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Gibsons Alliance of Business and Community Society,
283 Arbutus Reach,
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BC, V0N 1V8

Dear Sirs/Mesdames,

Re: Excavation for proposed George Hotel, 377 Gower Point Road, Gibsons

Your Society asked me to review the information provided by the proponent for development of a multi storey hotel at the above location and to determine if the excavation would enter the aquifer supplying the water to the community.

The material provided to me included:

- Architectural schematics for the project prepared by Omnicron Architecture Engineering Construction Ltd.
- A geotechnical report for the site by Horizon Engineering Inc dated November 26, 2012.
- A construction log for well 19896 of the Village of Gibsons, known as Well 1, dated 1966-04-01.
- An aerial photo of the northern part of the property adjacent to Gower Point Road showing the location of the water supply wells 1 and 4 relative to the property.
- A summary of the information for Wells 1 and 4.

The proposed development consists of two adjacent multi-storey buildings with two levels of parking under each, as shown in sections on Dwgs A4.0.1 and A4.0.3. These drawings show that, taking the level of Gower Point Road at 32.44 ft above sea level (ASL) at the entrance to the western building, the elevation of the top of the lower parkade floor would be 9.84 Ft ASL.

The geotechnical report indicates that this floor is to be designed as a suspended slab spanning between ground beams. No information is provided on the intended thickness of this slab or the spacing of the ground beams. However from experience the slab thickness would likely be 8in and the ground beam might extend 24in below the soffit of the slab. Based on these two assumptions, the proposed design would therefore require excavation to 7.18 ft ASL, without even taking into account the proposal to drill holes for cast-in-place piers to support the structure.

The geotechnical consultant was aware of the aquifer, as their report indicates that they had a copy of the "Aquifer Mapping Study Findings document" prepared by Waterline Resources Inc. and had been advised by the Village of Gibsons that the site was underlain by an aquifer of importance to the village, and that this "was not permitted to be penetrated by deep foundations , nor during the subsurface investigation".

The geotechnical report does not contain enough information to determine whether this depth of excavation would enter the aquifer as the investigative test pits and augur holes were all stopped when the glacial till layer above the aquifer was encountered. In addition the drill logs show that the collar elevation of each pit or hole was not established, making it impossible to relate the strata levels to sea level with any accuracy.

As a result of being unable to determine the thickness of the till layer above the aquifer, the report decided to rely on the conclusions reached in the " Geotechnical Report for 377 Gower Point Road, prepared by Geo Tac Tics Engineering Ltd dated March 18, 2004" (see p5) which reported that their drill holes had penetrated 12 to 18 feet into the till and had been terminated in the till layer. The location of these drill holes is not located in the report by Horizon Engineering Inc.

However the log from Well 1, just across Gower Point Road from the north- south axis of the property has a very detailed record of the strata encountered during its construction in 1996, and presumably could have been obtained by Horizon Engineering Inc. The ground elevation at the collar of this well, I have been advised, is 42ft ASL. The till was entered at 34ft ASL, and the aquifer at 21ft ASL.

As the excavation for the proposed development is intended to reach 7.18ft ASL, it is highly likely that, given the proximity of Well 1 to the site and unless the till layer thickness varies markedly in a short distance, the proposed excavation will penetrate about 14 feet into the aquifer in the northwest corner of the site. Data from Well 4 indicates that the elevation of the top of the aquifer is dropping to the east, but at a rate which would still have excavation penetrating into the aquifer at the northeast corner, but to a lesser extent.

I trust these comments clarify the situation, please advise me if I can be of further assistance.

Yours truly,

K.G.Farquharson P.Eng