

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](#)

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

**IF ANY OF THE REQUIREMENTS LISTED BELOW HAVE NOT BEEN INCLUDED 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 INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
Site Address	Toronto, Ontario		
Postal Code			
Property Owner (on request for comments memo)			
Proposed description of the project (if applicable) (point towers, number of podiums)			
Land Use (ex. commercial, residential, mixed, institutional, industrial)			
Number of below grade levels for the proposed structure			
HYDROLOGICAL REVIEW INFORMATION			
Date Hydrological Review was prepared:			
Who Performed the Hydrological Review (Consulting Firm)			
Name of Author of Hydrological Review			

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SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
<p>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?</p> <p>PEO: <a href="#">Professional Engineers of Ontario</a>            APGO: <a href="#">Association of Professional Geoscientists of Ontario</a></p>		N/A	
<p>Has the Hydrological Review been prepared in accordance with all the following:</p> <ul style="list-style-type: none"> <li>• Ontario Water Resources Act</li> <li>• Ontario Regulation 387/04</li> <li>• Toronto Municipal Code Chapter 681-Sewers</li> </ul>			
		<b>Page # &amp; Section # of every occurrence in the Review</b>	<b>Review Includes this Information City Staff (Check)</b>

## HYDROLOGICAL REVIEW SUMMARY

SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
Total Volume (L/day) Short Term Discharge of groundwater (construction dewatering) <b>with safety factor included</b>	What safety factor was used?		
Total Volume (L/day) Short Term Discharge of groundwater (construction dewatering) <b>without safety factor included</b>			
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 factor was used?		
List the nearest surface water (river, creek, lake)			

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SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
Lowest basement elevation			
Foundation elevation			
Ground elevation			
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.	<input type="radio"/> Yes		N/A
Study area map(s) been prepared according to the Hydrological Review Terms of Reference.	<input type="radio"/> Yes		N/A
WATER LEVEL AND WELLS		Page # & Section # of every occurrence	Review Includes this Information (City Staff Initial)

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		in the Review	
The groundwater level has been monitored using all wells located on site (within property boundary).			
<p>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.</p> <p>The intent is for the qualified professional to use professional judgement to estimate the seasonally high groundwater level.</p>			
All water levels in the wells have been measured with respect to masl.			
A table of geology/soil stratigraphy for the property has been included.			
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.			
Key aquifers and the site's proximity to nearby surface water has been identified.	<input type="radio"/> Yes		N/A

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SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
<b>PUMP TEST/SLUG TEST/DRAWDOWN ANALYSIS</b>		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.			
The pump test been carried out for at least 24 hours if possible. If not, has a slug test been conducted?			
Have the monitoring well(s) have been monitored using digital devices? If yes how frequently?			
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)? -post slug or pumping test(s)?	<input type="radio"/> Yes		N/A
The above noted slug or pump tests have been included in the report.	<input type="radio"/> Yes		
<b>WATER QUALITY</b>		Page # & Section # of every occurrence in the Review	Review Includes this Information City Staff (Check)

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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 water quality data templates in Appendix A have been completed for each sample taken for both sanitary/combined and storm sewer limits.	<p>For sanitary discharge- See the sanitary/combined sewer parameter limit template</p> <p>For storm discharge- See the storm sewer parameter limit template</p>	
Qualified professional to list all sample parameters that have violated the Bylaw limits for each sample taken for the sanitary/combined Bylaw limits <b>If there are any sample parameter Exceedances the groundwater can't be discharged as is.</b>		
Qualified professional to list all sample parameters that have violated the Bylaw limits for each sample taken for the storm Bylaw limits.  <b>If there are any sample parameter exceedances the groundwater can't be discharged as is.</b>		
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.	<input type="radio"/> <b>Yes</b>	N/A

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List of Canadian accredited laboratories: <a href="#">Standards Council of Canada</a>		
A chain of custody record for the samples is included with the report.		
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.		
List any of the sample parameters that exceed the Bylaw limits with the reporting detection limit (RDL) included.		
A true copy of the Certificate of Analysis report, is included with the report.		
EVALUATION OF IMPACT	Page # & Section # of every occurrence in the Review	Review Includes this Information City Staff (Check)
Does the report recommend a back-up system or relief safety valve(s)?	<input type="radio"/> Yes <input type="radio"/> No	
Does the associated Geotechnical report recommend a back-up system or relief safety valve(s)?	<input type="radio"/> Yes <input type="radio"/> No	
The taking and discharging of groundwater on site has been analyzed to ensure that no negative	<input type="radio"/> Yes	N/A



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impacts will occur to: the City sewage works in terms of quality and quantity (including existing infrastructure), the natural environment, and settlement issues.		
Has it been determined that there will be a negative impact to the natural environment, City sewage works, or surrounding properties has the study identified the following: the extent of the 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?	<input type="radio"/> <b>Yes</b> <b>If yes, identify impact:</b>  <input type="radio"/> <b>No</b>	N/A

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	
<b><u>Parameter</u></b>	<b><u>mg/L</u></b>	<b>-</b>		<b><u>ug/L</u></b>
BOD	300			300,000
Fluoride	10			10,000
TKN	100			100,000
pH	6.0 - 11.5			6.0 - 11.5
Phenolics 4AAP	1			1,000
TSS	350			350,000
Total Cyanide	2			2,000
<b>Metals</b>				
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
<b>Petroleum Hydrocarbons</b>				
Animal/Vegetable Oil & Grease	150			150,000
Mineral/Synthetic Oil & Grease	15			15,000

## HYDROLOGICAL REVIEW SUMMARY

Volatile Organics		Sample Result	Sample Result with upper RDL included	
<u>Parameter</u>	<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
<b>Semi-Volatile Organics</b>				
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
<b>Misc Parameters</b>				
Nonylphenols	0.02			20
Nonylphenol Ethoxylates	0.2			200

Sample Collected:  
Temperature:

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**STORM**

**Sample Location:**

Inorganics		Sample Result	Sample Result with upper RDL included	
<b>Parameter</b>	<b>mg/L</b>			<b>ug/L</b>
pH	6.0 - 9.5			
BOD	15			15,000
Phenolics 4AAP	0.008			8
TSS	15			15,000
Total Cyanide	0.02			20
<b>Metals</b>				
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
<b>Microbiology</b>				
E.coli	200			200,000
<b>Volatile Organics</b>				
<b>Parameter</b>	<b>mg/L</b>			<b>ug/L</b>
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

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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:

Consulting Firm that prepared Hydrological Report: \_\_\_\_\_

Qualified Professional who completed the report summary: \_\_\_\_\_  
Print Name

Qualified Professional who completed the report summary: \_\_\_\_\_  
Signature
Date & Stamp