



June 30, 2022

**Durham Region Health Department**

181 Perry Street, Suite 200  
Port Perry, Ontario  
L9L 1B8

**Re: Proposed 13 Lot Subdivision: Preliminary Sewage System Assessment  
Blackthorn Development Corp.  
City of Pickering, Region of Durham**

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To Whom It May Concern,

Our client, Blackthorn Development Corp., is proposing to develop a residential subdivision, located in the City of Pickering. The subject property is located at 3225 Concession Road 5, just north of the Deer Creek Golf Club. The overall property consists of an area of 17.9 ha. (44.2 acres), and includes the proposed subdivision lands (i.e. 13 proposed lots) and surrounding natural areas that are to remain undisturbed.

The proposed development is for the creation of 13 single residential building lots, as detailed on Concept Plan 21226-5, completed by Blackthorn Development Corp., in which both the Durham Region Health Department 'Lot Sizing Policy' and MECP Guideline D-5-4: Individual On-Site Sewage Systems - Water Quality Impact Risk Assessment will apply to this approval. In addition to the above, we have had ongoing consultation with our client, Mr. Maurizio Rogato at Blackthorn Development Corp., and the project hydrogeological consultant; GeoPro Consulting Ltd.

We have reviewed the following documents;

- Durham Region Health Department document, entitled; 'Drilled Wells and Lot Sizing Policies as Applied to Consents (Severances) and Draft Plans of Subdivision', dated October 2010.
- Concept Subdivision Plan 21226-5, completed by Blackthorn Development Corp., dated March 8, 2022
- GeoPro Consulting Ltd. 'Preliminary Nitrate Impact Assessment', dated February 15, 2021,
- Ministry of the Environment, Conservation and Parks (MECP) Guideline D-5-4: Individual On-Site Sewage Systems - Water Quality Impact Risk Assessment,

The purpose of Guideline D-5-4 is to assess the potential impacts to groundwater, as a result of the proposed individual on-site sewage systems for each lot. This guideline involves a three step process, in which the proponent will review each step sequentially, and proceeding to the next step will depend on whether the previous step can be satisfied.

Step One: Lot Size Considerations involves reviewing the lot sizes for each lot which make up the proposed subdivision. The average size when combining all the lots cannot be less than one hectare, with no individual lot being less than 0.8 hectares in size. As the average lot size for this development is 0.40 hectares, Step One is not satisfied and we must therefore proceed to Step Two.

Step Two: System Isolation Considerations applies to lots that are less than one hectare in size and requires the proponent to assess the potential risk to groundwater. This step reviews the potential for the sewage effluent discharged from each on-site sewage system to be isolated from the existing supply aquifer that is used as the source for local private wells. Based on the borehole log information detailed in the Preliminary Nitrate Impact Assessment completed by GeoPro Consulting Limited, the subject site does not appear to have an effective isolation layer of low permeable soils. Therefore, as Step Two is not satisfied, we must therefore proceed to Step Three.

Step Three: Contaminant Attenuation Considerations applies where it cannot be demonstrated that the sewage effluent is hydrogeologically isolated from all existing or potential supply aquifers; therefore, a nitrate impact study is required to assess the risk that the development's individual on-site systems will cause concentrations of nitrate in groundwater to exceed 10 mg/L (ODWS) at the property boundary.

GeoPro has completed the preliminary nitrate impact study based on parameters and calculations noted in MECP Guideline D-5-4, and have used the area within the staked limit as the land that will contribute to the attenuation of nitrates. The staked limit is identified by the black line work, along with a 10.0m open space buffer identified by blue line work, as shown on Concept Plan 21226-5, completed by Blackthorn Development Corp., dated March 8, 2022. It is noted that the proposal is to include this open space buffer area for nitrate attenuation (i.e. this area to be considered in the calculations); however, it is understood that the open space buffer that will not be developed or disturbed.

We are seeking a recommendation or approval to proceed on the basis that the Durham Region Health Department is satisfied with the proposal to include the open space buffer area in the overall land area that will be assessed for the attenuation calculations, which will be completed for the proposed 13 lot residential development. Our client will then be in a position to move forward with finalizing the necessary planning and engineering studies / reports required for a formal submission.

Yours truly,



Tom Keane  
*Gunnell Engineering Ltd.*

c. Maurizio Rogato, Blackthorn Development Corp.  
c. David Liu, GeoPro Consulting Limited