CAMBIUM

Environmental

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Building Sciences

Construction Quality Verification

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Locations
Peterborough
Kingston
Barrie
Oshawa

Laboratory
Peterborough

Professional Engineers Ontario

APGO

December 8, 2023

China Canada Jing Bei Xin Min International Co. Ltd.
c/o EcoVue Consulting Services Inc.
311 Goerge Street North,
Peterborough, ON
K9J 3H3

Attn: Aditya Srinivas
Planner

Re: DRAFT - In-Situ Infiltration Testing – Hidden Ridge Residential Development, Uxbridge, Ontario
Cambium Reference: 18619-001

Dear Aditya Srinivas,

China Canada Jing Bei Xin Min International Co. Ltd. (Client), care of EcoVue Consulting Services Inc. (Ecovue) retained Cambium Inc. to complete in-situ infiltration testing at Part Lot 25, Concession 3, Uxbridge Township (the Site).

It is Cambium's understanding that the Site is currently vacant undeveloped land. The Client intends on developing the Site with seven lots, two separate cul-de-sacs, and stormwater management features.

The stormwater management features include ditches along Road A. The ditches will include earthen berms that will impede surface water flow, thereby promoting re-infiltration. The in-situ infiltration testing outlined herein was completed in order to characterize the infiltrative capacity of the soils about 0.3 m below the bottom of the proposed ditches.

As outlined below, the locations and testing depths were approximate and were based off information provided by the Client. Further, testing locations and results were based on surface conditions which influence access of the drilling equipment, and shallow groundwater conditions.

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Methodology

Infiltration Testing Wells

Cambium staff were on-site on November 23, 2023 to advance boreholes and install dry wells to facilitate in-situ infiltration testing. The testing locations were determined from hand held GPS devices. The testing depths were inferred from available topographic surface mapping of the Site (as provided by the Client). The locations of the testing wells are outlined on attached Figure 1.

Two dry monitoring wells (labelled IT103-23 and IT104-23) were installed in the southern area of the property (near the southern half of Road A). Specific installation details are included in the attached borehole logs and discussed further below. It is noted that the location of wells IT103-23 and IT104-23 had to be altered from their initial planned locations due to the presence of debris on-site and existing vegetated areas. Borehole logs are attached.

Unsuitable Conditions

Groundwater conditions during the advancement of IT101-23 and IT102-23 were too shallow to allow for installation of a dry testing well at both of these locations. Details regarding the conditions encountered at these locations are discussed in the attached borehole logs, and in the following sections. The locations of boreholes IT101-23 and IT102-23 are outlined on attached Figure 1. Borehole logs are attached.

Infiltration Testing Procedures

Upon completion of IT103-23 and IT104-23 Cambium staff filled each well with potable water to saturate the bentonite seal (overlying the sand pack testing interval).

On November 24, 2023 Cambium staff re-visited the Site to complete testing on wells IT103-23 and IT104-23. The in-situ infiltration testing was completed in general accordance with the procedures outlined in the document titled Time Lag

and Soil Permeability In Ground-Water Observations[1]. The data generated from the above testing was processed using the procedures outlined in the above described methodology, and are attached to this document.

Results

Water Levels

Groundwater conditions on November 23, 2023 were confirmed by measuring groundwater depths at three existing wells (MW101, MW102 and DW-2). In addition, one borehole (labeled BH105-23) was advanced in the area of IT103-23 to confirm groundwater conditions in that area. The groundwater depths measured on-site were reviewed to ensure there was sufficient separation between the testing interval and groundwater level. The locations of the existing wells, and BH105-23 are outlined on attached Figure 1.

The water levels ranged from 5.26 metres below ground surface (mbgs) to 7.22 mbgs. Groundwater elevations ranged from 244.03 metres above sea level (masl) to 251.24 masl (approximately). Existing well MW101 was measured to be 4.49 m deep, and confirmed to be dry. The water levels measured on-site are outlined in Table 1 below.

Table 1: Summary of Water Level Measurements (Nov 23, 2023)

Location	Surface Elevation (masl)(2)	Depth (mbgs)(1)	Water Level (mbgs)(1)	Approximate Groundwater Elevations (masl)(2)
MW101(3)	255.10	4.49	Dry	Deeper than 250.61
MW102(3)	256.50	5.50	5.26	251.24
DW-2(4)	251.25	3.36	7.22	244.03
BH105-23(5)	255.20	5.95	4.88	250.32

1. metres below ground surface (existing grade)
2. metres above sea level
3. existing monitoring well
4. existing dug supply well
5. water level measured from borehole advanced on Nov 23, 2023
6. water elevation data based on approximate topographic data provided by the Client

The target testing interval for IT101-23 ranged from approximate elevations of 244.76 masl to 243.26 masl. This testing interval ranged from the bottom of the

[1] Hvorslev, M. (1951), Time Lag and Soil Permeability in Ground-Water Observations, Bulletin No. 36, Waterways Experiment Station USACOE, Vicksburg, Mississippi

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proposed underdrain of the ditch (i.e., 0.3 m below the ditch), to an additional 1.5 m below that depth. These data were referenced from existing topographic mapping provided by the Client. During advancement of IT101-23 the groundwater level was recorded in the borehole at 245.60 masl (i.e., a depth of 1.4 mbgs). As such testing was not possible at this location and the borehole was abandoned.

The target testing interval for IT102-23 ranged from approximate elevations of 248.01 masl to 246.51 masl. This testing interval ranged from the bottom of the proposed underdrain of the ditch (i.e., 0.3 m below the ditch), to an additional 1.5 m below that depth. These data were referenced from existing topographic mapping provided by the Client. This borehole was advanced to 3.05 mbgs. While groundwater was not directly observed within the borehole, saturated soils were observed between depths of approximately 2.75 mbgs and 3.05 mbgs (elevations of 248.00 masl and 247.70 masl). The presence of soil saturation at the target testing depth did not allow for testing to continue at this location. As such testing was not possible at this location and the borehole was abandoned.

In-situ Testing - IT103-23

The target testing interval for IW103-23 ranged from approximate elevations of 251.99 masl to 250.49 masl. This testing interval ranged from the bottom of the proposed underdrain of the ditch (i.e., 0.3 m below the ditch), to an additional 1.5 m below that depth. These data were referenced from existing topographic mapping provided by the Client.

The testing interval at IW103-23 ranged from 252.05 masl to 251.34 masl (a testing interval length of 0.71 m). The testing interval could not be advanced further due to termination on a presumed boulder contact. The bottom of the testing interval was 1.02 m above the water elevation reported at BH105-23, as such the testing is considered valid. The soils encountered throughout the testing interval were described as a sandy silt till, some gravel. Some sand lenses were noted. The hydraulic conductivity of the test interval soils ranged from 6.51 x 10^{-6} m/sec to 7.28 x 10^{-6} m/sec. The hydraulic conductivity results were converted to an infiltration rate referencing the methods outlined by the Ontario Ministry of

Municipal Affairs and Housing[2]. The infiltration rate of the screened soils ranged from 76 mm/hr to 78 mm/hr (geometric mean of 77 mm/hr). The Low Impact Development Design Guide[3] indicates that a safety correction factor should be applied to the tested infiltration rate for design purposes. A safety correction factor of 2.5 was applied to the geometric mean infiltration rate. The infiltration rate of the testing interval at well IW101-23, including safety correction factor, was calculated to be 31 mm/hr (i.e., 77 mm/hr / 2.5 = 31 mm/hr). These results are outlined in Table 2.

In-Situ Testing - IT104-23

The target testing interval for IT104-23 ranged from approximate elevations of 252.80 masl to 251.30 masl. This testing interval ranged from the bottom of the underdrain of the ditch (i.e., 0.3 m below the ditch), to an additional 1.5 m below that depth. These data were referenced from existing topographic mapping provided by the Client.

The testing interval at IW104-23 ranged from 252.80 masl to 252.15 masl (a testing interval length of 0.35 m). The bottom of the testing interval was 1.83 m above the water elevation reported at MW102, as such the testing is considered valid.

The soils encountered throughout the testing interval were described as silty sand, trace clay. The hydraulic conductivity of the test interval soils ranged from 1.90 x 10^{-6} m/sec to 2.50 x 10^{-6} m/sec. The hydraulic conductivity results were converted to an infiltration rate referencing the methods outlined by the Ontario Ministry of Municipal Affairs and Housing. The infiltration rate of the screened soils ranged from 55 mm/hr to 59 mm/hr (geometric mean of 57 mm/hr). The Low Impact Development Design Guide indicates that a safety correction factor should be applied to the tested infiltration rate for design purposes. A safety correction factor of 2.5 was applied to the geometric mean infiltration rate. The

[2] Ontario Ministry of Municipal Affairs and Housing. (1997), Supplementary Guidelines to the Ontario Building Code 1997. SG-6 Percolation Time and Soil Descriptions. Toronto, Ontario.
[3] Toronto and Region Conservation Authority. (2010), Low Impact Development Stormwater Management Planning and Design Guide.

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infiltration rate of the testing interval at well IT104-23, including safety correction factor, was calculated to be 23 mm/hr (i.e., 57 mm/hr / 2.5 = 23 mm/hr). These results are outlined in Table 2.

Summary of In-Situ Testing Results

The details regarding the in-situ infiltration testing are outlined below in Table 2.

Table 2: Summary of In-situ Testing Results (Nov 23, 2023)

Location	Testing Interval/ Elevation (masl[1])	Testing Interval/ Depth (mbgs[2])	Test #	Hydraulic Conductivity (m/sec)	Infiltration Rate (mm/hr)	Geometric Mean Infiltration Rate (mm/hr)	Geometric Mean Infiltration Rate (mm/hr) – Including Safety Correction Factor
IT103-23	252.05 to 251.34	2.95 to 3.66	1	6.52×10^{-6}	76	77	31
			2	7.28×10^{-6}	78		
			3	6.51×10^{-6}	76		
IT104-23	252.05 to 251.34	2.95 to 3.66	1	1.90×10^{-6}	55	57	23
			2	2.50×10^{-6}	59		

1. metres above sea level
2. metres below ground surface (existing grade)

Closing

The results indicate that in the southern area of the proposed infiltration features (in the area of IT103-23 and IT104-23), at the tested intervals, the infiltration rate ranged between 23 mm/hr and 31 mm/hr (including the safety correction factor). In-situ testing could be completed further north at locations IT101-23 and IT102-23 due to the presence of a shallow water table.

We trust the information outlined herein is sufficient. Please reach out to the undersigned at 1705-742-7900 if you have any questions.

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December 8, 2023

Best regards,

Cambium Inc.

Cameron MacDougall, P.Geo.
Project Manager

CJM

Encl. *Figure 1. Site Plan*
Borehole Logs
Infiltration Testing Data

P:\18600 to 18699\18619-001 EcoVue - GEO - Investigation of SWM Features for Hidden Ridge Dev\Deliverables\REPORT - LTR Infiltration RPT\Draft\2023-12-04 Infiltration RPT.docx

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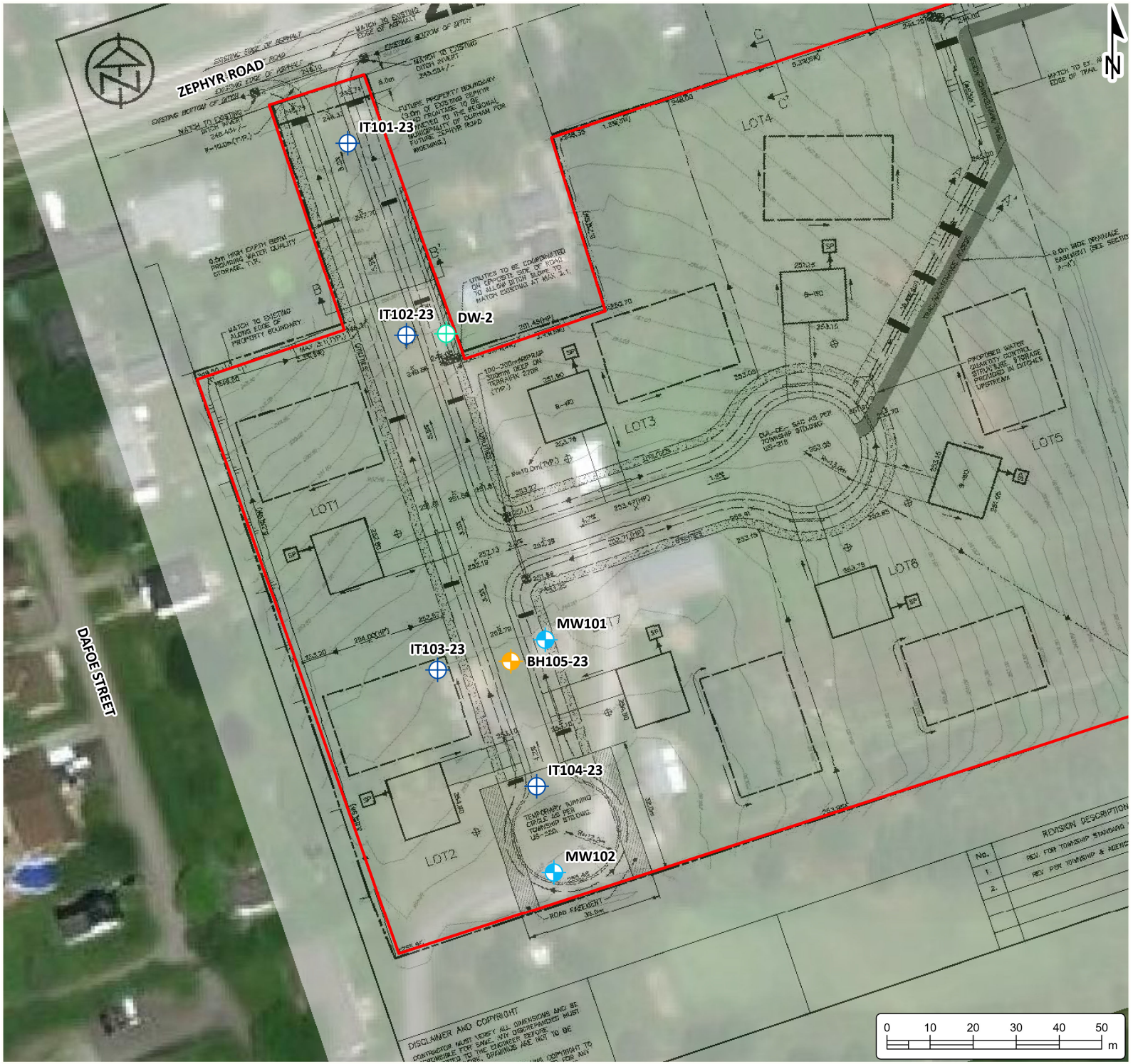
IN-SITU INFILTRATION TESTING

CHINA CANADA JING BEI XIN MIN INTERNATIONAL CO. LTD.
Part Lot 25, Concession 3
Uxbridge, Ontario



LEGEND

- Borehole (Cambium, 2023)
- Existing Well
- Infiltration Well
- Dug Supply Well
- Site (approximate)

Notes:
- This document contains information licensed under the Open Government License - Ontario.
- Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.
- Cambium Inc. makes every effort to ensure this map is free from errors but cannot be held responsible for any damages due to error or omissions. This map should not be used for navigation or legal purposes. It is intended for general reference use only.

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SITE PLAN

Project No.: 18619-001		Date: December 2023 Rev.:	
Scale: 1:1,250		Projection: NAD 1983 UTM Zone 17N	
Created by: DBB	Checked by: CM	Figure:	1

O:\GIS\MXDs\18600-18699\18619-001 EcoVue - GEO - Investigation of SWM Features for Hidden Ridge Dev\2023-12-07 Insitu Infiltration.aprx

In-Situ Borehole Infiltration Testing Calculator
Location: IT103-23
Date: Nov 24, 2023

Test **1**

			Input Data
ASSUME m (transformation ratio) =			1
L	Length of Intake Sample	cm	71
D	Diameter of Intake Sample	cm	11.4
d	Diameter of Standpipe	cm	5

H1	Initial Head		cm	57.71
H2	End Head		cm	1
T1	Initial Time		sec	0
T2	End Time		sec	690

mL	71
mL/D	6.22807

RESULT

kh	6.52E-04	cm/sec
kh	6.52E-06	m/sec

Equation:
Scenario G - Variable Head

$$k_h = \frac{d^2 \cdot \ln\left[\frac{mL}{D} + \sqrt{1+\left(\frac{mL}{D}\right)^2}\right]}{8 \cdot L \cdot (t_2 - t_1)} \ln\frac{H_1}{H_2}$$

$$k_h = \frac{d^2 \cdot \ln\left(\frac{2mL}{D}\right)}{8 \cdot L \cdot (t_2 - t_1)} \ln\frac{H_1}{H_2} \quad \text{FOR} \quad \frac{mL}{D} > 4$$

Citation: Hvorslev, M. (1951) Time Lag and Soil Permeability in Ground-Water Observations, Bulletin No. 36, Waterways Experiment Station USACOE, Vicksburg, Mississippi

Infiltration Rate Estimation (no safety correction factor applied)	76	mm/hr

Citation: Ontario Ministry of Municipal Affairs and Housing (OMMAH). 1997. Supplementary Guidelines to the Ontario Building Code 1997. SG-6 Percolation Time and Soil Descriptions.

In-Situ Borehole Infiltration Testing Calculator
Location: IT103-23
Date: Nov 24, 2023

Test **2**

			Input Data
ASSUME m (transformation ratio) =			1
L	Length of Intake Sample	cm	71
D	Diameter of Intake Sample	cm	11.4
d	Diameter of Standpipe	cm	5

H1	Initial Head		cm	42.11
H2	End Head		cm	1
T1	Initial Time		sec	0
T2	End Time		sec	570

mL	71
mL/D	6.22807

RESULT

kh	7.28E-04	cm/sec
kh	7.28E-06	m/sec

Equation:
Scenario G - Variable Head

$$k_h = \frac{d^2 \cdot \ln\left[\frac{mL}{D} + \sqrt{1+\left(\frac{mL}{D}\right)^2}\right]}{8 \cdot L \cdot (t_2 - t_1)} \ln\frac{H_1}{H_2}$$

$$k_h = \frac{d^2 \cdot \ln\left(\frac{2mL}{D}\right)}{8 \cdot L \cdot (t_2 - t_1)} \ln\frac{H_1}{H_2} \quad \text{FOR} \quad \frac{mL}{D} > 4$$

Citation: Hvorslev, M. (1951) Time Lag and Soil Permeability in Ground-Water Observations, Bulletin No. 36, Waterways Experiment Station USACOE, Vicksburg, Mississippi

Infiltration Rate Estimation (no safety correction factor applied)	78	mm/hr

Citation: Ontario Ministry of Municipal Affairs and Housing (OMMAH). 1997. Supplementary Guidelines to the Ontario Building Code 1997. SG-6 Percolation Time and Soil Descriptions.

In-Situ Borehole Infiltration Testing Calculator
Location: IT103-23
Date: Nov 24, 2023

Test **3**

			Input Data
ASSUME m (transformation ratio) =			1
L	Length of Intake Sample	cm	71
D	Diameter of Intake Sample	cm	11.4
d	Diameter of Standpipe	cm	5

H1	Initial Head		cm	40.12
H2	End Head		cm	1
T1	Initial Time		sec	0
T2	End Time		sec	630

mL	71
mL/D	6.22807

RESULT

kh	6.51E-04	cm/sec
kh	6.51E-06	m/sec

Equation:
Scenario G - Variable Head

$$k_h = \frac{d^2 \cdot \ln\left[\frac{mL}{D} + \sqrt{1+\left(\frac{mL}{D}\right)^2}\right]}{8 \cdot L \cdot (t_2 - t_1)} \ln\frac{H_1}{H_2}$$

$$k_h = \frac{d^2 \cdot \ln\left(\frac{2mL}{D}\right)}{8 \cdot L \cdot (t_2 - t_1)} \ln\frac{H_1}{H_2} \quad \text{FOR} \quad \frac{mL}{D} > 4$$

Citation: Hvorslev, M. (1951) Time Lag and Soil Permeability in Ground-Water Observations, Bulletin No. 36, Waterways Experiment Station USACOE, Vicksburg, Mississippi

Infiltration Rate Estimation (no safety correction factor applied)	76	mm/hr

Citation: Ontario Ministry of Municipal Affairs and Housing (OMMAH). 1997. Supplementary Guidelines to the Ontario Building Code 1997. SG-6 Percolation Time and Soil Descriptions.

In-Situ Borehole Infiltration Testing Calculator
Location: IT104-23
Date: Nov 24, 2023

Test **1**

			Input Data
ASSUME m (transformation ratio) =			1
L	Length of Intake Sample	cm	65
D	Diameter of Intake Sample	cm	11.4
d	Diameter of Standpipe	cm	5

H1	Initial Head		cm	39.51
H2	End Head		cm	1
T1	Initial Time		sec	0
T2	End Time		sec	2265

mL	65
mL/D	5.701754

RESULT

kh	1.90E-04	cm/sec
kh	1.90E-06	m/sec

Equation:
Scenario G - Variable Head

$$k_h = \frac{d^2 \cdot \ln\left[\frac{mL}{D} + \sqrt{1+\left(\frac{mL}{D}\right)^2}\right]}{8 \cdot L \cdot (t_2 - t_1)} \ln\frac{H_1}{H_2}$$

$$k_h = \frac{d^2 \cdot \ln\left(\frac{2mL}{D}\right)}{8 \cdot L \cdot (t_2 - t_1)} \ln\frac{H_1}{H_2} \quad \text{FOR} \quad \frac{mL}{D} > 4$$

Citation: Hvorslev, M. (1951) Time Lag and Soil Permeability in Ground-Water Observations, Bulletin No. 36, Waterways Experiment Station USACOE, Vicksburg, Mississippi

Infiltration Rate Estimation (no safety correction factor applied)	55	mm/hr

Citation: Ontario Ministry of Municipal Affairs and Housing (OMMAH). 1997. Supplementary Guidelines to the Ontario Building Code 1997. SG-6 Percolation Time and Soil Descriptions.

In-Situ Borehole Infiltration Testing Calculator
Location: IT104-23
Date: Nov 24, 2023

Test **1**

			Input Data
ASSUME m (transformation ratio) =			1
L	Length of Intake Sample	cm	65
D	Diameter of Intake Sample	cm	11.4
d	Diameter of Standpipe	cm	5

H1	Initial Head		cm	24.78
H2	End Head		cm	1
T1	Initial Time		sec	0
T2	End Time		sec	1500

mL	65
mL/D	5.701754

RESULT

kh	2.50E-04	cm/sec
kh	2.50E-06	m/sec

Equation:
Scenario G - Variable Head

$$k_h = \frac{d^2 \cdot \ln\left[\frac{mL}{D} + \sqrt{1+\left(\frac{mL}{D}\right)^2}\right]}{8 \cdot L \cdot (t_2 - t_1)} \ln\frac{H_1}{H_2}$$

$$k_h = \frac{d^2 \cdot \ln\left(\frac{2mL}{D}\right)}{8 \cdot L \cdot (t_2 - t_1)} \ln\frac{H_1}{H_2} \quad \text{FOR} \quad \frac{mL}{D} > 4$$

Citation: Hvorslev, M. (1951) Time Lag and Soil Permeability in Ground-Water Observations, Bulletin No. 36, Waterways Experiment Station USACOE, Vicksburg, Mississippi

Infiltration Rate Estimation (no safety correction factor applied)	59	mm/hr

Citation: Ontario Ministry of Municipal Affairs and Housing (OMMAH). 1997. Supplementary Guidelines to the Ontario Building Code 1997. SG-6 Percolation Time and Soil Descriptions.

Client:	China Canada Jing Bei Xin Min Intl c/o EcoVue Consulting Services	**Project Name:**	In-Situ Infiltration Testing, Hidden Ridge	**Log of Borehole:**	IT101-23
Contractor:	Drilltech	**Method:**	Truck Mounted Solid Stem Auger	Page:	1 of 1
Project No.:	18619-001	**Elevation:**	247 mASL	**Date Completed:**	Nov 23, 2023
Location:	Ontario, Canada	**UTM:**	17T **N:** 4895706.3 **E:** 638831.1		

SUBSURFACE PROFILE			SAMPLE							
Elevation (m) / Depth	Lithology	Description (Elevation / Depth)	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) LL PL PI; 25 50 75; % Moisture 25 50 75	Shear Strength Cu, kPa (nat V., rem V.); 20 40 60 80; SPT (N) 20 40 60 80	Well Installation	Log Notes
247 / 0		**(ML) SILT and SAND:** SILT and SAND, some gravel, brown, saturated.								
246.5 / 0.5										
246 / 1										
245.5 / 1.5			1	GB						Groundwater measured at 1.4 mbgs on completion.
245 / 2										
244.5 / 2.5										Borehole caved at 2.6 mbgs on completion.
244 / 3		243.95 / 3.05 Borehole terminated @ 3 mbgs due to target depth achieved.								
243.5 / 3.5										
243 / 4										
242.5 / 4.5										
242 / 5										
241.5 / 5.5										
241 / 6										
240.5 / 6.5										
240 / 7										
239.5										

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

1m = 24 units

Logged By: TP **Input By:** TP

Peterborough, Barrie, Oshawa, Kingston, Ottawa

Client:	China Canada Jing Bei Xin Min Intl c/o EcoVue Consulting Services	**Project Name:**	In-Situ Infiltration Testing, Hidden Ridge	**Log of Borehole:**	IT102-23
Contractor:	Drilltech	**Method:**	Truck Mounted Solid Stem Auger	Page:	1 of 1
Project No.:	18619-001	**Elevation:**	250.75 mASL	**Date Completed:**	Nov 23, 2023
Location:	Ontario, Canada	**UTM:**	17T **N:** 4895661.6 **E:** 638844.8		

Elevation (m)	Depth	Description	Elevation / Depth	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) 25 50 75 / % Moisture 25 50 75	Shear Strength Cu, kPa 20 40 60 80 / SPT (N) 20 40 60 80	Well Installation	Log Notes
250.8	0	**TOPSOIL:** TOPSOIL	250.52	1A	SS	100	4		4		
250.2	0.5	**FILL:** SAND FILL, medium grained, brown, moist	0.23 / 249.99	1B	SS						
249.8	1	**(ML) CLAYEY SILT:** CLAYEY SILT, brown, dryer than plastic limit to about plastic limit	0.76 / 248.87								
249.2	1.5			2A	SS	100	16		16		
248.8	2	**(SW) gravelly SAND:** gravelly SAND TILL, some silt, some clay,	1.88	2B	SS						
248.2	2.5	becomes trace silt Becomes wet, becomes coarse sand	247.7	3	SS	100	33		33		Borehole caved at 2.87 mbgs and was dry on completion. Groundwater encountered in SPT sample @ 2.90 mbgs.
247.8	3	Borehole terminated @ 3 mbgs due to target depth achieved.	3.05								
247.2	3.5										
246.8	4										
246.2	4.5										
245.8	5										
245.2	5.5										
244.8	6										
244.2	6.5										
243.8	7										
243.2											

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

1m = 24 units

Logged By: TP **Input By:** TP

Peterborough, Barrie, Oshawa, Kingston, Ottawa

Client:	China Canada Jing Bei Xin Min Intl c/o EcoVue Consulting Services	**Project Name:**	In-Situ Infiltration Testing, Hidden Ridge	**Log of Borehole:**	IT103-23
Contractor:	Drilltech	**Method:**	Truck Mounted Solid Stem Auger	Page:	1 of 1
Project No.:	18619-001	**Elevation:**	255 mASL	**Date Completed:**	Nov 23, 2023
Location:	Ontario, Canada	**UTM:**	17T **N:** 4895584 **E:** 638852		

SUBSURFACE PROFILE				SAMPLE							
Elevation (m) / Depth	Lithology	Description	Elevation / Depth	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) LL PL PI; 25 50 75; % Moisture 25 50 75	Shear Strength Cu, kPa nat V. rem V.; 20 40 60 80; SPT (N) 20 40 60 80	Well Installation	Log Notes
255 / 0		**TOPSOIL:**	254.95	1A	SS					Cap	
			0.00	2B	SS						
		FILL: GRANULAR FILL	254.85								
254.5 / 0.5		**(OL) ORGANIC SILT:** ORGANIC CLAYEY SILT	0.15	1C	SS	83	17		17		
			254.31								
		(ML) sandy SILT: sandy SILT TILL, some gravel, trace clay, brown, moist, compact	0.69								
254 / 1				2	SS	100	27		27		
253.5 / 1.5		Becomes compact, sand lenses								Bentonite Plug	
				3	SS	100	72		72	Riser	
253 / 2											
252.5 / 2.5			252.36								
		(SM) SILTY SAND: SILTY SAND, some gravel to gravelly, dry, brown, very dense	2.64								
252 / 3		Becomes gravelly, cobbles		5	SS		75		75	Sand Pack	
251.5 / 3.5			251.34							Cap	
		Borehole terminated @ 3.7 mbgs due to practical auger refusal encountered.	3.66								
251 / 4											
250.5 / 4.5											
250 / 5											
249.5 / 5.5											
249 / 6											
248.5 / 6.5											
248 / 7											
247.5											

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

1m = 24 units

Logged By: TP **Input By:** TP

Peterborough, Barrie, Oshawa, Kingston, Ottawa

Client:	China Canada Jing Bei Xin Min Intl c/o EcoVue Consulting Services	**Project Name:**	In-Situ Infiltration Testing, Hidden Ridge	**Log of Borehole:**	IT104-23
Contractor:	Drilltech	**Method:**	Truck Mounted Solid Stem Auger	Page:	1 of 1
Project No.:	18619-001	**Elevation:**	255.75 mASL	**Date Completed:**	Nov 23, 2023
Location:	Ontario, Canada	**UTM:**	17T **N:** 4895557 **E:** 638875		

SUBSURFACE PROFILE				SAMPLE							
Elevation (m) / Depth	Lithology	Description (Elevation / Depth)	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) LL PL PI; % Moisture 25 50 75	Shear Strength Cu, kPa (nat V., rem V.) 20 40 60 80; SPT (N) 20 40 60 80	Well Installation	Log Notes
255.8 / 0		**TOPSOIL:** TOPSOIL (255.47)	1A	SS	67	5		5	Cap	
255.2 / 0.5		**(ML) sandy SILT:** sandy SILT, some gravel, some clay, moist, brown (0.28 / 254.68)	1B	SS						
254.8 / 1		**(SM) gravelly SILTY SAND:** gravelly SILTY SAND, trace clay, brown, moist, dense (1.07 / 251.79)							Bentonite Plug	
254.2 / 1.5									Riser	
253.8 / 2			2	SS	100	47		47		
253.2 / 2.5										
252.8 / 3									Sand Pack	
252.2 / 3.5			3	SS	100	46		46		Borehole caved at 3.60 mbgs. Cave is included in well Sand Pack.
251.8 / 4		Borehole terminated @ 4 mbgs due to target depth achieved. (3.96)							Cap	
251.2 / 4.5										
250.8 / 5										
250.2 / 5.5										
249.8 / 6										
249.2 / 6.5										
248.8 / 7										
248.2										

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

1m = 24 units

Logged By: TP **Input By:** TP

Peterborough, Barrie, Oshawa, Kingston, Ottawa

Client:	China Canada Jing Bei Xin Min Intl c/o EcoVue Consulting Services	**Project Name:**	In-Situ Infiltration Testing, Hidden Ridge	**Log of Borehole:**	BH105-23
Contractor:	Drilltech	**Method:**	Truck Mounted Solid Stem Auger	Page:	1 of 1
Project No.:	18619-001	**Elevation:**	255.2 mASL	**Date Completed:**	Nov 23, 2023
Location:	Ontario, Canada	**UTM:**	17T **N:** 4895586 **E:** 638869		

SUBSURFACE PROFILE				SAMPLE							
Elevation (m) / Depth	Lithology	Description	Elevation / Depth	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) LL PL PI — 25 50 75 / % Moisture 25 50 75	Shear Strength Cu, kPa nat V. rem V. — 20 40 60 80 / SPT (N) 20 40 60 80	Well Installation	Log Notes
255.2 — 0											
254.7 — 0.5											
254.2 — 1											
253.7 — 1.5											
253.2 — 2											
252.7 — 2.5											
252.2 — 3											
251.7 — 3.5											
251.2 — 4											
250.7 — 4.5		**(SM) SILTY SAND:** SILTY SAND, some gravel to gravelly, very dense, moist, brown	249.97	1	SS	100	100		100		Groundwater measured in borehole at 4.88 mbgs on completion.
250.2 — 5			5.23								
249.7 — 5.5		**(SW) SAND:** SAND, some gravel to gravelly, some silt, brown, wet at 5.46 mbgs		2	SS	100	65		65		
249.2 — 6			249.31								Borehole open to 5.94 mbgs on completion.
248.7 — 6.5		Borehole terminated @ 5.9 mbgs due to target depth achieved.	5.89								
248.2 — 7											
247.7											

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

1m = 24 units

Logged By: TP **Input By:** TP

Peterborough, Barrie, Oshawa, Kingston, Ottawa

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December 8, 2023

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