

Akman Construction Inc.  
123 Cardevco Road  
Ottawa, Ontario  
K0A 1L0

October 4, 2017  
Project: 62565.02

Attention: Mr. Ilhan Akmanol, C.E.T.

**Re: Hydrogeological Evaluation - Update  
Proposed 2 Storey Commercial Building  
123 and 127 Cardevco Road  
Ottawa, Ontario**

This letter provides an update to the hydrogeological investigation prepared for the above noted site, entitled "Hydrogeological Evaluation, Proposed 2 Storey Commercial Building, 123 and 127 Cardevco Road, Ottawa, Ontario" prepared by Houle Chevrier Engineering Ltd. (HCEL) and dated November 27, 2003.

The purpose of the hydrogeological investigation was to confirm the following:

- That the quality of the well water meets the Ministry of Environment (MOE) Regulations, Standards, Guidelines and Objectives; and,
- That there is sufficient quantity of groundwater from the water well for the intended use.

The hydrogeological investigation utilized an eight (8) hour pumping test to withdraw 44,370 litres, which is approximately 4.4 times the estimated maximum demand requirements for the well (maximum of 10,000 litres per day).

Water samples collected by HCEL during the eight (8) hour pumping test were submitted for analysis of subdivision package parameters. The following exceedances to the Ontario Drinking Water Standard (ODWS) were noted: hardness, total dissolved solids (TDS), turbidity (laboratory sample only; field turbidity >5 NTU), iron and manganese. The operational guidelines exceedance for hardness is considered to be reasonably treatable through the use of conventional water softening. The aesthetic objective exceedance for TDS was determined to

not be of significant concern through the calculation of the Langelier Index Value for the eight (8) hour sample which demonstrated that the corrosion and scaling should not be of concern. The aesthetic objective exceedances for iron and manganese are considered to be reasonably treatable through the use of conventional water softener. The level of turbidity was demonstrated to meet the aesthetic objective of the OWDS at the time of water sample collection by field turbidity measurements.

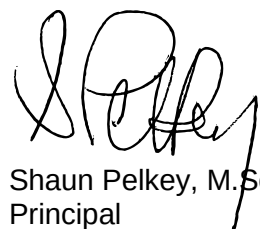
Based on the results of the initial hydrogeological investigation, the water quality meets the ODWS guidelines, objectives and standards (with the exception of hardness, total dissolved solids iron, and manganese) and the well has demonstrated that there is sufficient quantity of water available at the subject site for the proposed use.

It is our understanding that there are no changes to the proposed commercial development and therefore, the water quantity remains sufficient for the proposed use. In the absence of any notable developments or changes in land use in the area since the report was prepared, no changes to water quality are anticipated. Therefore, there are no changes to the conclusions and recommendations in the original hydrogeological evaluation.

We trust that this letter is sufficient for your purposes. If you require additional information or if we could be of further assistance to you on this project, please do not hesitate to call.



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Environmental Scientist



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Principal

