

December 21, 2007

County of Oxford
Community & Strategic Planning
P.O. Box 397, 415 Hunter Street
Woodstock, Ontario N4S 7Y3

Attention: Ron Versteegen

Dear Mr. Versteegen:

**Re: UTRCA Comments on Studies Submitted to Support Applications OP 11-152 & ZON 5-07-6
Applicant: Thames Valley Resource Corporation (Banner Road Pit)
Part Lot 20, Concession 1 (North Oxford), Township of Zorra, County of Oxford**

Further to our comments dated November 27, 2007, the Upper Thames River Conservation Authority (UTRCA) has reviewed the following documents which have been submitted to support the subject applications for Official Plan and Zoning By-Law Amendment:

1. *Natural Environment Level 1 Assessment - Proposed Class A Pit, South Part Lot 20, Concession (1) former North Oxford Township, Zorra Township* prepared by Biologic dated April 4, 2007.
2. *Level 2 Natural Assessment Proposed Thamesford Pit* prepared by Biologic dated June 1, 2007.
3. *Report on Updated Level 1 and 2 Hydrogeological Assessment Proposed Gravel Pit, Thames Valley Aggregates Inc, South Part of Lot 20, Concession 1, Zorra Township, County of Oxford* prepared by Golder Associates Ltd. dated June 12, 2007.

We offer the following comments.

NATURAL ENVIRONMENT ASSESSMENT REPORTS

1. The 2000 OMNR document entitled "Significant Wildlife Habitat – Technical Guide" applies to habitat for all wildlife (i.e. all wild mammals, birds, reptiles, amphibians, fishes, invertebrates, plants, fungi, algae, bacteria and other wild organisms), not just to species of provincial interest. As such, the OMNR document must be consulted in both the Level 1 and Level 2 Natural Environment Assessments. Please apply the criteria listed in the Technical Guide to this study area. For example, were there areas of seepage in the wetland pockets to the west? Is there deer habitat?
2. The June 2007 report indicates that the "thermal stability of the Humphrey Drain at Hunt Road is within the cool water range" (Section 3.3.1) and that "a portion of the Caddy Creek aquatic system has been identified as a cold water fishery by OMNR". It then states that activities on the Humphrey Drain will not



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impact the coldwater habitats identified by OMNR since they are “on tributaries to the Caddy-Bott system and not hydrologically linked to the subject land” (Section 5.0). We wish to advise that the Humphrey Drain also provides water, sediment and nutrient inputs to the receiving waters. And although the tributaries may not be hydrologically linked, members of the aquatic community would be linked at various times of the year.

With respect to the Humphrey Drain the following information is required:

- a) Please label the tributaries of the Caddy Bott system on a map in relation to the Humphrey Drain and the Caddy Bott Drain. Also, please label the stretches of permanent and intermittent flow as well as locations of cool water temperature, fish and invertebrate species locations.
- b) Please confirm the location of the ephemeral portion of the Humphrey Drain. The location of the ephemeral portion appears to conflict with the Municipal Drain Classification (MDC) for the subject property. The MDC is a C on the subject property and an F (intermittent or ephemeral) upstream of the subject property, north of Hwy 2.
- c) Since the Humphrey Drain crosses Hwy 2 on 3 occasions, there is a need to better describe the various locations referred to in the document. Please provide descriptive/numbered locations and identify the locations on a map. Also, please include temperature readings for each location.
- d) Please provide further clarification on the thermal stability of the Humphrey Drain. Figure 5, illustrates that if the Stoneman Protocol was followed, there were not enough (3) degree days above 24.5 degrees Celsius to utilise the protocol. In addition, we note that the interpretation of the data should have calculated that Station 2 was within the coolwater range.
- e) There should be clarification regarding the status of the Humphrey Drain. The report indicates that the drain has been relocated on page 1 yet on page 2 it is stated that the drain has been approved for relocation. Subsequently on page 3 it is indicated that the drain relocation will take place following aggregate extraction approval while on page 7 it is noted that the drain will be relocated. We are aware that an Engineer’s Report for the relocation has been prepared and approved by the Township of Zorra but DFO authorization remains outstanding.
- f) On page 7 of the report it is stated that the relocation of the drain has been submitted and approved under the Drainage Act and has authorization under the Fisheries Act. It is our understanding that the Humphrey Drain relocation as outlined in an Engineer’s Report by Spriet Associates has been approved by the Township of Zorra under the Drainage Act but other permits and DFO Fisheries Act authorization are required. A Section 28 permit application has been received by the UTRCA. For clarification, please contact the UTRCA’s designated Fish Habitat Biologist from the Department of Fisheries and Oceans Canada (DFO), Joe DeLaronde at 519-668-3502. It is probable that compensation will be required. Recommendations may include enhancing buffers downstream of the subject property along with the incorporation of natural channel design within the relocated drain.
- g) Please advise if the mapping in Appendix A illustrates the 1915 or 1955 drain.
- h) Please advise whether the tables found in Appendix B are the historic MNR files.

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3. The physical characteristics of the aquatic system (temperature) and the invertebrate midge populations indicate that the system receives occasional groundwater base flow that is cool to cold in temperature. Therefore, the aquatic system has the potential to support coldwater species, although the fish species at any one point in time may or may not be coldwater.
4. An unevaluated wetland of bog and swamp lies adjacent to the site to the southwest. It appears that another natural heritage feature lies within 250m of the site to the southeast. The surface water drains to the western wetland while groundwater discharge is predominantly towards the eastern feature and also in localized areas of the western wetland. Given that the open water on the site is directly connected to the groundwater, and that this groundwater discharges into the natural features (both south west and southeast), it is not clear how alterations to the groundwater temperature on the site will not impact the receiving natural features. Please explain how the temperature changes as a result of open water from the proposed activities on the site will not impact these features. Please provide more discussion as to how these features have formed, and how water quality and quantity to these features will be maintained or improved during and after extraction.
5. The scope of the Environmental Assessment must be expanded to include the natural feature located to the southeast of the subject property given that the predominant groundwater flow off the site is to this feature and that it is located within 250m of the site.
6. Please list all the plant species found in the spring inventory and indicate which ELC community they were recorded in.
7. In Section 5 of the Environmental Assessment it is stated that the woodland feature on the northern edge of the proposed license boundary was not identified as being significant by the Oxford County Natural Heritage Study. We wish to advise that the ONHS identified both of the woodland features located on the property as being significant. The UTRCA does not support the removal of any part of a significant woodland. The assessment must discuss how the woodland features in their entirety will be protected.
8. Please be advised that the protection of the butternut in the northern woodland will require the protection of its root system. To do this, an area that is 3 times the diameter of the crown must be protected from the trunk of the tree.

HYDROGEOLOGICAL ASSESSMENT

The hydrogeological report is detailed and addresses all of the necessary components. The report thoroughly outlines the hydrogeologic conditions across the site and relies on water level information from installed monitoring wells from August 2003 until 2007. The water level information is provided 3-4 times a year and measurements were obtained in all seasons. A detailed water budget, as well as north – south and east- west cross-sections, with the borehole logs and grain size distribution of the aquifer material across the site were included along with water well records for the immediate surrounding region. The geological description is detailed and adequate for the breadth of the study. In addition there are detailed comparisons of the water levels in both the drain and monitoring wells to determine if the area is a groundwater recharge or discharge location. Finally, water quality analyses were completed to provide a baseline summary of the conditions before the site was developed.

Changes in the drain and the below water level extraction should not significantly affect the water level as long

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as there are no dewatering activities. *It is recommended that the monitoring wells installed for this study be maintained on a quarterly basis as a minimum. In addition, one of the down-gradient monitoring wells on the property boundary (i.e. borehole 6) should be installed with a continuous recording water level gauge/logger with temperature recording capabilities to monitor changes that may occur as a result of the extraction below water table.*

As previously noted in item 4, the UTRCA has concerns regarding potential impacts on the adjacent wetland features. The pond at the aggregate site will extend close to the property boundaries and therefore there is a potential for impact on groundwater temperature and the wetland features located the west and to the southeast of the subject property. Furthermore, the groundwater flow direction in the area of the pit location appears to vary/changes direction seasonally (as per Figure 5-9) which would impact the thermal regime of the wetland features. This issue needs to be addressed.

Authority Staff would be pleased to meet with County Staff and the consulting team early in the new year to review the UTRCA's comments. Please contact the undersigned at extension 293 if there are any questions.

Yours truly,

UPPER THAMES RIVER CONSERVATION AUTHORITY



Christine Creighton
Land Use Planner
TT/CR/LN/CC/cc

c.c. Applicant – Thames Valley Resource Corporation
Agent – William Bradshaw
Biologic – Dave Hayman
Golder Associates Ltd. – John McNeil

