



Dougan & Associates

Ecological Consulting
Services (918676 Ont. Inc.)

7 Waterloo Avenue
Guelph, Ontario N1H 3H2
Tel: (519) 822-1609
Fax (519) 822-5389
Email: info@dougan.ca
Web: www.dougan.ca

- Natural Heritage Planning
- Landscape & Habitat Design
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- Ecological Research &
Monitoring
- Environmental Impact
Assessments
- Urban Street Tree & Forest
Management
- Peer Review & Expert
Witness Testimony

June 9th, 2006

ATTN. Stan Holiday, Senior Planner
City of Hamilton
Planning & Development Department
Development & Real Estate Division
71 Main St. West, 7th Floor
Hamilton, ON L8P 4Y5

T. (905) 546-2424 ext.4280
Email: sholiday@hamilton.ca

**Re: Peer Review of DRAFT EIS & Level 2 Natural Environment Report:
Proposed Mountsberg Quarry
(Stantec Consulting Limited – February 24, 2006)**

Dear Mr. Holiday,

Dougan & Associates and C. Portt & Associates have completed our interim review of the DRAFT Environmental Impact Statement and Level 2 Natural Environment Report for the proposed Mountsberg Quarry prepared by Stantec Consulting Limited (dated February 24th, 2006). This peer review recognizes that the study, hereafter referred to as the EIS is considered a "Draft for Discussion" and that additional information will be forthcoming that will eventually be integrated into an updated draft. As such, we consider the EIS to be preliminary and incomplete. A more detailed peer review will be provided once the updated draft of the EIS has been submitted. It should be noted CART does not consider this report a formal review.

This interim peer review report is organized into three parts as follows:

- **Part A** provides general comments on the DRAFT Environmental Impact Statement (EIS) and Level 2 Natural Environment Report;
- **Part B** provides specific comments on the DRAFT Environmental Impact Statement (EIS) and Level 2 Natural Environment Report; and
- **Part C** evaluates the report from the perspective of its compliance with the EIS Terms of Reference and City of Hamilton EIS Guidelines. Part C is also intended to confirm if comments reflected in our September 13, 2005 review of the March 4th EIS Terms of Reference have been adequately addressed.

PART A – GENERAL COMMENTS

The current peer review is limited to a review of the methods, findings and analyses sections of the report; namely Sections 1.0 – 5.0. The peer review does not include an evaluation of the impact assessment or conclusions sections of the report (Sections 6.0 & 7.0) as there is presently insufficient information contained in the report to provide a comprehensive assessment of potential impacts associated with this proposal. Similarly, it is also premature to develop any conclusions in the report based on a partial or incomplete assessment of impacts as it is likely that new information gathered over the course of the 2006 investigations may affect the outcome of the impact assessment and potentially the site plan.

In addition to the comments provided in this letter report, we also provided verbal and written comments on specific components of the 2006 field work

program at the March 28th, 2006 CART meeting with the proponent's natural heritage consultants and through an email correspondence to you on March 31, 2006. We trust that those additional comments will be reflected in the meeting minutes and addressed in the final EIS report. In general, the EIS has incorporated many of the comments provided in our initial review of the EIS Terms of Reference in September 13th, 2005; however a number of comments remain to be addressed and incorporated in the EIS. The current EIS includes additional baseline information to that presented in the EIS Terms of Reference report (dated March 4th, 2005). The findings of additional inventories carried out in 2005 have been incorporated and additional biological inventories and technical studies being undertaken in 2006 to provide a more comprehensive data set. The current EIS has also been updated to include a more detailed discussion on the regional context of the site, as well as an analysis of natural heritage resources within the context of provincial regulations and policies. Furthermore, the EIS includes a summary and conclusions section that discusses mitigation, management and monitoring. It is our opinion that the overall structure of the current EIS is generally consistent with that outlined in the City's EIS Guidelines.

The current EIS is described as a "Draft for Discussion". While we recognize that consultation with agencies and the City on technical matters is an important component of the approval process, we also believe that the EIS Terms of Reference and City's EIS Guidelines provide sufficient guidance for the preparation of the EIS. We would expect the EIS to fully incorporate additional information derived from the 2006 field season and updated technical studies into the impact analysis prior to finalization of the EIS report.

Water levels, flows, water quality and water temperature are all important to sustaining aquatic and wetland habitats and species populations. Understanding the functional relationships between groundwater discharge and surface water quantity, quality and temperature and the habitats and organisms they support is critical to the impact assessment. The EIS must clearly characterize the functional relationships described above by integrating the findings of the biological inventories with those from the hydrogeological and hydrological investigations. This is essential to the evaluation of potential impacts at the site and landscape scale.

It is our opinion that it is premature and inappropriate for the EIS to discuss impacts or make inferences regarding the ability to mitigate impacts until all the supporting technical studies are completed. The findings of the various technical studies may identify additional ecological features and result in an improved understanding of key biophysical relationships and interdependencies. This information will assist the EIS in evaluating the role and significance of various natural heritage features and functions at the site and landscape level as well as their sensitivities to any potential impacts associated with the proposal.

It is expected that the results of these analyses will assist in the development of revised site plan along with appropriate mitigation and adaptive management measures. Given that the proposed limit of extraction and access road depicted in the current EIS encroaches upon significant natural heritage features, it is likely that these limits will need to be adjusted to comply with relevant policies which prohibit development within significant natural heritage features. With regard to the proposed internal haul route, at the March 28, 2006 CART update meeting Mr. Long claimed that the route qualifies as "infrastructure" under the Greenbelt Plan, and therefore may be permitted to displace certain significant natural heritage features. We are advised by the City's Aggregate Planning Advisor and City staff that, based on their review of the relevant policies, they do not support this assertion as it stands.

We encourage the report authors to refrain from including in the EIS any assertions with respect to impacts and ability to mitigate them until the findings of the supportive technical studies can be integrated.

PART B SPECIFIC COMMENTS

Page 1.1, Paragraph 4 – It is stated that the site plan reviewed for the EIS is based on Long Environmental Consultants Ltd. (2004); however Page 6.1. Paragraph 3 refers to Long Environmental Consultants Ltd. (2005); the later is not listed in the references.

Page 1.1. Introduction – Paragraph 5

The “limit of extraction” shown and discussed in the report is, in effect, one of the conclusions. As such, it is premature for this to be defined or discussed until the EIS has been completed with the benefit of final proposals for natural heritage mitigation including a groundwater recirculation system. In any case, it should have been made clear that a boundary based on natural heritage considerations is subject to modification based on studies in other disciplines such as noise.

Page 1.2, Paragraph 3 states:

It is useful to note that agencies have offered additional comments on related technical work and activities (e.g. ongoing hydrogeological work being completed by Gartner Lee Limited on behalf of the Lowndes Holdings Corp.). We recognize that this ongoing earth science work will affect some aspects of this reporting, especially sections related to potential effects and mitigation. This report will be reviewed and updated as earth science data/interpretations are finalized.

The current Peer Review recognizes that this study is incomplete as stated above. As such, the review has been limited to Sections 1-4; Sections 5 – 7 will be reviewed in greater detail once a final draft has been prepared.

Page 1.2, Section 1.1 – Environmental Policy Context

The report should make it clear that the Abbott property is not included in the Planning Act application and if an application were to be submitted for these (or any other additional) lands it would be subject to the 2005 PPS and any other policies applicable at the time it is submitted.

Page 1.3, Section 1.1.1

Prime agricultural lands are shown on Map 2 of the Regional Official Plan. Some of these lands are adjacent to the subject site but none are within it. Not all of the site is shown as Mineral Aggregate on Map 5 and the map denotes gravel and sand and not stone aggregates on this site.

Page 1.4, Section 1.3. – Study Terms of Reference

This section provides details on how the terms of reference were developed circulated and reviewed; however there is no discussion of how the original terms of reference were updated to reflect the comments received by the peer reviewers and City. The September 13th, 2005 Peer Review of the Terms of Reference for the EIS requested a number of changes to the terms of reference. To our knowledge, there have been no revised or finalized terms of reference submitted or circulated to the City and agencies. Establishment of finalized terms of reference for this study is critical to the application review process. Terms of reference are intended to outline the type of content, level of detail and analyses required to satisfy the requirements of the City and agencies. It is within the context of the agreed upon terms of reference that the study is eventually evaluated.

Page 2.1, Section 2.1- Background Resources

This section still does not include several of the additional background resources listed in the September 13th, 2005 Peer Review of the Terms of Reference for the EIS. The NHIC database is cited as November 2004. An updated database query should be performed.

A number of other technical reports are cited as being incorporated into the EIS. Given that some of the studies are being re-done due to inappropriate study design, we have concerns with the incorporation of invalid data into the EIS analyses. Furthermore, it is not possible for us to complete the review of certain sections of the EIS that refer to studies which have not been provided to the review team. We require the 2004 & 2006 reports prepared by Stovel & Associates. Furthermore, we were

advised at the CART meeting of March 28th, 2006, that terms of reference for a joint groundwater and surface water investigation by Gartner Lee Ltd. and Stantec Consulting Ltd. would be forthcoming; however no additional information regarding this study has been provided to date.

Page 2.2, Section 2.2.1 - Vegetation Communities and Vascular Plants

Sources for determining the federal and provincial status of Species at Risk should be added (i.e. COSEWIC 2006 and SARO 2006 (www.ontarioparks.com/english/sar.html)). Mapping the habitat for significant species (including Species at Risk) and submission of ELC data cards for individual communities should be added to the approach as per Conservation Halton request.

Page 2.2, Section 2.2.2 – Wetland Boundary Delineation

It is not clear if the revised wetland boundaries have been verified and accepted by O.M.N.R. These subsequent steps in refining wetland boundaries should be explained.

Page 2.3, Section 2.3.1 – Winter Wildlife Surveys

It is not clear what the level of snow cover was at the time of the surveys. The September 13th, 2005 Peer Review of the Terms of Reference for the EIS suggested that winter was also an optimal period for detection of denning sites for Mustelids. It is unclear whether tracks of other wildlife species were also investigated. While the deer surveys collected data on a variety of habitat parameters, presumably important to deer survival, there is no explanation of how “habitat quality” was assessed. The provision of some form of habitat rating system based on the key parameters would be helpful so that the quality of the deer wintering areas on this site can be compared to others in the landscape to provide an indication of their relative importance.

Page 2.4 – Section 2.3.2 – Amphibians & Reptiles

It is stated that salamander surveys were conducted using methods approved by MNR. It is unclear if the survey is based on a specific MNR protocol or if MNR simply found the method acceptable. Either way, sources should be provided.

Details of weather conditions at the time of all surveys should be provided.

An explanation should be provided as to why the number of survey locations increased from 4 sites in 2004 to 8 sites in 2005?

Details of what was done with any collections should be also provided. For example, what was collected, who was responsible for identification, etc.

Page 2.4 – Section 2.3.3 – Breeding Birds

Details of weather conditions at the time of all surveys should be provided.

Only the southern owl survey location is indicated on Figure 5.0. Where was the northern owl survey conducted?

Four visits seem more reasonable for a property of this size. It would have been difficult to cover the entire study area with only two visits in 2005.

Page 2.4 – Section 2.3.4 – Butterflies and Other Wildlife

Given the conditions, it would have been useful to conduct at least a second survey for the species. It sounds as though the conditions at the time were marginal for detection.

Page 2.5 – Section 2.4.1 – Surface Water Monitoring

It is unclear if wetlands are being monitored.

Page 2.5 – Section 2.4.2 - Fish Habitat Assessment

Based on the descriptions in the document, Tributary A receives a significant amount of groundwater, which is a critical component of salmonid habitat. A spawning survey of Tributary A should be considered.

A table documenting fish sampling dates, length of watercourse sampled and number of each fish species captured would aid the reader, as would a table summarizing habitat characteristics. Appendix F apparently only documents 2004 field activities, although Section 2.4.2 states that some fish community inventory occurred in 2005. This may explain the discrepancy between the stated number of sites where these inventories occurred (Section 2.4.2) and the number of sites reported in the table in Appendix F.

The fish species table in Appendix F indicates that rosyface shiner (*Notropis rubellus*) is ranked threatened by COSEWIC. This is incorrect. There is also a reference to "shiners" that were collected in this table. Presumably those have been identified. Given that all other fishes were identified to species in the field, documentation of the personnel who made the identifications should be provided.

Page 2.6 – Section 2.4.3 - Benthic Invertebrates

Descriptions of the habitat characteristics at the benthic invertebrate sampling locations should be provided. The importance of substrate type to the benthic invertebrate community is mentioned in Section 2.4.3, and should be considered in the interpretation of the data.

The methods (Section 2.4.3) indicate that benthic invertebrate collections were made using a Surber sampler in coarse substrates and an Ekman dredge in fine sediments, but we did not find documentation of the type of gear used at each sampling location. The dimensions of the sampling gear should also be provided, so that metrics such as abundance can be standardized to a common unit area.

The document states that "diversity was calculated as the total number of unique taxa (lowest taxonomic resolution) in each sample." This is normally referred to as taxa richness; diversity is a different metric, which takes into account the relative abundance of taxa. The consultants should consider calculating diversity and the Hilsenhoff Biotic Index (HBI). The benthic invertebrate metrics should be compared to published values that are deemed indicative of water quality.

Section 3.0 – Regional Context – Overview of Natural Features

Section 3.1 - Regional Setting

Page 3.1 – Section 3.1.1 – Geology

A brief characterization of bedrock and overburden resources would be helpful to understanding the types of habitats.

Page 3.1 – Section 3.1.2 – Surficial Geology & Soils

This section should include reference to soils information described in the Hamilton-Wentworth County Soils Report.

Page 3.2– Section 3.1.4 – Hydrogeology

Sources for information should be provided.

Page 3.3– Section 3.1.6 – Vegetation

Include discussion relating vegetation types to physiographic features in the landscape.

Section 3.2 – Designated Features

Page 3.3 - Section 3.2.1 Provincially and Locally Significant Wetlands

Include a description of what attributes/values made these wetlands a PSW.

Page 3.5 - Section 3.2.3 – Natural Heritage System & Linkages

Surely there are other significant NH features associated with the Flamborough Plain that are worth mentioning. The discussion of linkages should be expanded and related to types of organisms migrating through the landscape and at what scales. Rationale should be provided explaining why linkages in this region are considered less important than those in adjacent regions.

Section 4.0 Existing Conditions

Page 4.1 - Section 4.1 – Surficial Geology & Soils

Some discussion of soil conditions in the wetlands would be helpful, particularly organic soils.

Page 4.1 - Section 4.2 – Hydrogeology

When referring to water tables it would be useful to distinguish between the shallow and deep water tables.

Page 4.2 – Section 4.3.1 – Vegetation Communities

It would be helpful to have all polygons on Figure 4 numbered and drainage features added. Similarly, Table 2 should include columns to indicate which unit numbers are associated with a particular community. Area calculations on a unit by unit basis would also be helpful.

Pond feature does not appear to be classified or labelled.

The findings section should summarize communities by type, their extent as well as significance.

It is noted that Buttonbush Mineral Thicket Swamp, a provincially significant vegetation community is not listed in Table 2 or discussed in this section. This community was observed as an inclusion within a swamp along Tributary A near the northeast corner of the property during the August 2005 field visit. The location of such features should be clearly identified in the report.

Page 4.2 – Section 4.3.2 –Vascular Plants

Buttonbush is not listed in Table 3. See comment above.

The locations of all significant species should be shown on a figure.

There should be more discussion relating to locally significant species given that they are also included in determination of ESA criteria and Significant Woodlands

Section 4.4. – Wildlife

The report does not include discussions on mammals or reptiles, even though these wildlife groups are present. Perhaps a section devoted to each would help.

Page 4.3 - Section 4.4.1 - Deer Wintering Areas

Explain who identified the wintering areas and their associated significance (i.e. stratum 1 vs. 2) and what it means in the context of regional deer populations. The winter survey was intended to determine the quality and importance of habitat for deer. There should at least be a statement summarizing whether the habitats are considered significant or not.

Page 4.6 – Section 4.4.2 – Amphibians

Where is the 'main pond' located? Does the main pond correspond to where the egg mass containing live Spotted Salamander larvae was found or where the egg mass was sampled in 2004? How many locations actually had Spotted Salamander egg masses present (viable or non-viable)? Where are they located?

Page 4.7 – Section 4.4.4 – Butterflies

A geographic query of the NHIC database for the site produced an Element Occurrence (EO 22855) corresponding with Sleepy Duskywing (S1) in the vicinity of the site. This may be worth mentioning.

Page 4.7 – Section 4.5 – Aquatic Resources

Based on the historical presence of Redside Dace (*Clinostomus elongatus*), a threatened fish species, in Mountsberg Creek, we would expect a more detailed discussion of this species' current status in the area. Depending on the available information, field investigations might be warranted to address this issue.

EIS Sections 5.0 – 8.0

As indicated in the introduction to this Part, the current peer review is limited to reviewing EIS Sections 1.0 through Section 4.0 and does not include a detailed review of Section 5.0 (Analysis), Section 6.0 (Potential Impacts) or Section 7.0 (Summary and Conclusions). We consider portions of Section 4.0 as well as all subsequent sections of the EIS incomplete as there are outstanding technical investigations which will likely affect the overall impact analysis and study outcome. Nevertheless, we feel that it is important to document some key issues related to the analyses based on a cursory review.

The following is a brief summary of key issues that have been identified based on a cursory review. More detailed comments will be provided once the findings of the additional investigations have been incorporated into the final draft of the EIS.

Section 5.0 - Analyses

The analysis has been structured to summarize the site's natural heritage resources within the context of the PPS for the purposes of the Natural Environment Level 2 study and within the context of the ESA's for the EIS. In general, we find the analysis fails to translate the significance of individual natural heritage components identified in the PPS (i.e. significant woodlands) to specific ESA criteria.

Section 5.1. - Significant Wetlands

Are the seeps included as part of the wetlands?

Section 5.2. - Significant Habitat of Threatened and Endangered Species

The presence/absence of Jefferson's Salamander should be confirmed through additional adult and egg mass surveys as recommended at the March 28th, 2006 CART meeting. Habitat mapping should include all areas utilized through the species life cycle as well as migration corridors. In addition, the habitat for this and other sensitive species, including Butternut should be mapped.

Section 5.5 – Significant Woodlands

Section 5.5.2 – Definition of Woodland Significance

This section proposes a novel approach to identification of significant woodlands at the scale of the physiographic region (i.e. the Flamborough Plain). While this approach may have some merit in terms of resource management at the landscape level, it is inconsistent with current approach utilized within the planning jurisdiction. We consider the EIS an inappropriate forum for such discussion. A more appropriate forum would be to comment on the City's Draft Official Plan Policies, and in particular the Technical Discussion Paper on Significant Woodlands.

There are discrepancies between the significant woodland criteria "used by this report" on page 5.6 and the "Localized Refinement Criteria" in the "Summary" on page 5.11? It is unclear what rationale was used to refine the criteria other than the desire to maximize the extraction area. This approach is not considered to be ecologically based.

It is our opinion that significant natural heritage resources including wetlands, woodlands, ANSI's and other locally and provincially significant features and functions are already recognized in the existing Regional Official Plan Policies through designation of Environmentally Significant Areas (ESA's) and the Greenlands System and that these are consistent with the PPS.

All of the significant natural heritage resources on the site are already captured within the Mountsberg Wetlands ESA and Carlisle North Forests ESA. Sections 3.2.2 and 5.8 of the EIS provide a discussion of the individual ESA criteria fulfilled.

In terms of Peripheral Forest Edge Habitat (PFEH) and young plantations, most of these features are contained within the ESA and are recognized for ecological functions in addition to those listed in the EIS. The exclusion of PFEH from Significant Woodlands or ESAs runs contrary to the EIS guidelines. Each feature should be evaluated according to a set of a priori criteria designed to identify the relative sensitivities. These should be translated to constraints based on their ability to maintain ecological functions at the site and landscape levels.

Section 5.7 - Significant Wildlife Habitat

Section 5.7.1 – Seasonal Concentration Area

This section suggests that the seasonal concentration areas are not deemed to be significant at the provincial scale and that local significance should be attached instead. It is our understanding that the SWH technical guidelines are intended to assist municipalities in terms of identifying significant wildlife habitat at the local scale. Is it possible that this site provides the best example of a seasonal concentration area for deer in the entire City? This needs to be made clearer.

Section 5.7.2 – Migration Corridors

The 3rd paragraph, 3rd sentence of this section is confusing. Is it implied that migration corridors will remain unaffected since they are in wetlands? As it stands, their proposed limit of development does encroach within 250 m of the salamander collection site. Is this the only vernal pool documented with salamander breeding?

Similar to comment on Section 5.7.1; SWH is intended for application at the level of the lower an upper tier municipalities; not at the provincial scale.

To determine SWH, it is important to note how different species move across the site and general landscape and to assess the relative importance to other sites within the jurisdiction.

Section 5.7.3 - Rare or Specialized Habitat

This section neglects to discuss rare or specialized habitats such as vernal ponds, and habitat for the 9 area-sensitive species noted from the site.

Section 5.9 – Summary

The proposed refinement criteria described in this section suggest that the landscape level criteria (i.e. those developed at the Regional scale) are too general to be applied at the site level as they would result in an overestimation of the significance of the natural heritage features relative to that of the mineral resource. While it is typical practice for an EIS to validate criteria and refine boundaries of natural heritage features based on site specific investigations, it is atypical for an EIS to propose alternative criteria for defining Regional and Provincial scale natural heritage features, particularly when they endorse encroachment on natural heritage features including Provincially Significant Wetlands, Significant Woodlands, and Significant Portions of the Habitat for Threatened and Endangered Species. These presence of significant natural heritage features is absolute and not scale dependent. Furthermore, the existing planning policies in the ROP, PPS and Greenbelt Plan clearly outline that development is not permitted within these features. We consider this approach unjustified and an attempt to maximize the size of the proposed extraction area. In doing so it proposes displacement of valuable natural heritage features and functions, contrary to existing guidelines, policies and legislation.

Sections 6.0 (Potential Impacts) & Section 7.0 Summary & Conclusions

We consider it premature to comment on these sections until the findings of the additional technical studies are completed and presented in a final draft.

PART C – COMPLIANCE WITH EIS TERMS OF REFERENCE & CITY EIS GUIDELINES

In general, the DRAFT Environmental Impact Statement (EIS) and Level 2 Natural Environment Report (Stantec - February 24th, 2006) has incorporated many of the comments provided in our initial review of the EIS Terms of Reference in September 13th, 2005; however a number of comments remain to be

addressed and incorporated in the EIS. To highlight these outstanding comments as well as the compliance status of the current EIS with the City of Hamilton EIS Guidelines (dated June 2004), we have included excerpts from the City's EIS guidelines (*in italics*) and provided commentary on the status of individual EIS components. In sections that paraphrase the Guidelines, our comments are depicted in **bold** typeface.

An EIS:

- *describes the proposal;*
- *describes the surrounding environment;*
- *identifies and assesses the impacts of the proposal on the environment and the significant features and functions of the ESA, as set out in the 2003 Nature Counts site summaries;*
- *Uses the unaltered ESA boundary, as shown in the Official Plan, Map No. 4 as the basis of the evaluation.*
- *identifies positive effects of the proposal such as enhancement and/or restoration of significant features;*
- *evaluates the feasibility of alternative mitigation measures or techniques and the ability of such measures to prevent or minimize impacts; and,*
- *makes recommendations on the advisability of proceeding with the proposal, appropriate mitigation measures, changes to the proposal, and monitoring plan if necessary.*

DESCRIPTION OF THE PROPOSAL

Section 6.1 of the EIS provides a description of the proposed quarry. The contents of this section have been evaluated in terms of accuracy, completeness and comprehensibility relative to specific components of the EIS guidelines below.

- a) what is proposed; incomplete, details need to be flushed out in terms of site plan and mitigation**
- b) the purpose of the proposal; complete**
- c) the timing of construction/development; incomplete**
- d) the existing land use and activities on-site; complete – addressed in Section 3.0**
- e) a general site location map, showing main roads; complete**
- f) a site plan, if necessary, (at an appropriate scale) with dimensions, showing the location of building(s), septic areas, grade changes, driveways, etc.; inaccurate/incomplete – Extraction limits in EIS are inconsistent with those reflected on Site Plan**
- g) a recent air photo map of the subject site at a scale of approximately 1:2000 identifying:**
 - *the limits of the ESA from the Official Plan; complete*
 - *Areas of Natural And Scientific Interest (ANSI) as defined by the Ontario Ministry of Natural Resources and the affected Conservation Authority; complete*
 - *vegetation communities, based on OMNR Ecological Land Classification for Southern Ontario; incomplete – wetland boundaries remain to be confirmed. This may require updating and adjustment of ELC mapping. Individual units need to be numbers and associated with vegetation and wildlife data. CH has requested that ELC data cards be included in EIS.*
 - *Provincially Significant Wetlands (PSW) and their classification, as well as other wetland areas as defined by the Ontario Ministry of Natural Resources and the Conservation Authority; incomplete; revised wetland boundaries remain to be confirmed and approved by OMNR. It is unclear if the seepage areas and ponds are included as wetlands.*
 - *permanent and intermittent water features such as, headwaters, rivers, streams, lakes and ponds, springs, and seeps; mostly complete; additional drainage features shown in Stantec presentation slides at March 28th, 2006 CART are not reflected in the EIS figures and should be verified.*
 - *registered flood or fill lines as defined by the Conservation Authority; not included in EIS*
- h) activities associated with the proposal which may have an environmental impact (e.g. work on stream banks, tree-cutting, removal of vegetation, earth-moving, excavation and post-**

construction activities). **Incomplete**; EIS offers some discussion of potential impacts but more detailed data and analysis are required.

- i) Other development applications known to be in progress in the area which would affect the natural heritage features. **While not considered a development application, the potential impact of future expansion on lands to the west should be mentioned as it may also affect natural heritage features.**

DESCRIBING THE SURROUNDING ENVIRONMENT (BIOPHYSICAL INVENTORY)

The description of the surrounding environment will be completed through a biophysical inventory. Three levels of investigation may be used for any feature to be described. In increasing degree of thoroughness, these are:

- secondary sources (compiling information from existing documents); **Some of the sources listed in the September 13th, 2005 review of the EIS Terms of Reference have not been consulted for the current EIS.**
- limited field inventory; or, **satisfactory**
- detailed field inventory. **Incomplete and ongoing;**

The EIS should explain and justify the level of investigation undertaken, unless specific direction has been received from the Planning and Development Department. **Explanation complete; Justification lacking.**

Particular attention should be paid to those features of the ESA identified as significant in the 2003 Nature Counts Project report. The biophysical inventory should address the significance of the features in the area studied and the importance of those features to the ESA as a whole **Complete**. The locations of any significant species or features should be mapped in detail **Incomplete**.

The Planning and Development Department and the relevant Conservation Authority can help in identifying the availability of secondary sources and should be consulted by the landowner. For example, site summaries from the 2003 Nature Counts Project are available from the Planning and Development Department. The Conservation Authorities and other government and non-government organizations may have additional information on particular areas. The Hamilton Conservation Authority is the depository for the Natural Heritage Database, which is updated annually. Information can be obtained by contacting the Ecologist at (905) 525-2181. **The Hamilton Natural Areas Database is not listed in the sources of background information.**

The EIS should discuss the significance of the entire ESA (**complete**) as well as the portion of the ESA affected by the application (**incomplete - to be addressed in impact assessment section**).

The biophysical inventory will identify the following:

- a) physical and hydrologic features, including:
- soil types by texture/grain size (e.g. clay, silt sand) and drainage characteristics; **EIS does not include a soils or micro-drainage map. Information from Stovel & Associates (2004) report should be integrated into the EIS;**
 - overburden and bedrock geology; **(partially complete – could include more details)**
 - areas of high water table; **(incomplete; pending results from additional hydrological and hydrogeological investigations)**
 - areas of groundwater recharge and discharge; **(incomplete; pending results from additional hydrological and hydrogeological investigations)**
 - locations and usage of wells; **(not shown in EIS, this information is contained in the Hydrogeological Investigation Report (Gartner Lee Limited - July 2005)**
 - drainage patterns **Incomplete – Microdrainage mapping not included in EIS, basin boundaries and watercourses Complete;**
 - existing erosion sites; and, **(not depicted; may be inapplicable)**

- *areas of shallow soil. (not mapped in EIS, but likely included in Stovel & Associates (2004); we do not have a copy of the soil study.*
- b) *biological features, including:*
- *a description of ecological communities identified during the appropriate season(s) * to the Vegetation Type level described according to the most recent version of the Ontario Ministry of Natural Resources Ecological Land Classification System for Southern Ontario. (incomplete; ELC units mapped, but not described in detail; ELC data cards not included).*
 - *an assessment of the condition of the vegetation community, with reference to successional state, degree of disturbance, and the extent of invasive plant species. incomplete; requires more detailed discussion.*
 - *the location and status of wildlife species and their habitat including birds, mammals, reptiles, fish, amphibians and butterflies, and the location and relative abundance of uncommon, rare, threatened, vulnerable or endangered species at the national, provincial, and regional scale according to the 2003 Nature Counts Project report. mapping the location and habitat of significant species is incomplete; species status rankings are current;*
 - *an inventory of species occurring in the study area, including:*
 - *vegetation in spring (May-early June) and summer/fall (July to September) using commonly acceptable sampling and recording methods; nearly complete; species checklists should be related to individual ELC units; at least for significant species. Also, we recall observing Buttonbush along Tributary A during the 2005 field visit.*
 - *breeding birds (late May to early July) using Ontario Breeding Bird Atlas protocols; generally satisfactory; we would recommend adding at least one or two additional days to the 2006 program due to the size of the site. Species list should note type of observation and behaviour.*
 - *herpetofauna (amphibian breeding from early spring to summer) and later incidental sightings using commonly accepted survey protocols (OMMP); incomplete; surveys should be designed to confirm the presence/absence of particular salamander species (eggs and adults) and also map populations of other amphibian species, including migration routes across the site.*
 - *mammals – incidental sightings or signs; Species list should note type of observation.*
 - *fish and aquatic organisms, using commonly accepted sampling methods. The location of aquatic habitat and fish communities, including spawning grounds, nursery, rearing, food supply, and migration areas of all intermittent and permanent streams and water bodies. Sampling should be carried out when fish and water are most likely to be present for intermittent streams (April-June). Tributary A should be surveyed. A more detailed investigation and discussion of Redside Dace habitat should be provided*
 - *lepidoptera –incidental sightings (spring-fall) including adult and larval stages. Surveys should be timed to coincide with periods when weather and temperature conditions are optimal for detection of the WV White and other significant species such as Sleepy Duskywing (S1) noted in the vicinity of the site by NHIC .*
 - *locations should be provided as NAD83 UTM co-ordinates for all plant and animal species that are listed as uncommon or rare within Hamilton or are considered Vulnerable, Threatened, or Endangered. An estimate of abundance for rare and VTE species should also be provided. Incomplete*

** Note: The timing of species surveys is critical and therefore the most appropriate season for specific surveys should be identified. In certain situations consideration of an EIS may be delayed pending the completion of an appropriate seasonal survey. If biological inventory work is conducted outside of the normal season or only during one season, reasons must be given to justify this.*

c) *landscape features, indicating where ecologically functional natural linkages and potential linkages are located within the Natural Heritage System. There should be a description and analysis of the existing ecosystem both within the subject site and as it relates to the larger regional ecosystem, including, but not limited to the following:*

- *the location of the subject lands in relation to components of the Natural Heritage System, as defined in the Official Plan Incomplete. Refer to Hamilton-Wentworth Regional Greenlands*

Map <http://www.myhamilton.ca/NR/rdonlyres/481AFF28-5F2D-4B7A-9EBA-994C44B3E837/0/RegionAppMap3.pdf>

- *Locally significant natural areas, as defined in the Official Plan* **Complete**
 - *Ecologically functional natural linkages and potential linkages, as shown in the Natural Heritage System in the Official Plan* **Incomplete**
 - *Significant Wildlife Habitat and Functions as identified in OMNR 2000 Significant Wildlife Habitat Technical Guide (e.g. migration staging areas, deer yards, snake hibernacula, wintering habitat)* **Incomplete** – **Determination of SWH should be completed following analysis of additional inventory findings.** Some inventories are ongoing. Vernal ponds and adjacent habitats that support species at risk would likely qualify as SWH. Similarly, specialized habitats such as Buttonbush Mineral Thicket Swamp (S3) community could also qualify as SWH. This community has not been mapped or discussed.
- d) *the area studied for each of the above elements.*
- *The area requiring study may be different for the various environmental and ecological elements. The reasoning behind the choice of study areas and the seasons or times of year of the study should be explained in the EIS. For example, where downstream impacts might be expected, the study area for aquatic habitat should extend downstream.* **Incomplete;** assessment of adjacent lands and downstream aquatic habitats are not discussed in detail.

IDENTIFYING AND ASSESSING THE IMPACTS OF THE PROPOSAL

It is our opinion that it is premature and inappropriate for the EIS to discuss impacts or make conclusions regarding the ability to mitigate impacts until the technical studies required to support the impact assessment are completed. The findings of these ongoing technical studies will assist in identification of additional ecological features and attributes as well as their functional relationships and interdependencies. This will assist the EIS in evaluating the significance and level of constraint associated with the various natural heritage features and functions at the site and landscape level as well as their sensitivities to any potential impacts associated with the proposal. The results of the evaluation should feedback into the site plan and inform the level of mitigation, management and monitoring required. We would strongly encourage the report authors to refrain from commenting or making assertions regarding impacts and the ability to mitigate them until the required technical studies are complete.

To this end, no comments have been provided in terms of conformity of the current study with the remaining sections of the EIS guidelines paraphrased below. We would nevertheless suggest that comments provided in the September 13, 2006 review be consulted to ensure the impact analysis approach is consistent

Please do not hesitate to contact us should you have any questions.

Sincerely,



Ken Ursic, M.Sc.
Sr. Ecologist
T. (519) 822-1609 ext. 25
F. (519) 822-5389
kursic@dougan.ca



Cam Portt, M.Sc.
C. Portt and Associates
T. (519) 824-8227
F. (519) 837-2268
cportt@sentex.net