



CASE STUDY

ENVIRONMENTAL LANDS

Scoped Hydrogeological Assessment to Support Land Severance

OVERVIEW

CM3 Environmental Inc. (CM3) was retained to conduct a scoped hydrogeological assessment to support an application for a proposed land severance. The assessment was completed following Ontario Ministry of Environment, Conservation and Parks (MECP) D-5-5 Procedure to evaluate the groundwater quality and quantity for use as a potable supply, and D-5-4 Procedure to assess potential adverse conditions due to private septic field on the severed property.



KEY CHALLENGES

CM3 attended a pre-consultation with the client, the municipal planning department and the third-party technical advisor to develop the scope of work to satisfy the planning department requirements for land severance. It was determined that a pump-test of a well at the proposed severed property was not required, and the existing supply well at the property would be representative of groundwater quality at the severed property.



OUR APPROACH

CM3 conducted a desktop review to establish the physical setting of the property including the topography, geology, hydrogeology. The property was considered hydrogeologically sensitive due to thin soil cover over weathered bedrock. The site soil and upper bedrock conditions were confirmed through a test pit and soil sampling program.

The desktop review included the evaluation of supply well records within 1.0 km of the property to assess well construction, the depth of water bearing units and well yield. The well records indicated that supply wells were of similar construction and the average pumping rate satisfied the MECP and D-5-5 minimum pumping rates. Water quality of the on-site supply well was assessed following Procedure D-5-5. During the water sampling,

CM3 measured field water quality parameters including chlorine and turbidity. CM3 evaluated the field and laboratory results with respect to the Ontario Drinking Water Standards, Objectives and Guidelines (ODWSOG) aesthetic objectives (AO) and maximum allowable concentration (MAC) values.

RECOMMENDATIONS

CM3 provided recommendations regarding the supply well at the severed property, including the location and construction of the well, and water treatment options to mitigate adverse effects of parameters exceeding the ODWSOG.

Potential adverse impacts with respect to background nitrate levels and on-site septic systems were assessed following Procedure D-5-4. The site nitrate loading and water budget were estimated using the results the water sampling, design flow, precipitation and evapotranspiration data and site characteristics. The calculated nitrate value met the MECP limit. CM3 provided recommendations including the location and design of the private septic system, to mitigate potential impacts to groundwater.

The hydrogeological assessment was accepted by the third-party reviewer and planning department and the severance was approved.

Choose CM3 Environmental to conduct a Scoped Hydrogeological Assessment.

Our experienced team will guide you through the entire assessment process, ensuring compliance with municipal and provincial requirements.

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