



LAND SURVEYORS and ENGINEERS

May 12, 2017

24457-17

Sent by way of email

Region of Waterloo  
150 Frederick Street  
PO Box 9051, Station C  
Kitchener, Ontario  
N2G 4J3

Attention: Geoff Moroz, P.Geo.

Dear Sir:

**Re: Sewage System Design  
Islamic Centre of Waterloo  
510 Erbville Road  
Waterloo, Ontario**

Following a review of your review comments and recent telephone conversation, Van Harten is pleased to provide this letter regarding the recently completed sewage system design for the above referenced site.

To elaborate on our comments in Section 6.0 of the design report, the water supply of the existing building is serviced by a municipal water supply and will continue to do so after the proposed renovation. At the time of the site investigation, no water wells were observed within a 30 m radius of the proposed leaching bed area. Based on our knowledge of this site and site inspection, we are confident that the proposed sewage system meets and exceeds the minimum horizontal separation distances to both cased and shallow uncased wells listed in Tables 8.2.1.6.A and B of the Ontario Building Code (OBC). No further investigation beyond these minimum distances was considered warranted for the purpose of our work.

As discussed, rather than investigating wells within a 500 m radius of the property, nitrate loading calculations are provided to demonstrate the anticipated change in loading to the groundwater. As a three bedroom single family home, the OBC would require a minimum peak sewage flow rate of  $Q = 1,600$  L/day. Assuming a standard nitrate concentration of 40 mg/L, 64 kg of nitrate would be produced daily. With a calculated peak flow rate of  $Q = 520$  L/day and an anticipated higher nitrate concentration of 80 to 100 mg/L for the proposed use of the building, 52 kg of nitrate would be produced daily.

12 Memorial Avenue,  
Elmira, Ontario N3B 2R2  
Phone: 519-669-5070

423 Woolwich Street,  
Guelph, Ontario N1H 3X3  
Phone: 519-821-2763

660 Riddell Road, Unit 1,  
Orangeville, Ontario L9W 5G5  
Phone: 519-940-4110

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Given that minimum OBC clearances to existing wells are being met and exceeded combined with an overall theoretical reducing nitrate loading on the groundwater, no further work is considered necessary. Please contact me if you have any questions or require anything further.

Van Harten Surveying Inc.

A handwritten signature in black ink, appearing to read "John Duffy", with a long horizontal flourish extending to the right.

**John Duffy, P. Eng.**

*Consulting Engineer*

cc Emad Abu-Ewimer, Muslim Association of Canada  
cc Thomas C. Hardacre, MCIP RPP