

Subject: Strada Proposed Quarry 2 km Influence Area: Water Wells with Less Than 10m Drawdown available above Well Bottom
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Mayor White:

My prior Peer Reviews for NDACT / Strada did not include analysis of vulnerable private water wells within the approximate 2 km proposed Strada Quarry Influence Area.

WELLness Checks

I had expected at some point to receive the results for the 200 or so WELLness checks requested and presumably undertaken by Strada. However these have not been forthcoming despite my direct request as recently as May 14, 2025.

Strada consultants have advised that 5 m of water column above the pump setting is required for typical domestic residential wells. This is an absolute minimum.

Table H.1 - Located Vulnerable Wells with Ground Elevations

Enclosed Table H.1 provides a summary of potentially vulnerable wells with less than 10 m of water column above the well bottom. This Table has been prepared from the March 31, 2023 version of the MECP water base as edited by my firm since our Mega Quarry work beginning about 2006. Despite this comprehensive editing, this MECP database is known to contain unspecified errors and omissions.

Ground elevations in Table H.1 have been looked up in the available 2022 LiDAR DTM and used to calculate elevations (m asl) for water well features. Key elevation horizons are the top of the Cabot Head Shale aquitard at about 445 m asl in Hornings Mills and about 440 m asl at the proposed Quarry site and the top of the Goat Island Aquitard at about 475 m asl west of Hornings

Mills and 470 m asl at the proposed Quarry site.

By this Fig H.1 database query there are 35 drawdown vulnerable existing wells in Lots 8 to 17 Con 1 to 4 Old Survey Melancthon. The most vulnerable wells identified are those at low elevations in Horning's Mills with bottoms at the top or a few meters within the Cabot Head Shale Aquitard. These wells may not provide suitable quantity and quality of water if deepened.

Wells between the proposed Quarry and Hornings Mills higher elevations may require deepening depending on the resultant quarry drawdowns. Wells immediately west of the fourth line and the proposed perforated tile drain at proposed invert elevation 488 m asl may also require deepening.

Table H.2 Unlocated Vulnerable Wells

Table H.2 includes MECP database wells with less than 10 m of drawdown with poor or unknown locations which prevent elevation look ups. There are 30 potentially vulnerable private wells in this count.

Conclusion:

There are a total of 65 potentially vulnerable water supply wells with less than 10 m of drawdown in the 2 km Quarry influence area. There are also a few wells with operational drawdowns in the 10 m range including a Dairy Farm on the Third Line immediately east of the proposed Quarry.

This count does not include unreported dug and bored wells likely located mainly in Hornings Mills community.

This vulnerable well count may likely be reduced with substantial improvement of the Jan 31, 2025 Groundwater Model and Site Plan Mitigation.

Maps are available on request.

Yours truly,

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— Attachments: —

Table H.2 Water Well Drawdown LT10m_NoElev20250530.pdf	271 KB
Table H.1 Water Well Drawdown LT10m_Lot8to17CON1to5.pdf	4.6 MB