



September 29, 2016

Via: Email

Lori Riviere-Doersam
Planning & Economic Development
Regional Municipality of Durham
605 Rossland Road East
Whitby ON L1N 6A3

Dear Ms. Riviere-Doersam:

**Re: QSRP Developments Inc.
Proposed Residential Subdivision
309 Zephyr Road, Township of Uxbridge
On-site Sewage Systems - Nitrate
Project No.: 300034602.0000**

Following discussions between Gary Hendy, WSP and Heather Sadler, EcoVue, we have reconfigured the proposed development. The new configuration excludes the wetland on the east side of the golf course property and still meets the MOECC Procedure D-5-4 nitrate objective for groundwater. A figure showing the new configuration has been attached. The building/development is restricted to the areas outlined in red and green. The purple area is an easement on the golf course to prevent future development serviced by on-site sewage systems. The easement is downgradient of the new lots in the groundwater flow direction.

The development area is approximately 3.29 ha and the easement area is approximately 1.96 ha for a total of 5.25 ha. The size of the development area has been increased by the addition of land along the south boundary of the subdivision. Our letter of May 25, 2016 had proposed a total area of 9.87 ha. This included an easement area extending east into the wetland part of the property. The easement now ends at the east edge of the golf course.

The revised nitrate dilution calculation: $C = Q_e C_e / (Q_e + Q_p)$

Where:

C = concentration of nitrate after dilution

Q_e = volume of effluent from leaching beds is 1,000 L/day/lot for 7 lots = 7,000 L/d

C_e = nitrate concentration in the sewage effluent = 40 mg/L

Q_p = volume of precipitation infiltration = 150 mm/year over 5.25 ha

C = 9.8 mg/L

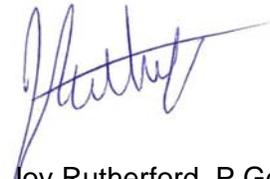
The predicted nitrate concentration is below the D-5-4 objective limit of 10 mg/L. The 10 mg/L criterion is the MOECC drinking water guideline for nitrate.

The purpose of D-5-4 is to ensure that developments using individual on-site sewage systems proceed at a density that will not degrade groundwater resources for drinking water. The actual nitrate concentration at the property boundary will be further reduced by plant uptake of nutrients and diluted by groundwater moving below the site. However, these processes are not included in the D-5-4 calculation.

We trust that this meets your requirements. Please contact me if you have any questions.

Yours truly,

R.J. Burnside & Associates Limited

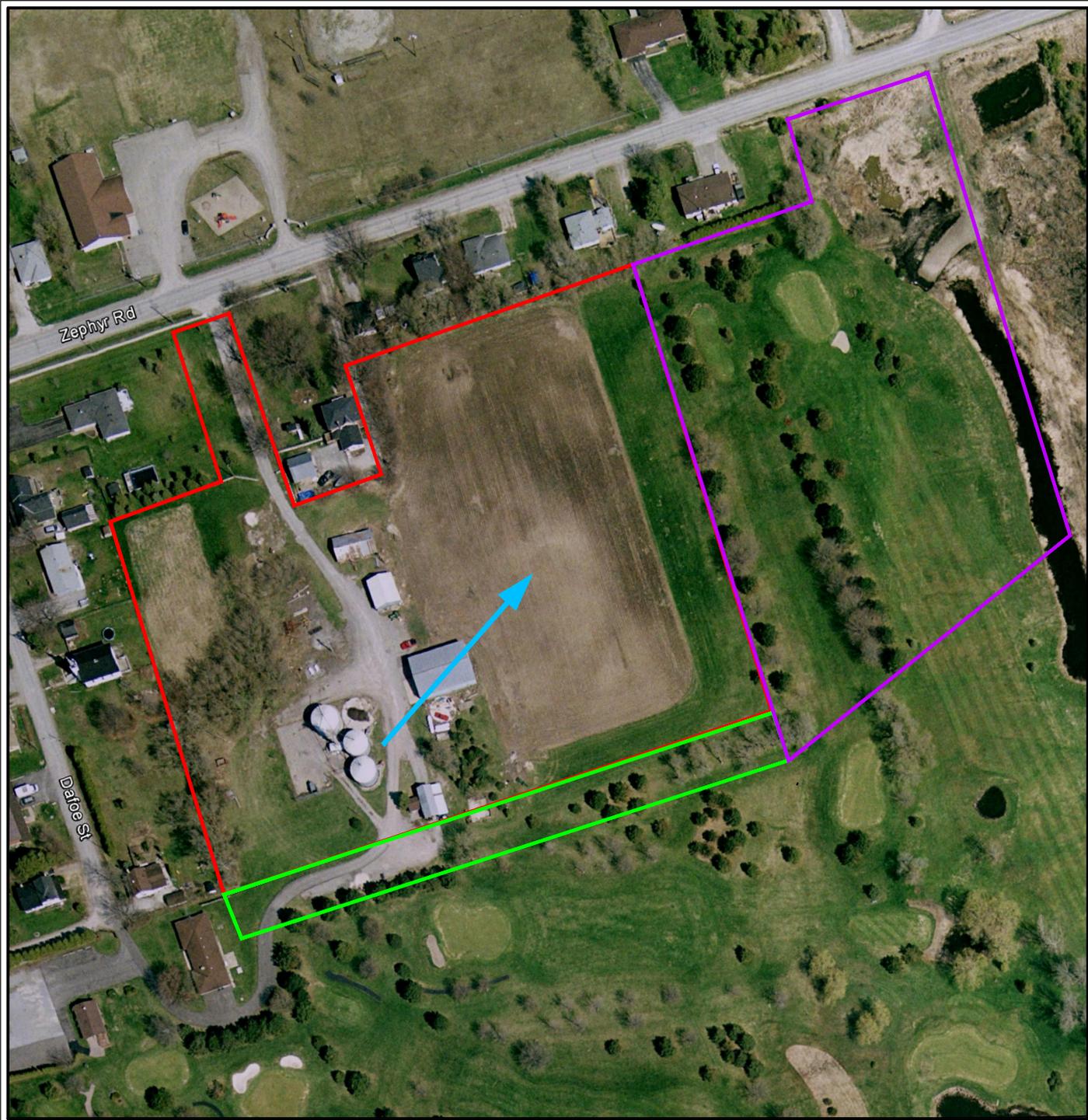


Joy Rutherford, P.Geol.
Senior Hydrogeologist
JR:js

Enclosure(s) Figure 1 – Subdivision and Dilution Areas

cc: Heather Sadler, EcoVue Consulting Services Inc. (enc.) (Via: Email)

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LEGEND

AREA = 2.96 ha

AREA = 0.33 ha

AREA = 1.96 ha

➔ APPROXIMATE GROUNDWATER FLOW DIRECTION
(Grace & Associates, 2013)



Client / Report
 QSRP DEVELOPMENTS INC.
 PROPOSED RESIDENTIAL SUBDIVISION
 309 ZEPHYR ROAD
 TOWNSHIP OF UXBRIDGE

Figure Title
**SUBDIVISION AND
 DILUTION AREAS**

Drawn S.K.	Checked J.R.	Date September 2016	Figure No. 1
Scale 1:2,000	Project No. 300034602		