

## THE RESEARCH BEHIND BULLETIN # 6

January 30, 2012

*[REDC newsletters contain information that's been carefully researched. Questions about our sources have prompted us to share some of the documentation we investigate before sending the information on to you.]*

### "Final Alternative Water Supply Source"?

Our review of the 2006 Ontario Clean Water Act directed us to the work of Area Source Protection Committees set up under the legislation. These committees concern themselves with municipal drinking water sources. In Caledon these sources are municipal wells and reservoirs.

While we were doing this review Councillor Paterak's Winter 2011 newsletter arrived. It reported on efforts to discover a sufficient and suitable municipal water supply for Alton and Caledon Village in order to meet 2031 population projections: *"Test drilling [under the auspices of the Region of Peel] at the site on Hurontario was completed in August but was unsuccessful at finding a suitable water supply. A number of sites have been tested or ruled out. Drilling will now be conducted at the site on Heart Lake Road **as the final alternative water supply source.**"*

Many residents had heard that Alton's municipal water supply had been diminished by the decommissioning of 2 municipal wells. As Alton is identified for future development, it will need more water. But this was news that the municipal water requirements of Caledon Village may not be met. That the additional municipal water supply was down to one potential well site is of great concern.

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As it turns out, REDC discovered the Hatch Mott MacDonald Caledon Village New Well Class EA Report for the Region of Peel did identify an alternative well on Hwy 10: Well 3B, next door to operating Well 3. It was tested in 2010 and slated for commissioning pending a formal agreement with Lafarge for use of adjacent land. Two representatives from the Region confirmed this information is correct.

Two other sites were identified as potential well sites. One test well completed in 1991 on Kennedy Road within the road allowance, just south of Charleston at the edge of Caledon Village, had tested as having "very good water quality" and the potential for high yield at 22 L/s. In fact in 1991 the Region of Peel had been advised to acquire this parcel of land for future water consideration but did not do so.

Further investigation of this site - Test Well #2 - was abandoned: the consultants [GeoKamp Ltd.] were advised that there was an existing expanded license to mine for aggregate under Kennedy Road to the depth of the existing gravel pits of the license holder; that the plan was to lower Kennedy Road and this would be an unsuitable location for a well as it would be temporary.

When REDC asked the Ministry of Natural Resources for confirmation of this license expansion, it was stated that the Ministry was "not aware of any plans to extract through or lower Kennedy Road at this time. This would not be a permitted activity under the current approved site plan."

## So What about the Vulnerable Aquifer?

DEFINITION OF VULNERABLE = OPEN TO ATTACK OR DAMAGE: WEBSTERS DICTIONARY

Most of us think of an aquifer as surrounded by stone - confined aquifers. Others exist within a layer of water-saturated gravel or sand. The one under Caledon Village is an unconfined sand and gravel aquifer.

Most of the wells in the Caledon Village area are GUDI wells [GUDI=ground water under direct influence of surface water]. According to the consultants advising the Region on new municipal wells, specifically 3B, **“production wells at this location are considered to be at some risk from contamination originating at surface because the aquifer is unprotected by poorly permeable overlying deposits and is exposed in the gravel pits.** Since the ponds in the gravel pit immediately to the east appear to be in hydraulic connection with the aquifer any contamination of the Caledon Sand and Gravel ponds could affect the water quality at the PW[permanent Well] 3/3A well field.” [GeoKamp Ltd. Well Construction Program, Caledon Village Well 3B]

..... “In view of the nearby pits and the sensitivity of PW3 and PW3B Well Field to contamination, it is recommended that the inventory of potential sources of contamination (as per the Source Water Protection Program) be revised to ensure no contamination sources be missed or established since previous inventories.”

Here’s what the Credit Valley Source Protection Draft -Proposed Updated Assessment- Report (released for public consultation June 17<sup>th</sup> 2011) said about the aquifer under the heading **Assessing Vulnerability of Drinking Water Sources:**

### “Gravel Pits/Aggregate Operations

*Aggregate operations were identified in the WHPAs of Caledon Village Well 3 and in Alton Wells 3 and 4. [WHPA - a wellhead protection area - is the area that surrounds the well through which contaminants are reasonably likely to move toward or reach the well.]*

*The aggregate operation in the WHPA of Caledon Village Well 3 consists of several pits that extend below water table, covering an area of approximately 20 hectares [50 acres]. **Within the footprint of the sand and gravel pits, the entire overburden layer has been removed, resulting in the opening up of the underlying overburden, and the loss of the protective layers overlying the aquifer across the gravel pit. Based on this, the vulnerability rating within the area of the gravel pits was increased from medium to high.*** [CTC Source Protection Draft Assessment Report 2011]

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### Alton & Caledon Village Map from the Report

FYI: a map that illustrates the high vulnerability areas around Caledon Village.

[http://www.ctcswp.ca/files/Caledon%20Village\(1\).pdf](http://www.ctcswp.ca/files/Caledon%20Village(1).pdf)