Ontario

Ministry of Municipal Affairs and Housing
Ministère des Affaires municipales et du Logement

Municipal Services Office - Southwestern
659 Exeter Road, 2nd Floor
London ON N6E 1L3
Telephone: (519) 873-4020
Toll Free: 1-800-265-4736
Fax: (519) 873-4018

Bureau des services aux municipalités - région du Sud-Ouest
659 Exeter Road, 2e étage
London ON N6E 1L3
(519) 873-4020
Sans frais: 1-800-265-4736
Télécopieur: (519) 873-4018

February 1, 2008

Mrs. Margaret Misek-Evans
Oxford County, Community and Strategic Planning
P.O. Box 397
415 Hunter St.
Woodstock, ON N4S 7Y3

Dear Mrs. Misek-Evans;

Subject: **Proposed Official Plan Amendment –OP 11-152**
Thames Valley Resources Corporation
Part Lot 20, Concession 1 (North Oxford)
Township of Zorra, County of Oxford

Thank you for your submission of November 8, 2007 regarding this matter. MAH staff have received and reviewed this information and offer the following.

It is understood that the purpose of the requested Official Plan Amendment application is to re-designate the eastern portion of the subject property that falls within the settlement limits of the village of Thamesford from "Secondary Planning Area" as shown on 'Schedule Z-2' Village of Thamesford to "Agricultural Reserve" in order to establish a below ground water table sand and gravel pit on the subject property

Under the "One Window" provincial planning system, Ministry of Affairs and Housing (MAH) circulated the additional information to the Ministry of the Environment (MOE), Ministry of Agriculture, Food and Rural Affairs (OMAFRA) and Ministry of Natural Resources (MNR). Received comments are summarized below.

Ministry of the Environment:

MOE staff have reviewed the application and supporting documentation and note that they are not aware of a secondary plan (as required by Section 4.2.2.4 of the Official Plan) being prepared for this area. Furthermore, the Golder Report references a 200mm trunk watermain. MOE staff suggest that the County examine the water and sewage Class EA documentation for Thamesford to determine if these lands fall within the service area of the village. A commitment may have been registered through a public process (the Class EA) to service this area for urban uses. MOE staff note that a pit application and a pond rehabilitation plan may be in variance with the Class EAs and the County's growth and urban land supply projections.

MOE does not normally review noise assessments for *Planning Act* applications where the municipality is exempt or the approval authority. Municipalities are to develop the necessary in-house expertise or retain a consultant to determine if MOE's noise guidelines are being met.

The minimum recommended setback distances specified by MOE land use compatibility guidelines are not relevant to the review of pit or quarry proposals. Consequently, there is no published "set" distance MOE staff can suggest that may assist the County in determining if a pit at this location is advisable.

The HGC report concludes that MOE's guideline for noise impacts from stationary sources (*NPC-205 Sound Level Limits for Stationary Sources in Class 1 and 2 Areas)* can be met provided certain mitigation measures are incorporated into the ARA licence. These measures include:

- limiting the areas where the crusher and screening plant can operate
- limiting hours of operation
- installation of a berm

MOE staff note that NPC 205 was designed to promote a standard of performance sufficient to prevent the majority of people from being affected adversely by noise. Due to the human response to noise, compliance to the criteria does not form an absolute guarantee of community acceptance. As part of the public participation process for the Secondary Plan for this area, the community may set its own standard for impact.

MOE staff offer a similar caution regarding dust generation. Dust control is not discussed in the submission. MOE staff assume that the proponent will agree to undertake sufficient measures to control dust in order to meet the terms of its licence. MOE staff note that through past experiences, dust is often difficult to control on an on-going basis. The risk of conflict with adjoining sensitive development is a function of proximity and the sensitization that can often develop over time within the affected community. MOE staff note that even the best efforts of the most conscientious operator may not be good enough for urban property owners that experience an impact on a multi-year basis.

MOE's Regional Water Resources Assessment Unit has indicated that aggregate extraction at this location is likely to cause a small and temporary depression in the water table. The comments of the Water Unit appear as an attachment.

MOE staff suggest that the County and the municipality examine the status of the pond proposed by the rehabilitation plan. This is a large feature that may require effective management and stewardship. From the documentation, MOE staff are not clear if the pond is to persist as a private venture or if it is to evolve into a community amenity (frontage for residential lots may be offered). The potential for the pond to become a municipal responsibility may need to be explored in the Secondary Plan process.

MOE staff note that a municipal SWM pond is shown on Drawing No. 2 (located to the north of the proposed pit). The possibility of interaction between this pond with the pit (and the eventual rehabilitation pond) was not raised in the documentation. MOE staff request that the County or the municipality e-mail the Certificate of Approval number for this municipal SWM facility.

MOE staff are not certain what can be accomplished at this time without a report from the County outlining its view on the policies of the OP with respect to Secondary Planning. Individual development applications, especially ones that will raise some rather basic questions about land use compatibility, should be evaluated through a more comprehensive process to decide the type and staging of land use in this area.

Ministry of Natural Resources:

MNR staff have reviewed the application and supporting documentation and note that MNR staff support the amendment which would establish a "sand and gravel pit" on the subject lands.

Aggregate Resources:

MNR staff note that a subsurface investigation to assess commercial aggregate supply, south of part lot 20, concession 1, Zorra township was conducted by Atkinson Davies Inc. One conclusion from this assessment was that the site has considerable quantities of aggregate of commercial value including 4.5 million tonnes of material with excellent crushing potential.

Due to the proximity of sensitive receptors within 150 metres of the proposed extraction and/or processing facilities, the proponent had a noise assessment report conducted to determine whether or not provincial guidelines could be satisfied. The report conducted by HGC Engineering listed five recommendation for noise mitigation, all of which were implemented on the site plans for the site.

In accordance with the PPS, section 2.5.2.1 and 2.5.2.2 as much as 4.5 million tonnes of aggregates will be made available to close markets and extraction is to be undertaken in a manner which minimizes social and environmental impacts.

Humphrey Municipal Drain:

MNR staff acknowledge the historical status of the watercourse as a municipal drain and that the drain relocation approval is under the mandate of Fisheries and Oceans Canada (DFO). MNR staff suggests proper mitigation measures be determined and implemented in order to reduce sedimentation and potential negative impacts to the downstream cold-water fishery in Caddy's creek.

Woodlands:

MNR staff note that Oxford County did not identify the on-site woodland as significant. However, the Natural Heritage Reference Manual (1999) indicates that where woodland cover in a municipality is between 5%-15%; any woodland 4 hectares in size or greater should be considered significant. MNR staff note that Oxford County has approximately 13% woodland cover, and as such, a woodlot 5 ha in size should be considered significant and therefore the 1.8 ha of a 5ha woodland should not be removed. The ELC sheets for this feature indicate there is a good stand structure, including a number of medium-sized trees. MNR staff suggest it is not appropriate to remove 1.8 ha of this woodland.

Ministry of Municipal Affairs and Housing:

MAH staff have reviewed this application and note that the County must be satisfied that the reports submitted in support of this proposal address the policies of the PPS including policies around land use compatibility as noted in Section 1.1.1, loss of Prime Agricultural lands for aggregate extraction purposes as noted in Section 2.5.4 and that the proposed loss of settlement area for future growth does not impact the township's ability to provide sufficient employment opportunities, housing and other land uses to meet projected needs for a time horizon of up to 20 years as noted in Section 1.1.2.

Further, MAH staff understand that a portion of the subject site has been identified as an area requiring secondary planning in accordance with County Official Plan policies. MAH staff are in agreement with the above comments from MOE suggesting that this proposal should be evaluated through a more comprehensive process (secondary plan) to determine the appropriate type and staging of land uses within this area and not as a stand alone application which may result in significant impacts to adjacent areas.

As such, MAH staff suggest that the area within the settlement area not be rezoned or re-designated to allow for the "sand and gravel pit" until a secondary plan can be completed for the area which comprehensively assess this area for future development.

MAH staff appreciates the opportunity to comment on this document and we wish to be notified of Council's decision on this application. If you have any questions or comments, please telephone me at (519) 873-4769.

Yours truly,

Craig Cooper
Planner
Municipal Services Office – Southwestern

c. Bob Aggerholm, MOE (London)
Daraleigh Irving, MNR (Aylmer)
Drew Crinklaw, OMAFRA (London)

Regional Water Resources Assessment Unit
Groundwater Review
Official Plan Amendment Application OP-11-152
Thames Valley Resources Corporation
Part Lot 20, Concession 1 (North Oxford), Township of Zorra

- *The number and distribution of boreholes/wells are suitable, and the hydrogeology of the site has been well characterized. Aggregate extraction that does not involve active dewatering typically does not result in a significant alteration to ground water resources. Even though water will not be pumped from the pit pond, there are three processes by which relatively minor amounts of water will be lost:*

- *Exposure of the water table will introduce direct evaporation from the aquifer: Evaporation from an open water body is typically about 0.6 to 0.8 m/yr in Ontario, or less than 1 cm per day even under favourable conditions. This will be countered somewhat by an increase in direct recharge to the aquifer by water that previously would have left the property by means of surface runoff (estimated by Golder as ~ 0.1 to 0.15 m/yr).*

- *Loss of water that adheres to the product: The coarse nature of the aggregate means that most of the water removed during the extraction process will simply drain back to the pit pond. Golder has estimated that this would be the equivalent of about 6 mm per year at this site.*

- *Loss of an equivalent volume of water from the aquifer to replace the void left by the extracted aggregate: Water from the surrounding aquifer will drain towards the pond in order to maintain equilibrium between the pond level and the aquifer level. The amount of water needed to replace the aggregate was not estimated by Golder. My initial estimates (80,000 tonnes extraction per year over 180 days) suggest that this could be the equivalent of about 160,000 litres per day. When the pond is small (0.1 ha), this would be an equivalent drawdown of the pond level of about 0.16 m per day. Thus, at the early stages, a drawdown of up to 0.16 m per day in the aquifer is theoretically possible, though unlikely. As the pond volume increases in size the volume of each day's extraction will quickly become proportionately smaller, and progressively less and less drawdown will occur in the pond and aquifer.*

- *In summary, the development of a pit may result in a very minor lowering of the water table in the immediate vicinity of the pit pond. Changes in pond water levels will very likely be mitigated by inputs from the surrounding aquifer, causing the pond level to approach equilibrium with the existing local water table. Nevertheless, to further reduce the small risk to surrounding well supplies, extraction below the water table should commence in an area of the property that is not adjacent to any shallow dug wells (eg. Well No. 4703123, see below).*

- *Despite the fact that significant drawdown in the aquifer is not expected, it remains prudent to monitor water levels in the aquifer using the existing well monitoring network. A good water level database can be used to demonstrate the impacts (or lack thereof) of*

the extraction on ground water resources. I agree with Golders' recommendation to commence water level monitoring before extraction occurs. Quarterly monitoring should be sufficient prior to extraction, but it would be beneficial to increase the frequency to at least monthly during the first year or two that the pit pond is developed. It is during this period that the greatest degree of change would be expected. How will the applicant determine whether a drop in water levels in a well is due to climatic variation or due to pit operations?

- *Most private wells in the vicinity of the area are reported to obtain water from deeper formations. Given that the excavation depth is comparatively much shallower than most of the wells, the risk to most nearby well supplies is considered to be low. A notable exception is well 4703123 (well No. 6 on Figure 2), which is located to the immediate northeast of the proposed pit. This well obtains water from the sand and gravel formation being extracted and is no deeper than the proposed extraction. Further discussion of the potential for impacts to this well is required. Is the well still in use? If so, arrangements should be sought to monitor water levels in this well on at least a monthly basis. A contingency plan should be proposed to deal with the possibility that the water level in this well is unacceptably impacted? How will the applicant determine whether a drop in water levels in the well is due to climatic variation or due to pit operations?*

- *The Ministry's water well database is not a reliable record of all wells, and thus the proponent should field verify that there are no other shallow wells in use within several hundred metres of the property.*

- *As discussed in comment No. 1, aggregate extraction will likely cause a small, temporary depression in the water table. Though minor, this may cause a change in the direction of ground water flow in the immediate vicinity of the pit. Drainage towards the pit could draw contaminants from a "contaminated" property to a "clean" property. Given that flow velocities have been estimated at approximately 150 m/year, there is a potential that contaminated ground water could be moved a significant distance. As this pit is located adjacent to an urbanized area with multiple small properties, it would be prudent to determine if there are any nearby properties that are known to be contaminated.*

- *The development of a pit pond may influence any ground water discharge that may supply the Humfrey Municipal Drain. Existing data suggests that for much of the year, the drain is situated above the water table, at which time it would not receive significant contribution from ground water. Note that since it is my understanding that the Humfrey Drain is to be relocated, it is premature to comment on the interactions between ground water and the new, yet-to-be constructed drainage channel.*