEORGIAN FARLE	A GPJ INSPE			-++++		2.50 84.13 Sandy CL-SILTY CLAY, stiff to very stiff, low plasticity, grey, moist		brown, moist	- 0.61 86.04 TOPSOLL : 75 mm - SM-SILTY SAND (FILL), trace day, trace gravel, brown, moist, dense	Feet Metres 86.72 GROUND SURFACE	Depth (bgs) Elevation (m) Stratigraphy SOIL AND BEDROOCK	DATE (START): <u>February 6, 2013</u> DATE (FINISH):	DESCRIBED BY: K. Vander Meulen CHECKED BY:	LOCATION: 2150 Lake Shore Blvd. West, Toronto	PROJECT: Preliminary Geotechnical Investigation	CLIENT: Mondelez Canada Inc.	BOREHOLE No.: ELEVATION:	REFERENCE No.: 081211
G G	APPH-Well 069 79.969 SHALE (GEORGIAN BAY FORNATION, highly to completely Weathered (inferred) gray SHALE (GEORGIAN BAY FORNATION, with interbedded inferstore, sitstone, fissile, think-bedded to think lamitade, soft gray State bottore that and works of the soft for the soft of the s	AA GPJ INSPE		2:13			- 2.59 84.13 Sandy CL-SILTY CLAY, stiff to very stiff, low plasticity, grey, moist		brown, moist	- 0.08 88.64 COPSCIL: 73 mm - SM-SILTY SAND (FILL), trace clay, trace - 0.61 86.11 Size track toown, moist, dense	Feet Metres 86.72 GROUND SURFACE	Depth (bgs) Elevation (m) Stratigraphy SOLES CRIPFTION SCRIPFTION OCCK F State Type and Number	UATE (START); <u>February 5, 2013</u> UATE (FINISH); <u>Februar</u>	DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shaht	LOCATION: 2150 Lake Shore Blvd. West, Toronto	PROJECT: Preliminary Geotechnical Investigation	CLIENT: Mondelez Canada Inc.	ELEVATION: <u>86.7</u>	REFERENCE No.: 081211
SOIL LOG	RAPH+WELL 081211-INSCI 7,32 79.40 SHALE (GEORGIAN BAY weathered (Inferred), grey SHALE (GEORGIAN BAY SHALE (GEORGIAN BAY Imestone, silts, think-bedded imestone, silts, think-bedded for think lamitated, soft, grey	A GPJ INSPE	C_SOLGDT 3/1	2:13		SS-5 100 15	- 2.59 84.13 Sandy CL-SILTY CLAY, stiff to very stiff, low plasticity, grey, moist	SS-3 100 16	brown, moist SS-2 100 16	- 0.08 86.94 TOPSOL: 75 mm - SM-SLITY SAND (FILL), trace day, trace - 0.61 86.11 Min <u>Function</u> moist, dense	Feet Metres 86.72 GROUND SURFACE %	Depth (bgs) Elevation (m) Stratigraphy SOIL SC SOIL SC	UATE (START): <u>February 5, 2013</u> UATE (FINISH); <u>February 5, 2013</u>	DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian	LOCATION: 2150 Lake Shore Blvd. West, Toronto	PROJECT: Preliminary Geotechnical Investigation	CLIENT: Mondelez Canada Inc.	BOREHOLE No.: MW7-13 ELEVATION: 86.72 m	REFERENCE No.: 081211
Figure Figure Figure Figure Figure RUN-1 100 70 7.5 m depth 7.5 m depth 7.6 mm horizontal and vertical fracture at 8.33 m depth 8.33 m depth <t< td=""><td>RAPH - 6.86 73.36 SHALE (GEORGIAN BAY FORMATION), highly to completely SS-10 50 5 60/ 1211-1 - 7.32 79.40 weathered (inferred), grow SHALE (GEORGIAN BAY SS-10 50 5 125mm 1211-1 - - SHALE (GEORGIAN BAY SS-10 50 5 125mm 1211-1 - - SHALE (GEORGIAN BAY SS-10 50 5 125mm 125 mm - - SHALE (GEORGIAN BAY - - 125mm 125 mm - - - - - - 125mm 125 mm - - - - - - - - 125 mm - - - - - - - - - - 125mm 125 mm - - - - - - - - - - 125mm 125 mm - - - - - - - - - - 125mm 125 mm - - - - - - - - - 125 mm - <t< td=""><td>A GPJ INSPE</td><td>C_SOLGDT_3/1</td><td>213</td><td></td><td></td><td> 2.50 84.13 Sandy CL_SILTY CLAY, stiff to very stiff, low plasticity, grey, moist SS-4 100 15 5-8-10-1;</td><td> Ss.3 100 16 5.7.10.1:</td><td></td><td>- 0.08 86.44 TOPSOIL. :75 mm - SMSULTY SAND (FILL), trace day, trace gravel, brown, moist, dense - 0.61 86.11 June Torrector comment</td><td>Feet Metres 86.72 GROUND SURFACE %</td><td>Depth (bgs) Elevation (m) Stratigraphy SOIL AND BEDROOR SOIL AND BEDROOR ROOCK State Type and Number Recovery Moisture Content Recovery Room Room Room Room Room Room Room Roo</td><td>DATE (START): <u>FEDRUARY 6, ZUT3</u> DATE (FINISH): <u>FEDRUARY 6, ZUT3</u></td><td>DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian</td><td>LOCATION: 2150 Lake Shore Blvd. West, Toronto</td><td>PROJECT: Preliminary Geotechnical Investigation</td><td>CLIENT: Mondelez Canada Inc.</td><td>BOREHOLE No.: MW7-13 ELEVATION: 86.72 m</td><td>REFERENCE No.: 081211</td></t<></td></t<>	RAPH - 6.86 73.36 SHALE (GEORGIAN BAY FORMATION), highly to completely SS-10 50 5 60/ 1211-1 - 7.32 79.40 weathered (inferred), grow SHALE (GEORGIAN BAY SS-10 50 5 125mm 1211-1 - - SHALE (GEORGIAN BAY SS-10 50 5 125mm 1211-1 - - SHALE (GEORGIAN BAY SS-10 50 5 125mm 125 mm - - SHALE (GEORGIAN BAY - - 125mm 125 mm - - - - - - 125mm 125 mm - - - - - - - - 125 mm - - - - - - - - - - 125mm 125 mm - - - - - - - - - - 125mm 125 mm - - - - - - - - - - 125mm 125 mm - - - - - - - - - 125 mm - <t< td=""><td>A GPJ INSPE</td><td>C_SOLGDT_3/1</td><td>213</td><td></td><td></td><td> 2.50 84.13 Sandy CL_SILTY CLAY, stiff to very stiff, low plasticity, grey, moist SS-4 100 15 5-8-10-1;</td><td> Ss.3 100 16 5.7.10.1:</td><td></td><td>- 0.08 86.44 TOPSOIL. :75 mm - SMSULTY SAND (FILL), trace day, trace gravel, brown, moist, dense - 0.61 86.11 June Torrector comment</td><td>Feet Metres 86.72 GROUND SURFACE %</td><td>Depth (bgs) Elevation (m) Stratigraphy SOIL AND BEDROOR SOIL AND BEDROOR ROOCK State Type and Number Recovery Moisture Content Recovery Room Room Room Room Room Room Room Roo</td><td>DATE (START): <u>FEDRUARY 6, ZUT3</u> DATE (FINISH): <u>FEDRUARY 6, ZUT3</u></td><td>DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian</td><td>LOCATION: 2150 Lake Shore Blvd. West, Toronto</td><td>PROJECT: Preliminary Geotechnical Investigation</td><td>CLIENT: Mondelez Canada Inc.</td><td>BOREHOLE No.: MW7-13 ELEVATION: 86.72 m</td><td>REFERENCE No.: 081211</td></t<>	A GPJ INSPE	C_SOLGDT_3/1	213			2.50 84.13 Sandy CL_SILTY CLAY, stiff to very stiff, low plasticity, grey, moist SS-4 100 15 5-8-10-1;	Ss.3 100 16 5.7.10.1:		- 0.08 86.44 TOPSOIL. :75 mm - SMSULTY SAND (FILL), trace day, trace gravel, brown, moist, dense - 0.61 86.11 June Torrector comment	Feet Metres 86.72 GROUND SURFACE %	Depth (bgs) Elevation (m) Stratigraphy SOIL AND BEDROOR SOIL AND BEDROOR ROOCK State Type and Number Recovery Moisture Content Recovery Room Room Room Room Room Room Room Roo	DATE (START): <u>FEDRUARY 6, ZUT3</u> DATE (FINISH): <u>FEDRUARY 6, ZUT3</u>	DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian	LOCATION: 2150 Lake Shore Blvd. West, Toronto	PROJECT: Preliminary Geotechnical Investigation	CLIENT: Mondelez Canada Inc.	BOREHOLE No.: MW7-13 ELEVATION: 86.72 m	REFERENCE No.: 081211
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SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ_INSPEC_SOL.GDT_3/12/13

		Feet Metres 86.72	- Depth (bgs) Elevation (m) Stratigraphy	DATE (START): <u>Fe</u> l	DESCRIBED BY: K.	LOCATION: 215	CLIENT: Mo PROJECT: Pre		REFERENCE No.:
	clay lens at 8.99 m 50 mm highly fractu depth 25 mm horizontal a 25 mm horizontal 25 mm horizontal END OF BOREHO Borehole dry to 9 'bgs' denotes b Ground Water Me (Surface elevation (Surface elevation 3/4/2013 2.52	B 72 m denth	DESCRI SOIL AND	bruary 6, 2013	Vander Meulen	50 Lake Shore Blvd. V	indelez Canada Inc.	e	081211
	depth nd vertical fracture at LE Tantes at 10.52 m bgs 7.3 m depth elow ground surface asurements : 1 : 86.72 m) Helev. (m) 84.20	O SURFACE) BEDROCK	DATE (FINISH)	CHECKED BY:	Vest, Toronto	Investigation	BOREHOLE NO	
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Image Image Image Image Image Image Image Image Image Image Image Image Image Image Image Image Image Image Image	10.52 m-	10 20 30 40 50 60 70 80 90	K Shear test (Cu) △ Field Sensitivity (Cu) △ Lab (Cu, Water content (%) Water content (%) Water content (%) Water content (%)		- WATER LEVEL	ST - SHELBY TUBE	EGEND	Page: <u>2</u> of <u>2</u>	ENCLOSURE No.: 7

			5.34 78.64 5.60 78.38		3.81 80.17			╵╷╵╷╵		0.15 83.83	Feet Metres 83.98	Depth (bgs)	DATE (START):	DESCRIBED BY: K	LOCATION: 2		
61 cm of horizonta 7.77 m depth 50 mm vertical fra 25 mm of clay at 8	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	SHALE (GEORG) FORMATION), wit limestone, siltstone to thinly laminated	SHALE (GEORGI) FORMATION), high		trace sand and gra		CL-SILTY CLAY, s moist to wet	trace sand, wet, di	ML-SILT, trace cla moist to wet, dilata	SW-GW SAND AN loose, brown, mois	GROUN	SULLIGICAL	ebruary 8, 2013	. Vander Meulen	150 Lake Shore Blvd. V	fondelez Canada Inc.	
il and vertical rock at cture at 8.03 m depth i.23 m depth		AN BAY h interbedded e, fissile, thinly-bedded , grey	AN BAY phly to completely d), grev		avel, soft, plastic		soft, plastic, grey, very	latant, very loose	iy, loose, grey, very ant	un GRAVEL (FILL), st, trace cobbles	D SURFACE	D BEDROCK	DATE (FINISH):	CHECKED BY:	west, Toronto		BOREHOLE No ELEVATION:
RU	RU	RU		ss	ss	ss	ss	≥ ss	≫ ss	ss		State Type and	Fet	S.			
zω	Z -2	Z -1	8	-7	- -	ů,	4	ώ	Ň	4		Number	oruary	Shaha			83.9a
95	100	75		100	100	100	100	62	100	62	%	Recovery	8, 2	angia			8 m
1	1	I	1	17	27	29	26	23	23	5		Content	013				ά
8 0	96	75	59/15mm	2-2-4-5	2-1-3-4	2-1-2-3	2-2-1-3	2-1-2-4	2-2-3-4	22-6-3-3		Blows per 6 in. / 15 cm or RQD					
l.	I	1	100	6	4	ω	ω	ω	σı	9	z	Penetration Index/SCR		K E		Ĩ	D
				6	•	•	•	•	•		10 20	Shear Sensit Sensit M ^w _p W At		RC	ST	GEND	Pa
WL 7.64 m 3/4/2013 8.50 m 8.50 m 8.50 m					O Bentonite Seal →	0	0	0	0	0.30 m	0 30 40 50 60 70 80 90	rr test (Cu) △ Field tiwity (Si) □ Lab Mater content (%) Attlerberg limits (%) N ⁺ Valie § / 12 in-30 cm)		- ROCK CORE - WATER LEVEL	- PQ size continue coring - SHELBY TUBE		

JIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_S	SOL.GDT 3/12/13				_	· · · ·						
· · · · · · · · · · · · · · · · · · ·	<u></u>	→ ↓ → ↓ + ↓ + ↓ 3 90	╶╶┧╷╸╴┨╷╸╴┶╻┥╴╴┙	╶╀┚┶┰┚┯┸╍┯┸╍┯	Feet Metres	- Depth (bgs)	DATE (ST	DESCRIB	LOCATIO	PROJECT	CLIENT:	
		70.08			83.98	Elevation (m)	ART):	ED BY:	z			
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		*****		Stratigraphy	Feb	K.V	215(Preli	Mon	
Ground Water Meas (Surface elevation : Date Depth (m 3/4/2013 7.94	END OF BOREHOLE Borehole terminat Borehole dry to 5. bgs' denotes belo	76 mm vertical fractur			GROUND S	DESCRIP SOIL AND E	uary 8, 2013	ander Meulen) Lake Shore Blvd. We	iminary Geotechnical Ir	delez Canada Inc.	
u <u>rements</u> : 83.98 m)) Elev. (m) 76.04	tes at 13.90 m bgs 6 m depth 9 w ground surface	re at 13.62 m depth			SURFACE	BEDROCK	DATE (FINISH):	CHECKED BY:	st, Toronto	rvestigation		BOREHOLE No ELEVATION:
		RU	RU			State Type and	Feb	S. S				
				4		Number	oruary	Shaha				33.98
		00	00	00	%	Recovery	8, 20	ngiar				8 M8-
		1	1	1		Content	13	-				13
		100	100	95		Blows per 6 in. / 15 cm or RQD						
		I	I	I	z	Penetration Index/SCR		ĸE			Ē	ω
					10 20 30 4	Shear test () Sensitivity (Water c W ₆ W, Atterbe M ⁸ W [*] Valu (blows / 12 i		RC - RO	ST - SHE	PQ - PQ	GEND	Page
		13. 90	Bentonite Seal	Screen	0 50 60 70 80 90	Cu) △ Fie S) □ Lat sontent (%) rg limits (%) n30 cm)		CK CORE	ELBY TUBE	size continue cor		2 of 2
			Ŧ			° đ				ring		ORT

UIL LOG WITH GF	RAPH+WELL 0	81211-INSC	RA.GPJ INSPE	C_SOL.GDT 3/	12/13							F						
┦╵┤╵┧╵		L ₁ L L + . 6.	┵┎┵┶	<u>., ., .</u>	+-+-+ 4.5	<u></u>		⊥ ₊ -⊥ ₊ -⊥ ₊ 2.28	┸╅┸╅╉			et Metre	Depth (bgs)	DATE (S	DESCRIE	LOCATIC	CLIENT: PROJEC	
	77.04	77.58			79.87		81.24	82.15		83.22	84.34	\$ 84.44	Elevation (m)	FART):	ED BY:	ž	-	
,,,,,,,,,,,,,,													Stratigraphy	Janu	K.V	215(Mon	
Highly fractured with clay at 7.47 m dep 25 mm horizontal fracture at 7.97 m depth	SHALE (GEORGIAN BAY FORMATION), with interbedded limestone, siltstone, fissile, thinly-bedd to thinly laminated, grey	SHALE (GEORGIAN BAY FORMATION), highly to completely weathered (inferred), grey		firm, plastic, very moist to wet	CL-SILTY CLAY, stiff, low plasticity, gre moist Gr : 0%, Sa : 0%, Si : 70%, Cl : 30%	some clay	ML-SILT, trace clay, compact, brown, moist	CL-SILTY CLAY, soft, plastic, brown, moist	some clay, loose	ML-SILT, trace clay, compact, brown,	ASPHALT : 100 mm SP-SAND (FILL), compact, brown, moi	GROUND SURFACE	DESCRIPTION OF SOIL AND BEDROCK	iary 30, 2013 DATE (FINIS	ander Meulen CHECKED E) Lake Shore Blvd. West, Toronto	delez Canada Inc. minary Geotechnical Investigation	BOREHOLE
Ť	ŧ ä.	\sim	\sim	\sim	,÷	\sim	\sim		\sim		<u>ه</u> [State	SH):	3Y:			 0.:
RUN-2	RUN-1	SS-10	- SS-9	8-8	SS-7		SS-5	SS-4	SS-3	SS-2	SS-1		Type and Number	Janua	S. Sha			84
100	100	100	92	100	82	100	100	62	92	62	72	%	Recovery	ry 30,	hang			MW.
I	1	ω	30	20	22	23	20	23	21	14	7		Moisture Content	2013	lan			9-13
83	80	26-71-50/ 125mm	2-3-2-3	3-4-3-4	3-4-5-5	3-5-8-11	4-5-8-9	3-2-2-2	5-3-5-6	4-5-7-11	11-11-8-8		Blows per 6 in. / 15 cm or RQD					
I	I.	100	Сл	7	9	13	13	4	8	12	19	z	Penetration Index/SCR		k∎ E			ω
Bentonite Seal →			6.40 m-		Screen			O U.2.70 m7 WL 2.74 m7 3/4/2013	O Bentonite Seal →		0.30 m	10 20 30 40 50 60 70 80 90	Shear test (Cu) △ Field Sensitivity (S) □ Lab W ₁ +1, Atterberg limits (%) W ₁ +1, Atterberg limits (%) W ₁ +1, Atterberg limits (%)		- WATER LEVEL	ST - SHELBY TUBE	EGEND PQ - PQ size continue coring	Page: <u>1</u> of <u>2</u>

,L		Feet Metres 84.44	Depth (bgs) Elevation (m) Stratigraphy) 	DATE (START): January 30, 20	DESCRIBED BY: K. Vander Meu	OCATION: 2150 Lake Shc	PROJECT: Preliminary Ge	CLIENT: Mondelez Can	
	ay seam at 9.65 m depth ghly fractured rock at 9.87 m ay seam at 9.91 m depth magnitis ole dry to 7.4 m appth ole dry to 7.4 m appth ole dry to 7.4 m appth lenotes below ground surface , \$1 and Clay respectively trand Clay respectively trand Clay respectively and Clay respectively trand respecti	GROUND SURFACE	OESCRIPTION OF		13 DATE (FINISH):	len CHECKED BY:	re Blvd. West, Toronto	otechnical Investigation	ada Inc.	BOREHOLE No.
	RUN3 10 1	%	State Type and Number Recovery Moisture Content or 15 6 10 8 R Content R Content R Content	_	January 30, 2013	S. Shahangian				: MW9-13 84.44 m
	Image: state of the state o	N 10 20 30 40 50 60 70 80 90	Penetration Sensitivity (S) Water content (%) Water content (%) (blows / 12 in - 30 cm)	C Shear test (Cu) / Field		III RC - ROCK CORE ▼ - WATER LEVEL	ST - SHELBY TUBE	PO - PO size continue coring	I FGEND	BOREHOLE REPORT
TLO	G 32985-01.GPJ CRA CORP.GDT 21/5/04 1 TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT	- 0.5			DEPTH		CLIENT	PROJE	PROJE	
NOTES: MEASURING POINT ELEVATIONS MAY CHA		ML/CL - SILTY CLAY, firm to stiff, mottled gray/oliv	ASPHALT SAND and GRAVEL (FILL), compact to dense, coa dry		DEPTH m BGS STRATIGRAPHIC DESCRIPTIO			PROJECT NUMBER: 32985-01	PROJECT NAME: UST CLOSURE SERVICES	STRA-
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION	Provide the saturated at 1.52m BCS Init saturated at	— 0.5 MUCL - SILTY CLAY, firm to stiff, mottled gray/olive, moist 0.	ASPHALT SAND and GRAVEL (FILL), compact to dense, coarse grained, well graded, brown, dry		DEPTH m BGS STRATIGRAPHIC DESCRIPTION & REMARKS		CLIENT: KRAFT CANADA INC.	PROJECT NUMBER: 32985-01 DATE COMPLETED: 22 Janua	PROJECT NAME: UST CLOSURE SERVICES HOLE DESIGNATION: BH2	STRATIGRAPHIC LOG
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE	4 2985-01-0PJ CPA_CONP_DOT 215004 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5	O.5 ML/CL - SILTY CLAY, firm to stiff, mottled gray/olive, moist 0.61 1	ASPHALT SAND and GRAVEL (FILL), compact to dense, coarse grained, well graded, brown, dry		DEPTH STRATIGRAPHIC DESCRIPTION & REMARKS DEPTH BGS m BGS		CLIENT: KRAFT CANADA INC. I OCATION: 2150 LAKESHORE BLVD W TORONTO ONTARIO FIELD PERSONNEL: K PETER	PROJECT NUMBER: 32985-01 DATE COMPLETED: 22 January 2004	PROJECT NAME: UST CLOSURE SERVICES HOLE DESIGNATION: BH2-04	STRATIGRAPHIC LOG

TEST	PIT LOO	G 32985-01.GPJ CF	A_CORP.GDT	21/5/04			11111					1111	1				1		1	
		-6.5	-6.0	5.5	-5.0	-4.5	-4.0	-3.5	-3.0	-2.5	-2.0		-1.5	-1.0		ן ס ת		DEPTH m BGS	PROJE CLIEN LOCAT	
CHEMICAL ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATIO			END OF TEST PIT @ 5.18m BGS		- soft, very moist to wet at 4.57m BGS			- no odour at 3.05m BGS	 - thin sand slit seams (less than 1 cm thick), moderate to strong petroleum hydrocarbon odour at 2.74m BGS - slight odour at 2.74m BGS 	- moderate to strong petroleum hydrocarbon odour at 2.13m BGS		- soft, wet at 1.22m BGS	2	ML/CL - SILTY CLAY, stiff, dark gray, dry to moist, sligt petroleum hydrocarbon odour	ASPHALT SAND and GRAVEL (FILL), compact to dense, coarse grained, well graded, light brown, dry		STRATIGRAPHIC DESCRIPTION & REMARKS	CT NAME: UST CLOSURE SERVICES HOLE DESIGNATION: D CT NUMBER: 32985-01 DATE COMPLETED: 22 Ja F: KRAFT CANADA INC. DRILLING METHOD: DIRE ION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO FIELD PERSONNEL: K. PE	STRATIGRAPHIC LOG
	N TABLE			5.18											0.61	0.15		DEPTH m BGS	nuary 200 CT-PUSH TER	
					Ch				ω			$\binom{N}{2}$			-		NUMBE	R	4	
ţ.				L	4.27 - 5.18	1	3.35 - 4.27	I	2.44 - 3.35	1		1.22 - 2.44			0.00 - 1.22		INTERVAL	SAMP		
					-		Ν		78			148			4		PID (ppm)	fi		Page 1 of 1

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Z	32985-1	0.55	.0	5. 5.	5.0	1 T 1	-4.5		-4.0	111	- 3.5	11	-3.0		- 2.5	- 2.0	1.5	· · · · 	5	0.5		m BGS	DEPTH	PROJECT PROJECT CLIENT: LOCATIO	
<u>TTES:</u> MEASURING POINT ELEVATIONS MAY CHANGE: REFER TO CURRENT ELEVATIONS MAY CHANGE: REFER TO CURRENT ELEVATIONS (CHEMICAL ANALYSIS)								END OF TEST PIT @ 4.27m BGS	- stiff, moist at 4.11m BGS	- soft to firm, very moist to wet at 3.81m BGS		- stiff, moist, no odour at 3.20m BGS		 trace sand, moderate to slight odour at 2.74m BGS 			- soft, mottled brown/gray, saturated, strong petroleum hydrocarbon odour at 1.52m BGS		MU/CL - SILTY CLAY, stiff, dark gray, moist, black staining, petroleum hydrocarbon odour	ASCHALT SAND and GRAVEL (FILL), compact to dense, coarse grained, well graded, light brown, dry - with slit, trace gravel at 0.46m BGS			STRATIGRAPHIC DESCRIPTION & REMARKS	INAME: UST CLOSURE SERVICES HOLE DESIGNATION: B INUMBER: 32985-01 DATE COMPLETED: 22 Ja KRAFT CANADA INC. DRILLING METHOD: DIRE KRAFT CANADA INC. DRILLING METHOD: DIRE N: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO FIELD PERSONNEL: K. PE	
ON TABLE								4.27											0.76	0.15		m BGS	DEPTH	9H4-04 nuary 200 CT-PUSH ETER	
										(*)			(w)		N	,			<u>ــ</u>	NUMB	ER		7 7	
										3.35 - 4.27			2.44 - 3.35		1	1.22 - 2.44		1		0.00 - 1.22	INTERVAL		SAMP		
										4			334			ŭ	;			7	PID (ppm		ΪE		Page 1 of 1

EBLVD. W., TORONTO, ONTARIO DELLIVE CVENTELE IC X 2 and many XVE ETRATIORVATIC DESCRIPTION & REMARKS DETENSIONEL: K PETERS EL (FLL), compact to dense, coarse grained, well graded, light 015 M M F F EL (FLL), compact to dense, coarse grained, well graded, light 015 1 M M PETERS EL (FLL), compact to dense, coarse grained, well graded, light 015 1 000-122 1 PID (pm) Simpact, poorly graded, brown, moist at 0.61m BGS 122 1 000-122 1 1 Simpact, poorly graded, brown, moist at 0.61m BGS 122 1 2 122-2.44 34 Simpact poorly graded, brown, moist at 0.61m BGS 122 1 2 122-2.44 34 Simpact poorly graded, brown, moist at 0.61m BGS 122 122-2.44 34 34 34 35 BGS 2 4 333-437 25 333-437 25 333-437 2 333-437 2 333-437 2 333-437 2 333-437 2 333		ł.		ON TABLE	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: REFER TO CURRENT ELEVATIO	
BILLINKS DELLINKS DELLINKS STRUCTOR CANTOL STRATIGRAPHIC DESCRIPTION & REMARKS NETHOR NETHOR NETHOR EL (FILL), compact to dense, coarse grained, well graded, light 0.15 NTERVAL PID (ppm) Remark N NTERVAL PID (ppm) 1 000-122 1 AN; stiff, motiled brownigray, moist 0.15 1 000-122 1 1 Simong petroleum hydrocarbon odour at 1.98m RGS 1 2 1 1 22-2.44 34 Simong petroleum hydrocarbon odour at 2.44m BOS 3 2.44-3.35 125 34 35-427 2 Sim BOS 4 4 335-427 2 2 2 2 1						6.5
EL (FILL), compact to dense, coarse grained, weil graded, light EL (FILL), compact to dense, coarse grained, weil graded, light EL (FILL), compact to dense, coarse grained, weil graded, light EL (FILL), compact to dense, coarse grained, weil graded, light EL (FILL), compact to dense, coarse grained, weil graded, light EL (FILL), compact to dense, coarse grained, weil graded, light EL (FILL), compact to dense, coarse grained, weil graded, light EL (FILL), compact to dense, coarse grained, weil graded, light EL (FILL), compact to dense, coarse grained, weil graded, light EL (FILL), compact to dense, coarse grained, weil graded, light ILZ AN, stift, motified brown, moist at 0.61m BGS ILZ AN, stift, motified brown, moist at 0.61m BGS ILZ Som BGS Strong petroleum hydrocarbon odour at 1.98m RGS Strong petroleum hydrocarbon odour at 2.44m BGS ILZ AT @ 4.27m BGS T @ 4.27m BGS T @ 4.27m BGS						6.0
EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse						5.5
E BLVD. W., TORONTO, ONTARIO FIELD PERSONNEL: K. PETER STRATIGRAPHIC DESCRIPTION & REMARKS DEPTH INCOMPLETED: 2.2.4 antuary XMM STRATIGRAPHIC DESCRIPTION & REMARKS DEPTH INCOMPLETED: 2.2.4 million FEL (FILL), compact to dense, coarse grained, well graded, light 0.15 FEL (FILL), compact to dense, coarse grained, well graded, light 0.15 AX, stiff, mothed brownigray, moist at 0.61m BGS 1.22 In mothing, moderate petroleum hydrocarbon odour at 1.98m BGS 1.22 In mothing, moderate petroleum hydrocarbon odour at 1.98m BGS 2 In BGS 3.2.43.35 In BGS 4.277 In BGS 4.277						5.0
DATE CONVELETED: DIRECT-PUSH STRATIGRAPHIC DESCRIPTION & REMARKS INTERVAL FL (FILL), compact to dense, coarse grained, well graded, light 0.15 FL (FILL), compact to dense, coarse grained, well graded, light 0.15 AV, stilf, mottled brown, moist at 0.61m BGS 1.22 S 1 AV, stilf, mottled brown, grained, well graded, light 1.22 S 1 BGS 2 BGS 2 S 2 </td <td></td> <td>L</td> <td></td> <td>4.27</td> <td>END OF TEST PIT @ 4.27m BGS</td> <td>4.5</td>		L		4.27	END OF TEST PIT @ 4.27m BGS	4.5
DALE CONVELETED: DERECT-PUSH STRATIGRAPHIC DESCRIPTION & REMARKS INFECT-PUSH STRATIGRAPHIC DESCRIPTION & REMARKS Infector Impact, poorly graded, brown, moist at 0.61m BGS 015 Impact, poorly graded, brown, moist at 0.61m BGS 1.22 Impact, poorly graded, brown, moist at 0.61m BGS 1.22 Impact, poorly graded, brown, moist at 0.61m BGS 1.22 Impact, poorly graded, brown, moist at 0.61m BGS 1.22 Impact, poorly graded, brown, moist at 0.61m BGS 1.22 Impact, poorly graded, brown, moist at 0.61m BGS 1.22 Impact, poorly graded, brown, moist at 0.61m BGS 1.22 Impact, poorly graded, brown, moist at 0.61m BGS 1.22 Impact, poorly graded, brown, moist at 0.61m BGS 1.22 Impact, poorly graded, brown, moist at 0.61m BGS 1.22 Impact, poorly graded, brown, moist at 0.61m BGS 1.22 Impact, poorly graded, brown, moist at 0.61m BGS 1.22 Impact, poorly graded, brown, moist at 0.61m BGS 1.22 Impact, poorly graded, brown, moist at 0.61m BGS 1.22 Impact, poorly graded, brown, moist at 0.61m BGS 1.22 Impact, poorly graded, brown, moist at 0.61m BGS 1.22 Impact, poorly graded, brown, moist at 0.61m BGS 1.22 Impact, poorly graded, brown, graded, graded, graded, graded, graded, grade	- 4.27 2	3.35	4		- no odour at 3.81m BGS	-4.0
EL (FILL), compact to dense, coarse grained, well graded, light STRATIGRAPHIC DESCRIPTION & REMARKS EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light S (1) (ppm) EL (FILL), compact to dense, coarse grained, well graded, light S (1) (ppm) S (1) (-			- slight odour at 3.35m BGS	3.5
Image: Construction of the co	- 3.35 125	2.44	()			3.0
EL (FILL), compact to dense, coarse grained, well graded, light III (mottled brown/gray, moist at 0.61m BGS 1122 1 S mottling, moderate petroleum hydrocarbon odour at 1.98m BGS 2					- gray, saturated, strong petroleum hydrocarbon odour at 2.44m BGS	-2.5
EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to brown, moist at 0.61m BGS 1.22 1.22 1.22 1.22 1.22 1.22 1.22 1.2	- 2.44 34	1.22	2		- gray, some brown motiling, moderate petroleum hydrocarbon odour at 1.98m BGS	-2.0
EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light 122 1					ML/CL - SILTY CLAY, stiff, mottled brown/gray, moist - wet at 1.52m BGS	1.5
EL (FILL), compact to dense, coarse grained, well graded, light EL (FILL), compact to dense, coarse grained, well graded, light 1 0.000 - 1.22 1		1		122		-1.0
EL (FILL), compact to dense, coarse grained, well graded, light Life Direct, 22 January 2004	- 1.22 1	0.00 -	-		- sand, with silt, compact, poorly graded, brown, moist at 0.61m BCS	0.5
STRATIGRAPHIC DESCRIPTION & REMARKS				0.15	ASPHALT SAND and GRAVEL (FILL), compact to dense, coarse grained, well graded, light brown, dry	
DALE COMPLETED: 22 January 2004 DRILLING METHOD: DIRECT-PUSH E BLVD. W., TORONTO, ONTARIO FIELD PERSONNEL: K. PETER STRATIGRAPHIC DESCRIPTION & REMARKS	VAL PID (ppm)	INTER	NUMB			
EBLVD. W., TORONTO, ONTARIO FIELD PERSONNEL: K. PETER	AMPLE		ER	DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS
IRE SERVICES HOLE DESIGNATION: BH5-04				nuary 2004 CT-PUSH TER	IECT NAME: UST CLOSURE SERVICES HOLE DESIGNATION: E IECT NUMBER: 32985-01 DATE COMPLETED: 22 Ja VT: KRAFT CANADA INC. DIRE VT: KRAFT CANADA INC. DIRE VTION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO FIELD PERSONNEL: K. PE	PROJEC PROJEC CLIENT LOCATI
STRATIGRAPHIC LOG	Page 1 of 1				STRATIGRAPHIC LOG	

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TEST PIT L	OG 32985-01.GPJ	CRA_CORP.GD	T 21/5/04					111		1111			1111		1 1 1 1			1			i
	6.5	-6.0	5.5	-5.0	4.5	4.0	3.5	2	-3.0	-2.5	-2.0	1.5	1.0	-0.5			m BGS	LOCAT	PROJE		
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: REFER TO CURRENT ELEVATION CHEMICAL ANALYSIS					END OF TEST PIT @ 4.27m BGS	3	- stiff, mottled gray/brown, no odour at 3.66m BGS	- moist, slight petroleum hydrocarbon odour at 3.35m BGS				- Irace sand, soft, gray, saturated, strong petroleum hydrocarbon odour at 1.52m BGS	ML/CL - SILTY CLAY, stiff, low plasticity, massive, gray with black mottling, dry to moist - slight to moderate petroleum hydrocarbon odour at 1.22m BGS	SAND (FILL), loose, fine to medium grained, massive, light brown, dry, no odour	SAND and GRAVEL (FILL), compact to dense, coarse grained, brown, dry		STRATIGRAPHIC DESCRIPTION & REMARKS	ION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO FIELD PERSONNEL: K. PE1	CT NUMBER: 32985-01 DATE COMPLETED: 22 Jan CT NUMBER: 32985-01 DATE COMPLETED: 22 Jan DRILLING METHOD: DIREC		STRATIGRAPHIC LOG
U TABLE					4.27								1.01	0.46			DEPTH m BGS	FER	uary 200 T-PUSH		
							•		ω		(\sim)			-		NUMBE	R	1	Ā		
1					L		3 35 - 4 97	1	2.44 - 3.35	1	1.22 - 2.44		1	0.00 - 1.22		INTERVAL	SAMP				
						1	5 7		Î		13.5			14		PID (ppm)	- m			Page 1 of 1	

	NOT	 6.0	5.5	5.0	4.5		4.0	3.5	- 3.0		- 2.5	- 2.0	- 1.5			- 0.5		mBGS	DEPTH	PROJECT I PROJECT I CLIENT: KI LOCATION	
CHEMICAL ANALYSIS	ES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION				END OF TEST PIT @ 4.57m BGS	SANDY SILT, stiff, brown, moist, no odour				 black petroleum hydrocarbon staining, strong petroleum hydrocarbon odour at 2 74m BGS 	- silly sand, dense, dilatent, saturated at 2.44m BGS				SAND (FILL), loose, medium grained, poorly graded, brown, dry to moist	SANU and GKAVEL (FILL), compact, coarse grained, well graded, light brownigray, dry		STRATIGRAPHIC DESCRIPTION & REMARKS		NAME: UST CLOSURE SERVICES HOLE DESIGNATION: BENUMBER: 3285-01 DATE COMPLETED: 22 Jan RAFT CANADA INC. DRILLING METHOD: DIREC : 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO FIELD PERSONNEL: K. PET	STRATIGRAPHIC LOG
	N TABLE			4.72		4.27									0.76			m BGS	DEPTH	H7-04 1uary 200 CT-PUSH TER	
						(•	•)		()			N				-	NUMB	ER		4	
a.				L		0.00-4.12	3 66 - 4 73		2.44 - 3.66			1.22 - 2.44		1		0.00 - 1.22	INTERVAL		SAMP		
						c	>		15.5			o				0	PID (ppm)		'n		Page 1 of 1

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TEST PIT LO	G 32985-01.GP	J CRA_CORP.	GDT 21/5/04																
	-6.5	-6.0	-5.5	-5.0	-4.5	-4.0	- 3.5	-3.0	-2.5	-2.0	-1.5	-1.0	-0.5			DEPTH m BGS	PROJE	PROJE	
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATIO					END OF TEST PIT @ 4.27m BGS			- stiff, moist at 2.74m BGS			- soft to firm, dilatent, brown, very moist, no odour at 1.52m BGS	ML/CL - SILTY CLAY, stiff, olive, moist, no odour		ASPHALT/CONCRETE SILTY CLAY (FILL), with gravel, stif, mottled gray/brown, dry to moist		STRATIGRAPHIC DESCRIPTION & REMARKS	CT NUMBER: 32985-01 DATE COMPLETED: 22 Jan KRAFT CANADA INC. DRILLING METHOD: DIREC ION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO FIELD PERSONNEL: K. PET	CT NAME: UST CLOSURE SERVICES HOLE DESIGNATION: BI	STRATIGRAPHIC LOG
N TABLE					4.27							1.07		0.21		M BGS	uary 2004 CT-PUSH	18-04	
						4		ω		N			-		NUMB	ER			
ŝ					L	3.35 - 4.27	1	2.44 - 3.35		1.22 - 2.44			0.00 - 1.22		INTERVAL	SAMP			
						0		0		0			0		PID (ppm)	h			Page 1 of 1

LIDCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO FIELD PERSONNEL: K. PETER Imbos: STRATIGRAPHIC DESCRIPTION & REMARKS Difference Imbos: ASPHALT 000 SMAD and GRAVEL. (FILL), compact to dense, coarse grained, weil graded, light bown, not. 000 Imbos: MUCCISILTY CLAY, firm to stiff, dark gray, moist, no odour 000 Imbos: MUCCISILTY CLAY, firm to stiff, dark gray, moist, no odour 000 Imbos: -seth, brown molting, very moist to wet at 1.83m BGS 000 Imbos: -seth, brown molting, very moist to wet at 1.83m BGS 000 Imbos: -seth, brown molting, very moist to wet at 1.83m BGS 000 Imbos: -seth, brown molting, very moist to wet at 1.83m BGS 000 Imbos: -seth and seams (less than 1cm thick), light gray at 2.13m BGS 000 Imbos: -seth and seams (less than 1cm thick), dark gray/black, no odour at 3.35m BGS 000 Imbos: -seth of tEST PIT @ 5.33m BGS 53 END OF TEST PIT @ 5.33m BGS 53 53 END OF TEST PIT @ 5.33m BGS 53 ES END OF TEST PIT @ 5.33m BGS ES MEASURING POINT ELEVATIONS MAY CHANCE: REFER TO CUPRENT ELEVATION TAKES		
ION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO FIELD PERSONNEL: C STRATIGRAPHIC DESCRIPTION & REMARKS Difference Difference Solution GRAVEL 0.09 Solution Solution 0.09 Solution BS 0.09 - solution Solution Solution - solution Solution Solution - solution FIELD PERSONNEL 0.09 - solution Solution Solution - mothed gray/br		
	HOLE DESIGNATION: B CT NAME: UST CLOSURE SERVICES HOLE DESIGNATION: B CT NUMBER: 3298-01 DATE COMPLETED: 23 Jan KRAFT CANADA INC. DRILLING METHOD: DIREC	STRATIGRAPHIC LOG
	H9-04 nuary 200 CT-PUSH	
NUMBER	4	
SAMP ERVAL 12-24 14-335 15-427 17-533		
	Page 1 of 1	Daan 1 af 1

	03 32985-01.0PJ CRA CORP.GDT 21/5/04	5.0	1 1 1 1 1 1 A 4 D	3 3 3 3		-1.5		m BGS	PROJECT CLIENT: K	
TTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION CHEMICAL ANALYSIS	END OF TEST PIT @ 5.18m BOS		- soft, diatent, saturated at 4.27m BGS - gray at 4.42m BGS	- stiff, mottled brown/gray, no odour at 3.51m BGS	- thin gray sand seams (less than 1cm thick), moderate petroleum hydrocarbon odour at 2.59m BGS	ML/CL - SILTY CLAY, stiff, brown with gray mottling, moist	ASPHALT SAND and GRAVEL (FILL), compact to dense, coarse grained, well graded, light brown, dry SAND (FILL), compact, medium grained, poorly graded, brown, moist	STRATIGRAPHIC DESCRIPTION & REMARKS	NUMBER: 3295-01 RAFT CANADA INC. 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO 12 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO 12 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO 13 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO 14 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO 15 2150 LAKESHORE BLVD. W., TORONTO,	STRATIGRAPHIC LOG
N TABLE		5.18				1.52	0.09	m BGS	TER	H10-04
		(0)	4		ω	N	-	NUMBER	4	
ŝ		4.27 - 5.18	3.35 - 4.27		a 2.44 - 3.35	a 1.22 - 2.44	0.00 - 1.22	INTERVAL	SAMPI	
		ø	30		330	o	0	PID (ppm)	m	Page 1 of 1

			N TABLE	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: REFER TO CURRENT ELEVATIO	Z
			6.86	END OF TEST PIT @ 6.86m BGS	
13	6,10 - 6,86	(-)		- shale fragments in spoon tip at 6.71m BGS	- 6.5
	1			- soft, high plasticity, dilatent, very moist at 6.10m BGS	-6.0
25	5.18 - 6.10	σ			- 5.5
	1			- trace clay, low plasticity, saturated at 5.18m BGS	-5.0
60	4.27 - 5.18	Ch.		wr SiL. (YvAl EKLAIN), win day to dayey, win sand, son, high plasticity, gray, very moist	-4.5
120	3.35 - 4.27	4	4.11		4.0
	1			- sand seam (approximately 10cm thick), saturated at 3.35m BGS	- 3.5
150	2.44 - 3.35	ω		- moderate odour at 3.05m BGS	-3.0
				- moist to dry, strong petroleum hydrocarbon odour at 2.59m BGS	- 2.5
				- no staining at 2.29m BGS	
670	1.22 - 2.44	(\sim)		- black staining, strong petroleum hydrocarbon odour at 1.68m BGS	2.0
				- saturated at 1.37m BGS	1.5
	1				-1.0
4	0.00 - 1.22	-			-0.5
			0.15	CONCRETE SANDY SILT (FILL), stiff, brown, moist	
PID (ppm)	INTERVAL	NUMB			
'n	SAMPL	ER	m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS
		4	nuary 2004 CT-PUSH TER	JECT NUMBER: 32985-01 DATE COMPLETED: 23 Ja NT: KRAFT CANADA INC. ATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO FIELD PERSONNEL: K. PE	PROJEC CLIENT: LOCATIO
Page 1 of 1			H11_04		
				STRATIGRAPHIC LUG	

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				6.0	5.5	5.0		4.5	-4.0	3.5	- 3.0		1 I I 2 1	- 2.0	-1.5		- 1.0	- 0.5			DEPTH m BGS	LOCATI	CLIENT	PROJE	
CHEMICAL ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: R					END OF BOREHOLE @ 4.97m BGS	- with gravel at 4.5/m BGS			- moist at 3.35m BGS			- wet at 2.29m BGS				SILT, trace sand, trace gravel, firm, laminated, mottled oray/oreen, moist	- SAND (FILL), dense, brown, moist - sitt, with sand, laminated, mottled gray/green at	ASPHALT		STRATIGRAPHIC DESCRIPTION & REMARKS	ON: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO	KRAFT CANADA INC.	CT NAME: UST CLOSURE SERVICES	STRATIGRAPHIC AND I
	EFER TO (4.37	Ì										0.10	0.40	2		DEPTH m BGS	FIELD F	DRILLIN	HOLE	URDE
	CURRENT ELEVATION TARI E	Material: #1 SILICIA SAND	Material: BENTONITE CHIPS Sand Pack: 1.22 to 4.57m BGS	Stot Size: 10 Material: SCH 40 PVC Seal: 0.30 to 1.22m BGS	1.52 to 4.57m BGS Length: 3.05m Diameter: 51mm	WELL DETAILS Screened interval:	BENTONITE				WELL SCREEN		BOREHOLE				CHIPS		SEAL		MONITOR INSTALLATION	PERSONNEL: B. IOTZOV	IG METHOD: 4 1/4" ID HSA	ESIGNATION: MW2-04	MENTATION LOG N)
						N	7	(°	·)	5		4		3		2			-	NUMBE	R		4		
	-						<	\triangleright	\leq					\geq	\leq		\leq	D	\times	INTERV	AL SA				
							>62	ñ	5	5 23		4		ω		0 18			5 16	'N' VALL					Pag
							0	c	,	0		0		0		0			0	PID (ppr	n)				e 1 of 1

	5 5 5 5	5.0	царана 4.0	3.5		- 2.5	2.0	1.5	1.0	- 0.5		mago	DEPTH	PROJEC PROJEC CLIENT	
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; POINT ELEVATIONS MAY ANA ANA ANA ANA ANA ANA ANA ANA ANA A	END OF BOREHOLE @ 5.18m BGS	- with sand, with gravel at 4.88m BGS	ML - SILT (TILL), trace sand, trace gravel, stiff, medium plasticity, laminated, gravy/olive, moist to wet	- trace gravel, trace sand, trace clay at 3.66m BGS				- saturated at 1.22m BGS	SAND and SILT (TILL), firm, gray	SAND and GRAVEL (FILL), dense, gray/brown, slight petroleum hydrocarbon odour	ASPHALT		STRATIGRAPHIC DESCRIPTION & REMARKS	7T NAME: UST CLOSURE SERVICES 3T NUMBER: 32985-01 KRAFT CANADA INC. ON: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO	STRATIGRAPHIC AND II
REFER TO		5 18	4.27						0.91	- 0.30		iii boo	DEPTH	HOLE D DATE C DRILLIN FIELD P	NSTRU
CURRENT ELEVATION TABLE	WELL DETAILS Screened interval: 1.52 to 4.57m BGS Length: 3.05m States: 51m States: 51m 0.30 to 1.27m BGS Material: BENTOWITE CHIPS 52nd Pack: 1.22 to 4.77m BGS Material: #1 SLUCA SAND	BENTONITE			WELL	BOREHOLE		11	CHIPS	BENTONITE	CONCRETE		MONITOR INSTALLATION	ESIGNATION: MW3-04 OMPLETED: January 21, 200 IG METHOD: 4 1/4" ID HSA PERSONNEL: B. IOTZOV	MENTATION LOG
			(°)	5		<u>^</u>	3		2	-		NUMBER		4	
		X				\leq	× 5		\leq	5	\leq	NTERVAL	SA		
		17	60 00	00 4		4	20		13	6 41		N' VALUE	MPLE		Pa
		0	0	o		0	0		I	0	1	PID (ppm)			ige 1 of 1

		N <u>LOG 32995-01.GPJ CR</u> 0 0 0 0 0 0	A_CORP.GDT 1/31	5. 0	-4.0	3.5		2.5	-1.5		0 5 5		11 000	DEPTH	CLIENT: LOCATIO	PROJEC	
CHEMICAL ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; F			ML - SILT (TILL), with clay, trace gravel, trace sand, hard, well graded, fine to coarse grained, corhesive, plastic, grey, most END OF BOREHOLE @ 4.57m BGS	- sand seam for 102mm, with silt, fine grained, grey at 4.11m BGS	SMMH SANDY SILT, slightly cohesive fine grained, non plastic, slightly dilatent, grey, moist to wet, - not dilatent, moist at 3.51m BGS	- black vegetative debris at 3.05m BGS	- with clay, green motting at 2.44m BGS	 with sand, fine grained, trace oxidation, no vegetative debris at 1.22m BCs trace sand, coarse grained, gray, oxidation motiling, moist to wet, sheen, strong petroleum hydrocarbon odour, black grease from 1.52 to 1.83m BCS 	ML - SILT, with to trace clay, trace sand, firm to stiff, slightly to non-plastic, grey with green mottling, vegetative debris, moist	GRAVEL (FILL), with sand trace sit, loose, fine to <u>coarse orained</u> , well graded, brownish user, moist SAND (FILL), trace sit, compact, fine to medium grained, poorly graded, brown with oxidation, moist to wet, no adours - gray with dark grey motting, wet, no odours at <u>Coren BGS</u>	ASPHALT		STRATIGRAPHIC DESCRIPTION & REMARKS	KRAFT CANADA INC. DN: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO	T NUMBER: 32985-01	STRATIGRAPHIC AND II
	EFER TO			4.88	1	9.60	3				0.38	0 20		DEPTH	DRILLIN FIELD F		URDE
	CURRENT ELEVATION TABLE	Materiat: BENTONTE CHIPS Sand Pack: 0.91 to 4.57m BGS Materiat: #2 SLLCA SAND	Length: 305m Diameter: 51mm Stot Size: 10 Material: SCH 40 PVC Seal: SCH 40 PVC	WELL DETAILS Screened interval: 152 to 4 57m BGS			WELL SCREEN	203 mm ð BOREHOLE	111111111111111111111		BENTONITE CHIPS CHIPS CHIPS	CONCRETE		MONITORING WELL	ig method: Direct-Push "Ersonnel: N. Redwood)	ESIGNATION: MW5-04	MENTATION LOG V)
					4		ω (mag	(h)	2 (NR-03)		-	1	NUMBER		/ 4 1/4" J. O'N	004	
				- tata	P/S		P/S	A altar	P/S		P/S		INTERVAL	- s	ID HS		
	-				75		75		75		75		REC (%)	AMPLE	A		P
	-				1.0		1.4		0.6		0.6	6	PID (ppm)				age 1 of 1



OVERD		0 0 0 0	1 1 1	 5.5	, , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , ,	-4.5	-4.0	- 3.5	- 3.0	2.5	, , , , , , , , , , , , , , , , , , ,	- 1.3		-1.0	- 0.5			DEPTH m BGS	LOCATI	CLIENT	PROJEC	
CHEMICAL ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION							л Э		Note: Borehole was backfilled with bentonite chips and a concrete surface.	MUCL - CLAYEY SILT, firm to stiff, dark grev, moist, no adour END OF BOREHOLE @ 2.59m BGS		odour	SMML - SILTY SAND, soft to firm, dark grey, saturated, faint petroleum hydrocarbon			GRANULAR FILL, no odour or staining		STRATIGRAPHIC DESCRIPTION & REMARKS	DN: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO FIELD PERSONNEL: K. PET	KRAFT CANADA INC. DRILLING METHOD: 2" PER	TNAME: UST CLOSURE SERVICES HOLE DESIGNATION: BH	STRATIGRAPHIC LOG (OVERBURDEN)
	V TABLE										2.59		<u>ب</u>	1.37			0.10		DEPTH m BGS	ER	CUSSIO	1201-05	
												SS-3	(14.0	SS-2		SS-1		NUMB	ER		N/BOS		
	[>	Se Se	\times	\square	\succ		INTERV	AL (SCH		
														100		Ch		REC (%)				
	-																	'N' VAL					Page
												0	٥	0		c	,	Eagle (p	pm)				1 of 1

	6.5	6.0	5.5	 	4.5	-4.0	3.5	- 3.0		-2.5	2	1.5	- 1.0	0.5			m BGS	DEDTU	CLIENT	PROJEC	
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVAT CHEMICAL ANALYSIS								Note: Borehole was backfilled with bentonite chips and a concrete surface. Borehole was redrilled from 1.5 to 2.3 m bgs.	END OF BOREHOLE @ 2.59m BGS		- seams of silly clay, grey, stiff, moist from 1.52 to 2.59m BGS	 strong petroleum hydrocarbon odour, some sheen on soil surface at 1.37m BGS wet/saturated, dilatant, moderate petroleum hydrocarbon odour, fainter with depth at 1.52m BGS 		ML/SM - SILTY SAND/SANDY SILT, compact/firm, fine grained, dark grey, moist, mild petroleum hydrocarbon odour - dark grey/black staining, stronger petroleum hydrocarbon odour from 0.61 to 0.76m BGS	GRANULAR FILL		STRATIGRAPHIC DESCRIPTION & REMARKS		KRAFT CANADA INC. DRILLING METHOD: 2" P ON: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO FIELD PERSONNEL: K. F	T NAME: UST CLOSURE SERVICES HOLE DESIGNATION: T NUMBER: 32865-02 DATE COMPLETED: Nov	STRATIGRAPHIC LOG (OVERBURDEN)
ON TABLE									2.59					0.38	0.15		m BGS	DEDTL	TER	8H202-C mber 14,	
										SS-3	3	(S-BH202-2	\$51	-BH202-0	NUMBI	R		ON/BO	2005	
										>	<	\square	5-5	\triangleright	525	INTERV	AL		SCH		
										0			10	20		REC (6)	SAMP			
				 						o			сл	;	10	'N' VAL Eagle (p	UE pm)	m			Page 1 of 1

	 6.0	 - 5.0	4.5	-4.0	3.5	- 3.0	2.5	-2.0	-1.5	-1.0	-0.5			DEPTH m BGS	LOCATIO	PROJEC	
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURREN CHEMICAL ANALYSIS								Note: Borehole was backfilled with bentonite chips and a concrete surface.	END OF BOREHOLE @ 1.52m BGS	- silly, dark grey, wet/saturated, dilatant, faint petroleum hydrocarbon odour at 0 BGS	SM - SAND with silt, compact, fine to medium grained, brown, moist, some black clasts	GRANULAR FILL, no staining or odour		STRATIGRAPHIC DESCRIPTION & REMARKS	TI: KRAFT CANADA INC. TION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO FIELD PERSON	ECT NAME: UST CLOSURE SERVICES HOLE DESIGNA ECT NUMBER: 32985-02 DATE COMPLET	STRATIGRAPHIC LOG (OVERBURDEN)
T ELEVATION TABLE									1.52	.76m	k coal 0.46 (SS-1) 15	0.15 S-BH203-0,5,2,5 0	NUMBE INTERV REC (9 'N' VAL! Eagle (p	mBGS R A 0 B m	10D: 2" PERCUSSION/BOSCH NEL: K. PETER	TION: BH203-05 TED: November 14, 2005	Page 1 of 1

	6.5	6.0	5.5	 - 4.5	4.0	3.5	- 3.0	- 2.5	-2.0	- 1.5		0.5		DEPTH	PROJE(PROJE(CLIENT LOCATI	
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVAT								END OF BOREHOLE @ 2.29m BGS Note: Borehole was backfilled with bentonite chips and a concrete surface.	CL/ML - CLAYEY SILT, stiff, grey, moist, no odour or staining	 - dark grey, faint petroleum hydrocarbon odour, some staining/sheen on soil at 1.37m BGS 	ML/SM - SILTY SAND, soft, fine grained, brown, saturated, dilatant	- no recovery, very soft, spoons appear saturated from 0.20 to 0.76m BGS		STRATIGRAPHIC DESCRIPTION & REMARKS	CT NAME: UST CLOSURE SERVICES HOLE DESIGNATION: 1 CT NUMBER: 32985-02 DATE COMPLETED: Nov PRILLING METHOD: 2" P I KRAFT CANADA INC. DRILLING METHOD: 2" P I NON: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO FIELD PERSONNEL: K. P	STRATIGRAPHIC LOG (OVERBURDEN)
ON TABLE								4.40	3 3 0		s	0.20		DEPTH	H204-0 mber 14, : RCUSSIC	
Ī									SS-3		(1204-2.5 BH204-2.5	SS-1	NUMBER		5 2005 DN/BOS	
									>	\bigcirc		\times	INTERVAL	- (0	SCH	
-									100		20	0	REC (%)	AMPL		-
-									σ	σ	U1		Eagle (ppn)		Page 1 of 1

		6.5	6.0	5 5	5.0	- 4.5	-4.0	- 3.5	- 3.0	-2.5	-2.0	- 1.5	1.0	0.5		DEPTH m BGS	PROJEC PROJEC CLIENT LOCATI	
CHEMICAL ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT E										Note: Borehole was backfiled with bentonite chips and a concrete surface.	END OF BOREHOLE @ 1.52m BGS	- saturated, grey, trace day at 1.07m BGS	CONCRETE FLOOR SLAB SMML - SILTY SAND, compact to dense, fine grained, brown, moist, no odour or staining		STRATIGRAPHIC DESCRIPTION & REMARKS	ECT NAME: UST CLOSURE SERVICES HOLE DESIGNATIC ECT NUMBER: 32985-02 DATE COMPLETEI IT: KRAFT CANADA INC. DRILLING METHO TION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO FIELD PERSONNE	STRATIGRAPHIC LOG (OVERBURDEN)
	EVATION TABLE											1.52		0.15		DEPTH m BGS	 BH205-0 November 14, 2" PERCUSSIC K. PETER 	
													(H205-2	SS-1	NUMBE	R	5 2005 DN/BO	1
													5.5	\times	INTERVA	L	SCH	
													100	70	REC (%) SAMP		
															'N' VALU	E Fin		Page
													0	o	Eagle (pp	m)		1 of 1

GROUNE Shallow/ 8	σ σ	52							6 0	02	(m) DEPTH		DATUN BH LOI	CLIEN	
WATER ELEVATIONS Single Installation 🖉 👤 Deep/Dual Inst	 Ento per Bostei OLE Sample refusal 15.5 m. Borehole backfilled with bentonite upon completion. 	SHALE weathered shale	trace gravel						SILTY CLAY grey, wet	 CONCRETE T5 mm of reinforced concrete FIL sand and silt, trace gravel, saturated 	DESCRIPTION	SOIL PROFILE	1: Local CATION:	CT LOCATION: 2150 Lake Shore Bi	Events Line Consultants Line Events Line Events Line Events Line Events Consultants Line Events Line E
illation			++++++	++++++	+++++	<i>†††††</i>	<i>+++++</i> +	<i>† † † † †</i>	<i>777</i>	<u> (1888)</u>	STRATA PLOT	1		d, Toro	ogeolog
				4AUNI	3BUN	3AUNI	2BUNI	2AUNI	1BUNI	1AUNI	NUMBER	SAN		onto, O	V L
		0		DIST	DIST	DIST	DIST	DIST	DIST	DIST	"N" <u>BLOWS</u> 0.3 m	NPLES		ž	5
<u>GRAPH</u> NOTES											GROUND WATE CONDITIONS	R			DG OF
.+ .ω											ELEVATION				BO
× 3. Numbers refer o 8=3° to Sensitivity											20 40 60 80 SHEAR STRENGTH (kPa) 0 LINCONF NED + FIELD 0 QUICK TRIAXIAL × LAB 50 100 150 200	RESISTANCE PLOT	Date: Nov/06/2013	Method: Geo Probe Diameter:	
³⁶ Strain at Failure											100 LIMIT CONTENT LIMIT 2 Wp W, W, WATER CONTENT (%) VVANE VATER CONTENT (%) 250 10 20 30	PLASTIC NATURAL LIQUID	ENCL NO.	REF. NO .:	
											(Cu) (kPa)	wт		1889-	
											AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	REMARKS		220	1 OF 1

	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 2.GPJ SPL.GDT 12/5/13															-
GROUI	ග ග							1 2	0.6	02	(m) ELEV 0 0		DATU BH Lu	PRO.	PRO.	۰
<u>NDWATER ELEVATIONS</u> ⊮ Single Installation∑ ∑ Deep/Dual Installa	 Sample refuse.lot.E Sample refuse.lot.at 5.5 m. Borehole backfilled with bentonite upon completion. 	trace grave, trace sand						SILTY CLAY trace sand, trace gravel, grey, wet	CLAYEY SILT trace sand, grey/brown, moist	230 mm of reinforced concrete FILL sand and silt, grey/brown, moist	DESCRIPTION	SOIL PROFILE	JM: Local OCATION:	JECT LOCATION: 2150 Lake Shore Blvd,	JECT: Mr.Christie NT:	SPL Consultants Limi Geotechnical Environmental Materials Hydrog
tion 🖉			7777	+++++	+++++;	+++++	<i>4444</i>	77777			STRATA PLOT	_	4	Toro		eolog
k		5AUN	-18UN	4AUN	BUN	3AUN	BUN	2AUN			NUMBER	SAI		nto, C		4
		DIST	DIST	DIST	DIST	DIST	DIST	DIST	DIST	DIST	TYPE			ž		
IZ IO											"N" <u>BLOWS</u> 0.3 m	S				5
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3,×3;											• · SHE 5 Q \ F K	RESIS	Date:	Diame	DRILI Metho	OREH
vumbers refer o Sensitivity											AR STRENGT AR STRENGT UCONF NED JICK TRIAXIAL	TANCE PLOT	Nov/06/2013	eter:	LING DATA pd: Geo Probe	OLE BHI:
⊖ ^ε =3% Strain											80 100 H (kPa) + FIELD VANE * & Sonsälvity × LAB VANE) 200 250	N ALION				
at Failure											Wp W W WATER CONTENT (%) 10 20 30	PLASTIC NATURAL LIQU	ENCLI	REF. N		
											POCKET PEN (Cu) (kPa)	10 N.	ē.	0.: 1		
											NATURAL UNIT (Mg/m ³)	WT]	889-22		
											GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	REMARKS		20		1 OF 1

	4 0				2.4		- N	60	02	DEPTH	(ii)	BHLO	PROJ	PROJ
	 Semple retura at 9 m. Borehole backfilled with bentonite upon completion 				SILTY CLAY brown, moist		SILT some clay, trace sand, trace gravel, brown, moist	SILTY CLAY trace sand, trace gravel, brown,	150 mm of reinfoced concrete FIL sand, trace gravel, trace silt, brown, moist	DESCRIPTION	SOIL PROFILE	DCATION:	NT: ECT LOCATION: 2150 Lke Shore Blv	IECT: Mr.Christie
		<i>444</i>	<i>444</i>	7777	+++++	× × × ×	× × ×	RZ	\otimes	STRATA PLO	от		d, Torc	
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		NDIS'	NDIS.	NDIS	NDIS	NDIS.	NDIS.	NDIS.	NDIS	TYPE	- AMP		ž	
		-				-			-	"N" <u>BLOWS</u> 0.3 m	5			
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	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 2.GPJ SPL.GDT 12/5/13																1
<u>GROU</u> Shallow		n					18			02	00	(m) DEPTH		DATU BH L	PRO,	PRO,	
VISINGLE Installation √ ▼ Deep	 Sample refutal at 5.5 m. Boretnole backfilled with be upon completion. 	trace weathered shale		wet			SILTY CLAY grey, saturated			FILL sand and silt, brown/grey,mo	CONCRETE 230 mm of reinforced concre	DESCRIPTION	SOIL PROFILE	JM: Local OCATION:	JECT LOCATION: 2150 Lake S	JECT: Mr.Christie NT:	Geotechnical Environmental Mater
Dual Inst	artonite									ist	ate -				hore Blv		ials Hydr
allation			77777 77777	<i>++++;</i>	+++++	+++++	+++++			\times	ь. P	STRATA PLOT			rd, Tor		ogeolo
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<u>GRAPH</u> NOTES												GROUND WATEF	3	1			0.00
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, × ³ : Numbers refer د sensitivity ٤=3% Strain د sensitivity												20 40 60 100 SHEAR STRENGTH (kPa) • UNCONF NED + FIELD WAVE • CUNC TRIAXIAL × LAB VAVE 50 100 150 200 250	RESISTANCE PLOT	Date: Nov/06/2013	Diameter:	DRILLING DATA Method: Geo Probe	DREHOLE BHI-4
at Failure												WATER CONTENT LIMITER 0 20 30 0 20 30 0 20 30	PLASTIC NATURAL LIGHT	ENCL NO.:	REF. NO.: 1889-2		
												AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	REMARKS		220		1 OF 1

GROUN	 									0.0	02	(m) DEPTH		DATU BH LC	PROJ PROJ	}
DWATER EI EVATIONS	END OF BOREHOLE 1. Sample relusal at 6.6 m. 2. Derehoe backfund upon completion.			trace gravel		wet	saturated	grey, wet		SILTE CLAT trace sand, brown, moist	50 mm of reinforced concrete FILL sand, trace silt, brown, moist	DESCRIPTION	SOIL PROFILE	M: Local DCATION:	ECT: Mr.Christie IT: ECT LOCATION: 2150 Lake Shore Bi	
		++++	<i>++++</i> ;	+++++ +++++	<i>+++++</i>	<i>++++</i>	<i>++++</i>	+++++ +++++	++++? ++++?	++++7 ++++7		STRATA PLOT			/d, Tor	
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					4							"N" <u>BLOWS</u> 0.3 m	ES			
3RAPH												GROUND WATE CONDITIONS	R			
2												ELEVATION				
3. Numbers refer												20 40 60 80 100 SHEAR STRENGTH (kPa) • UNCONF NED + FIELD VANE • QUICK TRIAXAL × LAB VANE 50 100 150 200 250	RESISTANCE PLOT	Date: Nov/07/2013	DRILLING DATA Method: Geo Probe Diameter:	
												W ^b W ^b	PLASTIC NATURAL LIQUID	ENCL NO .:	REF. NO.: 1889-221	
												AND GRAIN SIZE DISTRIBUTION (%) 3R SA SI CL	REMARKS		ŏ	

	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 3.GPJ SPL.GDT	12/5/13														
<u>GROUN</u> Shallow	6. 7					3.7			_1 8	1.4	02	(m) ELEV 0.0		CLIEN PROJ DATU BH LC	PROJ	٠
IDWATER ELEVATIONS	END OF BOREADE 1. Sample retrised at 6.7 m 2. Borehole backfilled with benton upon completion.			wet		SILTY CLAY grey, moist			CLAYEY SILT grey, moist	SILT trace clay, grey, moist	FIL FIL sand, trace silt, gravel, brown, mo	DESCRIPTION	SOIL PROFILE	VT: ECT LOCATION: 2150 Lake Shore M: Local M: Local	ECT: Mr.Christie	SPL Consultants Li
nstallatio		<i>tttt</i>	<i>7777</i>	<i>tttt;</i>	+++++	<i>+++++</i>	<u> </u>	<u>;;;;;;;;</u> ;	<u></u>	××	ist	STRATA PLOT	-	Blvd, T	Junguo	mite
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<u>GRAPH</u> NOTES												GROUND WATE CONDITIONS	R	1		0 D
+ 												ELEVATION		1		FBO
$, imes ^3$: Numbers refer $_{\odot}$												20 40 60 8 SHEAR STRENGTH (KF OUNCONFINED + 50 100 150 20	RESISTANCE PLOT	Method: Geo Probe Diameter: Date: Nov/07/2013	DRILLING DATA	RFHOI F BHI-6
[€] =3% Strain at												Pa) Pa) FIELD VANE * 3ensativity * A Sensativity * A Sensativity * A Sensativity * 3 Sensativity * 3 Sensativity * 3 Sensativity	TION			
Failure												IMIT CONTENT LIMIT Wp W W_L W_L WATER CONTENT (%) 10 20 30 10 20 30 10	MASTIC NATURAL LIQUID	REF. NO.		
												POCKET PEN (Cu) (kPa) NATURAL UNIT	NT	. 1889		
												GRAIN SIZE (%) GRAIN SIZE (%) GR SA SI CL	REMARKS	-220		1 OF 1

GROU	0 N						2.4			1		00	(m) ELEV DEPTH		DATU BH L	CLIE PRO	
NDWATER ELEVATIONS	EWD or BOREHOLE Somple retusal at 2: m. Sample retusal at 2: m. Sem-toole backfilled with sand to Sem-toole backfilled with s		saturated				SILTY CLAY grey, wet		Sonie vidy, provin, invist	SILT	FILL sand and clayey silt, brown/grey	150 mm of reinforced concrete	DESCRIPTION	SOIL PROFILE	JM: Local OCATION:	UECT: MILCHIISTE	ITOT: Ma Objetio
		<i>7777</i>	<i>444</i>		<i>++++</i>	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<i>++++</i> +	× × ×	× × × ×	× 🗱		Ì.	STRATA PLOT			/d, To	
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	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 2.GPJ SPL.GDT 12/5/13																-
<u>GROUI</u> Shallow	თ დ				3.7		2 2.4			U.6		00	(m) ELEV DEPTH		PRO, DATU BH Lu	PRO	
vDWATER ELEVATIONS ⊮ Single Installation∑ ▼ Deep/Dual Install	END OF BOLSEHOLE Somple refuse at 15.8 m, 2.30mh-radameter monitoring well installed, are necurntered at 2.4 mbg Nov. 6, 2013	trace sand, trace gravel			SILTY CLAY grey, wet		CLAYEY SILT grey, wet		grey/brown	Some clay, trace sand, grey, moist	FILL silt, grey/brown, moist	250 mm of reinforced-concrete	DESCRIPTION	SOIL PROFILE	JECT LOCATION: 2150 Lake Shore Blvd JM: Local OCATION:	JECT: Mr.Christie	SPL Consultants Lim Geotechnical Environmental Materiais Hydro
ation		777	++++;	+++++ +++++	+++++ +++++			× × × × × ×	× × × × ×	× × × > × × ×		5 a a y	STRATA PLOT		, Toro		teolog
×		BUN		^{‡BU} N	AUN	BUN	AUN	BUN			-	A N	NUMBER	SAN	nto, O		
		DIST	DIST	DIST	DIST	DIST	DIST	DIST	DIST	ISI	-		IYPE	NPLES	Ž		
RB			Maria da Arti	a a segur	1								0.3 m				6
APH		<u>IIII</u>						\leq				E 2	CONDITIONS	`			Q
+ .ω							Jun 11 2						ELEVATION				B
× ³ : Numbers refer ○ ^ε =3% Strain to Sensitivity							, 2013						20 40 60 100 SHEAR STRENGTH (KPa) 0 INKCONF NED + & FIELD VANE 0 CUICK TRIAXIAL × LAB VANE 50 100 150 200 250	RESISTANCE PLOT	Diameter: Diameter: Date: Nov/06/2013	Method: Geo Probe	REHOLE BHI-8
n at Failure													We Construct Limit		REF. NO.: 1889-220 ENCL NO.:		1 OF

	.2 4				02	(m) ELEV DEPTH		DATU BH LO	CLIEN
	END OF EDREMOLE 1. Sample refusal at 2.4 m. 2. Somm-diarneter monitoring well installed. 3. Water encountered at 2.1 mbg Nov. 5, 2013	grey	wet		150 mm of reinforced-concrete FILL sand, trace gracel, trace silt, brown,	DESCRIPTION	SOIL PROFILE	ECT LOCATION: 2150 Lke Shore Blv M: Local)CATION:	ECT: Mr.Christie
					XXF:	STRATA PLOT		i, Torc	
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		7				"N" <u>BLOWS</u> 0.3 m	ËS		
						GROUND WATER CONDITIONS	3		
		W. L. May				ELEVATION			
		.2.1 mBGL				20 40 60 100 SHEAR STRENGTH (kPa) • UNCOMF NED + Fabruary 50 100 150 200 250	PRESISTANCE PLOT	Diameter: Date: Nov/05/2013	DRILLING DATA Method: Geo Probe
						WP CONTENT MOSTURE LIMIT WP W WT ENT LIMIT LIMIT WATER CONTENT (%) 10 20 30 POCKS (%) (%) NATURAL UNIT W MD ISS NATURAL UNIT W MD ISS GR		REF. NO.: 1889-220 ENCL NO.:	
						AND iffain Size stribution (%) SA SI CL	REMARKS		

	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 2.GPJ SPL.GDT 12/5/13																-
<u>GROUI</u> Shallow	ය ප	55					2.4			0.6	02	0 0	(m) DEPTH		PRO, DATL BH L	PRO,	
vDWATER ELEVATIONS ∥ Single Installation ∑ Σ Deep/Dual Install	 ENO FE desized at 5.8 m. Somhe refusal at 5.8 m. Somher adameter monitoring well installed. Water encountered at 3.6 mbg Nov. 6, 2013 	SHALE shale, grey					SILTY CLAY trace sand, grey, wet	grey, wet	grey/brown	SILT trace sand, trace gravel, trace clay, brown, oxidation, moist	FILL sand and silt, brown, moist	230 mm of reinforced concrete	DESCRIPTION	SOIL PROFILE	JECT LOCATION: 2150 Lake Shore Bivd JM: Local OCATION:	JECT: Mr. Christie NT:	SPL Consultants Lim Geotechnical Environmental Materials Hydro
ation			<i>77777</i>	+++++;	77777	+++++	77777					20	STRATA PLOT		, Torc		jeolog
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GRAP		шп									0		GROUND WATER	R			GO
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ια ×					, 2	- 							• • •	20		≤ □	۱ <u>א</u>
 Numbers refer to Sensitivity 					013 	2							20 40 60 HEAR STRENGTH UNCONFINED OULICK TRIAXIAL 50 100 150	ESISTANCE PLOT	iameter: ate: Nov/06/2013	RILLING DATA ethod: Geo Probe	HOLE BHI-10
⊖ ^ε =3% Strain a													80 100 (kPa) + FIELD VANE * Sonstivity × LAB VANE 200 250	RATION >			
t Failure													LIMIT CONTENT LIMIT Wp W W WATER CONTENT (%)	PLASTIC NATURAL LIQUID	REF. NO.: ENCL NO		
												_	Cu) (kPa)	NT			
													(Mg/m ³)	_	9-220		
													AND STRIBUTION (%) SA SI CL	REMARKS			1 OF 1

GROUI	5 4	6.1	4 9					18	12	0.6	02	(m)		DATU BH Li	PRO,
NOWATER EI EVATIONS	 Pesible bedrok refusal at 6.4m. Borehole backfilled with bentonite upon completion 	CLAY TILL grey, moist	siLTY CLAY grey/brown, wet	moist to very moist	dry with fine sand layers		brown, some organics	CLAYEY SILT trace sand, grey, wet	SILT some clay, grey, moist	SILT TILL some sand, trace clay	230 mm of reinforced concrete FILL sand, trace silt, trace gravel, brown	DESCRIPTION	SOIL PROFILE	JECT LOCATION: 2150 LK8 Shore Bivo JM: Local DCATION:	JECT: Mr.Christie
		Ì	+++++++++ +++++++++			<u> </u>				o o		STRATA PLOT			•
		6 UNDIST	SAUNDIST SBUNDIST	4BUNDIST	4AUNDIST	3BUNDIST	3AUNDIST	2BUNDIST	2AUNDIST	1BUNDIST	1AUNDIST	NUMBER TYPE	SAMPLES	UNIO, UN	2
GRAPH												0.3 m GROUND WATER CONDITIONS	R		
+ ω												ELEVATION			
X 3 Numbers refer ○ ^ε =3% Strain a												20 40 60 80 100 SHEAR STRENGTH (KPa) 0 LINCONF NED + 8 500 000 50 100 150 200 250 50 100 150 200 250	DYNAMIC CONE PENETRATION RESISTANCE PLOT	Date: Nov/05/2013	DRILLING DATA Method: Geo Probe
at Failure												WATER CONTENT (%) POCKET PRA NATURAL UNIT POCKET PRA NATURAL UNIT NATURAL UNIT	PLASTIC NATURAL LIQUID	ENCL NO.: 1889-	
												AND GRAIN SIZE (%) GR SA SI CL	REMARKS	220	

	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 1.GPJ SPL.GDT 12/5/13	·																
GROUN	ວ ເ					30						02 00	(m)		DATL BH L(PRO	PRO.	۹
NDWATER ELEVATIONS	Evan pris restusat 6.2 m. Sorehole backfilled with bentonite upon completion.		trace gravel			SILTY CLAY grey, wet			greycown		FILL silt, some clay, grey, moist	200 mm of reinfoced concrete	DESCRIPTION	SOIL PROFILE	JM: Local OCATION:	NT: JECT LOCATION: 2150 Lke Shore Blvd	JECT: Mr.Christie	Geotechnical Environmental Materials Hydro
ation \		7777	77772 77777	+++++ +++++	+++++	++++++					\times		STRATA PLOT			Toro		geolog
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7					DIST	DIST		DIST	DIST	DIST	i i		TYPE	MPLE		ž		
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GRAPH NOTES													GROUND WATER	R				GOF
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													(Mg/m ³)			9-220		
													AN GRAIN ISTRIB (%	REMA				-
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GROUN			ភភភ						2.1	18			02	0 0	(m) ELEV DEPTH		DATU BH LC	PROJ PROJ	}
IDWATER ELEVATIONS	END OF Bolketi AC 7 m. 2. Somm-diameter monitoring well installed.		trace gravel		saturated				SILTY CLAY grey, wet	SILT trace clay, brown, wet			FILL sand, brown, moist	CONCRETE	DESCRIPTION	SOIL PROFILE	IM: Local DCATION:	ECT: Mr.Christie NT: ECT LOCATION: 2150 Lake Shore B	
				7777	<i>7777</i>	<i>++++</i> ;	<i>7777</i>	<u>7777</u>	777;	× ×8				A y S	STRATA PLOT			lvd, To	
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zia														"	N" <u>BLOWS</u> 0.3 m	S			
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, \times 3 Numbers refer $\circ \varepsilon = 3\%$ Strain														55 55 55 55 55 55 55	20 40 60 100 SHEAR STRENGTH (KPa) 0 UNCONFINED + 8 5000000 0 UNCONFINDAL + 8 5000000 0 UNCONFINDAL × LAB VANE 0 150 200 250	RESISTANCE PLOT	Date: Nov/07/2013	DRILLING DATA Method: Geo Probe Diameter:	
at Failure																PLASTIC NATURAL IIOIIID 5	ENCL NO.:	REF. NO.: 1889-2	
														GH SA SI CL	AND GRAIN SIZE DISTRIBUTION (%)	REMARKS		220	

ŗ	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 3.GPJ SPL.GDT 12/5/13										T			
BOU		3.7	22 0 22 0	0 0 0	1 8	23 8		262 0.4	(m) EPTH 25.6		BHL	PRO,	PRO,	
NDWATER ELEVATIONS		END OF BOREHOLE 1. Sample refusal at 3.7 m. 2. 50mm-diameter monitoring well installed. 3. Water at 3.1 mbg Nov. 7. 2013	SAND & SILT strong PHC odour, black, saturated		SILT some sand, trace gravel, strong PHC odour, brown, moist		sario, prown, moist	ASPHALT 180 mm of asphalt GRANULAR FILL	DESCRIPTION	SOIL PROFILE	OCATION:	JECT LOCATION: 2150 Lake Shore Blv	JECT: Mr.Christie	Geotechnical Environmental Materials Hydro
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l									C N	S				

SPL SOIL LOG 1889-220 1	BOREHOLE LOGS SET 4.GPJ SPL.GDT	12/5/13				N IN	!			<u>،</u>	N				₽₽	및 C 및	٦,
	 F END OF BOREHOUE Sample releval at 6.7 m. Borehole backfilled with bentontie upon completion. 	5.1 SHALE shale, grey 8.9			38 SILTY CLAY brown/grey, moist	35 SANDY SILT 18 brown	strong PHC odour between 3-4.5 m trace gravel		1 5 CLAVEV SILT trace sand, brown, moist	dayey silt, brown, moist	sandy silt, brown, moist	ASPHALT To mm of asphalt		SOIL PROFILE	ATUM: Local 4 LOCATION:	ROJECT: Mr.Christie JENT: ADJECT I OCATION: 2150 Lake Shore Bh	GOUDUIIIIIGII ETIVIIonnonaa maashaaa
			77777	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<i>;;;;;;;;</i> ;;;;;;;;;;;;;;;;;;;;;;;;;;;;				<i>111111</i>	****		\otimes	STRATA PLOT	1		5 2	- ango
		5AUI	4BUI	4AUI	3BUI	SAC		2BUI	2AUI	1BUI	A		NUMBER			ronto	0)
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3. Numbers refer													20 40 60 100 SHEAR STRENGTH (KPa) • UNCONFINED + 6500000 • OUICK TRIAXIAL × LAB VANE 50 100 150 200 250	RESISTANCE PLOT	Date: Nov/08/2013	DRILLING DATA Method: Geo Probe Diameter:	
														PLASTIC NATURAL LIQUID	ENCL NO.:	REE NO - 1880-220	

GROL		19 (6.7	6	19.6	4.6	21.1	3(22	24 ((m) ELEV DEPTI-		DAT	PRC	PRO
I INDWATER ELEVATIONS	2. Borehole backfilled with bentonite upon completion.	 7 END OF BOREHOLE 1. Sample refusal at 6.7 m. 	shale, grey		GLAYEY SILT clayey silt, brown, moist	_	sility clay, brown, moist	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	CLAYEY SILT clayey silt, trace sand, brown, moist		ASPHALT 100 mm of asphalt sand, trace silt, brown, moist	DESCRIPTION	SOIL PROFILE	UM: Local LOCATION:	JECT LOCATION: 2150 Lake Shore Blvd	JECT: Mr.Christie NT:
-							, , , , , , , , , , , , , , , , , , ,					STRATA PLOT			, Toro	
-			SAUN	4BUNI		BUN	3AUN	BUN	PAUN			NUMBER	SAN		nto, O	
-		-	ISIO	TSIC	DIST	DIST	UST I	T	DIST	DIST	T	"N" <u>BLOWS</u>	NPLES		z	
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3 Numbers refer S = 3% -												20 40 60 80 100 SHEAR STRENGTH (KPa) 0 LINCONF NED + selectively 50 100 150 200 250	RESISTANCE PLOT	Date: Nov/08/2013	Diameter:	DRILLING DATA Method: Geo Probe
												WP W W PP	PLASTIC NATURAL LIGHT	ENCL NO .:	REF. NO.: 18	
F												NATURAL UNIT V (Mg/m ³) GR AN (% GRAIN	T REMA		889-220	

		18 9 6 7			4 3	21.4				-	24.4	26 26 26	(m) ELEV 25.6 25.6		DATU BH LO	PROJE PROJE
	1. Borehole backfilled with benton upon competion.	END OF BOREHOLE	saturated		SILTY CLAY grey, wet	some clay, trace sand, wet				suct trace sand, trace clay, brown, moi	trace clay	50 mm of asphalt CONCRETE 125 mm of concrete FILL silt trace send prev moiet	DESCRIPTION	SOIL PROFILE	M: Local CATION:	ECT: Mr.Christie T: ECT LOCATION: 2150 Lake Shore
		++++	+++++	+++++	7777	× × ×	× ×	× × × >	< × × :	<u>st</u>			STRATA PLOT			Blvd, To
		6AUNDIST	5BUNDIST	5AUNDIST	4BUNDIST	A 4AUNDIST	× 3BUNDIST	3AUNDIST	2BUNDIST	2AUNDIST	1BUNDIST		NUMBER TYPE	SAMPLES		oronto, ON
GRAPH													0.3 m GROUND WATE CONDITIONS	R		
+ ω		10	20		22	Ę	ş	23		24		25	ELEVATION			
X 3. Numbers refer ○ ^ε =3% Strain													20 40 60 80 100 SHEAR STRENGTH (kPa) - UNCORN NED + RED VANE - CUICK TRIAXIAL × LAB VANE 50 100 150 200 250	RESISTANCE PLOT	Date: Nov/08/2013	DRILLING DATA Method: Geo Probe Diameter:
													WATER CONTENT LIMIT 0 20 30 POCKET PER (Ci) (%) POCKET PER POCKET PER PO	PLASTIC NATURAL LIQUID	ENCL NO .:	REF. NO.: 188
													AND MATURAL DUIT (Mg/m ²) GRAIN SIZE (%) GR SA SI CL	REMARKS		39-220

GRO	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 3.GPJ SPL	.GDT 18 0	12/5/13			4						23		22	DEPT (m)		BH DA	PR	CLI PR].
I NINDWATED EI EVATIONIO	END OF EDERHOLE Sample returns at 7.0 m. Sample returns at 7.0 m. Breihole backfilled with bentonit upon completion.	.7 SHALE .7 shale, grey	<u>0</u>	saturated		.1 .6 SILTY-CLAY brown, wet	saturated				8 CLAY dark brown, moist	trace sand, some clay		400 mm of asphalt FILL sand and gravel, brown, moist	DESCRIPTION	SOIL PROFILE	LOCATION:	OJECT LOCATION: 2150 Lake Shore B	OJECT: Mr.Christie	
ŀ	U		77777 77777	<i>77777</i>	<i>t†††</i> †	75		\square						\longrightarrow	STRATA PLOT	1		lvd, To		60
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Numbero refer _ £=.2%															20 40 60 80 100 SHEAR STRENGTH (kPa) 0 LINCONF NED + Encloying 0 CUICK TRIAXIAL × LAB VANE 50 100 150 200 250	RESISTANCE PLOT	Date: Nov/08/2013	Diameter:	DRILLING DATA Method: Geo Probe	
															WATER CONTENT (%) WATER CONTENT (%) 10 20 30 NATURAL (%) NATURAL (%) SGR	PLASTIC NATURAL LIQUID	ENCL NO.:	REF. NO.: 1889-220		
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	70	18.6		49	20 8	3.7	22 0	2.4	23 2 1	3 0	12	24.4	03	2000	(m) DEPTH		DATL	CLIEN	200
	END OF BOREHOLE 1. Borehole backfilled with bertronit upon completion.			SILTY CLAY silty clay, grey, wet		CLAYEY SILT clayey silt, brown, wet	some clay	SILT trace sand, brown, saturated	CLAY dark grey, moist	grey	SILT trace sand, grey/brown, moist	brown, moist	FILL sand and gravel, brown, moist SAND & SILT	ASPHALT 100 mm of asphalt	DESCRIPTION	SOIL PROFILE	JM: Local DCATION:	IECT LOCATION: 2150 Lake Shore B	
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		-	-	7		7								·	"N" <u>BLOWS</u> 0.3 m	ES			
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3; Numbers refer 0 &=3% strain															20 40 60 80 100 SHEAR STRENGTH (KPa) • UNCONFINED + FIELD VANE • UNCONFINATIAL × 1 AB VANE • S0 100 150 200 250	RESISTANCE PLOT	Date: Nov/08/2013	Method: Geo Probe Diameter:	
															UMATIC CONTENT LIMIT W. WATER CONTENT (%) WATER CONTENT (%) WATER CONTENT (%) WATER CONTENT (%) WATER CONTENT (%) WATER CONTENT (%) POCKET (%)		ENCL NO .:	REF. NO.: 1889-220	

GRC	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 3.GPJ SPL.GDT ത	12/5/13			ω	22 23		024		9	BH	R CL PR	
	7 END OF BORHOLE Incerteite backflied with bentonite upon completion.	<u>α</u>		brown, moist	0 SILTY CLAY grey, wet	.1 SILT .4 SILT some clay, brown, moist	trace clay	FL Sand and gravel, trace silt, brown Sand and gravel, trace silt, brown FILL slit, some sand, grey/brown, moist	NH 5 5 4 4 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4	SOIL PROFILE	TUM: Local LOCATION:		Geotechnical Environmental Materials Hyd
	-	+++++++ +++++++	<i>+++++++</i> ;	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	+++++++++	× × × × ×			STRATA PLOT		vä, i o	1	rogeolo
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+ +		-	22	N	N	2	Ŋ	N	ELEVATION	_			
$^{\rm s}, \times$ ³ : Numbers refer $^{\rm e}$ =3% St						<u> </u>			20 40 60 100 SHEAR STRENGTH (kPa) • UNCONFINED + FIELD VARE • CUICK TRIAXAL × LAB VMA 50 100 150 200 250	DYNAMIC CONE PENETRATION RESISTANCE PLOT	Date: Nov/08/2013	DRILLING DATA Method: Geo Probe	OREHOLE BH7
ain at Failure									WATER CONTENT WL 10 20 30	NATURAL INCID	ENCL N		
									POCKET PEN. (Cu) (kPa) NATURAL UNIT W	т	D.:		
									AND GRAIN SIZE (%) GR SA SI CL	REMARKS			1 OF 1

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	 END FE BOREHOLE Sample refusal at 6.7 m. Borehole backfilled with bentoniti upon completion. 	SHALE shale, grey		SILTY CLAY silty clay, grey/brown, moist		CLAYEY SILT some sand, grey, moist	SILTY CLAY brown, moist			ASPTALI 350 mm of asphalt FILL sand and gravel, brown, moist	DESCRIPTION	SOIL PROFILE	VIT: VIT: JECT LOCATION: 2150 Lake Shore B JM: Local DCATION:
	¢		<i>++++++</i>	<i>7777</i>		<u> </u>	<i>77777</i>				STRATA PLOT	-	ivd, To
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afer											NGTH		Probe 2013
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-3%											100 ID VANE B VANE 250	2	
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											30 NT (%)	EQ.	NCL N
											POCKET PEN (Cu) (kPa)	5	NO.: 1
											NATURAL UNIT (Mg/m ³)	WT	389-22
											AND GRAIN SIZ DISTRIBUTI (%) GR SA SI	REMARK	20

	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 4.GPJ SPL.GDT 12/5/13														_
<u>GROU</u> Shallow	ത ച	19.1	4.6 19.8	8	30	22.1	- 5	23.6 8	28.9 24.4	(m) ELEV DEPTH			PRO,	CLIEI	
<u>NDWATER ELEVATIONS</u> № Single Installation∑ <u> </u>	 END or BOREHOLE 1. Breizheit Lackfilled with bentonite upon completion. 	CLAYEY SILT TILL trace gravel, grey, shale fragments	SILTY CLAY trace sand, brown, wet	- 	 SILT some clay, trace sand, brown, moist 	Diackrigtey	SILTY CLAY trace sand, brown, moist	i FIL clayey silt, some sand, brown/grey, moist	ADDENTATE 100 mm of asphalt FILL sand and gravel, brown, moist	DESCRIPTION	SOIL PROFILE	.OCATION:	JECT LOCATION: 2150 Lake Shore Blvd	JECT: Mr. Christie NT:	Geotechnical Environmental Materials Hydro
ation			<i>777777</i>	~	0	77777	7777777			STRATA PLOT		4	, Toro		jeolog
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										POCKET PEN. (Cu) (kPa)] [.] .	0.: 18		
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		4 3	20.4	21 3 3.4		18	1 2 22 8	23.4	03	24.6	(m) ELEV DEPTH		DATU BH LC	PROJ
		 END OF BOREHOLE Borehole backfilled with bentonite upon completion. 		SILTY CLAY grey, wet	organics brown	SILT trace clay, brown	FILL silt, red and grey, wet	sand & silt, grey/brown, moist	FILL sand and gravel	ASPHALT	DESCRIPTION	SOIL PROFILE	M: Local SCATION:	ECT: Mr.Christie IT: ECT LOCATION: 2150 Lake Shore BI
			7777)	<u>777 × ×</u>	<	· · · · ·			$\overline{\mathbb{X}}$	s s	TRATA PLOT			vd. T
			4AUNDIST	3BUNDIST	3AUNDIST	2BUNDIST	2AUNDIST	1BUNDIST	1AUNDIST	N T	UMBER YPE	SAMPLE		oronto, ON
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⊢ ω			r	2	N		23		12	E	LEVATION			
 3. Numbers refer €=3% control 											20 40 60 80 100 SHEAR STRENGTH (kPa) 0 UNCONF NED + FIELD YANE 0 UNCK TRIAXIA × LAB VANE	RESISTANCE PLOT	Date: Nov/08/2013	DRILLING DATA Method: Geo Probe Diameter:
										10 20 30 GR S	WATER CONTENT (%) WATER CONTENT (%) WATER CONTENT (%) WATER CONTENT (%) WATER CONTENT (%)		ENCL NO .:	REF. NO.: 1889-220

GRO	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 4.GPJ SPL.GDT 12/5/13	20 4	20		20	3 123		23 24	DEPT 24	(m)	뽀	DA.	CLI	
	ENDOP BORHENDE Sample reveletion at 4.6 m, Sampe reveletion at 4.6 m, installed.	grey			3 SILTY CLAY trace gravel, grey, very moist	0 5 SANDY SILT trace clay, brown, moist	8 FILL silly clay, trace sand, trace gravel, brown, moist	C5 mm of asphalt FIL sand and gravel, brown, moist 8	DESCRIPTION	SOL PROFILE	LOCATION:	OJECT LOCATION: 2150 Lake Shore Bh TUM: Local	OJECT: Mr.Christie	Geotechnical Environmental Materials Hyd
			77	++++++	<i>+++++</i>	X			STRATA PLO	от		vd, Tor		rogeolo
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ľ									POCKET (Cu) (kF	PEN. Pa)		5.0		
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GROUNI	2.4	2.1 22 3	22.6	24. I 0.6	00	(m) ELEV DEPTH 24.7	ВНГО	DATU	CLIEN	
DWATER ELEVATIONS	END OF BOREHOLE 1. Borehole backfilled with bentonite upon completion.	CLAYEY SILT grey/brown, moist	FILL sand & silt, grey/brown, saturated	FILL silt & sand, trace gravel, trace brick, brown, moist	TOPSOIL topsoil, dark brown, moist	DESCRIPTION	SOIL PROFILE	EGT LOCATION: 2150 Lake Shore Bit VI: Local CATION:	ECT: Mr.Christie T:	
						STRATA PLOT		ă, 10		
			2AUI	1BUI	1AUI	NUMBER	ş	ronto,		
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						"N" <u>BLOWS</u> 0.3 m	S			
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+ ω			23	22		ELEVATION				
× 3 Numbers refer © &=3% Strain						20 40 60 80 100 SHEAR STRENGTH (kPa)	DYNAMIC CONE PENETRATION	Date: Nov/11/2013	DRILLING DATA Method: Geo Probe	
at Failura						WATER CONTENT W. 10 20 30 POCKET PEN 10 20 30 POCKET PEN (M) (PR) POCKET PEN (M) (PR) (M) (PR) (REF. NO.: 1889-220 ENCL NO.:		
						AND PAIN SIZE TRIBUTION (%) SA SI CL	EMARKS			

	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 5.GPJ SPL.GDT 12/5/13	-															-
GROUI	4 ت	198			30	21.7				03	22,228	(m) ELEV 24.7		BHL	PRO.	PRO,	
NDWATER ELEVATIONS	 Ben be backfilled with bentonite upon completion. 		trace shale fragments		CLAYEY SILT grey, moist				some clay, trace sand, gravel, brown, moist	FILL sand and gravel, brown, moist SILT	ASPHALT 75 mm of asphalt	DESCRIPTION	SOIL PROFILE	JM: Local OCATION:	JECT LOCATION: 2150 Lake Shore Blvc	JECT: Mr.Christie NT:	Control Initial Privito Initial Materials Figure
		344	<u></u>	<u>,,,,,,,,,</u>				1	1			STRATA PLOT			, Toro		Rouge
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⊖ ^ε =3% Strain												0 80 100 TH (kPa) + 8 3 Sensitivity × LAB VANE 50 200 250			,	œ	
At Ealling												WATER CONTENT 10 20	PLASTIC NATURAL				
		t										30 NT (%)	LIQUI		REF. N		
		t										POCKET PER (Cu) (kPa)	40 N.	j ő	0.: 18		
												NATURAL UNIT (Mg/m ³)	WT		389-22		
												GRAIN SIZE DISTRIBUTION (%)	REMARKS		ŏ		-

	6.7	18 9	1 9 9	19.7	4.6	21 0		32	3		24.1			28 02 00		Ì	BHLO	PROJ	CLIEN
	END OF BOREHOLE 1. Sample refusal at 6.7 m. 2. 50mm-diameter monitoring well installed.	SHALE grey	CLAY grey, moist		SILTY CLAY grey, moist			SILT trace clay, gravel, grey/brown, mois	dark grey	grey, wet	SILTY CLAY		FILL sand and gravel, brown, moist	ASPHALT 75 mm of asphalt	DESCRIPTION	SOIL PROFILE	DCATION:	ECT LOCATION: 2150 Lake Shore B	IECT: Mr.Christie NT:
			M	++++ ++++	, <i>†††††</i>				++++++	++++++ ++++++			•		STRATA PLC	т		vd, Tor	
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SPL SOIL LC	OG 1889-220 BOREHOLE LOGS SET 3.GPJ SPL.GDT 12/5/13	·														-
GROU		4 9	20.7		30	22 5	18	2 I 2	24 3		(m) ELEV 25.6		BHL	PRO	PRO.	
NDWATER ELEVATIONS		 END OF BOREHOLE Borehole backfilled with bentonite upon completion. 	wet		grey, moist	grey/brown	trace organics, brown, moist	silty clay, grey, wet	sand & silt, grey/brown, moist	FILL sand and gravel, brown, moist	DESCRIPTION	SOIL PROFILE	OCATION:	JECT LOCATION: 2150 Lake Shore Blv	JECT: Mr.Christie NT:	Geotecililical Environmental Materials myor
			<i>++++</i>	+++++	+++++	1/0//	<u> </u>				STRATA PLOT			d, Tor		nnafic
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			DIST	DIST	DIST	IDIST		UDIST	DIST	DIST	ТҮРЕ	MPLE		N		
n											"N" <u>BLOWS</u> 0.3 m	ŝ				
BRAPH											GROUND WATE CONDITIONS	R				
- ω		20	21		22	23		24		25	ELEVATION]			
3. Numbers refer											20 40 60 100 SHEAR STRENGTH (AS) 0 UNCONFINED + FELD VANE • CUICK TRIAXUAL × LAB VANE 50 100 150 200 250	RESISTANCE PLOT	Date: NOV/06/2013	Diameter:	DRILLING DATA Method: Geo Probe	
											WATER CONTENT 10 20 30 POCKET PLAN 10 20 30 POCKET PLAN POCKET PLAN POCKET PLAN POCKET PLAN POCKET PLAN POCKET PLAN POCKET PLAN	PLASTIC NATURAL LIQUID		REF. NO.: 1889-2		
											GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	REMARKS		20		

4 ω	20 5	2.4	23 2 1 5 22 3	249.68 03.28	(m) DEPTH 24.7	PROJ PROJI DATU BH LC
 Berehole backflied upon completion. 	trace sand, trace shale, some gravel	CLAYEY SILT clayey silt, brown, moist	SILTY CLAY trace sand, organics, grey, wet	Topsoll Topsoll Send brown, moist SILT trace sand, some clay, brown, moist	DESCRIPTION	ECT: Mr.Christie IT: CT LOCATION: 2150 Lake Shore Blw Local Mr.Local
			<i>*****</i> *****		STRATA PLOT	d, Tora
	4AUN	3AUN	2AUN	18UN		onto, O
		DIST				ž
					0.3 m	<u></u>
					CONDITIONS	_
	21	22	23	24	ELEVATION	
					PRESISTANCE PLOT 0 00	DRILLING DATA Method: Geo Probe Diameter: Date: Nov/08/2013 Date: Nov/08/2013
 					AB VANE	- -
					NATURAL LIQUID IT CONTURE LIMIT P W W WL NATER CONTENT (%)	REF. NO
					POCKET PEN. (Cu) (kPa) NATUBAL UNIT WT	0.1188
					(Mg/m ³)	9-220
					AND AND 3RAIN SIZE STRIBUTION (%) SA SI C	

	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 5.GPJ SPL.GDT 12/5/13														_
GROU		2.4	2.1 22 2	22 5				03	22 24 24 24 24 24 24 24 24 24 24 24 24 2	DEPTH 24.6	â	BHL	DATL		
		 END OF BOREHOLE Sample refusal at 2.4 m. Borehole backfilled with bentonite upon completion. 	wet	CLAY clay, brick and glass fragments		grey/brown	FILL silt, some clay, grey, moist	Sand and gravel	100 mm of asphalt	DESCRIPTION		OCATION: SOIL PROFILE	JM: Local		Geotechnical Environmental Materials Hydro
			$\backslash\rangle$	\bigotimes		XX		\otimes	\otimes	STRATA PLC	от			-	geolog
			100		2AUN		1BU	ą		NUMBER	_	SA	errei,		JY
~			0	5	DIST		DIST	Č.		TYPE		MPLE			
							·			"N" <u>BLOWS</u> 0.3 m	· '	ő			12
<u>GRAPH</u> NOTES										GROUND W/	ATER S				
+					N			v.		ELEVATION					
$3_{,} \times 3_{;}$ Numbers refer $\odot ^{\epsilon = 3\%}$ Strain : to Sensitivity										SHEAR STRENGTH (kPa) UNCONF NED + FELD VANE OUNCK TRIAXIAL × LAB VANE 50 100 150 200 250	20 40 60 80 100	DYNAMIC CONE PENETRATION	Date: Nov/11/2013	Method: Geo Probe	
at Failure										We will be a constrained by the second secon	PLASTIC NATURAL LIQUID		ENCL NO.:		

GROUN	4	0						ç	24 2 0 3	0 0 24 5	(m) ELEV DEPTH 24.8		DATU BH LC	PROJ
	 Exo Per backfilled upon completion. 				grey, wet	oxidation		some clay, trace sand, brown, mois	FILL silt, brown, moist	TOPSOIL topsoil, dark brown, moist	DESCRIPTION	SOIL PROFILE	ECT LOCATION: 2150 Lake Shore B M: Local SCATION:	ECT: Mr.Christie
	u .								×		STRATA PLOT	1	Na, 10	
		4BU	4AU	зви	зAU	2BU	2AU	1BU		1 AU	NUMBER	s.	ironto,	
		NDIST	NDIST	NDIST	NDIST	NDIST	NDIST	NDIST	00		TYPE	MPLE	<u> </u>	
G											"N" <u>BLOWS</u> 0.3 m	S.		
RAPH											GROUND WATE CONDITIONS	R		
- ω		3	21		22		23	24			ELEVATION			
3. Numbers refer 2=3% cm.											20 40 60 100 SHEAR STRENGTH (kPa) 0 UNCONF NED + 6 5million 50 100 150 200 250	RESISTANCE PLOT	Date: Nov/11/2013	DRILLING DATA Method: Geo Probe
											WATER CONTENT 10 20 30 10 20 30	PLASTIC NATURAL LIQUID	HEF. NO.: 1889-22 ENCL NO.:	
											AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	REMARKS		

	7.6	178					29	22.4		23 8	250	(m) ELEV DEPTH 25.3		DATU BH L	CLIE	PRO
-	I. Sample refusal at 7.6 m. Sorehole backfilled with bentonite upon completion.			wet			SILTY-CLAY grey, very moist		SILT trace clay, brown, moist		ropsoli, dark brown FILL silt, trace clay, brown, damp	DESCRIPTION	SOIL PROFILE	JM: Local OCATION:	UT: JECT LOCATION: 2150 Lake Shore Bh	IECT: Mr Christie
ľ		<i>1<u>1</u><u>1</u><u>1</u><u>1</u></i>	++++++	<i>+++++;</i>	++++++	<i>++++++</i> ;	<i>++++++</i> +	× × × < × ×	× × × × ×			STRATA PLOT			/d, Tor	
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		DIST	DIST	IDIST		DIST	DIST	DIST	DIST	DIST		TYPE	MPLE		ž	
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											n n	GROUND WATE CONDITIONS	R			
		18	19		20	22	N	Į	3	24	25	ELEVATION				
ſ												• SHE	PYNA	Date:	Meth	
												AR ST	STANCE	Nov/	od: Ge	
-												RENG 1	PLOT	11/201	o Prot	
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												Pa) FIELD	TION			
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												ATER C				
												20 VITENT	TURAL	_	-	
												30 NT (%)			ËF. Z	
┢												POCKET PEN (Gu) (kPa)	5	NO.:	Ó	
ľ												NATURAL UNIT (Mg/m ³)	WT	1	889-2	
												GRAIN SIZE DISTRIBUTION (%) GR SA SI C	REMARKS		20	

25.4 23.9 1.5 3	(m) ELEV DEPTH	PROJ CLIEN PROJ DATU BH LC
TOPSOIL Tupe FILL Sill trace day, trace sand, oxidized, brown END OF BOREHOLE 1. Borehole backfilled with bentonite upon completion.	SOIL PROFILE DESCRIPTION	IECT: Mr.Christie UT: IECT LOCATION: 2150 Lake Shore Bk Mr.Local DCATION:
2	TRATA PLOT	d, To
18UNDIST	YPE S	ronto, ON
	0.3 m ROUND WATER ONDITIONS	
E E	LEVATION	1
	20 40 60 100 SHEAR STRENGTH (kPa) 0 UNCOVE NED + SELEVING 0 UNCOVE NED + SELEVING 0 UNCOVE NED + SELEVING 0 UNC THAXIAL × LAB VANE	DRILLING DATA Method: Geo Probe Diameter: Date: Nov/11/2013
	PLASTIC WITTING WATER CONTENT (W) WATER CONTENT (%) WATER CONTENT (REF. NO.: 1889-220 ENCL NO.:

GHOU	91 COULLOU 1009220 UORENULELUUS SEI SURF SPLISUI 123/13	43 209	21 2			1 5	24 0	0 25 3	(m) ELEV 25 5		DATU BH L	PRO.	PRO.]∢
NDWATER ELEVATIONS	 Borehole backfluce upon completion. 	grey, saturated	saturated			CLAYEY SILT brown, wet	_	Some clay, trace sand, brown, moist	DESCRIPTION	SOIL PROFILE	UM: Local OCATION:	JECT LOCATION: 2150 Lake Shore Bl	JECT: Mr.Christie NT:	Geotechnical Environmental Materials Hydr
		4	<u> </u>						STRATA PLOT			d, Toi		ogeolo
			BU	ЗАU	280	2AU	1BU	1AU	NUMBER	v	1	ronto,		gy
			NDIS	NDIS	NDIS	NDIS	NDIS	NDIS	TYPE	AMPL		N		
			-	-		-	-	-	"N" <u>BLOWS</u> 0.3 m	ES				2
GRAPH NOTES									GROUND WAT	ER	1			60
+		2		N	N		0	2	ELEVATION		1			5
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to Se									EAR S	ISTAN	e: No	meter	LLING	Ē
pers ret									100 NF NET		v/12/2		Geo P	1
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Failure									WATI	MIT				
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									POCKET PEI (Cu) (kPa)	N.] ?	0.: 18		
-		-							MATURAL UNIT (Mg/m ³)	rwt	-	89-22		
									GRAII DISTRI	REM		0		1_
		1							∛ B ~ 3	s A	1			1 C

GROUN	A 2001/200 1000/2010/2010/2010/2011/2011/	20.7					24.1 1 5		250 0.6	25.6	ELEV (m)	5	DATU	PROJ	•
DWATER ELEVATIONS	 Berchole backfulled upon completion. 	moist		grey/brown, wet			CLAYEY SILT grey, moist	sand, brown, moist SILT trace sand, some clay, brown, moist	FILL Sand and gravel, brown, moist FILL			SOIL PROFILE	M: Local	ECT: Mr.Christie T: ECT I OCATION: 2150 Lake Shore Biv	
Ē							× <i>H</i>	× × × × ×		STRATA	PLOT				Re
		4BUI	4AUI	3BUI	3AUI	2BUI	2AUI	1BUI	1AU	NUMBER	٦	4s		onto	97
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										"N" <u>BLC</u> 0.3	<u>DWS</u> 3 m	ŝ			1
RAPH										GROUNI	D WATER				
+ ω		21		22	23		24		25	ELEVAT	ION				
×. 										• • (1) Ø ⊑	SHE	DYNA	Date:	DRIL Metho	
Number										UICK TI	AR ST	MIC CC	Nov/	LING I od: Ge	
's refer										RIAXIAI	RENG		08/201	o Prot	
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										POC (Ci	KET PEN. u) (kPa)			- 122	
										(I 0		-		a-220	
										(%) SA SI	AND GRAIN SIZE	DEMADKO			-

e l	SPL SUIL LOG 1889-220 BOREHOLE LOGS SET 5.GPJ SPL.GDT 12/5/13	N									, D	οP	
INNOE	4. o	21.1		2 3	2		0.25	т) 100 ртн 100 ртн			ROJE	ROJE	1
DWATER ELEVATIONS	 Borchole backfülled upon completion. 			SILTY CLAY grey, moist		wet	SILT some clay, trace sand, trace gravel, brown, moist	DESCRIPTION	SOIL PROFILE	d: Local CATION:	ECT LOCATION: 2150 Lake Shore Bh	ECT: Mr.Christie T:	
		77777	<i>++++++</i> +	<i>77777</i>				STRATA PLOT	1		/d, To		00
		зви	3AU	2BU	2AU	1BU	1AU	NUMBER	s.	1	ronto,		07
		NDIS.	NDIS	NDIS	NDIS	NDIS.	NDIS	TYPE	AMPL		Q		
		-	-	-	-	-	-	"N" <u>BLOWS</u> 0.3 m	S				
GRAPH								GROUND WATE CONDITIONS	R	1			
+ 3			22	23	24		28	ELEVATION		1			
×3. Numbers refer © 8=3% Strain								20 40 60 80 100 SHEAR STRENGTH (KPa) 0 UNCONF NED + FIELD VANE 0 UNCONF TRIMAL - LAB VANE 50 100 150 200 250	RESISTANCE PLOT	Date: Nov/12/2013	Diameter:	DRILLING DATA Method: Geo Probe	
								WATER CONTENT 10 20 30 POCKETPER (Gu) (RPa) NATURAL UNIT	PLASTIC NATURAL LIQUID	ENCL NO.:	REF. NO.: 1889		
								GRAIN SIZE GRAIN SIZE (%) GR SA SI CL	REMARKS		9-220		

e l	SPL SOIL LOG 1889-220 BOHEHOLE LOGS SET 5.GPJ SPL.GDT 12/5/13	N	N				N	.	N				0 1	٦,
OUND	* ŏ	1.1	1.4			18	1.4 3.8	Δ ω	0 00	n) TH			LIENT	G
WATER ELEVATIONS	1. Border backflue upon completion.	Grey, wet			saturated	SILT brown, wet	CLAY dark grey, wet	grey	topsoiL Sucr some clay, trace sand, trace gravel, brown	DESCRIPTION	SOIL PROFILE	CT LOCATION: 2150 Lake Shore Biv : Local :ATION:	CT: Mr.Christie	eotechnical Environmental wateriats riyuu
		14								STRATA PLOT				geoiu
			3BUI	3AUI	2BUI	2AUI		1BUI	1AU	NUMBER	٩S	onto,		ЧY
			NDIST	DIS	NDIST	VDIST		NDIST	DIST	TYPE	MPLE	l S		
										"N" <u>BLOWS</u> 0.3 m	ŝ			
3RAPH										GROUND WATER CONDITIONS				
+ 3				22	23		24		25	ELEVATION				
× 3; Numbers refer © ^e =3% Strain a										20 40 60 80 100 SHEAR STRENGTH (kPa) 0 UNCONF NED + RELD VANE 4 OUNCK TRIAXIAL × LAS VANE 50 100 150 200 250	RESISTANCE PLOT	Diameter: Date: Nov/12/2013	DRILLING DATA Method: Geo Probe	
at Failure										We		REF. NO.: 1889-220 ENCL NO.:		
										AND DAIN SIZE FRIBUTION (%) SA SI CL	MARKS			- -


GROUND	4 9	20 9	40		2.4	23 3		Co	25 3	(m) ELEV DEPTH		DATUN BH LOC	PROJE CLIENT PROJE	
WATER ELEVATIONS	 Berbiole backfilled with bentonit upon completion. 		CLAYEY SILT brown, moist, hard		SILTY CLAY grey, wet		oxidation organics	silt, some clay, trace sand and gravel, greyish brown, moist	ropsoir brown, moist, loose	DESCRIPTION	SOIL PROFILE	: Local XATION:	CT: Mr.Christie	
	-		<u>7777</u>	<i>+++++</i> ;						STRATA PLOT			vd, Tor	
		4BUN	4AUN	3BUN	3AUN	2BUN	2AUN	18UN	1AUN	NUMBER	SA		onto, C	
_		DIST	DIST	DIST	DIST	DIST	DIST	DIST	DIST	TYPE	MPLES		2 Z	
GRAF										0.3 m GROUND WATE	R			
Ĕ										ELEVATION				
		21		22	23	ŗ	2	25		• ः <u>भ</u>	REDY	Da	Dia Me	,
Numt										UNCO 50	SISTAN	ite: No	ameter:	
bers refe										40 TREN TRIAXI	CE PLO	v/13/20	à DAT/ àeo Pro	
										150 × + (k	N	13	be	
s=3%										Pa) FIELDV LAB V.	TION			
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1											PLASTI			
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										NTENT	IRAL	Ę	R	
										~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			F. NO.	
⊢										POCKET PEN (Cu) (kPa) NATURAL UNIT	и. wt	а - С	. 1889	
$\vdash$										(Mg/m ³ ) GR DIS G	7		-220	
										AND RAIN SI TRIBUT (%) SA SI	EMAR			
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	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13									-
<u>GROU</u> Shallov	 N	24.1		2 <b>8</b> .9	(m) ELEV 25.7		BHL	PRO	CLIE	
INDWATER ELEVATIONS	Electrice backfilled with bentonite upon completion	grey, very moist	occassional brick	FIL FIL silt, brown, moist, loose	DESCRIPTION	SOIL PROFILE	OCATION:	JECT LOCATION: 2150 Lake Shore Bh	NT:	Geotechnical Environmental Materials Hyd
allation		**	<u> </u>		STRATA PLOT	1		vd, To		rogeolo
			Ē	IAL	NUMBER	s	1	ronto,		ygy
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			-	4	"N" BLOWS 0.3 m	۳.				5
GRAPH NOTES					GROUND WATE	R	1			60
+					ELEVATION		1			) Ť
×, ×				25	<u>भ</u> ः •	REPY				澋
to Sensitivity					20 40 60 HEAR STRENGT UNCONF NED QUICK TRIAXIAL 50 100 15	SISTANCE PLOT	Ite: NOV/13/2013	ameter:	thod: Geo Probe	HOLE BH2
⊖ ^ε =3% Strain					H (kPa) + FIELD VANE + a Sensitivity × LAB VANE 200 250				ų	
at Failure					We www www WATER CONTENT (%)	PLASTIC NATURAL LIQU	ENCL	REF. N		
					POCKET PEN	<u>5</u>		0.: 1		
					NATURAL UNIT (Mg/m ³ )	wт		1889-2		
					GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	REMARKS		20		1 OF 1

		20 000 200-	(m) ELEV DEPTH 25.7		BHL	CLIEN
	END OF BOREHOLE 1. Sample refusal at 1.5 m 2. Berehole backfilled with bentonite upon completion.	90 mm FILL Stand gravel SLT SLT SLT SLT Tace sand, oxidation, brown, moist	DESCRIPTION	SOIL PROFILE	JM: Local DCATION:	IECT LOCATION: 2150 Lake Shore Biv
		~~~ <u>`</u>	STRATA PLOT	1		d, To
		1AL	NUMBER	6	1	ronto
	JN DI	JNDI	TYPE	AMP		, Q
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פיני			GROUND WAT	ĒR		
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		25	• ़ थ	교업		
•			HEAR STRENGT UNCONF NED QUICK TRIAXIAL 50 100 150	SISTANCE PLOT	ate: Nov/13/2013	ameter:
!			H (kPa) + Field VANE + Sensitivity × LAB VANE 0 200 250	MAIION		Ū
			We CONTENT	PLASTIC NATURAL LIC	ENC	REF.
			© 1 ≤		No	NO.::
			(Cu) (kPa)	ч. : WT		1889
			(Mg/m ³)			3-220
			GRAIN SIZE ISTRIBUTION (%) 3 SA SI CL	REMARKS		-

	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13														
<u>GROUI</u> Shallow	4 0	20 9							255	(m) DEPTH		BHL	PRO,	PRO,	
NDWATER ELEVATIONS	 Experience backfulder Experience backfulder upon completion. upon completion. 	_			oxidation zone		organic layer	brown, moist, compact	SILT some clay, trace sand and gravel,	DESCRIPTION	SOIL PROFILE	OCATION:	JECT LOCATION: 2150 Lake Shore BI	JECT: Mr.Christie NT:	Geotechnical Environmental Materials Hydr
allation		× × < × ×	× × × × × × ×	× × × × ×	× × × × × ×	× × × ×	× × × × × ×	× × × × × ×	××	STRATA PLOT			rd, To		ogeolo
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1710										"N" <u>BLOWS</u> 0.3 m	S				5
<u>GRAPH</u> NOTES										GROUND WATE CONDITIONS	R				0 0
+ 3		21	22		23		24	25		ELEVATION]			BO
1×3 ; Numbers refer 2 2 2 3 Strain										20 40 60 80 100 SHEAR STRENGTH (KPa) 0 UNCONF NED + FIELD VANE 0 UNCONF TRIAVAL - LAB VANE 50 100 150 200 250	RESISTANCE PLOT	Date: Nov/13/2013	Diameter:	DRILLING DATA Method: Geo Probe	REHOLE BH29
at Failure										WATER CONTENT (%) 10 20 30 NATURAL UNIT (Ø) 0 20 30 0 20 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PLASTIC NATURAL LIQUID	ENCL NO.:	REF. NO.: 1889-220		
										AND GRAIN SIZE NISTRIBUTION (%) 7 SA SI CL	REMARKS				1 OF 1

0 0	6.6 19 0	6.1 193	198							60	2 0 1 0	25.00	(m) ELEV DEPTH		DATU	PROJ PROJ
END OF BOREHOLE 1. Sample retusat 8.8 m 2. 50 mm-diameter monitoring well Installed	SHALE	CLAY shale fragments						organics at 2 m (thickness 0.7 m)	organic layers	SILT some clay, greyish brown, moist, ve stiff	SANU trace silt, brown, very moist, loose	dark brown, moist	DESCRIPTION	SOIL PROFILE	IM: Local DCATION:	IECT: Mr.Christie
			× × × × × × × × × × × × × × × × × × ×	× × × × ×	<	× × × × ×	× × × × × ×	× × × × ×	× × ×	γ × × × × ×	• . • .	• _x s	STRATA PLOT	1		vd, To
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	\$		20	21	22		23	24		5	ວ ກ	E	LEVATION		_	
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													>00 × + (kPa) LAB = 00	V RATIO		
													D VANE	2		
													<u>ح بغ أ</u>	P		
													ATER 0	ISTIC N		
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													30 IVT (%)	EQ	ENCL	REF. N
													POCKET PEN (Cu) (kPa)	5	NO.:	0 .: 1
													NATURAL UNIT (Mg/m ³)	WT		889-2
												GH SA SI	GRAIN SIZE DISTRIBUTIO (%)	REMARKS		20

i	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13																	-
GROUT	4 0	20 9	40	21 9								2 8 .0	(m) ELEV DEPTH 25 8		BHL	PRO.	CLIEF	
NDWATER ELEVATIONS	 Bereheie backflied upon completion. 	wet	CLAYEY SILT clayey silt, grey, very moist						organic layer at 1.4 m (thickness 200 mm)	very moist	SILT some clay, trace sand, trace gravel, brown, moist	dark brown, moist	DESCRIPTION	SOIL PROFILE	JM: LOCAI OCATION:	JECT LOCATION: 2150 Lake Shore Blvd	JECT: Mr.Christie	Geotechnical Environmental Materials Hyoro
				××	× × × × × ×	× × × × ×	× × × × ×	× × ×	× × × × ×	× × >	< × × × ×	· ×	STRATA PLOT	_	4	, Toro		Jeology
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							_						"N" <u>BLOWS</u>	IPLES		z		
													0.3 m GROUND WATE	R	-			
망면													CONDITIONS		$\left\{ \right.$			
+ ³ ,×		21		22		23		24		25				20		, ,	< 0	
3. Numbers refer O ^c =3% Strain a													20 40 60 80 100 HEAR STRENGTH (Pa) • UNICONF NED + ELD VANE • OUICK THIAXAL × LAB VANE 50 100 150 200 250	ESISTANCE PLOT	ate: NOV/13/2013	iameter:	RILLING DATA ethod: Geo Probe	
at Failure													WATER CONTENT (%) 10 20 30 NATURAL UNIT IN 10 20 30 NATURAL UNIT 10 20 30	PLASTIC NATURAL LIQUID	ENCL NU:	REF. NO.: 1889-2		
													AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	REMARKS		220		

GROUN		20 3	4	219				24 3 1 5			28.9 0.2	(m) ELEV DEPTH		DATU BH LC	CLIEN	
DWATER ELEVATIONS	 So m-diameter monitoring well installed later encountered at 0.9 mbg Nov. 12, 2013. 	shale	grey, wet, soft				occasional grey fissures	SILT some clay, brown, moist, hard		FILL silt, some clay, trace sand and gravel, greyish brown, wet, loose	TOPSOIL 150 mm, dark brown, wet, loose	DESCRIPTION	SOIL PROFILE	M: Local ICATION:	ECT : MILUTINSUE	COT. Mr Obvistio
ľ		7777 7777	;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;		× × × × ×	× × × × × ×	× × × ×	×		****	X E s	TRATA PLOT			rd, Tor	
		Ę					- E			Ę	N	IUMBER	SA		onto, C	
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g, i		a sugar		i en text								0.3 m				
APH									× 7<			ONDITIONS				
ω			21	22		23	24	2	40v 12	2	E	LEVATION		_		
з. х									4.9 m				RESIST	Date:	Method	
umbers													ANCE F	Nov/12	ter:	
refer													PENE	2/2013	Probe	
												×+(KPa -80	V RATIO			
=3%													ž			
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												POCKET PEN		L NO.:	NO.:	
ŀ												(Cu) (kPa) NATURAL UNIT (Mg/m ³)	WT		1889-	
ľ											g	DIST	R		220	
											2	AIN SIZ	MARKS			

	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13												_
GROUI		19.7	4.6	24	30	22 8			25 2 0.6	(m) ELEV DEPTH		PRO PRO DATL	8
NDWATER ELEVATIONS	END FE BOREHOLE Event Set Set Set Set Set Set Set Set Set Se	shale fragments	grey, wet, sott	-	 SAND trace silt, brownish grey, saturated clayey silt, grey 			zones of oxida ion, brown, moist	90 mm 91 FIL silt, some clay, trace sand and silt, some clay, trace sand and silt, some clay, trace sand and	DESCRIPTION	SOIL PROFILE	URC 1: Mr.Unistie UECT LOCATION: 2150 Lake Shore Blw UR: Local UCATION:	Geotechnical Environmental Materials Hydro
- vian		++++++	<i>44444</i>			+++++		++++++	<u> </u>	STRATA PLOT		d, Toro	geolog
•		4BUN	4AUN	3BUN	3AUNI	2BUN	2AUN	1BUN		NUMBER	SAN	into, O	< `
		DIST	DIST	DIST	DIST	DIST	DIST	DIST	DIST	IYPE	APLES	ž	
RIG										0.3 m	<u> </u>		5
MAPH DTES										CONDITIONS	н		Ř
,+ ,3		20	21	22		23	24	5	5	ELEVATION			BO
$ imes ^3$: Numbers refer $^{ m e=3\%}$ Strain z to Sensitivity										20 40 60 80 100 SHEAR STRENGTH (kPa) 0 LINCONF NED + 8 500000 0 CUICK TRIAXIAL × LAB VANE 50 100 150 200 250	RESISTANCE PLOT	Method: Geo Probe Diameter: Date: Nov/12/2013	REHOLE BH33
at Failure										WATER CONTENT (%) 10 20 30 NATURAL (MIT PA) 10 20 30 1	PLASTIC NATURAL LIQUID	REF. NO.: 1889-220 ENCL NO.:	
										AND GRAIN SIZE ISTRIBUTION (%) ? SA SI CL	REMARKS	_	1 OF 1

GRO	SPL SOIL LOG 1889-220 BOHEHOLE LOGS SET 7.GPJ SPL.GUT 12/5/13	21				_	24 0	25	0			BH DA PR	CLI
UNDWATER ELEVATIONS	EVD OF EPICLE Sample refusal at 4.6 m Bonchole backfilled with bentonite upon completion.	<u>ω</u>		damp/moist		5 CLAYEY SILT clayey silt, trace sand, brown, damp	silty clay, brown, moist	FILE sand and gravel, brown, moist	ASPHALT 1 25 mm of asphalt	DESCRIPTION	SOIL PROFILE	OJECT LOCATION: 2150 Lake Shore Biv TUM: Local LOCATION:	OJECT: Mr.Christie ENT:
									*	STRATA PLOT		d, Tor	
		3BUNDIST		3AUNDIST	2BUNDIST	2AUNDIST	1BUNDIST			NUMBER TYPE "N" <u>BLOWS</u> 0.3 m	SAMPLES	onto, ON	
GRAPH										GROUND WATER CONDITIONS	1		
+ ω			22		23	24	ŗ	v n		ELEVATION			
× 3. Numbers refer 0 = 3% Strain :										20 40 60 80 100 SHEAR STRENGTH (kPa) • UNCONFINED + FELLOWING • UNCONFINAL × LAB VANE 50 100 150 200 250	RESISTANCE PLOT	Diameter: Date: Nov/13/2013	DRILLING DATA Method: Geo Probe
at Ealling										WATER CONTENT (%) 10 20 30 10 20 3		REF. NO.: 1889-220 ENCL NO.:	
										AND GRAIN SIZE NSTRIBUTION (%) 7 SA SI CL	REMARKS		

GER		20					!	24 0	25	ELE (m)		BH DA	PR	CLI PR
UNDWATER ELEVATIONS	 END OF BOREHOLE 1. Borehole backfilled with bentontia upon completion 			clayey siit, occasional silt layers			2 SILT some clay, grey, moist, hard	.6 FILL silt, some clay, trace sand and gravel, brown, moist, compact	Sand and gravel	DESCRIPTION	SOIL PROFILE	TUM: Local LOCATION:	OJECT LOCATION: 2150 Lake Shore Bh	OJECT: Mr.Christie ENT:
		× × ×	× × × ×	× × × × × × ×	× × × × × ×	× × × × × ×	× × × × × ×		\otimes	STRATA PLOT	1		/d, To	
		4BUNDIST	4AUNDIST	3BUNDIST	3AUNDIST	2BUNDIST	2AUNDIST	1BUNDIST	1AUNDIST	NUMBER TYPE "N" <u>BLOWS</u> 0.3 m	SAMPLES		ronto, ON	
GRAPH										GROUND WATE CONDITIONS	R			
+ ω		N		22	23		22	22		ELEVATION				
3. Numbers refer ∩ ε=3% strain										20 40 60 80 100 SHEAR STRENGTH (KPa) O UNCOME NED + FIELD VANE O QUICK TRIAXIAL × LAB VANE 50 100 150 200 250	RESISTANCE PLOT	Date: Nov/13/2013	Diameter:	DRILLING DATA Method: Geo Probe
										WATER CONTENT 20 10 20 10 20 10 10 10 10 10 10 10 10 10 1	PLASTIC NATURAL LIQUID	ENCL NO.:	REF. NO.: 1889-2	
										GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	REMARKS		220	

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Tric Lake Shore Br Tric Coal CATION: 2150 Lake Shore Br Mt Local SOIL PROFILE DESCRIPTION Sp mm FIL Sp mm Sp mm FIL Sp mm Sp mm Sp mm DESCRIPTION Sp mm Sp
ja j
GROUND WATER CONDITIONS
ELEVATION
DemiLinko DATA Method: Geo Probe Diameter Data: Nov/13/2013 DemiLinko Conc EPISETIATION RESISTINGE PLOT SHEAR STREEMOTH (GPa) - UNCONFINED - UNCONFINED - 100 150 200 250 - 00 100 150 200 250 - 00 100 150 200 250
REF. NO.: 1889-220 ENCLUOU: NUMERIC LOUDE NOTENT WATER CONTENT NUMERIC LOUDE NATER CONTENT NUMERIC LOUDE NUMERIC LOUDE NATER CONTENT NUMERIC LOUDE NATER CONTENT NUMERIC LOUDE NUMERIC LOUDE

÷	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13							· · ·						
GROU	8	21 2				23.7	24 3	25 0	ELEV DEPTH		BHL	PRO.	CLIE CLIE	
INDWATER ELEVATIONS № Single Installation∑ Σ Deep/Dual Installa	 Leschuid Vinture Vontonite upon completion. 			brown/grey	clayey silt, trace sand, brown, moist	SILTY CLAY silly clay, trace sand, grey, very moist CLAYEY SILT	clayey silt, trace sand, trace gravel, brown, moist	VOO mm of asphalt FILL sand and gravel, brown, damp	DESCRIPTION	SOIL PROFILE	UM: Local OCATION:	JECT LOCATION: 2150 Lake Shore Blvd,	NECT: Mr.Christie	Geotechnical Environmental Materials Hydrog
tion 🗸			<u>ω</u>	1111	<u></u>	447777 12			STRATA PLOT	-	-	Toron		eology
					BUND				TYPE	SAM		nto, Of		
		- IST	- IS		IST	- ST	- ST	- IS	"N" <u>BLOWS</u>	PLES		2		
GRA									0.3 m GROUND WATE	R				00
비행									CONDITIONS		1			유
+ ³ ,×			22		23	24	č	ა л		20		0	2 0	Å
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									POCKET PEN		NO	NO.:		
									(Cu) (kPa) NATURAL UNIT (Mg/m ³)	WT		1889-:		
									GR S	RE	1	220		
									AND AIN SIZ (%) A SI	MARK				1 9
l									р g	S				

GDOIN	72 05 1502 05	28.9 25.1	(m) ELEV DEPTH 25.7			PROJ
DIWATED ELEVATIONIS	END OF BOREHOLE 1. Borehole backfilled with bentonite upon completion.	ASHPHALI 90 mm FILL sand and gravel, brown, moist	DESCRIPTION	SOIL PROFILE	TT: 2150 Lake Shore Bk	ECT: Mr.Christie
		: : :	STRATA PLOT		d, To	
		1AU	NUMBER	ŝ	ronto,	
		NDIS.	TYPE	AMPL	N	
		7	"N" <u>BLOWS</u> 0.3 m	ES		
<u> 3RAPH</u> NOTES			GROUND WATER CONDITIONS			ľ
+			ELEVATION			ľ
,×3: Numbers			20 40 SHEAR STF ● QUICK TF 50 10	DYNAMIC COT RESISTANCE	Method: Gec Diameter: Date: Nov/1	DRILLING D
s refer O ^{& =3%} Strain			0 60 80 100 RENGTH (kPa) FIELD VANE NED + FIELD VANE NIAXIAL × LAB VANE 150 200 250	PLOT	3/2013	DATA
at Failure			We with Control LIMIT We w w w w	NATURAL	REF. NO.: ENCL NO.	
			(Cu) (kPa) NATURAL UNIT W	т	1889-	ľ
			GR SA SI CI	REMARKS	-220	

	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET	7.GPJ SI	PL.GDT 12/5/1	3													_
GROUT	7.6	18.1	18.7	58	19 9			30	22.6	-1 5	24.2	29 0.1 248	(m) ELEV DEPTH 25.7		DATL BH L	CLIEF	PRO.
NDWATER ELEVATIONS	END OF BOREHOLE 1. Samble returns at 7.1 m. 2. Somm-diameter monitoring well installed at 7.6 m.		SHALE	SILTY CLAY silty clay, grey, very moist trace gravel, trace shale fragments				CLAYEY SILT clayey silt, trace sand, grey, moist		SILT some sand, trace clay, brown, damp/moist	FILL clayey silt, some sand, trace gravel, brown/red, moist	ASPHALT 25 mm of asphalt FILL sand and gravel, brown, damp	DESCRIPTION	SOIL PROFILE	JM: Local OCATION:	NT: JECT LOCATION: 2150 Lake Shore Blv	JECT: Mr.Christie
			77777	+++++	<u>7777</u>								STRATA PLOT			d, Torr	- month
			5AUN 5BUN		4BUN	4AUN	звии	3AUN	2BUN	2AUN	1BUN	1AUN	NUMBER	SA		onto, C	57
					DIST	DIST	DIST	DIST	DIST	DIST	DIST	DIST	TYPE	MPLE		ž	
<u>G</u>													0.3 m	0			
APH				1111								000	CONDITIONS	R			
+ ω			19		20	2		22	23	24		25	ELEVATION				
× 3: 1													● SHE/	PESIS	Date:	Metho	
Number													AR STI	TANCE	Nov/1	od: Ge eter:	
s refer														PLOT	3/201	o Prob	DATA
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e =3%													Pa) FIELD V & Bensil	TION			
Strain													50 May 10				
at Failu														PLAST	1		
¢													TER CON	NAT			
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													10 F (%)	LIQUIE		E N	
													POCKET PEN. (Cu) (kPa)	0		0.: 18	
													NATURAL UNIT V (Mg/m ³)	ΝT		89-22	
													AND GRAIN SIZE DISTRIBUTION (%) IR SA SI CL	REMARKS		0	-

GROUN	4 \$	21.1				08	24.9	(m) ELEV DEPTH 25.7	9	PRO. DATL	PRO
NUMATER ELEVATIONS	1. Sample reluxal at 4 m. 2. Borehole backfilled with bentonite upon completion.	grey			trace sand, brown	CLAYEY SILT brick fragments, brown/red, moist	FILL sand and gravel, brown, damp	DESCRIPTION	SOIL PROFILE	JECT LOCATION: 2150 Lake Shore Biv JM: Local DCATION:	JECT: Mr.Christie NT:
		<u> </u>						STRATA PLOT		d, Torc	
-								NUMBER	SAM	nto, Of	
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GRAP								GROUND WATEF	1		
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3; × 3: Numbers refer 0 €=3% Strain							л 	20 40 60 80 100 SHEAR STRENGTH (kPa) 0 LINCONF NED + FELD WARE 50 100 150 200 250	DYNAMIC CONE PENETRATION	Diameter: Date: Nov/13/2013	DRILLING DATA Method: Geo Probe
4 E-211 20								WATER CONTENT CHANT WATER CONTENT (%) WATER CONTENT (%) POCKET PENN POCKET PENN MATURAL UNIT MATURAL UNIT MATURAL UNIT MATURAL UNIT MATURAL UNIT		REF. NO.: 1889-220 ENCL NO.:	
								AND STRIBUTION (%) SA SI CL	REMARKS		

. 1	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13										1	_
GROUI		4.6	21 22	30	22.7		24 2	28.9	(m) ELEV 25.8		CLIEI PRO, DATL BH L	PRO.
NDWATER ELEVATIONS		END OF BOREHOLE 1. Borehole backfilled with bentonite upon completion.		CLAVEY SILT brown, moist/very moist		FILL clayey silt, some sand, trace organics, black/brown, moist	brick fragments, asphalt fragments, grey	ASPMALT 75 mm of asphalt FIL sand and gravel, brown, damp	DESCRIPTION	SOIL PROFILE	NT: UECT LOCATION: 2150 Lake Shore Blv JM: Local OCATION:	JECT: Mr.Christie
									STRATA PLOT		d, Toj	
			зви	3AU	2BU	2AU	1BUI	1AU	NUMBER	_s	onto,	
			VDIS.	VDIS	VDIS	VDIS.	VDIS:	VDIS	TYPE	MPL	Q	
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GRAPH NOTES									GROUND WATE CONDITIONS	R]	
+ 3				N	N	22	ŗ	2	ELEVATION		1	
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									(Cu) (kPa) NATURAL UNIT	WT	1889	
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									AND FAIN S TRIBU (%) SA S	REMAR		
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GROUN		4 9 20 3	20 9			2.4	23 3		25 0.1			CLIEN PROJI DATU BH LC	PROJ
DWATER ELEVATIONS	 Serverbuck at 5.m. Borehole backfilled with bentonte upon completion. 	SHALE				CLAYEY SILT occasional sand layer, grey, moist	grey	silt, trace clay and sand, brown, moist	FILL sand, trace gravel, brown, moist	DESCRIPTION	SOIL PROFILE	T: ECT LOCATION: 2150 Lake Shore BN M: Local ICATION:	ECT: Mr.Christie
			2222	<u> </u>	<u> </u>					STRATA PLOT	1	d, To	
		5AU	4BU	4AU	3BL	3AU	28U	1BU	1AU	NUMBER	ŝ	ronto,	
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										"N" <u>BLOWS</u> 0.3 m	ES		
<u>GRAPH</u> NOTES								·		GROUND WATE CONDITIONS	R		
+ 			21	22		23	24	25		ELEVATION			
×										• SHEV	DYNA	Metho Diam Date:	DRIL
Number											TANCE	od: Ge eter: Nov/	LING
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e =3%										Pa) FIELD	TION		
Strain										ANE 100			
at Failu										× T ^w IMIT	PLAST		
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										POCKET PEN (Cu) (kPa)		5 O.	
										NATURAL UNIT (Mg/m ³)	WT	89-22	
										A GRAI DISTRI	REM	ö	
										IBUTIC	IARKS		

İ	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13												
<u>GROU</u> Shallov	4.6	21 0				090	24 P	ELEV 255		BHL	PRO	CLIE	
NDWATER ELEVATIONS	 END OF BOREHOLE I. Sample relusal at 4 6 m. Borehole backfilled with bentontie upon completion. 					CLAVEY SILT trace sand, brown, moist	ASPHALI 25 mm of asphalt FIL sand and gravel, brown, moist	DESCRIPTION	SOIL PROFILE	OCATION:	JECT LOCATION: 2150 Lake Shore Bh	JECT: Mr.Christie NT:	Geotechnical Environmental Materials Hyd
• llation								STRATA PLOT	1		vd, To		rogeolo
		звu	3AU	2BU	2AU	Ē	ĨĄ	NUMBER	v	1	ronto,		y gy
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		Г	-			-	-	"N" <u>BLOWS</u> 0.3 m	ES				5
<u>GRAPH</u> NOTES								GROUND WATER CONDITIONS	R	1			0.00
+ 3		21	22	23		22	28	ELEVATION		1			FBO
,×3. Numbers refe to Sensitivity								20 40 SHEAR STREN • UNCONF NED • QUICK TRIAXI 50 100	PYNAMIC CONE P RESISTANCE PLO	Date: Nov/13/20	Diameter:	DRILLING DAT, Method: Geo Pr	REHOLE BH
rr ⊖ [€] =3% Strain								60 80 100 GTH (kPa) H FIELD VANE + AL × LAB VANE 150 200 250		013	5	be	43
at Failure								WATER CONTENT () 10 20 30	PLASTIC NATURAL LIC	ENC	REF.		
								POCKET PEN.	JUID		NO.:		
								(Cu) (kPa) NATURAL UNIT V (Mo/m ³)	NT		1889-		
								AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	REMARKS		220		1 OF 1

upor compression c	END OF BOREHOLE 1. Borehole backfilled with bent upon completion.	FILL silt, some clay, trace sand gravel, brown, very moist	90 mm FILL sand and gravel, bro	DESCR	SOIL F	IM: Local DCATION:	
	lonite	d and	wn, moist, loose	IPTION	PROFILE		ISTIE
				STRATA PLOT			d, Tor
		1BUN	1AUN	NUMBER	SA		onto, (
		IDIST	IDIST	TYPE	MPLE		2 Z
				"N" <u>BLOWS</u> 0.3 m	ŝ		
				GROUND WATER CONDITIONS	۶		
			N	ELEVATION			
A Control Cont				20 40 60 100 SHEAR STRENGTH (KP2) 0 LINCONFINED + 6 FUELD VANE 50 100 150 200 250	RESISTANCE PLOT	Date: Nov/13/2013	Method: Geo Probe Diameter:
				WATER CONTENT (%) 10 20 30 10 20 3	PLASTIC NATURAL IIOIIID 5 RE	ENCL NO .:	REF. NO.: 1889-220

ř	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13														
GROU			2 6 8 4.7	21 0			23.1		0	24 8	20.1	(m)		PRO DATI	PRO
	 Sample retural at 4.7 m. Stom-retarned remotioning well installed at 5.3 m. 	END OF BOREHOLE	3 SHALE 7 Shale, grey	shale fragments, grey			dayey silt, trace sand, brown, moist	trace wood fragments	3 FILL clayey silt, trace sand, trace organics, dark brown	FILL sand and gravel, brown, damp	A ASPHALT 1 125 mm of asphalt	DESCRIPTION	SOIL PROFILE	UN: LOCATION: 2150 Lake Shore Blv UM: Local LOCATION:	JECT: Mr.Christie
				<u> </u>			<i>UUU</i> X				s) s	STRATA PLOT		i, Torr	
			4AUN		3BUN	3AUN	2BUN	2AUN	1BUN	1AUN	N	IUMBER	SA	onto, (
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RD .											"	N" <u>BLOWS</u> 0.3 m	S		
3RAPH JOTES												ROUND WATER	R		
+				<u>.</u>		N)	N			N	E	LEVATION			
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pers ref										_	Ē		CE PLO	v/14/2	3 DAT
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ain at i													P		
Failure										_			LASTIC		
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[POCKET PEN. (Cu) (kPa)			
-											G	MATURAL UNIT V (Mg/m ³)	VT	39-22	
											H SA		REM		
												~ ~ ~ ~ ~ ~	~ .	1	

GROUN		15	08	2	2 9 .9	(m) ELEV DEPTH 25.6		DATU BH LC	PROJ	
	 Sample refusal at 1.5 m. Berehole backflued with bentonite upon completion. 	END OF BOREHOLE	FILL silt mixed with slag, brown, moist	FILL sand and gravel, brown, moist	90 mm of asphalt	DESCRIPTION	SOIL PROFILE	JCATION:	ECT LOCATION: 2150 Lake Shore Blv	ECT: Mr.Christie
		K			Ì	STRATA PLOT			d, To	
			18L	1AU		NUMBER	s		ronto,	
			NDIST	NDIST		TYPE	AMPLI		Q	
						"N" <u>BLOWS</u> 0.3 m	ES			
GRAPH		Τ				GROUND WATER CONDITIONS	1			
+		╈		N		ELEVATION				
1×3 . Numbers ref						20 40 SHEAR STREN O LINCONF NET O QUICK TRIAX 50 100	DYNAMIC CONE F	Date: Nov/13/2	Diameter:	Method: Geo Pr
er						60 80 100 HGTH (KPa) 150 200 250 150 200 250		013		A
1						UMATER CONTENT (%)	DI ACTIC NATURAL LICIUD	ENCL N	REF. NC	
						POCKET PEN. (Cu) (kPa)		0	0.: 18	
		+				MATURAL UNIT W (Mg/m ³)	n.		39-220	
						AND GRAIN SIZE DISTRIBUTION (%)	REMARKS		5	

	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13														- ٦
<u>GROU</u> Shallov		4.6	21 0	<u>د</u>	NN 55		24.2	08		DEPTH	1	BH L	PRO	CLIE	
// Single Installation	upor i	 END OF BOREHOLE 1. Borehole backfilled with bentonite upon completion. 	grey	 CLAYEY SILT TILL shale fragments, trace gravel, brow moist 			CLAYEY SILT	 FILL clayey silt, some sand, brown, moist 	FILL sand and gravel, brown, damp	DESCRIPTION	SOIL PROFILE	OCATION:	JECT LOCATION: 2150 Lake Shore Bi	JECT: Mr.Christie NT:	Geotechnical Environmental Materials Hyd
hallation			j <u>ol 1, jo</u>	ب (1) (1) (1) (1)			××			STRATA PLC	т		vd, To		rogeol
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			7	-	-				7	"N" <u>BLOWS</u> 0.3 m	ES				5
GRAPH NOTES										GROUND WA	TER	1			0.00
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3 × 3. Numbers refer O ^ε =3% Strain to Sensitivity				N		;				SHEAR STRENGTH (kPa) UNCONF NED + FLD VANE OUJCK TRIAXIAL × LAB VANE 50 100 150 200 250	20 40 60 80 100		Diameter:	DRILLING DATA Method: Geo Probe	DREHOLE BH47
at Failure										WATER CONTENT (%) 10 20 30 POCKET (Cu) (kP) NATURAL U (Mg/m	PLASTIC NATURAL LIQUID		REF. NO.: 1889-220		
										3 SA SI CL	REMARKS AND		5		1 OF 1

GROUN	22 088 15	(m) ELEV DEPTH 25.6 0 0	PROJ CLIEN PROJ DATU BH LC
IDWATED EI EVATIONS	FIL sit, some day, greyish brown, moist 1. Borehole backfilled upon completion. 	DESCRIPTION FILL moist and gravel, brown with black,	ECT: Mr.Christie IT: ECT LOCATION: 2150 Lake Shore Biv ECT LOCATION: Mr. Local CATION:
		STRATA PLOT	d, Tor
		TYPE	onto, ON
		"N" <u>BLOWS</u> 0.3 m	5
GRAPH		GROUND WATER CONDITIONS	
- ω	N 55	ELEVATION	
		PESSTAVCE PLOT	DRILLING DATA Method: Geo Probe Diameter: Date: Nov/13/2013 Date: Nov/13/2013
	Image: Sector	With Teneral Water Content of Con	REF. NO.: 1889 ENCL NO.:
		(Mg/m ²) GRAIN SIZE GR SA SI CL	9-220

a n Î	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13	_												٦ 🍙
3ROUI		21 0 4.6	ယ စ	21 8		15	08	280 0.1 248	(m) EPTH 25.6			PRO	PRO,	
W Sindle Installation √ ■ Deep/Dual Insta	upon completion.	END OF BOREHOLE 1. Borehole backfilled with bentonite	SILTY CLAY silty clay, trace gravel, grey, very moist	grey		CLAVEY SILT trace gravel, brown/grey, moist	FILL clayey silt, some sand, some gravel, brown, moist	ASPHALT 100 mm of asphalt FIL sand and gravel, brown, damp	DESCRIPTION	SOIL PROFILE	OCATION:	JECT LOCATION: 2150 Lake Shore Blv	JECT: Mr.Christie NT:	Geotechnical Environmental Materials Hydro
ation		XX	<i>++++</i> +			X <i>HHH</i> X			STRATA PLOT			d, Tor		geolo
			зви	3AU	2BU	2AU	1BU	1AU	NUMBER	_s		onto,		gy
			NDIS	NDIS	NDIS	NDIS	NDIS	NDIS	TYPE	MPL		Q		
			-		-	-	-		"N" <u>BLOWS</u> 0.3 m	- ES				5
GRAPH NOTES									GROUND WATE CONDITIONS	R	1			0.00
+					N	N		N	ELEVATION		1			E
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to S		_							DUIC CAR	SISTA	(e:	mete	ILIN thod:	<u>5</u>
nbers n ensitivi								_	STRE	NCE PI	0V/14/		Geo F	
ty ty		_						_	NGT 60	OT	2013		TA	1 [°]
0									2 × + 	N RAT				1
e =3%									a) IELD V AB V/	9				
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at Fail									₹ I ° M	PLAS	1			
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ŀ		+							(Cu) (kPa) NATURAL UNIT	wт		1889		
ŀ		+							(Mg/m ³) GR Dg G	-	1	-220		
									ANI STRIBL (%)	REMAF				1
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	 2 4	23 23	1 2	0.6	ол 1 00	(m) ELEV DEPTH 25.7		DATUN BH LO	PROJE
MATTER E FAATOAG	 END OF BOREHOLE Borehole backfilled with bentonite upon completion. 	wet	FILL silty clay, trace sand, grey, moist	FILL silt with some clay, greyish brown, moist	FILL gravel with some sand and silt, brown, moist	DESCRIPTION	SOIL PROFILE	A: Local DATION:	CT: Mr.Christie
						STRATA PLOT			/d. Top
		2BUN	2AUN	1BUN	1AUN	NUMBER	SAI		onto. C
		DIST	DIST	DIST	DIST	"N" <u>BLOWS</u>	MPLES		ž
GRAPH						GROUND WATE CONDITIONS	R		
-			Ņ	Ņ		ELEVATION			
 X Xumbers refer C-3% 						20 40 60 80 100 SHEAR STRENGTH ((Pa) O UNCONFINED + FIELD VANE O UNICK FINAVAL - LAS VANE 50 100 150 200 250	RESISTANCE PLOT	Date: Nov/14/2013	DRILLING DATA Method: Geo Probe Diameter:
						WP WITH CONTENT UNMTER WATER CONTENT % PL POCKETPEN 10 20 30 PL POCKETPEN NATURAL UNIT (Mgm 0 PL POCKETPEN NATURAL UNIT NATURAL UNIT	PLASTIC NATURAL LIQUID	ENCL NO.:	RFF NO · 1389-220
						AND GRAIN SIZE NISTRIBUTION (%) 3 SA SI CL	REMARKS		-

S	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13												-
GROUI		2.4	22	15	о 4 л		28.9	(m) ELEV DEPTH 26 0			PRO.	PRO,	•
I NDWATER ELEVATIONS	upon completion,	END OF BOREHOLE 1. Borehole backfilled with bento		FILL silty clay, grey, wet		silt with some clay, trace sand, b and grey, wet	sand with gravel, trace silt, brow moist FILL	DESCRIPTION	SOIL PROFILE	JM: Local OCATION:	JECT LOCATION: 2150 Lake Shore	JECT: Mr.Christie NT:	
		nite		~~			•	STBATA PLOT	-		e Blvd, T		00-
F		_	××××: R			i i i i i i i i i i i i i i i i i i i	<u>××××</u>	NUMBER			oront		10
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GRAP								GROUND WATER	3				
			N		N			ELEVATION					l
a ∴a Numbers refer ⊃ ε=3%						<u>۱</u>		20 40 60 100 SHEAR STRENGTH ((Pa) 0 UNCONF VED + 5 80-000 50 100 150 200 250	RESISTANCE PLOT	Date: Nov/14/2013	Diameter:	DRILLING DATA Method: Geo Probe	
								WATER CONTENT (%) 10 20 30 10 20 3	PLASTIC NATURAL LIQUID 5 RE	ENCL NO.:	REF. NO.: 1889-220		

70	5						24.6 1.7	c	25 5 2			PROJ DATU BH L(CLIEN
END OF BOREHOLE 1. Sample refusal at 7.0 m. 2. 50mm-diameter monitoring well installed at 7.6 m.					grey, moist		CLAYEY SILT brown/grey, moist	clayey silt, trace sand, trace gravel, brown, moist	FILE silt, some clay, some sand, some gravel, brown, moist	DESCRIPTION	SOIL PROFILE	IECT LOCATION: 2150 Lake Shore B IM: Local DCATION:	IECT: Mr.Christie NT:
4 14							X			STRATA PLOT		lvd, Tor	
	5AUND	4BUND	4AUND	3BUND	3AUND	2BUND	2AUND	1BUND	1AUND	NUMBER	SAM	onto, ON	
 	- is		ŝ	ŝ	ŝ	IST I	IST I	ŝ	- IST	"N" <u>BLOWS</u> 0.3 m	PLES	2	
									10 10	GROUND WATE	R		
19	20		21	22	23		24	25	26	ELEVATION			
										● QUIC 50	DYNAMIC	Diamete Date: N	DRILLIN Method:
 										40 STREN DNF NEE	NCE PLC	ır: ov/14/2	Geo Pr
										AL + (K		013	obe
										Pa) FIELD VM & Sensitive A B VAI 250 251	TION		
											2		
											ASTIC N		
												m .p	
										1T (%)	LIQUID	EF. NO	
										POCKET PEN (Cu) (kPa) NATURAL UNIT	WT	.: 1889 D.:	
										(Mg/m ²) GR DIST		-220	
										A REAN	Ň		

	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13	1											-
GROU		12 4	23 3	15	24 2		28.0	(m) ELEV DEPTH		BHL	PRO,	CLIEI	
NDWATER ELEVATIONS		 ENO FP BOREHOLT Sample refusel at 2.4 m. Borehole backfilled with bentonit upon completion. 	-	clayey silt, grey, wet		FILL sand, trace silt, brown, saturated	ASPHALT 75 mm of asphalt	DESCRIPTION	SOIL PROFILE	OCATION:	JECT LOCATION: 2150 Lake Shore B	JECT: Mr.Christie NT:	Geotechnical Environmental Materials Hy
		¢	****	~~				STRATA PLOT			lvd, To		drogeol
1			2BE	L L	e p	ž	2000	NUMBER	s	1	pronto,		ogy
5			INDIS					TYPE	AMPL		9 N		
			-	-	-	-	-	"N" <u>BLOWS</u> 0.3 m] Es				5
<u>GRAPH</u> NOTES								GROUND WATE	R	1			6
+				Ņ		N		ELEVATION		1			FBC
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Numb to Sen								AR S	STANC	Nov	neter:	LING	
ers refei sitivity									E PLOT	/14/20		DATA eo Pro	모
								150 TH 6	N	13		be	53
°=3								FIELD A Bens LAB V					
6 Strain													
at Failu								\$ T ^{\$ MI}	PLAST	1			
re								TER CO					
									URAL		R		
								30 F (%)	LIQUID		EF. NO		
								POCKET PEN (Cu) (kPa)			D.: 18		
								MATURAL UNIT	ΝT	4	89-22		
								AND GRAIN SIZE DISTRIBUTION (%) ;R SA SI CL	REMARKS		õ		1 OF 1

GROUN		2.4	20	24.4	0 2	26.4 26.2	(m) ELEV DEPTH		DATU BH LC	PROJ	3
DWATER ELEVATIONS	upor completion.	END OF BOREHOLE 1. Sample refusal at 2.4 m. 2. Borehole backfilled with bentonite	SILT CLAY grey, wet	wet	FIL FIL sill with some clay, trace sand, brown, moist,	TOPSOIL	DESCRIPTION	SOIL PROFILE	M: Local OCATION:	ECT: Mr.Christie IT: ■ ECT LOCATION: 2150 Lake Shore BI	
ŀ			777 777) <u>×</u> . 	RATA PLOT			vd. To	
			2BUN	2AUN	1AUN 1BUN	NL	JMBER	SA		ronto. (
			IDIST	IDIST		TY	PE	MPLE		Z	
8							0.3 m	0			
АРН						co	ONDITIONS	<u> </u>			
+ ~				25	26	EL	EVATION	70	_		
3. Nu						5		PYNAMIC	Date: N	DRILLIN Aethod: Diamete	
mbers re						10	STRE	NCE PL	ov/14/2	Geo P	
fer							NGTH 60	OFENETI	2013	robe	1
) 8						20	× (kPa) FIEL	¥ RATION			
3% Stra							100 D VANE Nailivity	-			
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B							ATER	N N			
·						18	NTENT NTENT	TURAL	т	п	
							IT (%)	2	NCL N	Fi Z	
ļ							POCKET PEN. (Cu) (kPa)		0	- - 18	
		_				្ន	MATURAL UNIT W (Mg/m ³)	m		20-22	
						R SA SI (AND GRAIN SIZE NSTRIBUTIO (%)	REMARKS		-	

10	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13								_				-
BOU		2 2	22				2 9 9 0.1	(m) ELEV EPTH		BHL	PRO	CLIEF	
NDWATER ELEVATIONS		END OF BOREHOLE 1. Sample refusal at 2.4 m. 2. Borehole backfilled with bent upon completion				FILL sand, cinders brown, moist	ASPHALT 120 mm	DESCRIPTION	SOIL PROFILE	JM: Local DCATION:	JECT LOCATION: 2150 Lake Sho	UECT: Mr.Christie	Geotechnical Environmental Materials
		onite						STRATA PLOT			e Blvd, Tc		Hydrogeol
			28	24	Ē	Į	5	NUMBER	6	1	pronto		ogy
			JNDIS	JNDIS	JNDIS			TYPE	AMPI		, N		
			- 1			-	-	"N" <u>BLOWS</u> 0.3 m	Es				
GRAPH								GROUND WATE	R				
+				N		N		ELEVATION		1			
3.×3: Numbers refer O ==3% Strai				<u>1</u> 4				20 40 60 80 100 SHEAR STRENGTH (kPa) 0 UNICONF NED + FELD VANE 0 UNICK TRIAXIAL × LAB VINE 50 100 150 200 250	RESISTANCE PLOT	Date: Nov/14/2013	Diameter:	DRILLING DATA Method: Geo Probe	
1 :								WATER CONTENT 10 20 30 10 20 3	PLASTIC NATURAL LIQUID	ENCL NO.:	REF. NO.: 1889-220		
								AND PIAIN SIZE TRIBUTION (%) SA SI CL	EMARKS				-

	 24. 2.4	2			25 0.1	DEPTH 265		DATU) BH LO	PROJE
WATER E FVATIONS	END OF BOREHOLE 1. Sample refusal at 4.9 m. 2. Borehole backfilled with bentonite upon completion.	silty clay, grey, wet		SILT some clay, trace sand, brown, moist hard, iron staining	HIL FILL sill, trace sand and clay, brown, very moist	DESCRIPTION	SOIL PROFILE	M: Local CATION:	ECT: Mr.Christie T: ECT LOCATION: 2150 Lake Shore Bh
						STRATA PLOT			d. Tor
	 	2BUN	2AUN	1BUN	1AUN	NUMBER	SAN		onto. C
		DIST	DIST	DIST		"N" BLOWS	NPLES		ž
GRAPH						0.3 m GROUND WATER	۲.		
+						ELEVATION			
3 × 3. Number refer						20 40 60 80 SHEAR STRENGTH (kPa) 0 LINCONF NED + FIEL 0 CUICK TRIAXIAL × LAB 50 100 150 200	RESISTANCE PLOT	Date: Nov/14/2013	DRILLING DATA Method: Geo Probe Diameter:
5% grain ar Fallur						100 LIMIT 5 VANE Wa VANE WAT	PLASTIC		
						ER CONTENT (%) ER CONTENT (%) 20 30	NATURAL LIQUID	ENCL NO	REF NO
	 					POCKET PEN. (Cu) (kPa) NATURAL UNIT V	VT	Ĕ	1889
						Mg/m ³) GRAIN SIZE (%) GR SA SI C	REMARKS		3-220



	2.4	23.0	2 2 0		25 3 0 3	(m) ELEV DEPTH 25.6		DATL BH LC	CLIEN
	 Sample refusal at 2.4 m. Sample refusal at 2.4 m. Borehole backfilled with bentonite upon completion. 	SILTY CLAY		trace clay, trace sand, trace gravel, brown, moist some clay, grey, wet	TOPSOIL trace sand, trace gravel, dark brown, moist SILT	DESCRIPTION	SOIL PROFILE	IM: Local DCATION:	ECT: Mr.Christie
	5	<i>111</i>				STRATA PLOT	1		d, Tor
		2BUNDIS	2AUNDIS	1BUNDIS	1AUNDIS	NUMBER TYPE	SAMPL		onto, ON
						"N" <u>BLOWS</u> 0.3 m	-ES		
GRAPH						GROUND WATE CONDITIONS	R		
5			24	25		ELEVATION			
3 Numbers refer 8 _ 20/						20 40 60 80 1 SHEAR STRENGTH (kPa) 0 LINCCNF NED + FIELD 0 QUICK TRIAXIA × LAB V 50 100 150 200 2	RESISTANCE PLOT	Date: Nov/14/2013	DRILLING DATA Method: Geo Probe Diameter:
						ANNE WATER CON SO 10 20	PLASTIC NATUR		
						TTENT (%) POCKET PEN. (Cu) (kPa)	LIQUID	ENCL NO .:	REF. NO.: 18
						NATURAL UNIT ((Mg/m ³)	νT		89-220
						AND GRAIN SIZE DISTRIBUTION (%) R SA SI C	REMARKS		0

i	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13											_				-
GROU		49	20 7		30	22 5				0.5	DEPTH		BHL	PRO,	PRO,	
	uppor completion;	END OF BOREHOLE 1. Sample refusal at 4.9 m. 2 Borshole backfilled with bentonite			SILT CLAY grey, wet				black SILT some clay, trace sand, brown, wet	VS mm of asphalt SILT & GRAVEL Vitace sand, brown, moist ORGANICS	DESCRIPTION	SOIL PROFILE	UM: Local OCATION:	JECT LOCATION: 2150 Lake Shore Blv	JECT: Mr.Christie NT:	Geotechnical Environmental Materials Hydro
			7777 7777	+++++ +++++	+++++					<u> </u>	STRATA PLOT			d, Tor		geolog
			4BUN	4AUN	3BUN	3AUN	2BUN	2AUN			NUMBER	s		onto, (уy
			IDIST	IDIST	IDIST	IDIST	IDIST	IDIST	IDIST	IDIST	TYPE	MPLE		Z		
asi											"N" <u>BLOWS</u> 0.3 m	S				5
RAPH OTES											GROUND WAT CONDITIONS	ER				
+ 3			21		22	23		24		28	ELEVATION					8
$_{\rm r} imes {}^3$: Numbers refer $_{\rm O}$ ${}^{\epsilon}$ =3% Strain z											SHEAR STRENGTH (KPa) UNCONFINE UNCONFINE OUICK THIAXAL × LAB VANE S0 100 150 200 250		Date: Nov/14/2013	Diameter:	DRILLING DATA Method: Geo Probe	
t Failure											10 20 30 POCKET PEC (Cu) (kPa) POCKET PEC (Cu) (kPa) NATURAL UNI (Mg/m ²)	PLASTIC NATURAL LIQUID	ENCL NO.:	REF. NO.: 1889-22		
											GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	REMARKS		20		-

		79	18.3		6.1	8	4.6	21.6	ω 0	23 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	24.1 2 3 .9		03	25 9	(m) DEPTH		DATU	CLIEF
	END OF BOREHOLE 1. Sample refusal at 7.9 m. 2. Somm-diameter monitoring well installed at 8.4 m.				SILTY CLAY silty clay, grey, saturated		SILT silt, some sand, trace gravel, brown saturated		CLAYEY SILT clayey silt, brown, moist	organic silt SILT silt, some clay, trace sand, brown, moist	SILT		FILL silt, some sand, trace gravel, trace clay, trace slag, brown, moist	TOPSOIL topsoil, dark brown, moist	DESCRIPTION	SOIL PROFILE	JM: Local JM: Local OCATION:	JECT: Mr.Christie
			<i>77777</i>	<i>+++++</i>	££2			<u> </u>			; 🔛			<u>)</u> (2 s	STRATA PLOT		Vd, 10	
			6AU	- PAC		4BU	4AU	3BL	3AL	2BU	2AU	1BU	IA I	N	NUMBER	ş	ronio,	
			NDIS NDIS			NDIST	NDIST	NDIST	NDIST	NDIST	NDIST	NDIST	NDIST	т	TYPE	AMPL	Q	2
						7		7		7				1	"N" <u>BLOWS</u> 0.3 m	ËS		
															GROUND WATER	1		
		18	, L	:	20		Ņ	22	23		22	28		N E	ELEVATION			
		Ĩ									Ī				● ° SHE	PESIS	Date:	Meth
																MIC CO	Nov/1	od: Ge
																PLOT	15/2010	o Prob
															0 TH 0 8	VIETRAT	ω	Φ
															a) a) field VA A Bensitiv A Bensitiv	TION		
														2	8 A 2 A			
															CONT CONT ER CO	NATU		
															VTENT 30	RAL		1
																2	CL NO	
															POCKET PEN. (Cu) (kPa) NATURAL UNIT V	π	0.188	
														9	(Mg/m ³)	_	9-220	
														AC A	AND RAIN S STRIBU (%)	REMAR		
1														19		λ.		

	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13										_				-
GROUN	4 م	20 9						0.6	25.2	(m) DEPTH		BHLO	PRO	CLIED	
	 Sample refusel at £9 m. Sample refusel backfilled with bentonite upon completion. 				saturated	wet	some clay, grey	some clay, trace sand, brown/grey, moist	75 mm of asphalt FILL sand & gravel, brown, moist	DESCRIPTION	SOIL PROFILE	JM: Local OCATION:	JECT LOCATION: 2150 Lake Shore Blvd,	JECT: Mr.Christie NT:	Geotechnical Environmental Materials Hydrog
		~	N	6	6	N)	N			STRATA PLOT		-	Toro		eology
		BUN						BUNE		NUMBER	SAN		nto, O		
		DIST	- DIST	DIST	ISIC	- Dist	JISIT	ISI	ISIC	"N" BLOWS	IPLES		z		
										0.3 m GROUND WATE	R	-			
민민										CONDITIONS		-			1
+ 3,×		21	22		23		24	25		ELEVATION	70		_	~ •	
3: Numbers refer 5: 5 to Sensitivity 5: 5 to Sensitivity 5: 5 to Sensitivity										20 40 60 80 100 SHEAR STRENGTH (kPa) 0 UNCONF NED + FIELD VANE 0 UNCK TRIAVAAL × LAB VANE 50 100 150 200 250	RESISTANCE PLOT	Date: Nov/14/2013	Diameter:	DRILLING DATA Method: Geo Probe	
at Failure										WATER CONTENT 10 20 ONTENT (%) 10 20 CONTENT (%) 10 20 CONTENT (%) 10 20 CONTENT (%) 10 20 CONTENT (%) 10 CONTE	PLASTIC NATURAL LIQUID	ENCL NO.:	REF. NO.: 1889-22		
										GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	REMARKS		20		- - -

d	19.6						24 0 1 8		28.4 25.4	(m) ELEV DEPTH 25.8		PROJ DATU
Sample refusal at 6.2 m. Somm-diameter monitoring well Installed at 6.7 m.			wet				CLAVEY SILT grey, moist	brown, moist	ASPTALI 75 mm of asphalt FILL sand and gravel, brown, moist SILT SULT	DESCRIPTION	SOIL PROFILE	UT: UT: IECT LOCATION: 2150 Lake Shore Biv IM: Local DCATION:
	22							1		STRATA PLOT	1	d, Toro
 _	5AUN	4BUN	4AUN	3BUN	3AUN	2BUN	2AUN	1BUN	1AUN	NUMBER	SAI	onto, C
 _	DIST	DIST	DIST	DIST	DIST	DIST	DIST	DIST	DIST	TYPE	MPLES	ž
- 1		Ang tana	Seterat						203	0.3 m	<u> </u>	
)XX	CONDITIONS		
		20	21		<u>v</u>	23	24	ŗ	о л	ELEVATION		
											PESIST.	Methoc Diamet
										R STRE	ANCE PI	er: Nov/15
										NGTH		Probe 2013
_										× + (kPa) 200 - 200		
_										100 Prositivity 3 VANE 250	~	
										~	P	
										VATER 0	STIC	
 _										CONTE	ATURAL	
 _										30 NT (%)		PEF. N
										POCKET PEN. (Cu) (kPa)	5	NO.: 12
										NATURAL UNIT ((Mg/m ³)	NΤ	389-22
1										AI GRAII DISTRII JR SA	REM	ö
1										SI ND	ARK	

	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13											_
GROU		2.4	23 0	12	24.3	299-291 03	(m) ELEV 25 5		BHL	PRO.	CLIE	
		 END OF BOREHOLE Sample refusal at 2.4 m. Borehole backfilled with bentonite upon completion. 		SILTY CLAY grey, moist	SAND sand, trace silt, brown/grey, wet	ASPHALI 25 mm of asphalt FILL sand & gravel	DESCRIPTION	SOIL PROFILE	OCATION:	JECT LOCATION: 2150 Lake Shore Bi	JECT: Mr.Christie NT:	
			+++++	<i>444</i>			STRATA PLOT			d, To		Bo
			280	2AU	1BUI	1AU	NUMBER	s		onto,		37
			VDIST	VDIST	VDIST	VDIST	TYPE			Q		
						7	"N" <u>BLOWS</u> 0.3 m	S				
GRAPH							GROUND WAT CONDITIONS	ER				
				N		N	ELEVATION		1			
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Niumi							EAR S	ISTAN	IAMIC 0	meter:	hod: C	
							TRIAX	A PLO		CINH	àeo Pr	
							150 JGTH	⁸ // ⁹	PENETE	012	A obe	
							200 A	B V S	ATION			
							250	ŝ				
							< т. [§]	ΓŖ	-			
							10 VATER	T STIC N				
							CONTE					
							30 V	- E		REF.		
							POCKET PI	N.	- ?	S S		
							NATURAL UN (Mg/m ³)	T WT	1	1889-2		
							GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	REMARKS		220		

GROUN	20 2.4	о Эл		24 8 1.1	02	25.9			DATU BH LC	CLIEN PROJ
IDWATER ELEVATIONS	END OF BOREHOLE 1. Sample refusal at 2.4 m. 2. Borehole backfilled with bentonite upon completion.	grey, wet	some clay	SILT	FILL silt, some clay, trace sand, brown, moist	TOPSOIL dark brown	DESCRIPTION	SOIL PROFILE	M: Local DCATION:	ECT: Mr.Christie IT: ECT LOCATION: 2150 Lake Shore Bi
	 					125	STRATA PLOT			д. То
		2BU	2AU	1BU	1A	١	NUMBER	s		ronto,
		NDIS.	NDIS	NDIS	NDIS	Т	TYPE	AMPL		9
		-	-	-			"N" <u>BLOWS</u> 0.3 m	ES		
GRAPH						0	GROUND WATE	٦		
+ 		12		25		E	ELEVATION			
-X 3. Numbers teler							20 40 60 90 100 SHEAR STRENGTH (kPa) • UNCOMENED + FIELD VANE • CUICK THAXIAL × LAB VANE 50 100 250 200 250	RESISTANCE PLOT	Date: Nov/14/2013	DHILLING DATA Method: Geo Probe Diameter:
# Failure							Watter Content (%) WATER CONTENT (%) 10 20 30 (%) NATER CONTENT (%	PLASTIC NATURAL LIQUID 5 REMA	ENCL NO .:	REF. NO.: 1889-220

OHD DHD	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT	12/5/13 თ	19					- 12	2 -	24 0			BH DA	PR R	CL PR	
OUNDWATER ELEVATIONS	END OF BOREHOLE 1. Sample release at 6.1 m, 2. 50mm-diameter monitoring well installed at 6.7 m.	5.1	9.5 dry	shale tragments, wet				5 CLAVEY SILT 6 clayey silt, trace sand, grey, very moist	 8 FILE clayey silt, trace sand, trace gravel, brown/red, moist 	14 ASHALI 15 mm of asphalt FIL sand & gravel, brown, moist) M TH DESCRIPTION	SOIL PROFILE	ILOCATION:	ROJECT LOCATION: 2150 Lake Shore Blv	IENT:	Geotechnical Environmental Materials Hydr
											STRATA PLOT		ļ	d, Toro		Gennaho
						BAUND					TYPE	SAM		nto, ON		
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GRAPH											GROUND WATER CONDITIONS	R	1			
.– ⊦ ω			20	N	2	22	23	24		22	ELEVATION		ĺ			
× 3. Numbers refer © ² =3% Strain a											20 40 60 100 SHEAR STRENGTH (KP2) OUICONF NED + 4 Sumsainly OUICK THINAL - 4 Sumsainly 50 100 150 200 250	RESISTANCE PLOT	Date: Nov/14/2013	Diameter:	DRILLING DATA Method: Geo Probe	
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											AND GRAIN SIZE IISTRIBUTION (%) R SA SI CL	REMARKS		5		-

ີ ສ	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 8.GPJ SPL.GDT 12/5/13	_							, ,					80	τοτ	,
	0 0 - 0	9.4						-1 ;- 57 -		0.4	5 0 49 55 ∨ – 49 6	PTH D		ATUM: H LOC.	ROJEC	
	 Sample refusal at 6.2 m. Borehole backfilled with bentonite upon completion. 							grey, wet	some clay, brown, moist	FILL sand and gravel, trace silt, brown, moist SILT	ASPHALT 75 mm of asphalt	DESCRIPTION	SOIL PROFILE	ATION:	5T: Mr.Christle	
t		77. 72	<i>++++</i>	77777	77772, 77772,	+++++;	<i>+++++;</i>	<i>77777</i>			s s	TRATA PLOT			d, Tor	0
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are refer											Ē	F NED	E PLOT	/15/20	BO Pro	
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												NATURAL UNIT W (Mg/m ³)	VT		389-22	
											GH SA SI C	AND GRAIN SIZE DISTRIBUTION (%)	REMARKS		20	

Sha EB	SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 8.GPJ SPL.GDT 12/5/13		N		N			N				<u>φ</u> ς	קק	Ω₽	٦ 📣
IOUND)		4.6	09	3 0	N UT			49	- 49 U		-				G C
WATER ELEVATIONS		END OF BOREHOLE 1. Sample refusal at 2.4 m. 2. Borehole backfilled with bentonite upon completion.	grey, wet	CLAYEY SILT brown				FIL sand and gravel, brown, moist SILTY CLAY organics, black, moist	ASPHALT 75 mm of asphalt	DESCRIPTION	SOIL PROFILE	n: Local DATION:	CT LOCATION: 2150 Lake Shore Bh	CT: Mr.Christie	eotechnical Environmental Materials Hyd
allation		-			77777 77777	<i>77777</i>	7777	2222 XXX	s s	STRATA PLOT	1		vd, To		rogeolo
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GRAPH NOTES									G	GROUND WATE	R				60
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	 ENO OF BORENCE Sample retusal at 8.2 m. Borehole backfilled with bemonte upon completion. 	5 grey, wet	R 2 Saturated				8 CLAYEY SILT grey, moist		SLT grey/orange, moist		SOIL PROFILE	rum: Local LOCATION:	JJECT: Mr.Christie ENT: JECT LOCATION: 2150 Lake Shore Bh
		7777;			<u> </u>		1410			STRATA PLOT	1		d 7
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GEC	Occasion 9.1 END OF BOREHOLE 9.1 END OF BOREHOLE Borehole dry upon completion. Water Level Resadings: Date Oct. 2204 3.25	REHOLE LOGS GO	vosos GPJ GEO 7.0 SHALE (Inferred) grey	6.1 CLAY some sit, yong noist, interlayered with sit, some day, unace gravel/shale fragments, grey gravel/shale fragments, stiff	SUT 21104 ccc. fine sendulit partings grey hard			grey	and topsoil/ and topsoil/	0.6 CLAVEY SILT 0.6 CLAVEY SILT motiled brown-grey, stiff to very stiff	101.5 GOUND SUBJECT Comm	(m) CEPTH DESCRIPTION STRATA PLOT	BOREHOLE LOCATION: Refer to Drawing No. 1 SOIL PROFILE	CLIENT: Kraft Canada Inc. PROJECT: Transformer Upgrades LOCATION: Toronio DATUM ELEVATION: Assumed Datum - See Dra	GEO-CANADA
ŀ		•					5	4	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	N	- -	NUMBER	SAN	wing No.	
F		GRAB	SS 55	S 1			SS 1	SS 18	SS 21	SS 14	SS 10	TYPE	APLES	. 1 for Lo	
GRAP		<u>' </u> mmuu	<u> </u>	 8 1000000000000000000000000000000		· 			× – – – –			GROUND WATE CONDITIONS	R	Metho Diame caturate:	
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umbers ref Sensitivity												40 STRENG NFINED 40	CE PLOT	ht solid-	DLE 1
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) ^{e=3%} St											_	B VANE	¥	gers	
ain at Fait		0									0	× T ×	PLASTIC		
0/e			0	+		Î	0	9	•				MOISTURA	REF. N	
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			Split spoon wet.			8 73 19				7 68 25		GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	REMARKS		1 OF 1

G	EO-CANADA SOIL LOG B	OREHOLE LOGS G040903.GPJ	EO-CANADA TEMPLATE.G	SDT 2/11/04	r			-	Sim o			
	9.1	03 7.3	95.6 94.4		3 0	98.7	01.1	01.7	PTH (m)	ORE	ROJE	
	1 END OF BOREHOLE Borehole dry upon completion. Water Level Readings: Date WL Depth (m) Oct 22/04 5.45	, BEDROCK SHALE (Inferred) grey	CLAY some sill, interlayered with sill, some clay, still, very motist	very molst clayey	SILT some clay, coc. very thin sitt partings grey, very stiff very stiff		Cleasible FILL) CLATEY SITT motted bown grey, motted bown grey, coc. fistures very siff to had	Ground Surface TOPSOIL 50mm Silt, some clay, organic stalned, coollals brown	SOIL PROFILE DESCRIPTION	HOLE LOCATION: Refer to Drawing No	IT: Kraft Canada Inc. ECT: Transformer Upgrades TION: Toronto M ELEVATION: Assumed Datum - See I	GEO-CANAD
								<u> </u>	STRATA PLOT	<u>_</u>	Drawi	Þ
		ω α	7	\$	51	4	3 2	1	NUMBER	2	Ng No	ļ
		GRAE	s	SS	SS	SS	SS SS	ss	TYPE		, 1 fo	
		· 50/	ω	17	22	8	18	16	"N" <u>BLOWS</u> 0 0.3 m		r Loca	-
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							7 65 28		AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	REMARKS		1 OF 1

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	JORDE	 9.0	8.5 .5	8.0	7.5	7.0	6.5	6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0		швер	DEPTH	LOCAT	PROJE	
LABORATORY ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; R														- low plasticity, grey END OF BOREHOLE @ 2.59m BGS		CL-SILTY CLAY (TILL), trace gravel, stiff, medium plasticity, brown, moist	SM-SILTY SAND (FILL), trace gravel, compact, I've grained, poorly graded, brown, moist CL-SILTY CLAY, stiff, medium plasticity, brown, moist	CONCRETE FLOOR		STRATIGRAPHIC DESCRIPTION & REMARKS	T: Mondelez Canada Inc. TION: 2150 Lake Shore Blvd. West, Toronto	ECT NAME: Geotechnical Investigation and Phase Two ESA ECT NUMBER: 081211	STRATIGRAPHIC AND
	EFER TO CUP														2.6			0.5	<u> </u>	mbGS	DEPTH	FIELD F	HOLE D DATE C	INSTRU BURDEI
	RRENT ELEVATION TABLE																BENTONITE SEAL	SEAL	CONCRETE		BOREHOLE	IG METHOD: SPLIT-SPOON ERSONNEL: K. Vander Meulen	ESIGNATION: BH1-13 OMPLETED: March 2, 2013	MENTATION LOG V)
																~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	(n)	-	N	JMBER		2		
																$\leq$	<u> </u>	$\geq$	IN"		S I			
															č	76	76	76	- R 'N'	VALUE	MPLE			Pa
															-	04	0.8	0.5	PI	D (ppm)				ige 1 of 1

OVERB	URDE	N LOG 08	1211.0			P.GDT 3	/3/13						Ť.							T			30			т т		1
		9.5		9.0	8.5	3.0	7.5	7.0	05 07	6.0	5	5.0	4.5	4.0	5	3.0	2.5	2.0	1.5	1.0	0.5		1 BGS		CATI	ROJE		
LABORATORY ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; RE																	END OF BOREHOLE @ 1.83m BGS		CL-SILTY CLAY, stiff, medium plasticity, brown, very moist	SM-SILTY SAND (FILL), trace gravel, compact, fine grained, poorly graded, brown, moist	CONURETE ELOOR	STRATIGRAPHIC DESCRIPTION & REMARKS		F. Mondelez Canada Inc. TON: 21501 ake Shore Blvd. West. Toronto	CUT NAME: Geolechnical investigation and Friase Two ESA	STRATIGRAPHIC AND	
	FER TO CU																	1.8				\$	DEPTH m BGS	_	FIELD	DATE	BURDE	
	RRENT ELEVATION TABLE																		SEA	BENTONITE	SEAL		BOREHOLE		PFRSONNEL: K. Vander Meuler	COMPLETED: March 2, 2013	JMENTATION LOG	
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																			0.61	0.61		REC					P	
	-																		2.4	5.1		PID (p	pm)				age 1 of 1	

C V ENDO		.200 0812 	9.0	  8.0	7.5	7.0	 6.5	6.0	5.5	5.0	4.5	4.0	 3.5	3.0	2.5	2.0	1.5	1.0	0.5		DEPTH m BGS	LOCAT	PROJE	
LABORATORY ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; RE																END OF BOREHOLE @ 1.52m BGS	- very moist to wet	CL-SILTY CLAY, firm, medium plasticity, grey, moist		STRATIGRAPHIC DESCRIPTION & REMARKS	1: Mondelez Canada Inc. ION: 2150 Lake Shore Blvd. West, Toronto	CT NAME: Geotechnical Investigation and Phase Two ESA CT NUMBER: 081211	STRATIGRAPHIC AND
	L FER TO CUF																4.5	*****		2	DEPTH m BGS	FIELD F	HOLE D DATE C	INSTRU
	RRENT ELEVATION TABLE																	BENTONITE SEAL	SEAL	S. S	BOREHOLE	G METHOD: SPLIT-SPOON PERSONNEL: K. Vander Meuler	COMPLETED: March 2, 2013	IMENTATION LOG N)
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	_			 														Ň	$\ge$	INTERV	AL 0			
	_			 														.61	.76	REC (r	") ≸P⊑			Ţ
																		0.8	0.8	PID (pp	m)			age 1 of 1

9.5	9.0	- 8.5	80	7.5	;	- 7.0	6.5	ງ ລ ວ	5.5	5.0	4.5	-4.0	3.5	, , ,	ວ	2.5	2.0	 ייי א ת	1.0	0.5		III BGS	DEPTH	LOCATIO	CLIENT:	PROJEC	
																			- split-spoon refusal	SW-GW SAND & GRAVEL (FILL), fine to coarse grained, well graded, brown, moist	CONCRETE FLOOR		STRATIGRAPHIC DESCRIPTION & REMARKS	DN: 2150 Lake Shore Blvd. West, Toronto	Mondelez Canada Inc.	T NAME: Geotechnical Investigation and Phase Two ESA	
	 		 					 			 							 		*****	0.2	III BGS	DEPTH	FIELD F	DRILLI	DATE (	BURDE
																				SEAL BENTONITE	CONCRETE		BOREHOLE	PERSONNEL: K. Vander Meuler	NG METHOD: SPLIT-SPOON	COMPLETED: March 2: 2013	N)
																				_	1	NUMBER					
																				$\geq$	11	NTERVAL	s S				
																				1.76	ו אי	REC (m)	AMPLE				σ
	 		 					 			 							 		0.4	F	PID (ppm)					³ age 1 of 1

IZ	 9.5	9.0	8.5	8.0	7.5	7.0	6.5	6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	- <u>1</u> .5	1.0	0.5		m BGS	DEPTH	LOCATIO	PROJECT		
IOTES: MEASURING POINT ELEVATIONS MAY CHANGE; RE																			SW-GW SAND & GRAVEL (FILL)			STRATIGRAPHIC DESCRIPTION & REMARKS	N: 2150 Lake Shore Blvd. West, Toronto	F NUMBER: 081211 Mondelez Canada Inc.	FNAME: Opphophysical propriation and Dhapp Two ESA	STRATIGRAPHIC AND
-ER TO CUI																			0.3 0.3	§	m BGS	DEPTH	FIELD F			NSTRL
RRENT ELEVATION TABLE																			SEAL				PERSONNEL: K. Vander Meulen	COMPLETED: March 2, 2013		JMENTATION LOG N)
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		9.5	9.0	0011 00 1	8.0	7.5	7.0	 6.5	6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.5		DEPTH m BGS	LUCATI	CLIENT:	PROJEC		
LABORATORY ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; RE															END OF BOREHOLE @ 2.44m BGS		- stiff, brown, moist	CL-SILTY CLAY, firm, low plasticity, grey, moist	SP-SAND (FILL), fine grained, poorly graded, brown, moist		STRATIGRAPHIC DESCRIPTION & REMARKS	DN: 2150 Lake Shore Bivd. West, Foronto	Mondelez Canada Inc.	T NAME: Geotechnical Investigation and Phase Two ESA	STRATIGRAPHIC AND	
	-ER TO CUP			 												12.4	:####:	*****	HHY.		§	DEPTH m BGS		DRILLIN	DATE C	NSTRU BURDEI	
	RENT ELEVATION TABLE																	SEAL		SEAL SEAL	6653	BOREHOLE	PERSONNEL: K. Vander Meuler	IG METHOD: SPLIT-SPOON	OMPLETED: March 2, 2013	N)	
	_																з —		)	-		ER /AL					
	-																0.61	0.76		0.76	REC (r	n) SAMPLE				T	
	-																0.1	0.2		0.1	PID (pp	m)				Vage 1 of 1	

	URDE	9 5	9.0	00 07 07	8.0 8.0	7.5	7.0	 6.5	6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	1.5	 1.0	0.5		DEPTH m BGS	CLIENT LOCATI	PROJE	
LABORATORY ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; R							END OF BUREHOLE @ 0.10111 BGS						- brown, moist to wet		- medium plasticity		CL-SIL1Y CLAY, low plasticity, grey, moist	MCGW SAND& GRAVEL (FILL), coarse to medium grained, well graded, brown, moist	6 22 5 1	STRATIGRAPHIC DESCRIPTION & REMARKS	: Mondelez Canada Inc. ON: 2150 Lake Shore Blvd. West, Toronto	CT NAME: Geotechnical Investigation and Phase Two ESA CT NUMBER: 081211	STRATIGRAPHIC AND
	FER TO CUP								<u>,</u>	<i>HHHH</i>		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,							.2		DEPTH m BGS	DRILLIN FIELD F	HOLE D DATE C	INSTRU BURDEI
	RRENT ELEVATION TABLE													SEAL	BEATOMITE						BOREHOLE	ig method: Geoprobe Personnel: L. Griffith	OMPLETED: February 7, 2013	IMENTATION LOG N)
									10		•	00	7	(m)	cn	4	ω	22	-	NUMBI	ER		ω	
									P/S			P/S	P/S	PS	P/S	S/d		SA SA	NS A		/AL			
	-								0.61		2	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	REC (I				_
									0.0	000	2	0.1	0.6	159	1.3	9.3	3.3	0.9	0.1	PID (pp	om)			Page 1 of 1

OVERE	BURDE	N LOG 0812 9.5	11.GPJ ( 11   11 9.0	00 05	P.GDT 2/	7.5	7.0	0 5	6.0	5.0	4.5	4.0	3.5		2.5	2.0			0.5		M BGS	PROJ CLIEN LOCA	PROJ	
LABORATORY ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE;							END OF BOREHOLE @ 6.10m BGS		<ul> <li>less slit content, high plasticity, grey, moist to wet</li> </ul>	CL-SILTY CLAY, medium plasticity, grey, moist	SM-SILTY SAND, fine grained, poorly graded, brown, wet	CL-SILTY CLAY, medium plasticity, grey, moist	- 152 mm section of coarse gravel , grey, slight	- moist to wet, slight black staining, slight odour			SP-SAND (FILL), medium grained, poorly graded, brown, moist	ASPHALT SW-GW SAND & GRAVEL (FILL), well graded, grey, moist		STRATIGRAPHIC DESCRIPTION & REMARKS	IECT NUMBER: 081211 VT: Mondelez Canada Inc. VTION: 2150 Lake Shore Blvd. West, Toronto	ECT NAME: Geotechnical Investigation and Phase Two ESA	STRATIGRAPHIC ANI
	REFER TO CU							<u>e</u>				4.0		3.0					0.2		M BGS	DATE ( DRILLII FIELD	HOLE	) INSTRU RBURDE
	RRENT ELEVATION TABLE													BENTONITE							BOREHOLE	COMPLETED: February 7, 2013 NG METHOD: GEOPROBE PERSONNEL: L. Griffith	DESIGNATION: BH102-1	JMENTATION LOG
									5	9 •	00		(m		on Voltable	4 • 1 < • * < • * <	دن میں ایک	N	 	NUMBE	R	ű	ω	
									P/S 0	P/S 0	P/S 0	P/S 0	SA4		P/S 0	P/S	P/S 0	P/S 0	P/S 0	INTERV	AL			
									.61	.61	.61	.61	.61		.61	.61	.61	.61	.61	REC (n	<u>ッ</u> 着 ルーデ			ۍ ۲
									1.4	1.2	21.9	1.4	283		10.3	0.3	5.2	1.6	1.5	PID (ppi	m)			age 1 of 1

	INCL	9 5	9.0	8.5 .5	8.0	7.5	7.0	 6.5	6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0	;	רוון כ ת		DEPTH m BGS	LOCATI	CLIENT	PROJEC	
LABORATORY ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; R							END OF BOREHOLE (0,0,10m BGS				- trace fine sand, brown, moist			- 152 mm section of moist to wet, slight odour	- medium plasticity, grey, slight odour	CL-SILTY CLAY, low plasticity, brown, moist	- dark brown, slightly oxidized	- black staining, no odour	SP-SAND (FILL), fine grained, poorly graded,	SAND & GRAVEL (FILL), coarse to medium		STRATIGRAPHIC DESCRIPTION & REMARKS	ON: 2150 Lake Shore Blvd. West, Toronto	: Mondelez Canada Inc.	CT NAME: Geotechnical Investigation and Phase Two ESA	STRATIGRAPHIC AND
	EFER TO CUI								<u>A</u>									*****	****	×***	×		DEPTH m BGS	FIELD F	DRILLIN	HOLE D	INSTRL BURDEI
	RENT ELEVATION TABLE													SEAL	BENTONITE								BOREHOLE	PERSONNEL: L. Griffith	IG METHOD: GEOPROBE	DESIGNATION: BH103-1	IMENTATION LOG N)
									6			00	7	6	) (	n	4	ω	22			NUMBE	R			ω	
									S/d		P/S	P/S	PVS	P/S	(		P/S	P/S	S/d	* 45 F	P/S	INTERV					
									0.61		0.61	0.61	0.61	0.61	0.01	0	0.61	0.61	0.61		0.61	REC (m	) AMPLE				_
									4.4		0.1	3.1	114	299	3	474	9.7	4.4	0.7		0.7	PID (ppr	n)				⁵ age 1 of 1

OVERBURD		DEPTH m BGS	
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: RE LABORATORY ANALYSIS	ASPHALT ASPHALT SMC-GW SAND & GRAVEL (FILL), oarse to medium grained, weil graded, grey, moist CL-SILTY CLAY, low plasticity, brown, moist CL-SILTY CLAY, low plasticity, brown, moist CL-SILTY CLAY, low plasticity, brown, moist - medium plasticity, grey, moist to wet END OF BOREHOLE @ 6.10m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	STRATIGRAPHIC AND (OVER TT NAME: Geotechnical Investigation and Phase Two ESA TT NUMBER: 081211 : Mondelez Canada Inc. ON: 2150 Lake Shore Blvd. West, Toronto
FER TO CUP		DEPTH m BGS	BURDEI HOLE D DATE C DRILLIN FIELD F
RRENT ELEVATION TABLE	SEATONE	BOREHOLE	IMENTATION LOG V) OMPLETED: February 7, 2013 IG METHOD: GEOPROBE ERSONNEL: L. Griffith
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		L SA	
		,	Page 1 of

	JORDE	 9.0	00 05	8.0	7.5	7.0	 6.5	6.0	ບາ ບາ ບາ	5.0	4.5		4.0	3.5	3.0	2.5	2.0			 >	0.5		m BGS	DEPTH	CLIENT	PROJE	
LABORATORY ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFI						END OF BOREHOLE @ 6.10m BGS		- medium plasticity, arey, moist to wet	- slightly oxidized	- slightly oxidized	- slightly oxidized		- moist to wet		- uruwri i giey, siginiy uxiuized, sigini uduuri		CL-SILTY CLAY, low plasticity, brown, moist - slight black staining, no odour	SM-SILTY SAND (FILL), medium grained, poorly graded, moist, oxidized	SP-SAND (FILL), medium grained, poorly graded, brown, moist	SW-GW SAND & GRAVEL (FILL), coarse to medium grained, well graded, grey, moist	5 22 24 4	STRATIGRAPHIC DESCRIPTION & REMARKS		: Mondelez Canada Inc. : Mondelez Canada Inc. ION: 2150 Lake Shore Blvd. West, Toronto	CT NAME: Geotechnical Investigation and Phase Two ESA	STRATIGRAPHIC AND IN
	ER TO CUF							- 7////////////////////////////////////	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				m BGS	DEPTH	PRILLIN FIELD P	HOLED	URDEN
	RRENT ELEVATION TABLE														BENTONITE								BOREHOLE		ERSONNEL: L. Griffith	ESIGNATION: BH105-1:	MENTATION LOG V)
								6	P - P	œ	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		7			(on)	4	ω		N	-	NUMB	ER			ω	
								P/S	( (	Pys	P/S		P/S	Ū		P/S	P/S	P/S	45 45 ¹	P/S	P/S		/AL	0			
	-							0.61		0.61	0.61		0.61	0.61	2	0.61	0.61	0.61		0.61	0.61	REC (	m)	AMPLE			_
		 																				IN VAL		a			Page 1 of 1

OVER	BURDE	0812 	.0 .0	0.5	 7.5	7.0	 6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0		 -1.0	0.5		DEPTH m BGS		CLIENT:	PROJEC	
LABORATORY ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; RE						END OF BOREHOLE @ 6.10m BGS		<ul> <li>- 152 mm section of tine slity sand, brown, wet</li> <li>- grey, moist</li> </ul>		- grey	- slight odour, brown	- strong odour, moist	- strong odour, wet		CL-SILTY CLAY, Iow plasticity, grey, moist, slightly oxidized - slight odour, grey	SP-SAND (FILL), fine grained, poorly graded, brown, moist	ASPHALT SW-GW SAND & GRAVEL (FILL), medium to fine grained, well graded, brown, moist		STRATIGRAPHIC DESCRIPTION & REMARKS	UN, 2130 Lane Shore Divit, West, Futurito	Mondelez Canada Inc.	3T NAME: Geotechnical Investigation and Phase Two ESA 3T NUMBER: 081211	STRATIGRAPHIC AND
	FER TO CUP						 	*****		****	;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	******				<u></u>	<u>.</u>			DEPTH m BGS		DRILLIN	HOLE D	NSTRU
	RRENT ELEVATION TABLE												BENTONITE SEAL							BOREHOLE		IG METHOD: GEOPROBE	DESIGNATION: BH106-13	NMENTATION LOG
							5 <u>~~~~</u>	* a> [ a> ]	ہ <u>ہ چ</u>	°	~	· ~ ( ·	»)	о о	4	ω 	N		NUMBE	ER			ω	
					 		 P/S	× => => '	P/S 0	0 S/4	P/S			P/S 0	P/S 0	P/S 0	P/S 0	P/S	INTERV	AL S				
	ŀ						 61		61	61	61		<u>n</u>	61	61	61	61	61	'N' VALI					Ра
							0.2		0.6	1.4	0.8		203	82.3	105	6,5	0.9	1.8	PID (pp	m)				ye 1 of 1

	JURDE	9 5	9.0	00 00 05	8.0	7.5	7.0	 6.5	 6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0		1.0	0.5		m BGS		PROJEC CLIENT LOCATI	PROJEC	
LABORATORY ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: REF							END OF BOREHOLE @ 6.10m BGS			- moist to wet	- medium plasticity, grey	- wet			- slight odour, moist to wet		CL-SILTY CLAY, low plasticity, brown, moist - strong odour, brown / grey	SP-SAND (FILL), fine grained, poorly graded, brown, moist	SW-GW SAND & GRAVEL (FILL), coarse to medium grained, well graded, grey, moist		STRATIGRAPHIC DESCRIPTION & REMARKS		CT NUMBER: 081211 : Mondelez Canada Inc. ON: 2150 Lake Shore Blvd. West, Toronto	CT NAME: Geotechnical Investigation and Phase Two ESA	STRATIGRAPHIC AND II
	ER TO CUF								Kuun								,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			, 		m BGS		DATE C DRILLIN FIELD P	HOLE D	URDE
	RRENT ELEVATION TABLE													C F	BENTONITE							BOREHOLE		OMPLETED: February 7, 2013 IG METHOD: GEOPROBE 'ERSONNEL: L. Griffith	ESIGNATION: BH107-1	IMENTATION LOG V)
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									S/d			P/S	P/S	P/S			P/S	P/S	P/S	P/S	INTERV	'AL	ω			
									0,61	2	2	1.61	).61	0.61		51	.61	1.61	1.61	1.61	REC (r	n)	MPLE			-
																										age 1 of 1

9.5	9.0	8.5	8.0	7.5	7.0	 6.5	6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0		 	0.5		DEPTH m BGS	PROJEC CLIENT: LOCATIC	PROJEC	
IOTES MEASIBING DONT EI EVATIONS MAY CHANGE: BI															- Refusal END OF BOREHOLE @ 1.89m BGS	CONCRETE (FILL)	SP-SAND (FILL), fine grained, poorly graded, brown, moist	CONCHETE SWACWS SAND & GRAVEL (FILL) coarse to medium grained, weil graded, brown, moist	2	STRATIGRAPHIC DESCRIPTION & REMARKS	T NUMBER: 081211 Mondelez Canada Inc. NI: 2150 Lake Shore Blvd. West, Toronto	T NAME: Geotechnical Investigation and Phase Two ESA	STRATIGRAPHIC AND
															1.8		, with the second se			DEPTH m BGS	DATE C DRILLIN FIELD F	HOLE	INSTRL
																	SEAL			BOREHOLE	COMPLETED: February 7, 2013 NG METHOD: GEOPROBE PERSONNEL: L. Griffith	DESIGNATION: BH108-13	JMENTATION LOG N)
																3/di		N 1 P/S		ER /AL			
															ľ	0.61	- 451.45	0 0 0	REC (	m)			
																			'N' VAL	UE			Page 1 of 1

		9.5	9.0	ол сл сл	8.0	7.5	7.0		6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5	 1.0	0.5		m BGS		PROJE CLIENT LOCATI	PROJE	
LABORATORY ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REF							בואט טר פטאברוטבב (00 מ. וטוזו פעס			- moist to wet, grey	- slignny oxialzea, no oaour		- medium plasticity, grey			- strong odour	CL-SILTY CLAY, low plasticity, brown, moist	son-suc ir sANU (FLL), little day, ime grained, poorly graded, brown, moist - slightly oxidized	SW-GW SAND & GRAVEL (FILL), coarse to medium grained, brown, moist		STRATIGRAPHIC DESCRIPTION & REMARKS		CT NUMBER: 081211 1 Mondelez Canada Inc. 10N: 2150 Lake Shore Blvd. West, Toronto	CT NAME: Geotechnical Investigation and Phase Two ESA	STRATIGRAPHIC AND I
	ER TO CU								<u>"</u>		;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;				, , ,	<u>i</u> xxxxx	*** <u>*</u>	8	m BGS	7	DATE C DRILLIN FIELD F	HOLE D	NSTRL ;URDE
	RRENT ELEVATION TABLE														BENTONITE						3	BOREHOLE		COMPLETED: February 7, 2013 NG METHOD: GEOPROBE PERSONNEL: L. Griffith	DESIGNATION: BH109-1	JMENTATION LOG N)
									ð	,	, , , , , , , , , , , , , , , , , , , ,	00 * 10 * 10 !	~	(m		ر. حمال حم ^ر حم	4	ω	N		NUMBE	R			ω	
									S.A.		) ) ,	P/S 0	P/S ¹	P/S			PYS	P/S 0	P/S	P/S	INTERV	AL	ε			
									.61	ō	2	1.61	1.61	.61		61	1.61	.61	1.61	1.61	REC (r	n) JE F				P
	-																									age 1 of 1

-9.5 -17.5 -2.0 -2.0 -2.0 -2.0 -2.0 -2.0 -2.0 -2.0		m RP	5233.	$\sim$
NOTE / /		SS 코	ROJE	
CL-SILTY CLAY (FILL), firm, low plasticity, grey, wey most scalar (port), trace siti, compact fine grained, porty gradet, brown, molar - Refusal END OF BOREHOLE @ 1.37m BOS END OF BOREHOLE @ 1.37m BOS	ASPHALT	STRATIGRAPHIC DESCRIPTION & REMARKS	CT NAME: Geotechnical Investigation and Phase Two ESA CT NUMBER: 061211 1: Mondelez Canada Inc. 10N: 2150 Lake Shore Blvd. West, Toronto	STRATIGRAPHIC AND IN
		DEPTH m BGS	Hole di Date co Drillin Field P	STRU
RENT ELEVATION TABLE		BOREHOLE	ESIGNATION: BH110-13 OMPLETED: February 22, 2013 G METHOD: HAND DRILL ERSONNEL: L. Griffith	MENTATION LOG V)
	NUMB	BER		
		VAL		
	REC (	(m) SAMF		
	'N' VAL			Page
8	PID (pr	pm)		91 of 1

		9.5	9.0	8.5	8.0	7.5	7.0	6.5	6.0	5.5	5.0	4.5	4.0	3.5	2.5	2.0	1.5	1.0	0.5			DEPTH	CLIENT: LOCATIO	PROJEC	
LABORATORY ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; RE									END OF BOREHOLE @ 4.88m BGS	CL-SILTY CLAY (TILL), trace sand, trace gravel, medium plasticity, grey, moist - Refusal (Shale fragments)						CL-SILTY CLAY, stiff, low plasticity, grey, moist - medium plasticity, very moist	SM-SILTY SAND (FILL), compact, fine grained, poorly graded, brown, moist	CL-SILTY CLAY (FILL), stiff, low plasticity, grey, moist	SW-GW SAND & GRAVEL (FILL)		STRATIGRAPHIC DESCRIPTION & REMARKS	Mondelez Canada Inc. DN: 2150 Lake Shore Blvd. West, Toronto	JT NAME: Geotechnical Investigation and Phase Two ESA JT NUMBER: 081211	STRATIGRAPHIC AND I
	ER TO CUR										24.9 24.9								**** ****			DEPTH	drillin Field p	HOLE DI DATE CI	NSTRU BURDEN
	RENT ELEVATION TABLE														BENTONITE SEAL							BOREHOLE	g Method: Geoprobe Ersonnel: L. Griffith	ESIGNATION: BH111-7 OMPLETED: February 22, 20	MENTATION LOG V)
												00	7	6	5	4	ω	2		-	NUMBER			ωω	
												S/d	S/d	P/S	P/S	P/S	P/S	P/S	× 4> 4>	P/S	INTERVA				
	-											0.61	0.61	0.61	0.61	0.61	0.61	0.61		0.61	REC (m)	SAMPL			
												0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	'N' VALUE PID (ppm	)			Page 1 of 1

OVERE	BURDE	N LOG 0812	11.GPJ (	CRA_COR	P.GDT 2/	25/13							цп															
		- 9.5	-9.0	- 8.5	- 8.0	- 7.5	- 7.0	-6.5	- 6.0	- 5.5	- 5.0		-4.5	- 4.0	-3.5	- 3.0	- 2.0	-1.5	-1.0		0 5		m BGS		LOCAT	PROJE	PROJE	
LABORATORY ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REF										END OF BOREHOLE @ 4.88m BGS	Definal (Shale fragments)	CL-SILTY CLAY (TILL), trace sand, trace gravel, medium plasticity, grey, moist to very moist						- medium plasticity, moist to very moist	CL-SILTY CLAY, firm, low plasticity, grey, moist	SW-GW SAND & GRAVEL (FILL)		STRATIGRAPHIC DESCRIPTION & REMARKS		10N: 2150 Lake Shore Blvd. West. Toronto	· Mondelez Canada Inc	CT NAME: Geotechnical Investigation and Phase Two ESA	STRATIGRAPHIC AND I
	ER TO CU										4.9	70%	1927						11111				DEPTH m BGS		FIELD		HOLE D	USTRL
	RENT ELEVATION TABLE															SEAL							BOREHOLE		PERSONNEL: L. Griffith	COMPLETED: February 22, 201	DESIGNATION: BH112-13	IMENTATION LOG N)
												(	•	7	ō	cn	4	ω		2	-	NUMBE	ER	1		ω	ω	
											[		P/S	P/S	P/S	P/S	PVS	P/S		P/S	P/S	INTERV	/AL					
													0.61	0.61	0.61	0.61	0.61	0.61		0.61	0.61	REC (r	n)					
	-																					'N' VAL		i				Page
													0.0	0.0	0.0	0.0	0.0	0.0	1	0.0	0.0	PID (pp	im)					1 of 1

	in O in O in O in O	7.05.0	5. 4.5	4.0	2 2 2 0 5 0	1.5 0	0.5	DEPTH m BGS	PROJEC PROJEC CLIENT: LOCATIO	
NDES: MEASURING POINT ELEVATIONS MAY CHANGE; RE LABORATORY ANALYSIS		- Refusal (Shale fragments) END OF BOREHOLE @ 6.10m BGS	- high plasticity, very moist	- međium plasticity		CL-SIL IY CLAY, tirm, low plasticity, grey, moist, slightly oxidized	SW-GW SAND & GRAVEL (FILL)	STRATIGRAPHIC DESCRIPTION & REMARKS	T NAME: Geolechnical Investigation and Phase Two ESA T NUMBER: 081211 Mondelez Canada Inc. N: 2150 Lake Shore Blvd. West, Toronto	STRATIGRAPHIC AND
							******	DEPTH m BGS	HOLE DI DATE CI DRILLIN FIELD P	NSTRU
KRENT ELEVATION TABLE				SEAL OWNER				BOREHOLE	<ul> <li>March BH113-13</li> <li>CMPLETED: February 22, 2013</li> <li>G METHOD: GEOPROBE</li> <li>ERSONNEL: L. Griffith</li> </ul>	MENTATION LOG
							P	INTERVAL		
		0.61	0.61	0.61 0.61	0.61 0.61	0.61	0.61	REC (m)		
								'N' VALUE	-	Page
		0.0	0.0	0.0	0.0	0.0	0.0	PID (ppm)		1 of 1

	BURDE	9 5	9.0	00 5	8.0 8.0	7.5	7.0	н б 5	ے دو ا	л 50 л 00	4.5	4.0	3.5	3.0	2.0	1.5	1.0	0.5		DEPTH m BGS	LOCAT	CLIEN	PROJE		s)
LABORATORY ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; RE							- Refusal (Shale fragments) END OF BOREHOLE @ 6.10m BGS	CL-SILTY CLAY (TILL), firm, low plasticity, grey,		- high plasticity						CL-SILTY CLAY, firm, low plasticity, grey, moist - slight black discolouration	SW-GW SAND & GRAVEL (FILL)		STRATIGRAPHIC DESCRIPTION & REMARKS	ION: 2150 Lake Shore Blvd. West, Toronto	r: Mondelez Canada Inc.	CT NAME: Geolechnical Investigation and Phase Two ESA	OVER	
	FER TO CU							C#46.1												DEPTH m BGS	FIELD F	DRILLIN	DATE C	BURDE	
	RRENT ELEVATION TABLE												SEAL	BENTONITE						BOREHOLE	PERSONNEL: L. Griffith	IG METHOD: GEOPROBE	COMPLETED: February 22, 201:		
	-								10 P/S	9 19 19	8	7 P/S	6	5 5 7 7 7 7 7	4		2 AP/S	- P/S					ωυ	)	
	-							F	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	REC (m	SAMPLE				_	
									0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	PID (ppr	n)				Page 1 of 1	

		ອ ອີ ອີ	6. 0	5 5 5	5.0	4.5	4.0	ω 5	- 3.0	2.5	2.0		1.0	0.5			DEPTH	PROJEC PROJEC CLIENT LOCATI	
CHEMICAL ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; R					- Refusal, concrete at 4.27m BGS END OF BOREHOLE @ 4.27m BGS		SM-SILTY SAND, fine grained, poorly graded, grey, moist - wet at 3.51m BGS						Current Control Control (11, 12, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10	ASPHALT		STRATIGRAPHIC DESCRIPTION & REMARKS	ST NAME: MONDELEZ ST NUMBER: 081211 ; ON: 2150 LAKE SHORE BLVD. W., TORONTO, ONTARIO	STRATIGRAPHIC AND I
	EFER TO (					4.27		3.35						0.30	0.15		DEPTH		URDE
	URRENT ELEVATION TABLE										BENTONITE						BOREHOLE	HOLE DESIGNATION: DATE COMPLETED: 27 DRILLING METHOD: 511 FIELD PERSONNEL: L. (	IMENTATION LOG N)
							7	(m)	)	თ	4	ω	2	-		NUMBER		BH20 May 20 nm 0.1 GRIFFI	
							$\geq$	$\bigcirc$	$\bigcirc$	$\times$	$\times$	$\ge$	$\geq$	$\bigcirc$	$\leq$	INTERVA	-	01-13 013 0./DIRE TH	
																REC (%)	SAMPL	ECT PI	_
	+															'N' VALUE	: m - 1	USH	⊃age 1
							0.4	0.5		0.6	0.5	0.7	0.7	0.7		PID (ppm)			of 1

IZ	 6.5	6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.5		DEPTH m BGS	LOCATIC	PROJEC CLIENT:	
OTES:													EN - R		S	N: 2150	t name: T numbe	Ð
MEASURING POINT ELEVATIONS MAY CHANGE; R													efusal at 0.15m BGS D OF BOREHOLE @ 0.15m BGS		TRATIGRAPHIC DESCRIPTION & REMARKS	) LAKE SHORE BLVD. W., TORONTO, ONTARIO	ER: 081211	STRATIGRAPHIC AND II OVERB
EFER TO C													0.15		DEPTH m BGS			URDE
URRENT ELEVATION TABLE															BOREHOLE	FIELD PERSONNEL: L. G	HOLE DESIGNATION: DATE COMPLETED: 27 N DRILLING METHOD: 51m	MENTATION LOG V)
															ER /AL	RIFFITH	BH2U2- /ay 2013 /m O.D./D	
														REC (	- SA		'T3 IRECI	;
	 													'N' VAL			r Pus	Pag
																	т	te 1 of 1

	6.5	6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.5			DEPTH m BGS	CLIENT: LOCATIO	PROJEC	
NOTES: N													END	- Refu		STF	DN: 2150 L	OT NAME: N OT NUMBER	Ø
AEASURING POINT ELEVATIONS MAY CHAN													OF BOREHOLE @ 0.15m BGS	HALT Jsal at 0.15m BGS		RATIGRAPHIC DESCRIPTION & REMARKS	AKE SHORE BLVD. W., TORONTO, ONTA	MONDELEZ R: 081211	STRATIGRAPHIC AN (OVE
IGE; R													Į				RIO		
EFER TO														0.15		DEPTH m BGS			USTRU
CURRENT ELEVATION TABLE																BOREHOLE	Drilling Method: 51r Field Personnel: L. (	HOLE DESIGNATION: DATE COMPLETED: 27 I	JMENTATION LOG N)
															NUMBER	2	nm O.I 3RIFFI	BH2 May 20	
															INTERVA	L	D./DIR ITH	03-13 )13	
															REC (%	SAMP	ECT	50	
															'N' VALU		PUSH		Page 1 c
																			of 1

IZ	о. 5	6.0	5.5	4.5	4.0	3.5	2 2 2 5	2.0	1.5	1.0		0.5		DEPTH m BGS	PROJEC PROJEC CLIENT: LOCATIC	
OTES: MEASURING POINT ELEVATIONS MAY CHANGE; I	END OF BOREHOLE @ 6.10m BGS		- medium plasticity, moist to wet at 4.88m BGS	slight oxidation CL-SILTY CLAY, low plasticity, grey, moist to wet - trace sand at 4.27m BGS - low plasticity, moist at 4.57m BCS	SP-SAND, fine grained, poorly graded, brown, moist ML-SILT, trace clay, low plasticity, brown, moist,			- little sand, wet, slight oxidation at 1.83m BGS	ML-SILT, trace clay, low plasticity, brown, moist	SM-SILTY SAND, fine grained, poorly graded, brown, moist	SP-SAND (FILL), fine grained, poorly graded, brown, moist	ASPHALT SW/GW-SAND AND GRAVEL (FILL), coarse to medium grained, well graded, brown, moist		STRATIGRAPHIC DESCRIPTION & REMARKS	T NAME: MONDELEZ T NUMBER: 081211 NI: 2150 LAKE SHORE BLVD. W., TORONTO, ONTARIO	STRATIGRAPHIC AND I
REFER TO		6.10			3.96	ມ ກ				4 0.91		0.15		DEPTH m BGS		NSTRL 3URDE
L CURRENT ELEVATION TABLE						BENN								BOREHOLE	HOLE DESIGNATION: DATE COMPLETED: 27 DRILLING METHOD: 511 FIELD PERSONNEL: L. 1	IMENTATION LOG N)
ľ		10	œ		7	ō	ы	4	ω	N	,	-	NUMBE	ER	BH2 May 20 mm 0.1 GRIFFI	
		$\geq$	$\square$	$\succ$	$\leq$	$\geq$	$\ge$	$\times$	$\times$	$\geq$	$\langle$	$\ge$	INTERV	AL (	04-13 )13 D./DIRE	
+													REC (S	%)		_
+													'N' VAL		USH	Page 1
		0.6	0.7	1.0	0.7	2.4	2.1	0.9	0.7	0.9	>	0.8	PID (pp	m)		of 1

		6. 5	0.05	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0	· · · · ·	0.5		DEPTH m BGS	CLIENT: LOCATI	PROJEC	
CHEMICAL ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; RE	END OF BOREHOLE @ 6.10m BGS			CL-SILTY CLAY, medium plasticity, grey, moist		- trace sand, loose, moist to wet at 3.66m BGS	ML-SILT, trace clay, compact, brown, moist			- black staining at 1.52m BGS	ML-SIL1 (11LL), trace clay, compact, grey, moist - wood fragments, slight odour at 1.22m BGS		ASPHALT SW/GW-SAND AND GRAVEL (FILL), coarse to medium grained, well graded, brown, moist		STRATIGRAPHIC DESCRIPTION & REMARKS	: ON: 2150 LAKE SHORE BLVD. W., TORONTO, ONTARIO	ST NAME: MONDELEZ ST NUMBER: 081211	STRATIGRAPHIC AND IN
	FER TO	ç	n 10		4.57			2.74					0.91	0.15		DEPTH m BGS			URDE
	URRENT ELEVATION TABLE							BENTONITE								BOREHOLE	Drilling Method: 51n Field Personnel: L. (	HOLE DESIGNATION: DATE COMPLETED: 27 I	IMENTATION LOG N)
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	+														'N' VALI	^{の)} MPLE	OT PU		Pa
			0.4	0.5	0.3	0.5	0.9	.1 .51		2.9	1.4		0.7	0.8	PID (pp	m)	H		ge 1 of 1










		0 0 0 0	6.0 5.5	5.0	4.5	4 3.5	3.0	2.5	; ;	י י י י י ג ת	1.0	0.5			DEPTH	CLIENT: LOCATIO	PROJEC	
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: CHEMICAL ANALYSIS	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; R	END OF BOREHOLE @ 6.10m BGS		- with clay at 4.88m BGS			- trace vegetative matter, vegetative staining at 3.05m BGS		ML-SILT, trace clay, fine grained, poorly graded, grey, moist	SM-SILTY SAND, fine grained, poorly graded, brown, moist		SW/GW-SAND AND GRAVEL (FILL), coarse to medium grained, well graded, brown, moist SP-SAND (FILL), medium grained, poorly graded, brown moist	ASPHALT		STRATIGRAPHIC DESCRIPTION & REMARKS	ON: 2150 LAKE SHORE BLVD. W., TORONTO, ONTARIO	ST NAME: MONDELEZ ST NUMBER: 081211	STRATIGRAPHIC AND I
	EFER TO (	a. To	5						1.32	1.22		0.30			DEPTH			URDE
	URRENT ELEVATION TABLE						BENTONITE								BOREHOLE	Drilling Method: 51r Field Personnel: L. (	HOLE DESIGNATION: DATE COMPLETED: 27 I	IMENTATION LOG N)
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			$\geq$	$\geq$	$\times$	$\leq$	$\leq$	$\leq$	$\bigcirc$	$\leq$	$\ge$	$\geq$		NTERVAL		1./DIRE	1-13 13	
	+													REC (%)	AMPLE	CT PL		υ
			0.6	0.4	0.4	0 0.2 4		0. 4 0	0.0	2	0.5	0.5	F	PID (ppm)		ISH		age 1 of 1





Hydrological Review Summary Form

| Issue 01 | May 15, 2020 | Arup Canada Inc.

August 2018

#### HYDROLOGICAL REVIEW SUMMARY

The form is to be completed by the Professional that prepared the Hydrological Review. Use of the form by the City of Toronto is not to be construed as verification of engineering/hydrological content.

Refer to the Terms of Reference, Hydrological Review: Link to Terms of Reference Hydrological Review

For City Staff Use Only:	
Name of ECS Case Manager (Please	
print)	
Date Review Summary provided to	
to TW, EM&P	

IF ANY OF THE REQUIREMENTS LISTED BELOW HAVE NOT BEEN INLCUDED IN THE HYDROLOGICAL REVIEW, THE REVIEW WILL BE CONSIDERED INCOMPLETE.

THE GREY SHADED BOXES WILL REQUIRE A CONSISTANCY CHECK BY THE ECS CASE MANAGER.

#### **Summary of Key Information:**

SITE INFO	RMATION	Page # & Section # of Review	Review Includes this Information City Staff (Check)		
Site Address	2150-2194 Lake Shore Boulevard West and 23 Park Lawn Rd	Page 3 Section 1.1			
Postal Code	M8V 1A3	Page 5 Section 2			
Property Owner (on request for comments memo)	FCR (Park Lawn) LP and CPPIB Park Lawn Canada Inc	Page 3 Section 1.1			
Proposed description of the project (if applicable) (point towers, number of podiums)	Fifteen towers with basement, mid-rise and low-rise buildings, new Park Lawn GO Station, a public park	Page 3 Section 1.1			
Land Use (ex. commercial, residential, mixed, institutional, industrial)	Mixed (residential, offices, services/retail, institutional)	Page 3 Section 1.1			
Number of below grade levels for the proposed structure	3 to 5	Page 3 and 4 Section 1.1			
HYDROLOGICAL REVIEW INFORMATION					
Date Hydrological Review was prepared:	15 May 2020	Cover Page			
Who Performed the Hydrological Review (Consulting Firm)	Arup Canada Inc	Cover Page			
Name of Author of Hydrological Review	James Collins	Cover Page			



SITE INFOR	MATION	Page # & Section # of Review	Review Includes this Information City Staff (Check)
Check the directories on the website for Professional Geoscientists and/or Professional Engineers of Ontario been checked to ensure that the Hydrological Report has been prepared by a qualified person who is a licensed Professional Geoscientist as set out in the Professional Geoscientist Act of Ontario or a Professional Engineer? PEO: <u>Professional Engineers of Ontario</u> APGO: Association of Professional Geoscientists of Ontario		N/A	
<ul> <li>Has the Hydrological Review been prepared in accordance with all the following: <ul> <li>Ontario Water Resources Act</li> <li>Ontario Regulation 387/04</li> <li>Toronto Municipal Code Chapter 681-Sewers</li> </ul> </li> </ul>	Yes	Page 4 Section 1.2	
		Page # & Section # of every occurrence in the Review	Review Includes this Information City Staff (Check)



SITE INFORMATION						Page # & Section # of Review	Review Includes this Information City Staff (Check)
Total Volume (L/day) Short Term Discharge of groundwater (construction dewatering) with safety factor included	What safety factor Factor of Safety of 1.5 was used Values for each basement have been tabulated and are presented in the report. Report text includes values in L/d.	Table 7 - Anticipated Basement Phase Phase 1 Phase 2 Phase 3 Phase 4 Phase 5 Phase 5 Phase 5 Phase 5 Phase 5 Phase 1.5	Croundwater Discharg Minimum Anticipated Groundwater Discharge (m/d) (unfactored) 5 4 5 4 5 4 3 3 3 2 1	e Maximum Anticipated Groundwater Discharge (m ³ d) (unfactorid) (unfactorid) 40 41 49 38 34 34 34 34 209	Maximum Anticipated Groundwater Dicharge (m²d) (factored) 70 62 73 57 51 51 51 313	Page 20 Section 5.2.3	
Total Volume (L/day) Short Term Discharge of groundwater (construction dewatering) without safety factor included	Values for each basement have been tabulated and are presented in the report. Report text includes values in L/d.	:Table 7 - Anticipated Basement Phase Phase 1 Phase 2 Phase 3 Phase 3 Phase 4 Phase 5 Phase 6 Phase 6 Phase 15 Note Testered greathware	Groundwater Discharg Minimum Autogaveter Discharge (m/d) 5 4 4 3 3 3 2 1 discharge m/d) 5 4 4 discharge (m/d) 5 4 discharge (m/d) 6 discharge (m/d) 6 discha	e Mastimum Anticipated Consequence Discharge (m/d) 41 41 49 38 34 34 209 safty of 15	Mastimum Matigpher Groundwater Discharge (m)di) (factored) 70 62 73 62 73 51 51 51 313	Page 20 Section 5.2.3	
Total Volume (L/day) Long Term drainage of groundwater (from foundation drainage, weeping tiles, sub slab drainage) <b>with safety factor included</b> If the development is part of a multiple tower complex, include total volume for each separate tower	What safety facto Factor of Safety of 1.5 was used Values for each basement have been tabulated and are presented in the report. Report text includes values in L/d.	r was use Table 8 – Anticipated Basement Phase Phase 1 Phase 2 Phase 2 Phase 2 Phase 3 Phase 4 Phase 5 Phase 6 Phase 1-5 Note Factored groundwater discharg	cd? Groundwater Disch Maximum (m ³ /d) understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand understand	arge with Secant Pile Anticipated Groundwith (factored) 18 15 18 14 13 13 78 fery of 1.5 analysis result due to beach	e Perimeter Wall water Discharge meter Wall	Page 21 Section 5.4	
List the nearest surface water (river, creek, lake)	Mimico Creek, approx Lake Ontario is locate the southeast .	kimately 200 ed approxin	0 m to the nately 250	southwest m to 300	t. m to	Page 5 Section 2.2	



SITE INFO	RMATION	Page # & Section # of Review	Review Includes this Information City Staff (Check)
Lowest basement elevation	+89 masl	Page 18 Section 5.2.2	
Foundation elevation	Anticipated to be within the shale bedrock which was encountered between 70.7 masl and 82.6 masl	Page 16 Section 5.1	
Ground elevation	The site is generally flat, with existing elevation across the site typically ranging from approximately +84 masl and +86 masl.	Page 5 Section 2.1	
STUDY AREA MAP		Page # & Section # of every occurrence in the Review	Review Includes this Information City Staff (Check)
Study area map(s) have been included in the report.	X Yes Site Location Plan - Page 3, Section 1.1 Borehole Location Plan - Appendix A	Page 3 Section 1.1 and Appendix A	N/A
Study area map(s) been prepared according to the Hydrological Review Terms of Reference.	⊗ Yes		N/A
WATER LEVEL AND WELLS		Page # & Section # of every occurrence	Review Includes this Information (City Staff Initial)



SITE INFO	RMATION	Page # & Section # of Review	Review Includes this Information City Staff (Check)
		in the Review	
The groundwater level has been monitored using all wells located on site (within property boundary).	Yes	Page 12 Section 4.2	
The static water level measurements have been monitored at all monitoring wells for a minimum of 3 months with samples taken every 2 weeks for a minimum of 6 samples.	No. Existing monitoring data is provided at various seasons but not consistently for 3 months. Based on the available data a conservative estimate of groundwater level has been made, and groundwater assumed to be 1 m below ground surface.	Page 16 Section 5.2	
The intent is for the qualified professional to use professional judgement to estimate the seasonally high groundwater level.			
All water levels in the wells have been measured with respect to masl.	Yes	Page 12 Section 4.2	
A table of geology/soil stratigraphy for the property has been included.	Yes	Page 10 Section 3.3 and Page 11 Section 4.1	
GEOLOGY AND PHYSICAL HYDROLOGY		Page # & Section # of every occurrence in the Review	Review Includes this Information (City Staff Initial)
The review has made reference to the soil materials including thickness, composition and texture, and bedrock environments.	Yes	Page 10 Section 3.3	
Key aquifers and the site's proximity to nearby surface water has been identified.	(X) Yes	Page 5 Section 2.2 and Page 11 Section 4.1	N/A



SITE INFO	RMATION	Page # & Section # of Review	Review Includes this Information City Staff (Check)
PUMP TEST/SLUG TEST/DRAWDOWN ANALYSIS		Page # & Section # of every occurrence in the Review	Review Includes this Information City Staff (Check)
A summary of the pumping test data and analysis is included in the review.	Pumping tests have not yet been carried out. In situ permeability testing is proposed for future design stages, which is discussed in Section 7 Summary and Further Work	Page 23 Section 7	
The pump test been carried out for at least 24 hours if possible. If not, has a slug test been conducted?	Slug tests have not been conducted. In situ permeability testing is proposed for future design stages, which is discussed in Section 7 Summary and Further Work	Page 23 Section 7	
Have the monitoring well(s) have been monitored using digital devices? If yes how frequently?	Not monitored using digital devices	N/A	
If a slug or pump test has been conducted has the static groundwater level been monitored at all monitoring well(s) multiple times to measure recovery? -prior to the slug or pumping test(s)?	<b>Yes</b> Pumping nor slug tests tests have not yet been carried out. In situ permeability testing is proposed for future design stages, which is discussed in Section 7 Summary and Further Work	N/A	N/A
-post slug or pumping test(s)? The above noted slug or pump tests have been included in the report.	Yes Pumping nor slug tests tests have not yet been carried out. In situ permeability testing is proposed for future design stages, which is discussed in Section 7 Summary and Further Work	N/A	
WATER QUALITY		Page # & Section # of every occurrence in the Review	Review Includes this Information City Staff (Check)



SITE INFO	RMATION	Page # & Section # of Review	Review Includes this Information City Staff (Check)
The report includes baseline water quality samples from a laboratory. The water quality must be analyzed for all parameters listed in Tables 1 and 2 of Chapter 681 Sewers of the Toronto Municipal Code (found in Appendix A) and the samples must have to be taken unfiltered within 9 months of the date of submission.	The report discusses known contamination at the site and the requirements of Tables 1 and Table 2 of The City of Toronto Sewers By-Law. Required tests are to be carried out during ground investigation for future design stages.	Page 15 Section 4.5	
The water quality data templates in Appendix A have been completed for each sample taken for both sanitary/combined and storm sewer limits.	For sanitary discharge- See the sanitary/combined sewer parameter limit template	N/A	
	For storm discharge- See the storm sewer parameter limit template		
Qualified professional to list all sample parameters that have violated the Bylaw limits for each sample taken for the sanitary/combined Bylaw limits If there are any sample parameter Exceedances the groundwater can't be discharged as is.	The report discusses known contamination at the site and the requirements of Tables 1 and Table 2 of The City of Toronto Sewers By-Law. Required tests are to be carried out during ground investigation for future design stages.	Page 15 Section 4.5	
Qualified professional to list all sample parameters that have violated the Bylaw limits for each sample taken for the storm Bylaw limits. If there are any sample parameter exceedances the groundwater can't be discharged as is	The report discusses known contamination at the site and the requirements of Tables 1 and Table 2 of The City of Toronto Sewers By-Law. Required tests are to be carried out during ground investigation for future design stages.	Page 15 Section 4.5	
The water quality samples have been analyzed by a Canadian laboratory accredited and licensed by Standards Council of Canada and/or Canadian Association for Laboratory Accreditation.	○ Yes The report discusses known contamination at the site and the requirements of Tables 1 and Table 2 of The City of Toronto Sewers By-Law. Required tests are to be carried out during ground investigation for future design stages.	Page 15 Section 4.5	N/A



SITE INFO	RMATION	Page # & Section # of Review	Review Includes this Information City Staff (Check)
List of Canadian accredited laboratories:	N/A	N1/A	
Standards Council of Canada		N/A	
A chain of custody record for the samples is			
included with the report.	N/A	N/A	
Has the chain of custody reference any filtered			
sample? If yes, the report has to be amended and re-submitted to include only non-filtered samples.	N/A	N/A	
List any of the sample parameters that exceed the			
Bylaw limits with the reporting detection limit (RDL) included.	N/A	N/A	
A true copy of the Certificate of Analysis report, is	N/A	N/A	
EVALUATION OF IMPACT		Page # &	Review
		every	Information
		occurrence	City Staff
		in the Review	(Check)
Does the report recommend a back-up system or relief safety valve(s)?	⊖ Yes ⊗ No		
Does the associated Geotechnical report			
recommend a back-up system or relief safety			
ימויכנא <i>ו</i>			
The taking and discharging of groundwater on site	⊖ Yes		N/A
has been analyzed to ensure that no negative			



#### HYDROLOGICAL REVIEW SUMMARY

SITE INFOR	RMATION	Page # & Section # of Review	Review Includes this Information City Staff (Check)
impacts will occur to: the City sewage works in terms of quality and quantity (including existing infrastructure), the natural environment, and	Review has been carried out in terms of groundwater quantity. Further review of groundwater quality and detailed settlement analysis will be carried out during ground investigation and future design stages	Page 22 Section 5.6	
settlement issues.	investigation and future design stages.		
Has it been determined that there will be a	◯ Yes		N/A
negative impact to the natural environment, City	If yes, identify impact:		
sewage works, or surrounding properties has the			
study identified the following: the extent of the	🗴 No		
negative impact, the detail of the precondition			
state of all the infrastructure, City sewage works,			
and natural environment within the effected zone			
and the proposed remediation and monitoring			
plan?			

Summary of Additional Information and Key Items (if applicable):



#### HYDROLOGICAL REVIEW SUMMARY

#### Appendix A:

#### SANITARY/COMBINED

Sample Location:

Inorganics		Sample Result	Sample Result with upper RDL included	
Parameter	<u>mg/L</u>	_		<u>ug/L</u>
BOD	300			300,000
Fluoride	10			10,000
TKN	100			100,000
рН	6.0 - 11.5			6.0 - 11.5
Phenolics 4AAP	1			1,000
TSS	350			350,000
Total Cyanide	2			2,000
Metals				
Chromium Hexavalent	2			2,000
Mercury	0.01			10
Total Aluminum	50			50,000
Total Antimony	5			5,000
Total Arsenic	1			1,000
Total Cadmium	0.7			700
Total Chromium	4			4,000
Total Cobalt	5			5,000
Total Copper	2			2,000
Total Lead	1			1,000
Total Manganese	5			5,000
Total Molybdenum	5			5,000
Total Nickel	2			2,000
Total Phosphorus	10			10,000
Total Selenium	1			1,000
Total Silver	5			5,000
Total Tin	5			5,000
Total Titanium	5			5,000
Total Zinc	2			2,000
Petroleum Hydrocarbons				
Animal/Vegetable Oil & Grease	150			150,000
Mineral/Synthetic Oil & Grease	15			15,000

August 2018

#### HYDROLOGICAL REVIEW SUMMARY

Volatile Organics		Sample Result	Sample Result with upper RDL included	
Parameter	<u>mg/L</u>	_		<u>ug/L</u>
Benzene	0.01			10
Chloroform	0.04			40
1,2-Dichlorobenzene	0.05			50
1,4-Dichlorobenzene	0.08			80
Cis-1,2-Dichloroethylene	4			4,000
Trans-1,3-Dichloropropylene	0.14			140
Ethyl Benzene	0.16			160
Methylene Chloride	2			2,000
1,1,2,2-Tetrachloroethane	1.4			1,400
Tetrachloroethylene	1			1,000
Toluene	0.016			16
Trichloroethylene	0.4			400
Total Xylenes	1.4			1,400
Semi-Volatile Organics				
Di-n-butyl Phthalate	0.08			80
Bis (2-ethylhexyl) Phthalate	0.012			12
3,3'-Dichlorobenzidine	0.002			2
Pentachlorophenol	0.005			5
Total PAHs	0.005			5
Misc Parameters				
Nonylphenols	0.02			20
Nonylphenol Ethoxylates	0.2			200

Sample Collected: Temperature:

August 2018

STORM	Sample Location:			
Inorganics		Sample Result	Sample Result with upper RDL included	
Parameter	mg/L			ug/L
рН	6.0 - 9.5			
BOD	15			15,000
Phenolics 4AAP	0.008			8
TSS	15			15,000
Total Cyanide	0.02			20
Metals				
Total Arsenic	0.02			20
Total Cadmium	0.008			8
Total Chromium	0.08			80
Chromium Hexavalent	0.04			40
Total Copper	0.04			40
Total Lead	0.12			120
Total Manganese	0.05			50
Total Mercury	0.0004			0.4
Total Nickel	0.08			80
Total Phosphorus	0.4			400
Total Selenium	0.02			20
Total Silver	0.12			120
Total Zinc	0.04			40
Microbiology				
E.coli	200			200,000
Volatile Organics				
<u>Parameter</u>	mg/L			ug/L
Benzene	0.002		_	2
Chloroform	0.002			2
1,2-Dichlorobenzene	0.0056		_	6
1,4-Dichlorobenzene	0.0068			7
Cis-1,2-Dichloroethylene	0.0056			6
Trans-1,3-Dichloropropylene	0.0056			6
Ethyl Benzene	0.002			2
Methylene Chloride	0.0052			5
1,1,2,2-Tetrachloroethane	0.017			17
Tetrachloroethylene	0.0044			4
Toluene	0.002			2
Trichloroethylene	0.0076			8
Total Xylenes	0.0044			4

August 2018

#### HYDROLOGICAL REVIEW SUMMARY

Semi-Volatile Organics		Sample Result	Sample Result with upper RDL included	
Di-n-butyl Phthalate	0.015			5
Bis (2-ethylhexyl) Phthalate	0.0088			8.8
3,3'-Dichlorobenzidine	0.0008			0.8
Pentachlorophenol	0.002			2
Total PAHs	0.002			2
PCBs	0.0004			0.4
Misc Parameters				
Nonylphenols	0.001			1
Nonylphenol Ethoxylates	0.01			10

Sample Collected: Temperature:

	Arup
Consulting Firm that prepared Hydrological Report:	7.000

Qualified Professional who completed the report summary:	James Collins	A A O
	Print Name	Cutting Deletions
Qualified Professional who completed the report summary:	See stamp	0 N TARIO 15/05/2020
	Signature	Date & Stamp