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June 23, 2026

Islands Trust
700 North Road
Gabriola Island, BC
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Sent via e-mail : icox@islandstrust.bc.ca

ATTENTION: MR. IAN COX
RE: DEVELOPMENT VARIANCE PERMIT APPLICATION – PL-DVP-2026-0162 - RESPONSE TO NEIGHBOUR CONCERNS
OUR FILE: 1110

Dear Sir:

This letter has been prepared in response to the two letters submitted by neighbours regarding the above noted Development Variance Permit Application. The following points are regarding Type 3 treatment and the proposed sewerage system (please refer to updated well setback reduction information prepared by Mr. Allan Dakin, P.Eng. for neighbours' questions regarding wells and groundwater protection):

1. The present Standard Practice Manual - SPM-V3, came into effect in 2014. Requirements for application of Type 3 systems were different in 2009, which refer to the standards in SPM-V2. Now (SPM-V3) the standards rely more on soil-based treatment processes than pre- treatment in a tank or treatment system. Soil-based treatment systems are more stable, more reliable and less risky than Type 3 pre-treatment systems. They also produce high quality effluent or percolate at the base of the soil treatment layer with the use of intermittent or time-dosing. In fact, one of the first "Type 3" systems successfully used in onsite septic systems was the intermittent sand filter (a soil - based treatment system). Modern Type 3 systems typically use UV sterilization prior to discharge to ground. UV systems can be unreliable, require frequent cleaning and inspection and require frequent lamp replacement. It is the owner's responsibility to have maintenance done in accordance with the system maintenance plan. Not all owners have this done or have it done at the required frequency. Thus, there is no guarantee that a Type 3 system will continuously meet effluent quality standards and protect public health.

2. From a public health point of view, the Type 3 standard is based on a limit of 400 CFU/100ml of Fecal Coliform bacteria. We are proposing timed micro-dosing to filter sand (sand mound system – which is essentially an above ground intermittent sand filter). After 45cm of the sand layer, the Fecal Coliform level is calculated to be 6.5 CFU/100ml or 1.8 logs less than Type 3, and 0.044 CFU/100ml after 25cm of further treatment in the native soil at the bedrock interface.

3. Note that the Standard for all systems designed in accordance with SPM-V3, regardless of Type (1, 2 or 3), is 200 CFU/100 ml at the limiting layer (water table, flow restrictive layer or bedrock). 200CFU/100ml is the standard for human contact or swimming water. The proposed system exceeds this level by several Logs reduction.

4. For general background information, regulatory well setbacks to septic fields are typically 15m to 30m (50ft to 100ft) in North America. This is a somewhat arbitrary number. Typically, very little treatment occurs in the saturated zone beneath the field and in horizontal subsurface travel to wells, freshwater bodies, ditches and marine water where there is potential for human contact. Public health and environmental protection (i.e. pathogen removal) occur in the unsaturated zone in the soil-based treatment system or field.

5. Note that the proposed location for the field was based on numerous test pit excavations spread over the property. Conditions at the proposed field site were deemed the most suitable. A particular goal of the design is to position the field at a distance greater than 30m from all existing downslope wells. The groundwater flow direction of percolate from the field is in the downslope direction to the east.

I trust the foregoing responds adequately to the questions raised by the two neighbouring property owners. As noted above, Allan Dakin, P.Eng. will respond to the neighbours' questions regarding well setbacks and groundwater protection.

Please contact me if you require anything further.
Yours truly,

Ron McMurtrie, P.Eng.
E.G.B.C. Permit to Practice No. 1002218

cc Katherine Davies
cc Allan Dakin, P.Eng.