



320 - 77 James Street North
Hamilton, ON Canada L8R 2K3
www.hamilton.ca

Public Works Department

Capital Planning and Implementation

905-546-2424 ext. 1016 (Telephone) - 905-546-4435 (Facsimile)

Hamilton

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November 30, 2006

PTTW Coordinator
Ministry of the Environment
West Central Regional Office
119 King St. W, 12th Floor
Hamilton, ON L8P 4Y7

RE: PTTW: Notification of Application for Permit to Take Water – EBR Registry No. IAO6E1293 and Ministry Reference Number: 4455-6U9MKG

In response to the posting on the EBR Registry regarding the above referenced application for a permit to take water by CBM Aggregates (Division of St. Mary's Cement Inc.) we are providing our comments on the application. Our comments are from the City's Public Works and Planning and Economic Departments and are in addition to previous comments provided to your office by our Public Health Services Department on November 21, 2006.

Based on the information provided in the EBR registry, the application from CBM Aggregates is for a category 3 Permit to Take Water to conduct a series of pumping tests to:

1. Collect additional geologic and hydrogeologic information on the bedrock to characterize a "productive zone" within the Amabel Formation and
2. Undertake a pilot scale evaluation of the preferred measures referred to as a Groundwater Recirculation System (GRS) that would be installed peripherally to the quarry to mitigate quarry dewatering effects

The proposed water taking is from 3 wells located on CBM Aggregates property (Lots 1, 2 and 3, Concession 11, Flamborough, Hamilton) which is accessed off of 11th Concession Rd. E. near Milbrough Line. The application specifies that the maximum water taking is not to exceed 8,800 l/min for a maximum duration of 20 days. Based on this background information our comments on the application are as follows:

The City has significant concerns with this water taking as it is extremely close (approximately 2km) to the Carlisle municipal well system which provides the majority of the public water supply for the Rural Settlement Area of Carlisle. The steady state capture zone for the Carlisle wells system extends approximately 2km to the northwest in direct line with the CBM wells proposed to be pumped. The CBM wells are therefore likely within the recharge zone of the Carlisle wells. Based on the Wellhead Protection study that was done for the City by SNC-Lavalin, in 2006, the northern portion of the well head capture zones for the Carlisle wells are adjacent to the proposed water taking. It is important to note that the capture zones are based on the maximum allowable permissible rate of pumping for Carlisle wells (as specified in their Permits to Take Water) which is, in total, approximately 2600 l/min. It is expected

that the capture zone for the Carlisle wells would be much more pronounced and larger in area if the pumping rate was increased 3 fold to 8800 l/min (which is the rate at which the CBM wells are proposed to be pumped). Therefore it is entirely likely that when pumped at 8800 l/min the CBM wells will interfere with the Carlisle well supply. The magnitude of the interference is the unknown factor. It is possible that this interference is significant enough to prevent the sustained supply of water to the public from the Carlisle wells. The actual 2005 monthly average pumping rate from the Carlisle wells is on the order of approximately 650 l/min and there has been a history of periodic water shortages from the wells in the summer months. Therefore it may not even be possible to pump 8800 l/min without severely stressing the municipal aquifer.

For the above reasons the City is concerned about maintaining the water supply for Carlisle during this proposed pumping test. Therefore we recommend that an early warning system be in place which would permit the City to demand CBM pumping rates to be reduced or ceased altogether if groundwater levels and/or yields around Carlisle drop to a point at which the municipal supply can no longer be sustained. If possible a threshold amount of water that is available for the municipal well supply that is also acceptable to the municipality should be established as early on in the test as possible. CBM should therefore be required as per condition on the Permit to Take Water to submit a contingency plan acceptable to the City and MOE that provides an outline of the steps that will be implemented (with triggers) to protect and maintain the Carlisle water supply during the pump testing. As part of this early warning system we recommend that groundwater monitors be installed between the CBM wells and the Carlisle wells at a depth consistent with the production zone. The monitors should be installed at least 1 km from the CBM pumping wells.

It is important to note that many rural residents rely on private wells in the area. Depending on the private well site conditions and their location in relation to the CBM wells it is possible that some private wells within at least 2km of the CBM wells may be affected (even if the municipal wells are not). Therefore, it is recommended that private well monitoring be undertaken as part of this test prior to during and after the test.

In addition we would recommend that the pumping test not be undertaken during seasonally low levels of groundwater flow (i.e. June July August)so that the risk of significant well interference is minimized since Carlisle has had a consistent history of experiencing low water yields in the summer months.

We have appreciated that CBM has kept us informed of their intentions and has shared technical information with us. We have previously corresponded with them and expressed a number of other sensitivities/issues which need to be addressed as part of the proposed pumping test. These issues as well as other issues that have been recently brought to our attention by others are summarized as follows:

- Monitoring the water quality in Mountsberg Creek. Triggers should be included that would allow the pumping to be ceased or reduced if indications support that any environmental/ecological impact was occurring
- Geotextile should be emplaced around the discharge pipe outlet to Mountsberg Creek to prevent erosion and vegetation stress from the water flow
- Monitoring of potable wells around the CBM pumping wells prior to, during and after the pump test.
- Establishment of how interruption of private wells supplies will be prevented and if the private wells are interrupted, what is the proposed mitigation.
- Monitoring (quality and quantity) of impact to groundwater and surface water in the sensitive woodlot to the north of the trench as well as overall zone of influence.
- Provide additional details on measures that will be adopted to prevent groundwater contamination as a result of the pump test.

- The pumping tests should be of sufficient duration to be able to quantifiably evaluate potential impacts
- Ensure a suitable setback/buffer from the bush/tree-line of the woodlot to the north of trench of at least 10m from the drip line.
- Installation of snow fencing at the limit of the buffer zone
- Monitoring of all site activities and documentation of any tree-clearing by an environmental inspector.
- Include how disturbed area is to be vegetated rehabilitated on completion of pumping test.
- Establishment of a contingency plan for both the municipal and private wells monitoring program.
- Further consultation is requested with the City prior to any testing stage that requires blasting.

In summary, we have a number of concerns that we would like to see addressed satisfactorily by CBM, our primary concern being able to maintain the potable supply of water to Carlisle throughout the duration of the proposed test.

We would like to suggest that a meeting be held between the City and your office to discuss this application further, the appropriate contingency provisions and what the next steps should be. In the meantime, if you have any questions please call me, at 905-546-2424 ext. 1016.

Yours Truly,



David J Kerr, P. Geo.
Senior Project Manager, Source Water Protection

cc: Scott Stewart, General Manager, Public Works, city of Hamilton
 Jim Harnum, Sr. Director - Water & Wastewater, City of Hamilton
 Mark Bainbridge, Sr. Project Manager - Water & Wastewater, City of Hamilton
 Mary Lou Tanner, Manager - Strategic and Env. Planning, City of Hamilton
 Richard Wooten, Project Manager - Source Water Protection, Hamilton/Halton
 Diane Bloomfield, Senior Hydrogeologist, Halton Region
 Stan Holiday, Sr. Planner, Planning and Economic Development, City of Hamilton
 Eric Mathews, Manager, Health Protection, Public Health Services
 Bill Marquardt, St Mary's Cement Inc.
 Councillor (Ward 15), Margaret McCarthy, City of Hamilton



Public Health Services
City Hall, 71 Main Street West
Hamilton, Ontario,
Canada L8P 4Y5
www.hamilton.ca

Hamilton

November 21, 2006

PTTW Coordinator
West Central Regional Office
119 King St. West, 12th Floor
Hamilton, Ontario, L8P 4Y7

Attention: Cora Shepherd

Re: EBR# 1AO6E1293
Ministry Reference # 4455-6U9MKG
Proposed Permit to Take Water
11th Concession, (East) Flamborough
City Of Hamilton

In response to the above-noted EBR posting dated 2006/10/13, the Health Protection Branch of Public Health Services, City Of Hamilton, wishes to provide the following comments:

1. That the applicant/MOE identifies all ground and surface water source drinking water systems regulated under the Safe Drinking Water Act within a 2 kilometer radius of the proposed PTTW.
2. That owners and operators of these drinking water systems be made aware of the proposed water takings (so that operators can monitor and note any turbidity or other well water issues that may arise during the course of the water taking(s)) in writing with sufficient notice prior to the water taking.
3. That the proponent's response plan be revised to receive and address any complaints or concerns relating to water quality or quantity issues reported by regulated drinking water systems with a 2 kilometer radius.
4. That in recognition of the project size, complexity of hydro-geological issues, and the need for transparency that MOE, technical staff be present at the site during proposed water takings.

Respectfully submitted

Eric Mathews
Health Protection Branch
Public Health Services
City Of Hamilton
905-546-2424 xt 2186