

## LSRCA Hydrogeological Submission Acknowledgement

I, Name: Tabitha Lee, Credentials: P.Eng. (i.e. P.Geo, or exempted P.Eng. as determined within the *Professional Geoscientists Act of Ontario*), confirm that I am a professional familiar with applicable documents, guidelines and criteria pertaining to groundwater management and that the submission entitled: Report Name: Hydrogeological Investigation, 150 Cemetery Road, Uxbridge, ON, dated February 10, 2021, with associated Drawings: 1 – 14 has been reviewed by me and addresses the key components in the check list included below.

I acknowledge that hydrogeological sign-off or sign-off from another discipline pertaining to this submission or a portion of this submission does not constitute a permit from LSRCA. A permit will be required for all works within an LSRCA Regulated Area in accordance with Ontario Regulation 179/06 and additional information may be required as part of the permit process.

I acknowledge that an incomplete submission will result in processing delays and may be returned or rejected at the discretion of the Municipality in consultation with the LSRCA and/or additional information may be requested.



Signature: \_\_\_\_\_ Printed Name: Tabitha Lee

Name of Consulting Firm: Toronto Inspection Ltd.

Date: 02/10/21 (mm/dd/yy)

## LSRCA Hydrogeological Submission Checklist

The following checklist refers to the requirements when submitting a detailed design submission. These same requirements apply to functional design submissions as well, with the exception of the detailed design drawings. The functional design needs to provide sufficient detail to demonstrate the proposed development concept will be capable of meeting the hydrogeological requirements at the detailed design stage.

For items that have been included, please fill in the report section and report page along with appendix location or drawings pertaining to each item. For items not included, check “No” or “N/A” (Not Applicable) for each item. If “No” or “N/A” are checked, please provide an explanation in the note section of why the criteria do not apply in a particular instance. Please note that the submission may be deemed incomplete and that additional consultation with LSRCA may be required prior to submission acceptance.

The checklist below refers to requirements for every development type, therefore the **LSRCA Hydrogeological Submission Guidelines (2013)** should be referred to for specific study requirements for your type of Planning Act application. For example, the study scope may be reduced for single lot residential applications. Please contact LSRCA to scope study requirements prior to undertaking work.

Yes			No	N/A	Item	Comment
Report Section	Report Page	Drawing/ Appendix				
			No		<b>Pre-submission consultation</b> with LSRCA has been completed as recommended in the Hydrogeological Assessment Submission Guidelines (2013).	A pre-consultation will be scheduled with the LSRCA proceeding Civil Engineering Consultant reviewing Hydrogeological Investigation.
Section 6.2	16	Appendix E			The hydrogeological report has been prepared as a <b>standalone document</b> . (i.e., all references, calculations and drawings, Thornthwaite-Mather water balance assessment, are included within the document).	Although a water balance assessment will be complete in a future revision, the Thornthwaite-Mather water balance assessment calculations for pre and post development have been included in the report.
Yes	Yes	Yes			A <b>Hard Copy</b> of all reports and all drawings (folded individually to 8.5" x 11" size) has been submitted for LSRCA review.	Had copy submissions prepared by the Applicant.
Sections 3, 4	7, 10	Figures 4, 5, 6, 7, 9 and Appendix B			Geological Characterization as per Section 3.1	A characterization of regional and local geological conditions within the current report.
Section 4.1	10	Appendix B			Test pits/Boreholes as per Section 3.1.6 (Required for detailed design)	5 boreholes were completed and included in the characterization of local hydrogeological conditions within the current report
Section 4.3	10	Appendix B			Monitoring Wells as per Section 3.1.7 (Preliminary data required for functional design)	3 monitoring wells were completed and included in the characterization of local hydrogeological conditions within the current report. Due to the period of monitoring, water levels were not recorded in all wells on-Site. A long-term monitoring program is currently underway providing an opportunity to collect missing data, including hydraulic testing and remaining parameters of water quality sampling data.
				N/A	Private Well Survey as per Section 3.1.8	Although a dewatering assessment will be complete in a future revision, the current groundwater table and assumed founding depths do not require dewatering. As no groundwater takings

Yes			No	N/A	Item	Comment
Report Section	Report Page	Drawing/ Appendix				
						are anticipated nor unacceptable losses to groundwater recharge in short term and LID designs will be developed and assessed in the long-term, no unacceptable impacts to other groundwater users has been identified; therefore, a private well survey was not considered necessary and was not conducted.
Sections 3.5, 4.3, 4	8, 10	Figures 7 and 9, Appendix B, Appendix C			Characterization of the local hydrostratigraphy/hydrogeology as per Section 3.1.9	Local hydrostratigraphy/hydrogeology was characterized for the Site
Sections 3.1, 3.3, 8.13, 9.1, 9.2	7, 7, 22, 23, 24	Figures 1, 2a			Description of Surface Water Features and Functions as per Section 3.1.10	Surface water features within and near the Site were discussed along with potential impacts and approaches to mitigation.
Section 4.3.5	12	Appendix D			Water Quality as per Section 3.1.12	Due to limited water column and slow recovery in the sampled well, the water quality samples were taken on separate days. A few parameters remain to be assessed and will be included in the future update. Exceeding parameters out of the ones analyzed were identified in the report.
				N/A	D-5-5 Water Supply (private servicing only) as per Section 3.1.13	The Site will be serviced by a municipal connection therefore a D-5-5 assessment is not necessary
Sections 4.3.2, 9	10, 23	Figures 8, 9, Appendix B			Groundwater Levels as per Section 3.2.1 (Preliminary data required for functional design)	Preliminary groundwater levels were collected. A long-term monitoring period is currently underway to capture seasonal variability in the groundwater table at the Site. Potential impacts to the groundwater system based on the information available were also discussed.

Yes			No	N/A	Item	Comment
Report Section	Report Page	Drawing/ Appendix				
				N/A	Pumping Tests as per Section 3.2.2	Pumping tests are not planned to be completed as part of the current investigation; however single well response testing will be completed during the long-term monitoring program as conditions allow. Preliminary estimates of hydraulic conductivity were provided based on results of the grain size analyses.
Section 9.2	24				Groundwater Discharge (Baseflow) as per Section 3.2.3	The proposed development does not directly drain towards the sensitive surface water areas to the west; therefore, hydrologic inputs to the wetland are not anticipated to be impacted by the development. The Site is also not known to be within an Ecological Significant Recharge Area (ESGRA). Further groundwater dewatering is not anticipated.
Section 6	16	Figures 10 and 11, Appendix E			Pre- and Post-Development Water Balance Assessment as per Section 3.2.4	A pre and post-development water balance analysis has been included in the report. An overview of the Site with respect to the LSRCA recharge policies is provide. The complete water balance analysis with mitigation will be provide in an updated report.
					D-5-4 (Onsite Sewage Systems only) as per Section 3.2.6	The Site will connect to municipal sanitary servicing therefore a D-5-4 Assessment
Sections 6, 9.2	16, 24				Infiltration/recharge mitigation plan as per Section 3.3	Mitigation of the potential infiltration deficit is discussed in the SWM Report for the Site. Opportunities and limitations for infiltration/recharge mitigation at the Site is discussed in our report.

Yes			No	N/A	Item	Comment
Report Section	Report Page	Drawing/ Appendix				
			No		In-situ infiltration testing as per Section 3.3	The in-Situ infiltration testing will be completed in the Spring of 2021 and will be submitted under a separate cover.
				N/A	Low impact development design calculations	The LID design calculations will be provided in the SWM report for the Site.

#### Submission/Resubmission Requirements:

1. A completed response matrix which includes a detailed response outlining how each of the comments above have been addressed with reference to applicable reports/drawings (i.e. specific sections/pages/details or tab identifiers).
2. The response matrix is to also include a summary of any additional changes to the design (i.e. in addition to those not identified in the detailed response to comments, and includes changes to reports, drawings, details, facility design, etc.).
3. All drawings are to be folded (8.5 x 11).
4. Reports and engineering drawings/details are to be signed and sealed by a Professional Geoscientist or Professional Engineer as appropriate.
5. Reports are to include a digital copy of applicable models on a Data CD or USB Thumb Drive.
6. All submissions/reports are to include applicable technical components which achieve the minimum requirements outlined in the LSRCA Technical Guidelines for Stormwater Management Submissions, September 2016.

#### Important Notes and References:

1. Please contact the LSRCA to scope any required Environmental Impact Study or Natural Heritage Evaluation
2. The stormwater management submission is required to be prepared in accordance with "LSRCA Technical Guidelines for SWM Submissions"  
[https://www.lsrca.on.ca/Shared%20Documents/permits/swm\\_guidelines.pdf](https://www.lsrca.on.ca/Shared%20Documents/permits/swm_guidelines.pdf)
3. Submissions are to be in accordance with the LSRCA Watershed Development Guidelines  
<https://www.lsrca.on.ca/Shared%20Documents/permits/watershed-development-guidelines.pdf?pdf=Watershed-Development-Guidelines>
4. The hydrogeological analysis is required to be prepared in accordance with "Hydrogeological Assessment Submissions: Conservation Authority Guidelines for Development Applications"  
[https://www.lsrca.on.ca/Shared%20Documents/permits/hydrogeological%20\\_guidelines.pdf?pdf=Hydrogeological-Guidelines](https://www.lsrca.on.ca/Shared%20Documents/permits/hydrogeological%20_guidelines.pdf?pdf=Hydrogeological-Guidelines)
5. Where the LSPOP applies, submissions are to be in accordance with the LSPOP found here:  
<https://www.lsrca.on.ca/watershed-health/phosphorus>
6. Low Impact Development Treatment Train Tool can be found here:  
<https://www.lsrca.on.ca/Pages/LIDTTTool.aspx>
7. LSPP Water Balance Offsetting Policy: applies to all new applications under the planning act received after 1 January 2019, details can be found here:  
<https://www.lsrca.on.ca/Shared%20Documents/lspw-water-budget-policy.pdf>
8. LSRCA Review Fees can be found here:  
<https://www.lsrca.on.ca/permits/permit-fees>