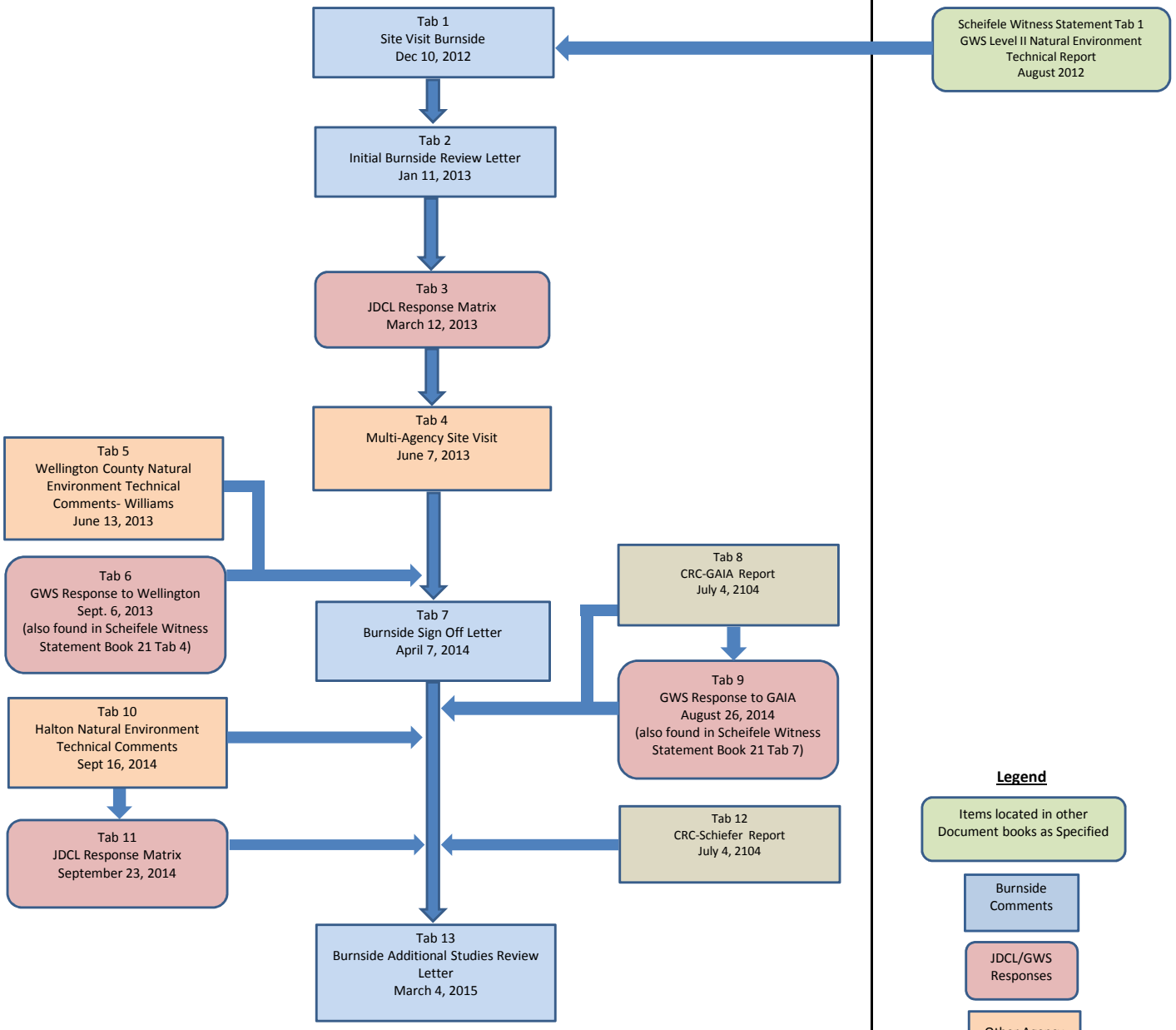
Evidence Book 9

28-Apr-16

Township of Guelph/Eramosa

Natural Environment Review Document Book



Township of Guelph/Eramosa

Natural Environment Review Document Book Index

Leigh Mugford

From: Dominique Evans <Dominique.Evans@rjburnside.com>
Sent: Monday, December 10, 2012 12:25 PM
To: Greg Sweetnam
Cc: Leigh Mugford; Jackie Kay
Subject: RE: Hidden Quarry - Township of Guelph/Eramosa 300032475

Hello Greg,

I would like to go out to site on Friday morning for 9am. I am interested in two specific locations, however will welcome the opportunity to discuss the site as a whole with one of your staff.

Please let me know if this date and time work for you.

Regards,
Dominique

Dominique Evans
Environmental Technologist

R.J. Burnside & Associates Limited
292 Speedvale Avenue West, Unit 20
Guelph, Ontario N1H 1C4
Dominique.Evans@rjburnside.com
tel: 519.823.4995 x493
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www.rjburnside.com

From: Jackie Kay/RJB
To: Greg Sweetnam <gsweetnam@jamesdick.com>,
Cc: Leigh Mugford <lmugford@jamesdick.com>, Dominique Evans/RJB@RJB
Date: 12/10/2012 10:58 AM
Subject: RE: Hidden Quarry - Township of Guelph/Eramosa 300032475

Hi Greg,

Thanks for the response. Dominique Evans from our office will coordinate a date and time with you to visit the site.

I hope you enjoyed your holidays!
Jackie

From: Greg Sweetnam <gsweetnam@jamesdick.com>
To: Jackie Kay <Jackie.Kay@rjburnside.com>,
Cc: Leigh Mugford <lmugford@jamesdick.com>
Date: 12/10/2012 09:44 AM
Subject: RE: Hidden Quarry - Township of Guelph/Eramosa 300032475

Hi Jackie,
Sorry to be slow in responding, I just arrived back from holidays this morning. No problem viewing the site. If you let me know when you or your Environmental Technologist would like to attend the site I can have someone accompany you and show you around.
Greg

From: Jackie Kay [mailto:Jackie.Kay@rjburnside.com]
Sent: November-28-12 2:06 PM
To: Greg Sweetnam
Subject: Hidden Quarry - Township of Guelph/Eramosa 300032475

Hi Greg,

We have been proceeding with the technical review of the supporting documentation that was submitted as part of the ZBA change for the Hidden Quarry in the Township of Guelph/Eramosa. In order to finalize our review comments for the EIS we were hoping to stop by the site and confirm a few conclusions that were made in the report. This site visit would likely take no more than 1 hour and will be complete by one of our Environmental Technologist on their way into (or home from) work. I have not had a chance to visit the site and was unsure if there are any barriers to entry. We would like to ask for permission to enter the site and coordinate entry, if required. My contact info is below if would like to discuss this further.

Thanks,
Jackie

BURNSIDE

Jackie Kay, P.Eng., MBA

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BURNSIDE
[THE DIFFERENCE IS OUR PEOPLE]

January 11, 2013

Via: Email

Mrs. Janice Sheppard, AMCT
CAO
Township of Guelph/Eramosa
P.O. Box 700
Guelph ON N1G 5B4

Dear Janice:

Re: ZBA Hidden Quarry – Township of Guelph/Eramosa
James Dick Construction
File No.: 300032475.0000

We have reviewed the above noted ZBA along with the following documentation:

- Site Plan Drawings, prepared by Stovel and Associates, plotted September 21, 2012:
  - Page 1 of 5, Existing Features
  - Page 2 of 5, Operations Plan
  - Page 3 of 5, Quarry Phasing
  - Page 4 of 5, Cross Sections
  - Page 5 of 5, Cross Sections
- Planning Report, prepared by Stovel and Associates Inc., dated September 2012;
- Stage I – II Archaeological Assessment, prepared by York North Archaeological Services Inc., dated August 31, 2012;
- Air Quality Assessment, prepared by RWDI, dated September 6, 2012;
- Traffic Impact Study, prepared by Cole Engineering, dated April 2012;
- Level II Natural Environment Technical Report, prepared by GWS Ecological & Forestry Services Inc., dated August 2012; and,
- Level I and II Hydrogeological Investigation, prepared by Harden Environmental Services Ltd., dated September 2012.

We offer the following comments.

Background
The subject site (Part of Lot 6, Concession 1 in the Township of Guelph/Eramosa) is currently zoned Agricultural and Hazard. The applicant is proposing to amend the existing Agricultural and Hazard zoning to Extractive Industrial with a special provision to provide relief from required surface water excavation setbacks. Since 1999, the Official

Plan has identified this area as an Aggregate Resource area; only a portion of the property will be used for extraction purposes. Extraction is being proposed both above (80%) and below (20%) the water table. The site will be accessed off of 6th Line. The proposed annual tonnage limit for the site is 700,000 tonnes.

General

- Details of private water and wastewater services required to service the scale house or Shop/Office/Lab building should be provide on the drawing showing location and size/footprint. CBO to confirm adequacy of services.
- A residential unit exists within the proposed site. Details regarding the intended use or removal of this residence and the associated services and entrance should be provided.
- Details should be provided for the driveway apron and should adhere to Township Design Standards within the ROW.
- A high point at the property limit of the right of way should be provided in the New Entrance/Exit to the site to ensure additional surface runoff is not being directed towards 6th Line.
- The proposed entrance to be paved from the scale house to the public road.
- Will the existing service entrance shown on the Operations Plan remain or be removed?
- Fence/Gate geometry to be such that one full truck length can be off the travelled portion of the public road with the gate closed.
- Note 5 on the Operations Plan indicates that the existing property limits are fences although also indicates that fencing and repairs will be undertaken once extraction is initiated. An inspection of the existing fence condition is recommended to confirm the condition of existing fence and to establish the municipality's requirements in this regard.
- Top of rock elevation should be added to the Operations Plan.
- The Township's By-law Enforcement Officer should confirm the activities noted below conform to the Township's Noise Control by-law:
  - extraction operations may occur between the hours of 7 a.m. and 7 p.m., Monday to Friday and 7 a.m. until 1 p.m. on Saturday;
  - hauling operations may occur between 6 a.m. and 6 p.m. Monday to Friday and 6 a,m, to 1 p.m. on Saturday; and,
  - drilling and blasting will occur between 8 a.m. and 5 p.m. Monday to Friday.
- It is understood that a small pond will be constructed for wash water. Additional details should be provided on washing operations.
- Additional details should be provided outlining how the stripped overburden will be dealt with.

Archaeological Assessment

- It is noted that a significant cultural heritage feature has been identified in the northwest portion of the site. The technical recommendations of the archaeologist (York North Archaeological Services) have been included on the site operation plan.
- It is understood that a Stage III assessment will be undertaken prior to any works being completed on site. This assessment should be completed to the satisfaction of the Ministry of Tourism, Culture and Sport.

Air Quality

- The Emissions Summary and Dispersion Modelling (ESDM) as prepared by RWDI was reviewed. Although the documentation took some time to interpret, there was nothing in the ESDM to indicate that the site could not request and receive an Environmental Compliance Approval ("ECA").

Traffic Impact Study

The Traffic Impact Study (TIS) for the proposed quarry was prepared by Cole Engineering Limited (2012) and generally considers traffic operations at the access onto the 6th Line as well as the intersection of Highway 7/6th Line and Highway 7/5th Line. Our comments in this regard are as follows:

- The TIS notes that 5th Line is under the jurisdiction of the Township of Guelph/Eramosa, however it is actually under the jurisdiction of the Town of Milton.
- Comments should be obtained from the Ministry of Transportation (MTO), for operations affecting Highway 7, and from the Town of Milton, for operations affecting 5th Line.
- No information is provided on the anticipated lifespan of the quarry, which would provide context into the potential for longer term impacts.
- The forecast of background traffic is based on traffic counts taken in February 2012. The MTO classifies Highway 7 as a commuter road, which is also confirmed by the strong directional distribution of traffic on a daily basis (i.e., high eastbound traffic in a.m. peak period and high westbound traffic in p.m. peak period). On a seasonal basis, MTO's commuter roads typically have 20 to 25% higher traffic volumes in the summer months, when compared to winter traffic (i.e., February counts). Traffic volumes should be increased to account for these seasonal variations.
- The forecast of trip generation from the proposed quarry is based on data from a proxy site (i.e., Erin Pit). On a weekly basis, the calculation assumes consistent traffic over a Monday to Saturday period, inclusive. Information should be provided to confirm this assumption. The number of working days assumed for the critical month (i.e., August) also does not appear to take into account holiday period, or any reduced operations due to weather, over the monthly period. Also the trip generation is based on average loads which are typical of tractor trailers, whereas actual trip volumes may be higher if the fleet is comprised of higher numbers of tandem or triaxle trucks. Based on the above factors, the estimates for peak period traffic may be low.
- No analysis was provided on the requirements for turning lanes at the intersection of Highway 7/6th Line and at the intersection of Highway 7/5th Line. It is recommended that turning lane warrants and requirements be reviewed for these intersections.
- The TIS does not provide any review of the need to upgrade 6th Line to accommodate the increased truck traffic. It is recommended that a geotechnical study be provided to confirm the road base and road surface requirements. Road widths should also be reviewed, to confirm sufficiency to allow two lanes.
- Analysis of stopping sight distances have been provided for the proposed access onto 6th Line, based on an assumed 50 km/h operating speed. However, since speeds are not posted, the legal speeds on this rural road should be assumed to be 80 km/h, in accordance with the Highway Traffic Act. The required stopping sight distance should be revised accordingly.

- The TIS does not analyze the available sight distances at the intersection of Highway 7/6th Line. It should be confirmed that sufficient stopping sight distances and turning sight distances are available to accommodate the significant increase in truck turning movements at this location.
- The visibility triangles (daylighting) are limited at the intersection of Highway 7/6th Line, by encroachment of existing trees. Considering the down gradient on the 6th Line approach and the type of traffic (i.e., large trucks), visibility triangles should be provided for the approaches, in accordance with the requirements of the Geometric Design Manual for Ontario Highways.
- The design and placement of truck entrance warning signs should meet the requirements of the Ontario Traffic Manual, based on a design speed of 100 km/h on Highway 7 and 80 km/h on 6th Line.

Natural Environmental Technical Report
Burnside has reviewed the report titled "Proposed Hidden Quarry Level II Natural Environment Technical Report" as prepared by GWS Ecological &Forestry Services Inc. Our comments are as follows:

- Development and site alteration are not permitted within a Provincially Significant Wetland ("PSW"). The boundary of the Eramosa River-Blue Springs Creek PSW should be staked in the field with the Ministry of Natural Resources ("MNR") or the Grand River Conservation Authority ("GRCA") with MNR's approval. The report notes that the boundary will be staked at a later date but we strongly suggest that this exercise should occur prior to acceptance of the Level II report as it could have significant implications on the limit of extraction.
- Development and site alteration are not permitted adjacent to a PSW unless it can be demonstrated that no negative effects will result. As such, additional information is required to confirm that the proposed quarry will not affect the hydrology of the wetland. Specifically, the Level II report notes that a hydraulic barrier will be required to prevent the loss of water from the wetland into the quarry bottom. However, there is no discussion of potential effects based on changes to the amount of water entering the wetland. Will the drainage area to the wetland be reduced as a result of the quarry?
- Development and site alteration are also not permitted within or adjacent to Significant Wildlife Habitat unless it can be demonstrated that no negative effects will result. It is not clear that all Significant Wildlife Habitats have been identified and, as such, it is not clear that adequate protection will be provided. We specifically note that the following types of habitats have not been discussed or addressed:
  - According to Section 4.5.5 of the report, Little Brown Bat was recorded on the property. This species is listed as Endangered federally but not provincially. As a result, its habitat would qualify as a type of Habitat for Species of Conservation Concern, in accordance with the Under the Natural Heritage Reference Manual (MNR, 2005) and the Significant Wildlife Habitat Technical Guide (MNR, 2000). The latest guidance for the MNR is that habitat may exist in naturally occurring forest stands (FOD communities) but not in plantations (CUP). It is suggested that the MNR be contacted for further guidance on identifying the significant habitat of this species and the type of protection required.

Hydrogeological Investigation
Burnside has reviewed the report prepared by Harden Environmental Services Ltd entitled "Level 1 and 11 Hydrogeological Investigation Hidden Quarry, Rockwood, Ontario as dated September 2012 and have the following comments:

- We raise some caution with respect to the water level information provided from standpipes installed in open pit excavations.
- TP9 has no description of the dolostone rock. Since the basal till layer has been removed, it is possible that the rock could be acting as an underdrain. Many intervals in the test pit logs do not include descriptions of soil colour and, as a result, it is not clear whether there was any evidence of colour changes associated with saturated conditions.
- Borehole logs for M5 to M10 were missing from the report.
- It is noted that wells M1D to M4 do not include a surface seal and, as a result, the water levels reported may not be accurate.
- Multi-level wells are located only on the west side of the site. The overburden geology changes from primarily sand at M3 to primarily silty sand till at M11. An understanding of the change in geology and variations in water levels between M3/M9 and M11 is needed so that the impacts of extraction on Tributary B can be fully understood.
- Table C1 provides flow data. It is not clear from the table whether data with no values are due to no measurement being taken or whether flows were below the sensitivity of the flow meter. The data should be compared with precipitation data. This should be clarified. Continuous flow measurements would provide an additional level of understanding since spit flows are highly variable.
- An in-situ hydraulic assessment was completed using falling head testing and using a pump to remove water at constant rate (M2, M4). Table D1 indicates that a falling head test was completed at M2 and a short term pumping test was completed in both M2 and M4. A comparison of hydraulic conductivity values obtained with the two methods at M2 should be provided.
- Both MW1D, M2 and M4 have a silica sand pack above the lower bentonite seal whereas the other two bedrock wells (M13-D, M14-D) have a bentonite seal above the sand pack to surface. Wells M1D and M13D have lower hydraulic conductivity values. Is it possible that the minimal annular seal and substantial sand pack in M2 and M4 is impacting the results of hydraulic conductivity testing?
- A good job was done in documenting wells near the site. The two nearby overburden wells are either no longer used (No. 6) or are used occasionally for cleaning purposes (No. 2). Well No. 2 is shallow (3.97 mbtoc) and should be monitored.
- Viewlog™ and Modflow™ were used to create a model of groundwater potentials for the bedrock aquifer.
  - The model uses three layers to represent the bedrock aquifer. How does the model consider the overburden at the site?
  - Hydraulic conductivity values of 5.8 $v10^{-7}$ m/sec (M1D) and 4.0 x 10^{-7} m/sec (M13D). How were these lower k values utilized in the model?
  - Appendix D does not contain any hydraulic conductivity data for M3 and the highest k value is 2.0 x 10^{-4} m/sec at MpN-1. What is the rationale for assigning a value of 1.8 x 10^{-4} m/sec to the bedrock and what is the thickness of this layer?

  - Is the recharge value of 150 mm realistic given the hummocky nature of the site, the relatively coarse deposits that overlie the bedrock in some areas and the closed drainage areas (D5, D6 and D7)?
  - How does the recharge used in the model created for the site compare to values used in the Source Water Protection work completed for the area by Golder and Aqua Resource?
  - Figure H10 provides the predicted groundwater flow in the bedrock. How does this compare to the current flow direction (there is no north arrow on the map)?
  - The model is used to predict changes in bedrock water levels as a result of extraction in two areas of the site (east pond and west pond). What will the impacts be in the overburden?
  - Many of the figures (H4, H5, H6 and H7) do not have legends and, as a result, the significance of the colours used is not always apparent.
  - Tributary B is an ephemeral stream which was assigned a recharge value of 0.154 m/day. How was this value calculated? How was limited flow data for SW5/SW7 considered in the calculation?
  - Burnside recommends that a thorough review of the model be completed by a groundwater modeller with experience in fractured rock geology.
- The infiltration rates used in the groundwater model are less than the rates in the Gartner Lee model (2004) which seems reasonable given the till layer overlying the bedrock. However, it is not clear if higher recharge rates in micro drainage area D7 would affect the interpretation of future impacts. Based on the 1 m contours in Figure 3.4 it is also not clear why D5 and D6 are not considered as one micro-drainage area.
- The bedrock surface is shown in Figure 3.5. The proposed extraction area should be added to this map. It appears that there are few (if any) bedrock monitoring wells within the two extraction areas. Given the heterogeneity of the bedrock, it is recommended that monitoring wells be installed within the extraction areas.
- The report indicates that in general the basal silt till is thin or absent above the bedrock near Tributary B. It is our opinion that there is insufficient information to conclude that the basal till is thin or absent near Tributary B. TP3, TP5 and TP11 did not encounter bedrock but did have finer grained materials. There is no discussion about the difference in effective "k" values between the till and the finer grained materials. This suggests that the water "lost" by Tributary B is may be remaining in the overburden and may not reach the bedrock.
- It is noted in the report that the Brydon Spring likely represents discharge directly from the bedrock and can be considered to be the re-emergence of Tributaries B and C. There are limited bedrock wells on the proposed quarry site and there is no data that confirms that the tributary loses water to the bedrock. Tracer testing should be considered to confirm this statement.
- It is indicated that some monitors have up to 17 years of records and provides groundwater potentials for overburden and bedrock in Figures 3.16 and 3.17. Although there are numerous monitors on site, few (if any) are actually within the extraction area. Only one bedrock well (M2) extends to the bottom of the proposed extraction depth. This well is screened near the top of the bedrock and, as a result, only provide information for a small portion of the bedrock. Water level data from TP8 and TP9 is from a different date than the remainder of the data that was used to prepare Figure 3.16. There also appears to be limited data to support the contours between MW1 and M7. Similarly, there does not appear to be sufficient data

presented in the report to support the assertion that "groundwater occurring within the overburden does so above the silt till as a silt layer generally in the northern portion of the site and percolates into the bedrock within the southern portion of the site. An isopach map of silt thickness would assist in demonstrating the limit of the till unit.

- An estimate of hydraulic conductivity and transmissivity based on data collected during short term pumping tests and falling head tests is provided. Based on the mapping provided, it appears that none of the bedrock wells tested are within the two proposed extraction areas. Onsite in-situ testing was completed in wells with limited screened intervals. The lack of data within the extraction areas results in several concerns:
  - Given the heterogeneity of the bedrock, is there the potential for zones of higher or lower hydraulic conductivity to be present. There are significant variations in flow (400 L/min at mushroom farm vs. 82 L/m in TW2).
  - The excavation will behave as a large diameter well open through the bedrock sequence. The onsite wells are screened over discrete intervals and hydraulic testing will not be representative of the entire bedrock sequence.
  - The Guelph/Eramosa Study used significantly higher hydraulic conductivity values. Since the bedrock is heterogeneous significant variations in hydraulic conductivity can be expected. Additional data from within the extraction areas is needed to confirm on-site conditions.
- Figure 3.18 shows the relationship between water levels in the tributary and MP2, M9 and MP1. The water levels in the tributary are consistently higher than levels in the monitors, however, this may simply demonstrate a lack of connection between the base of the tributary and the fine grained till. Adding stratigraphy to Figure 3.18 would assist in the interpretation of water levels.
- It is agreed that there does not appear to be any groundwater contribution to the Northwest wetland from the bedrock. The water level data in Figure 3.19 and information in cross section B-B' suggests that upward gradients in the overburden west of the wetland may provide discharge to the wetland in the spring when water levels are highest. Please comment.
- It is indicated that Allen wetland is supported by direct precipitation runoff and interflow from the north. Streamflow enters the wetland from the De Grandis Pond. There does not appear to be any relationship between water levels in the Allen wetland and the bedrock wells on the Hidden Quarry Site with diffuse groundwater seepage into the pond interpreted as interflow along the contact between the relatively permeable surficial till found on the De Grandis property and there silt till identified beneath the wetland. The water level in bedrock well 6707545 on cross section A to A' are is the overburden. This well appears to be unconfined. There do not appear to be any bedrock wells in the vicinity of the De Grandis Property. If similar conditions exist on the De Grandis property, is there the potential that the maximum predicted drawdown of 0.6 m shown in Figure 4.3 could impact the Pond?
- Elevated nitrate concentrations (>5 mg/L) were present in samples from bedrock wells M2 and M3. Both M2 and M3 are bedrock wells located at the north end of the Hidden Quarry site. The top of screen at M3 is near the bedrock/till contact and the top of screen at M2 is about 7 m below the bedrock/till contact. Neither well has a surface seal. As a result, it is not certain if there was a conduit created through the till when the wells were constructed. The current level of information does not allow the following concerns to be addressed:

  - What is the source of the nitrate?
  - If the elevated nitrate is currently present in only the shallow bedrock, excavation of the bedrock will create a vertical connection between the shallow and deep fracture systems. What will be the impact to nearby domestic well quality?
  - The final depth of extraction is not indicated. What are the impacts of mixing water from the underlying shale with the water from the dolostone?
- The bedrock below the water table will be blasted and the broken rock will be removed with excavators or draglines stationed above the water table without dewatering (Note: should dewatering be required additional review of the detailed operations will be required). The proposed mining area is shown in Figure 4.1. The proposed depth of extraction should be shown on all the cross sections with an additional cross section created to show the extraction area east of Tributary 5.
- The construction of a hydraulic barrier along the downgradient side of the onsite wetland is proposed. The proposed barrier is to be 2.5 m wide and keyed into the silt/silt till layer.
  - It is not clear from Figure 4.2 how the location of the proposed barrier corresponds to the limits of micro drainage areas on Figure 3.4. The scale of the contours on Figure 3.4 suggests that D5 and D6 are connected. The addition of the limits of extraction and the location of the proposed barrier to this Figure would assist in confirming that runoff to the wetland will not change.
  - The addition of wells and water level data to Figure 5.1 along with observed lithology is needed to ensure that the barrier is placed at the optional location.
  - Additional detail on how the width of the barrier was calculated should be provided.
- There does not appear to be any wells which are located in the two extraction areas that penetrate the entire bedrock sequence. As a result, the bulk hydraulic conductivity and the depths of fracture are not reliably known. The extraction of the bedrock may result in the connection of horizontal fractures that are currently separated by zones of relatively impermeable bedrock. This could result in the alteration of current groundwater flow in the bedrock. The statement that the creation of a waterbody will result in increased storage and will benefit downstream wells, springs, ponds or streams during drier conditions suggests that there is a connection between the bedrock beneath the site and downstream resources. As a result, any decrease in available water onsite or changes in water quality will potentially impact downgradient features.
- There is not sufficient information on the bedrock in the extraction areas to allow for a reliable prediction of drawdown to be made. The vertical spacing and contribution of the water bearing fractures is not known and as a result, inflow into the pit may result in temporary dewatering of shallow fractures. The length of time for water levels to stabilize is not estimated. There is also a potential that bedrock water quality will be affected if cascading occurs within the extraction area.
- The report indicates that there is downgradient of the Northwest Wetland (southeast of M1), groundwater flow in the silty sand layer and sand and gravel layer ceases and there is only groundwater found in the bedrock. There are no overburden monitoring wells downgradient of M1S/D and as a result, there is no evidence to confirm that there is no water in the overburden.
- Northwest Wetland water balance should address the following:
  - There is a difference between the flux of groundwater upgradient and downgradient of the wetland. Is the increase unsaturated thickness due to

variations in the elevations of the top of the till or is it a result of contribution by the wetland?
  - The design hydraulic conductivity of the barrier 1 x 10^{-7} m/s in Section 5.1.1.2 which is different than the value of 5 x 10^{-8} m/s in Section 4.2.1.
- The predicted water level change in the aquifer for the nearest well will be 1.6 m. However, there are no wells within the proposed extraction areas that penetrate to the proposed depth of the quarry. As a result, the potential for a connection with nearby domestic wells is not known.
- The extraction of the bedrock has the potential to connect shallow fractures with deeper fractures and as a result, there is the potential to cause changes in water quality in nearby domestic wells. Please comment.
- There are no wells that provide an indication of water levels in the bedrock within the extraction areas. Wells in test pits are not considered to provide reliable water levels. The monitoring network needs to be modified to provide additional information on water levels in the overburden south of the wetland and to provide a better understanding of where the significant water bearing fractures occur in the bedrock. We concur with the need to compete a well survey. Contingency measures should be tied into trigger levels for both water levels and water quality.

Summary
It is recommended that the above noted technical issues be addressed prior to approving the zone change application.

Please feel free to contact me or Don McNalty if you have any questions regarding the above noted comments. This review has been carried out by staff with specific areas of expertise. Consequently questions or comments may be passed on to the appropriate individuals who have carried out the initial reviews

Yours truly,

R.J. Burnside & Associates Limited

Jackie Kay

Jackie Kay, P.Eng. MBA
JK/jw

Cc: Gae Kruse, Township of Guelph/Eramosa (Email)
Mike Davies, Cuesta Planning Consultants (Email)
Heather Ireland, GRCA (Email)

130102 Sheppard.docx
11/01/2013 2:17 PM

Burnside Natural Environment Technical Report Comments	31	Development and site alteration are not permitted within a Provincially Significant Wetland ("PSW"). The boundary of the Eramosa River-Blue Springs Creek PSW should be staked in the field with the Ministry of Natural Resources ("MNR") or the Grand River Conservation Authority ("GBCA") with MNR's approvat. The report notes that the boundary wiU be staked at a later date but we strongly suggest that this exercise should occur prior to acceptance of the Level II report as it could have significant implications on the limit of extraction.	Agree, the boundary of the Provincially Significant Wetland (PSW) will be staked/flagged by GWS staff in the spring after the leaves have flushed and it will be subsequently confirmed in the field by GRCA staff prior to having it surveyed and plotted on the Operational Plan.	GWS to flag PSW boundary in spring and have GRCA confirm.	GWS
	32	Development and site alteration are not permitted adjacent to a PSW unless it can be demonstrated that no negative effects will result. As such, additional information is required to confirm that the proposed quarry will not affect the hydrology of the wetland. Specifically, the Level II report notes that a hydraulic barrier will be required to prevent the loss of water from the wetland into the quarry bottom. However, there is no discussion of potential effects based on changes to the amount of water entering the wetland. Will the drainage area to the wetland be reduced as a result of the quarry?	Based on the topographic mapping provided in Figure 8 and our field observations, the 30 m buffer which is proposed adjacent to the PSW (MAS2-1) closely approximates the wetland's catchment area. Consequently, there should be no noticeable reduction in surface water input to this wetland. Groundwater will continue to flow into the wetland from the northwest at current rates. As a result, we do not anticipate any significant change in the amount of water entering the wetland.	No Action Required	
	33	Development and site alteration are also not permitted within or adjacent to Significant Wildlife Habitat unless it can be demonstrated that no negative effects will result. It is not clear that all Sign"ificant Wildlife Habitats have been identified and, as such, it is not clear that adequate protection will be provided. We specifically note that the follwing types of habitats have not been discussed or addressed: - According to Section 4.5.5 of the report, Little Brown Bat was recorded on the property. This species is listed as Endangered federally but not provincially. As a result, its habitat would qualify as a type of Habitat for Species of Conservation Concern, in accordance with the Under the Natural Heritage Reference Manual (MNR, 2005) and the Significant Wildlife Habitat Technical Guide (MNR, 2000). The latest guidance for the MNR is that habitat may exist in naturally occurring forest stands (FOD communities) but not in plantations (CUP). It is suggested that the MNR be contacted for further guidance on identifying the significant habitat of this species and the type of protection required.	Agree, with respect to concerns raised about little brown bat habitat, this species had no special status when the wildlife inventories and Natural Environment Technical Report were completed. Since the review of the report by Burnside, the province has designated the little brown bat endangered and it is now afforded protection under the Endangered Species Act, 2007. We concur that discussions are required with MNR to identify the significant habitat for this species and the level of protection that is required.	Review endangered species habitat with MNR.	GWS

March 13 2013 no comments received from County of Wellington, Novus Environmental

Hidden Quarry Site Meeting Notes for June 7 @ 1:00 PM

In Attendance:
GRCA-Fred Natolochny, Tony Zammit
Wellington County- Peter Williams, Williams Forestry Services
Township of Guelph Eramosa- Domenique Evans and Don McNaulty, RJ Burnside
Ministry of Natural Resources- Steve May
James Dick Construction Limited- Greg Sweetnam, Leigh Mugford
Stan Denhoed, Harden Environmental
Rob Stovel, Stovel Associates
Greg Scheifele, GWS Ecological and Forestry Services

All in attendance by 1:15. Brief welcome and site orientation. Generally the site walk started at the on site contemporary home, proceeded to the west along the woodland border, crossed the creek and followed the woodland border to the east property limit. Then the group walked the east watercourse limit to the north property boundary, crossed the creek and proceeded down the west creek boundary to the central wetland. The wetland boundary was viewed and the group returned to their cars. The walk reconvened in the old gravel pit in the northwest corner of the site. The boundary of the MAS 2-1 wetland was walked and the location of the berms and hydraulic buffer was pointed out. Details of discussions of various features are listed below. All had left the site by 4:15 pm.

The notes below were written by L Mugford James Dick Construction Ltd, with additional content below that from GRCA and Wellington County.

1. **Woodland Boundary – south east area-Identify and flag the limits of the woodland areas to be retained and removed and review linkages with off property areas.**

- The group was led around the flagged limits by GWS. Discussion regarding saving large mature maple as a seed source in the vicinity of HQ 1. This was agreed to by JDC subject to monitoring of the condition of the tree as it will likely naturally decline over the coming decade.
- JDC also agreed that where there was a steep slope down into the extraction area it would not make sense to disturb the vegetation on the existing westerly slope of FOM 2-2.

2. **Tributary B and MAM3-2 Wetland-Identify the limit of Tributary B including the MAM3-2 wetland area, the associated floodplain, set back requirements (20m vs 30m) and whether the services of a geomorphologist are required for this task.**

- The setbacks from the stream and wetlands were staked and viewed in the field. There appeared to be a general agreement that the setbacks were appropriately staked.
- GRCA advised that as long as the floodplain was within the setbacks the services of a geomorphologist were not required.
- The installation of silt fence to protect the creek should be located inside the extraction area rather than inside the setback zone. All areas on the setback side of the silt fence as well as a 2m buffer outside the silt fence designated as 'no touch' areas. Stovel to provide design cross section.

3. Clarify GRCA April 15 2013 comment #10 regarding the 'unevaluated' wetland (MAM3-2) and application of the complexing rules from the Ontario Wetland Evaluation Manual?

• MNR written comments indicated that "Given that the MAM3-2 wetland is less than 0.5 Ha and in accordance with the OWEM and MNR policy the MNR has commented that this wetland feature will not be considered part of the Eramosa River- Blue Springs Creek PSW."

4. Identify whether the cedar stand (FOC2-2) beside Tributary B can be trimmed to a 20m setback.

- After review in the field with GRCA and the Professional Forester hired by Wellington County, no objections were raised regarding the staking locations as laid out in the field.

5. Discuss Tributary B crossing requirements.

- Discussion with the GRCA explored the use of a CSP type crossing with footing on either side, leaving the stream bed intact, constructed in the dry period. JDC will provide a design detail. GRCA advised to leave a low area on one side of the culvert in case of flooding or culvert blockage and install a steel or stone wing wall to protect the creek from erosion.

6. Burnside comment regarding the thickness of basal silt till near Tributary B and the effective "k" values that will affect where the water from Tributary B is going.

- Discussion with Stan Denhoed clarified evidence of basal silt layer in borehole logs on a monitor by monitor basis as each monitor was passed during the site walk.

7. <u>PSW and Other Wetlands- North West Area</u>-Flag, stake the limits of the PSW (MAS2-1).

- The boundary of the wetland was flagged and walked by GRCA and GWS and general consensus was reached.

8. **Identify the adjacent wetland boundaries to be enhanced and removed (0.2Ha of the man-made wetland area is proposed to be removed) and the proposed enhancement proposal in relation to meeting GRCA Wetlands Policy.**

- Discussion around the merits of the enhancement versus leaving the wetland in its current condition resulted in agreement to preserve the wetland enhancement part of the project and preserve the man-made current condition with small area of the manmade wetland to be removed.

9. **Review the proposed location for the Hydraulic Barrier proposal as there may be a mapping issue. Also may discuss the need for the Barrier as an optional belt and suspenders approach. Is there groundwater flow out of the wetland etc.**

- JDC agrees that the hydraulic buffer would be relocated slightly to underlie the acoustic berm in order to minimize the overall disturbance of vegetation and wetland.

Feedback to Notes from GRCA 7/15/2013 Fred Natolochny:

Thank you for providing the minutes from our site meeting for the Hidden Quarry. I hope you wouldn't mind distributing the comments below as appropriate/required.

We have reviewed the minutes and Tony Zammit has identified a couple of points where modification of the minutes may be warranted.

Point #1 – GRCA is satisfied with the boundary along the ridgeline, but in other areas the line seemed arbitrary. This was conveyed to GWS. Furthermore, I do not recall that we reviewed or discussed linkages with off-site property areas.

Point #2 - Agreement/approval of setbacks was not an objective of the site visit. A buffer analysis is required prior to approval of extraction limits.

Point #7 - Although mapped by GWS in his Level 2 Natural Environment Report, the boundary of the man-made wetland was not staked in the field and thus was not verified by the GRCA, this should be noted.

The intent of the on-site inspection was to become familiar with the features and to review the staking/limits of the features and proposed limits in the field. We would expect that rational for the woodland area and review of linkage to offsite areas would be provided in a written response. The buffer analysis should be provided in response to our prior comments and the in-field findings.

Trusting these comments are helpful, and looking forward to a response to our prior comments when they are available.

Feedback from Wellington County – July 18, 2013 from Aldo Salis

Please find attached the comments provided by our consultant, Peter Williams, Williams & Associates Forestry Consultants Ltd., regarding the proposed Hidden Quarry application.

Williams & Associates was retained by this office to assist with the review of the woodlands on the subject property. As you know, Mr. Williams attended the site meeting on June 7, 2013 together with representatives from the municipality and the other public agencies. While Mr. Williams was generally in agreement with the results of the woodlands assessment, he did request additional information. If you have any questions with this request or the attached report, please contact me.

WILLIAMS
& ASSOCIATES
Forestry Consultants Ltd.

5369 Wellington Rd 27, R.R.#1,
Rockwood, ON N0B 2K0
Tel (519) 856-1286 Fax (519) 856-9728

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Website www.forestar.ca
Email forstar@execulink.com

June 13, 2013

Aldo Salis, Planner
Wellington County, Planning and Development Department,
74 Woolwich St.
Guelph, Ont N1H 3T9

Re: Hidden Quarry (Rockwood) Site Meeting, June 7

At the County's request, I reviewed the documentation sent and other materials regarding the Hidden Quarry proposal near Rockwood and attended a site meeting. The material was mainly technical reports from the proponents and material in my files regarding forests and natural areas in the vicinity.

On June 7, 2013, I attended a site meeting and tour hosted by the proponent and their consulting team. Representatives from the Grand River Conservation Authority and Ministry of Natural Resources were also in attendance. My understanding is that the County wanted my presence at the site meeting to review/confirm that the woodland boundaries were satisfactorily represented in the proponent's assessment and to report on other aspects of the woodland evaluation conducted by the proponent.

I reviewed the technical reports regarding the vegetation and wildlife on the site and found that the survey and inventory work was professionally done and represents the existing conditions of the subject property. While not all of the woodlands on the property are currently mapped as Core Greenlands or Greenlands in the County Official Plan, in my opinion the woodlands appear to meet the size requirements of the Official Plan policies, contribute to local forest cover, provide linkage to neighbouring woodlands, and provide important ecological connection to the nearby natural areas (i.e. Eramosa/ Blue Springs Creek corridors).

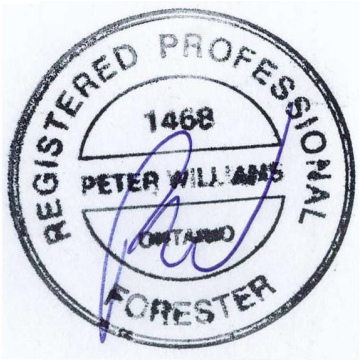
In my view, the technical reports provide inadequate discussion as to the importance of the woodlands on the property relative to nearby natural areas, and incorrectly suggested negligible linkages to the Blue Springs Creek to the south. They justify the lack of connectivity because the property is cut off by Highway 7, and limited linkages to other woodlands to the north and west. I disagree with this assessment and suggest that with the exception of the proximity of urban areas associated with Rockwood, the complex of natural areas and agricultural land is well-connected. The natural areas between the Eramosa River and Blue Springs Creek channels become more important closer to their confluence around Rockwood and Eden Mills. With the high proportion of natural areas between the subject property and the confluence of two waterways, I believe that the woodlands on the subject property provide important connectivity to surrounding natural areas.

Notwithstanding the preceding discussion, it is my opinion that the proposed project would have limited negative impacts on the functions discussed above. While these woodland functions would be temporarily affected by the project, I believe that the basic linkages can be maintained by the vegetative corridors on the north and east side of the property and stream channel as proposed. The affects on connectivity can be further mitigated through other operational considerations such as retaining the current vegetation until just prior to extraction, expeditious restoration back to natural cover and enhancing tree/natural vegetation along the 6th Line would help maintain these connections.

I trust that this information is helpful. Please contact me if you have any questions.

Sincerely,

Peter A. Williams, M.Sc., R.P.F.
Consulting Forester/Arborist



WILLIAMS
& ASSOCIATES
Forestry Consultants Ltd.

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★ ★ ★ ★

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June 13, 2013

Aldo Salis, Planner
Wellington County, Planning and Development Department,
74 Woolwich St.
Guelph, Ont N1H 3T9

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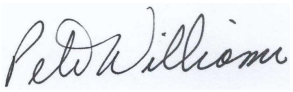
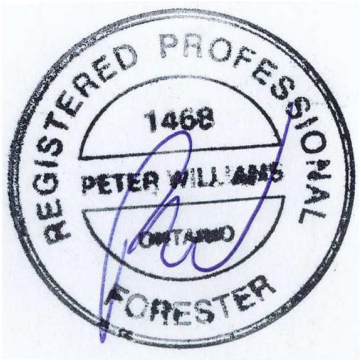
Notwithstanding the preceding discussion, it is my opinion that the proposed project would have limited negative impacts on the functions discussed above. While these woodland functions would be temporarily affected by the project, I believe that the basic linkages can be maintained by the vegetative corridors on the north and east side of the property and stream channel as proposed. The affects on connectivity can be further mitigated through other operational considerations such as retaining the current vegetation until just prior to extraction, expeditious restoration back to natural cover and enhancing tree/natural vegetation along the 6th Line would help maintain these connections.

I trust that this information is helpful. Please contact me if you have any questions.

Sincerely,



Peter A. Williams, M.Sc., R.P.F.
Consulting Forester/Arborist



File: 3028
By: Email & Mail

September 6, 2013

County of Wellington
Planning & Development Department
74 Woolwich Street
Guelph, ON
N1H 3T9

Attention: Mr. Aldo Salis
Planner

Dear: Mr. Salis

Re: Hidden Quarry

We have reviewed Mr. Peter Williams comments on our Level II Natural Environment Technical Report for the Proposed Hidden Quarry.

We appreciate and concur with Mr. Williams' opinion that the proposed project would have limited negative impacts on woodland functions. Although these functions would be temporarily affected by the project, the basic linkages can be maintained by the vegetative corridors on the north and east side of the property and stream channel as proposed. We agree that the affects on connectivity can be further mitigated through other operational considerations such as retaining the current vegetation until just prior to extraction, expeditious restoration back to natural cover and enhancing tree/natural vegetation along the 6th Line.

Mr. Williams indicated a concern for a more detailed discussion about the importance of woodlands on the subject property and their linkage to the nearby Eramosa River and Blue Springs Creek Corridors which are located to the north, west and south respectively. In our report we state, on page 17, "The subject property is well connected to natural areas to the north and west but is weakly linked to lands to the east and south because of Highway #7, existing residential and commercial developments and a lack of large well connected natural features." These land uses are clearly shown on Figures 1, 7 and 8. On page 60 we conclude that "The James Dick woodlands lie in close proximity to other woodlands and wetlands located to the north and west of the site. As such they provide an important linkage to these natural features."

We are therefore in agreement with Mr. Williams regarding the importance of linkages to the north and west but feel the connection to the Blue Springs Creek corridor is not as strong. The right-of-way for Highway #7 is 30 to 40m wide and this provincial highway gets a large volume of traffic well into the evening. This was quite apparent during evening surveys for bats, owls and calling amphibians. Although some mammals, reptiles and amphibians may venture across this highway they are clearly at risk of becoming a road kill. Although common birds that typically nest in a meadows and forest edges may cross the highway for foraging purposes this forest opening is sufficiently wide to adversely affect woodland utilization by area sensitive birds. Existing residential

and commercial land uses located on the south side of the highway further impair wildlife movements in a north-south direction.

With respect to Mr. Williams concerns for mitigating potential impacts to connectivity through operational modifications, we confirm that existing vegetation will be retained until just prior to extraction in accordance with the Phasing shown on the Operations Plan. Once extraction is completed in a Phase the area will be promptly restored to the ecological after-use specified in the Progressive Rehabilitation Plan. We also agree there is merit in enhancing tree cover along the 6th Line, particularly within the cultural thicket and meadow communities (CUT1-7 and CUM1-1). The Rehabilitation Plan will therefore be revised to show some tree planting in open areas within these communities. We recommend that coniferous and deciduous trees should be planted in this area with a minimum spacing of 3m to ensure an appropriate forest density for effective corridor establishment. This planting should take place immediately upon the establishment of any berms in this area, prior to aggregate extraction in proximity to the 6th line.

We trust this information adequately addresses the County's concerns. Please do not hesitate to contact us if you require further clarification on these matters.

Yours truly,

GWS Ecological & Forestry Services Inc.

Greg W. Scheifele, M. A., R.P.F.
Principal Ecologist/Forester

cc: Greg Sweetnam, James Dick Construction Limited
Leigh Mugford, James Dick Construction Limited
Rob Stovel, Stovel and Associates

R.J. Burnside & Associates Limited 3 Ronell Crescent Collingwood ON L9Y 4J6 Canada
telephone (705) 446-0515 **fax** (705) 446-2399 **web** www.rjburnside.com

BURNSIDE
[THE DIFFERENCE IS OUR PEOPLE]

April 7, 2014

Via: Email (kwingrove@get.on.ca)

Ms. Kim Wingrove
Chief Administrative Officer
Township of Guelph/Eramosa
P.O. Box 700
Rockwood ON N0B 2K0

Dear Kim:

Re: ZBA Hidden Quarry, Township of Guelph/Eramosa
James Dick Construction
File No.: 300032475.0000

R.J. Burnside & Associates Limited (Burnside) has been retained by the Township of Guelph/Eramosa (Township) to compete a full technical peer review of all materials prepared in relation to the Zoning By-law Amendment (ZBA) for the subject lands (located on Part of Lot 6, Concession 1, Township of Guelph/Eramosa) herein referred to as the Hidden Quarry. The technical peer review was carried out by Dominique Evans, Environmental Technologist.

After review of the initial ZBA materials, along with the report updates, various meetings minutes, agency correspondence and updated plans, Burnside staff feel that James Dick Construction (James Dick) has adequately addressed all concerns as they related to the Natural Environment at the Hidden Quarry. Concerns included protection of wetlands, as well as Species At Risk and their habitat.

Should James Dick revise their approach, or alter their extraction plans, Township and Burnside staff reserves the right to complete additional review.

Yours truly,

R.J. Burnside & Associates Limited

Don McNalty, P.Eng.
Vice President, Public Sector

cc: Saidur Rahman, Director of Public Works, Email (srahman@get.on.ca)
Dominique Evans, Burnside, Email (dominique.evans@rjburnside.com)
Leigh Mugford, James Dick Construction Ltd., Email (lmugford@jamesdick.com)

GAIA EcoConsultants

SOLUTIONS FOR CONSERVATION

146 Elvaston Drive
Toronto, ON
M4A 1N6

July 4, 2014

Quentin Johnson
Everton, ON

Re: Hidden Quarry Property Visit

Dear Quentin,

I visited the Hidden Quarry site on July 2, 2014 from 05:50 to 08:40, in an effort to discover the presence of any wildlife designated as Species-at-Risk by the Environment Canada's Committee on the Status of Endangered Wildlife in Canada (COSEWIC). The weather was overcast but with no rain or noticeable wind. There was virtually no background noise to interfere with identification of singing birds, except along the Highway 7 frontage where constant traffic made observations close to impossible. I accessed this property from the west on 6 Line, and walked trails through most of the southern half of the area (Figure 1). I did not enter the northern corner of the area. As the audibility range of many birds can be 100 metres, my survey likely covered a large fraction of the total Hidden Quarry area.

Birds observed during this visit included:

Mallard	Wood Duck	Sharp-shinned Hawk
Sora	Black-capped Chickadee	White-breasted Nuthatch
Great Crested Flycatcher	**Barn Swallow**	Cedar Waxwing
House Wren	Gray Catbird	American Robin
Red-eyed Vireo	Magnolia Warbler	Yellow-rumped Warbler
American Redstart	Pine Warbler	Mourning Warbler
Black-and-white Warbler	Common Yellowthroat	European Starling
Northern Cardinal	Indigo Bunting	Song Sparrow
Red-winged Blackbird	Brown-headed Cowbird	
Blue Jay	American Crow	American Goldfinch

Barn Swallow (*Hirundo rustica*) has been designated as COSEWIC-Threatened. One Barn Swallow was foraging on both sides of 6 Line near the open water / cattail wetland as shown below and presumably

was a breeding individual. The Hidden Quarry site offers suitable foraging habitat for Barn Swallows predominantly in this area as the remainder is dense conifer plantation forest with some hardwood forest, and small patches of weedy fields.

In addition to Threatened Barn Swallow, the Ontario Ministry of Natural Resources database of species-at-risk reports historic observations of COSEWIC-Special Concern Snapping Turtle (*Chelydra serpentina*) from 2010 and COSEWIC-Threatened Blanding's Turtle (*Emydoidea blandingii*) from 1989 for the 1-km squares (17NJ7129 and 17NJ7229) where the Hidden Quarry site is located as well as from surrounding 1-km squares. Reports from landowners adjoining the Hidden Quarry site (e.g. Stephanie De Grandis) confirm that Snapping Turtles are regularly present in the immediate area. Snapping Turtle was also reported as present in The Proposed Hidden Quarry Level II Natural Environment Technical Report by GWS Ecology and Forestry Services Inc., Appendix C. The wetland facing 6 Line and the stream that runs from northwest to southeast within the Hidden Quarry site provide suitable breeding, feeding and dispersal habitat for aquatic species like Snapping and Blanding's Turtles. The loss of these wetland habitats as a result of quarrying activities would effectively exclude these two species-at-risk from the site. Any activity affecting listed wildlife species requires a permit authorizing that activity from Environment Canada. www.sararegistry.gc.ca/document/default_e.cfm?documentID=2543

The Proposed Hidden Quarry Level II Natural Environment Technical Report states on page 37 that "Eastern Wood-Pewee (COSEWIC-Special Concern) was observed both in the mixed white pine-sugar maple forest adjacent to Highway 7 and in the coniferous plantation immediately adjacent to this woodland". In addition, "the Wood Thrush (COSEWIC-Threatened) was observed in the sugar maple–white ash forest north of the site, but did not occur on the subject lands". Neither species was observed on July 2, 2014 but the Eastern Wood-Pewee is highly likely to be present within these forests. COSEWIC-Threatened Bobolink was reported as breeding on adjacent lands, while COSEWIC-Threatened Eastern Meadowlark was reported from 1997 but not from 2012. Both Bobolink and Eastern Meadowlark are grassland birds that will not find suitable habitat except in very small patches anywhere within the Hidden Quarry site.

Also noteworthy, the Blue Springs Creek Wetlands regionally significant Life Science Area of Natural or Scientific Interest (ANSI) and the Blue Springs Creek Valley Environmentally Sensitive Area (ESA) both lie within 0.5 km of the Hidden Quarry site (Figure 2). Negative changes to hydrology arising from quarry operations may affect the ecological values of these areas protected by provincial and regional governments respectively.

I trust this responds to your concerns.

Regards

Bill McMartin 416 757 7795 www.gaiaecoconsultants.ca

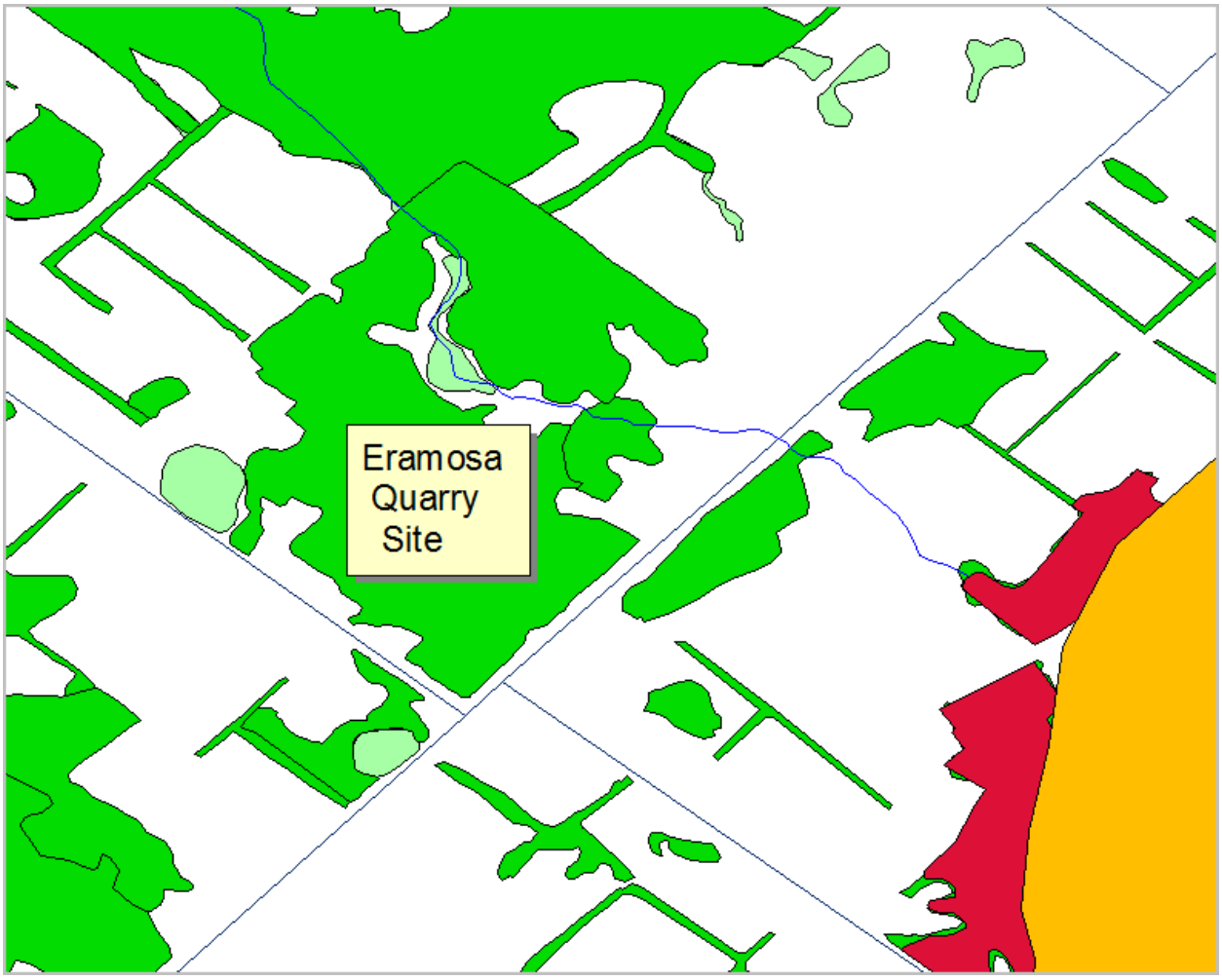
Reputable specialist – Bill McMartin PhD in avian ecology, University of Toronto 2000; experience bird banding at Long Point and Bruce Peninsula Bird Observatories 1988, 1992, 2004, 2010, 2011 and 2012. Censuses (hundreds) for MSc(F) and PhD research, Escarpment Biosphere Conservancy, Oak Ridges Moraine Land Trust, Ontario Farmland Trust, Rouge Park, self-employed as Gaia EcoConsultants since 2000.

↑ **North**

Legend:

Solid green – Forest (old data)
Blue lines – Watercourses
Blue horizontal hatching – Wetlands
Black track – route taken
Solid white – Open areas
Solid blue – Water-bodies
Brown lines – Contour lines
Black boxes – Buildings

Figure 1: GPS tracks of route taken through the Hidden Quarry site. The route also included the Highway 7 frontage and 6 Line frontage from Highway 7 north to the track shown above. The green dots show the GPS coordinates of site corners. Source: 1:10,000 topographic mapping for Southern Ontario from TrakMaps.



Scale 1:10,000

North

Legend:

Red polygon – Life Science ANSI
Solid Dark Green – Forest
Solid white – Open areas

Orange polygon – Environmentally Sensitive Area
Solid Light Green – Wetlands
Blue lines – Watercourses

Figure 2: GIS mapping of forests, wetlands and watercourses of the Hidden Quarry site plus the nearby Area of Natural or Scientific Interest (ANSI) and Environmentally Sensitive Area (ESA). Note: the ESA overlies much of the ANSI. Source: OMNR GIS data layers.

File: 3028
By: Email

August 26, 2014

James Dick Construction Limited
P.O. Box 470
Bolton, Ontario
L7E 5T4

Attention: Greg Sweetnam

Dear: Mr. Sweetnam

Re: Hidden Quarry – CRC Natural Environment Report by GAIA on Species at Risk

This letter is in response to the report written by GAIA EcoConsultants (hereafter GAIA) on the Hidden Quarry, dated July 4, 2014. It should be noted that the report constitutes an admission of guilt regarding trespassing. It is unfortunate that GAIA did not have the courtesy to ask for permission to visit the property, as the report clearly would have benefitted from discussions with the Hidden Quarry study team ecologists.

There are two facts associated with Species at Risk, particularly those designated endangered and threatened, that should have been taken into account by GAIA. The first is that the mandate for endangered and threatened species in Ontario lies solely with the Ministry of Natural Resources and Forestry (MNRF), formerly known as the Ministry of Natural Resources. The MNRF determines if there is habitat for endangered or threatened species on a given site and if the surveys that have been undertaken to detect these species are adequate. In the case of Hidden Quarry, the Ministry has concluded that the inventory work to determine presence/absence of endangered and threatened species was adequate and that no additional fieldwork was required. This information was provided to the proponent in a letter dated November 3, 2013. It is unfortunate that Mr. Johnson had to pay for a survey that was unnecessary and that could have been avoided through a simple phone call to MNRF.

The second fact related to Species at Risk that should have been considered is that the site is private land where development is proposed under the provincial *Planning Act* and its associated support documents. Therefore, provincial designations of Species at Risk by the MNRF and the Committee on the Status of Species at Risk in Ontario (COSSARO) apply to the site, not federal designations by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). In many circumstances, the level of risk is the same

federally and provincially, but this is not always the case. For example, GAIA noted that the Wood Thrush is listed as threatened by COSEWIC, but it is listed as special concern provincially and this is the designation that applies to the subject lands.

The GAIA report identified that a single Barn Swallow was observed foraging on both sides of Sixth Line near the on-site marsh, and concluded that it was a breeding individual. The Barn Swallow typically raises two broods in a year and young from the first nest may have fledged by early July when the survey was undertaken. Shortly after leaving the nest, young routinely travel as far as 0.5 km from the nest and may travel considerable distances once they are a little older. There is definitely no nesting habitat for this species on site in the vicinity of the sighting, as the Barn Swallow typically nests on or in human-made structures such as buildings and bridges, habitat that is absent on the site near the marsh. The MNRF has defined the general habitat of the Barn Swallow under the *Endangered Species Act, 2007* (ESA) as an active nest site, a 5-m radius around the nest to account for the species' territory, and a 200-m radius around the nest that constitutes the foraging habitat. Areas outside the 200-m radius are not considered habitat for the Barn Swallow under the ESA even if they are used for foraging. Apparently no attempt was made by GAIA to determine if there were active Barn Swallow nests within 200 m of the sighting. Even if the marsh is within 200 m of an active nest, the wetland will be retained and there will be no effect upon this species. The clearing of the forest and its replacement with open ponds and wetland habitat will create additional foraging habitat for the Barn Swallow. This species prefers to forage above open water and wetlands as these support the highest diversity and density of insects. Other favoured foraging habitat includes grassy fields and meadows, pastures, and hayfields. The species does not forage over treed habitat, so removal of the plantations and replacement of them by open water and wetlands will be beneficial to this species.

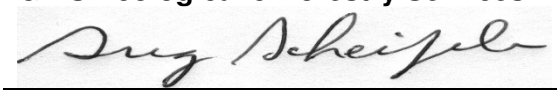
In the discussion on significant turtle species, GAIA states that loss of wetland habitat as a result of quarrying activity would exclude the snapping turtle and Blanding's turtle from the site. Apparently, the Natural Environment Technical Report was not read in detail by GAIA, as the wetland habitats on site are being maintained and additional wetland habitat will be created. The statement that these turtles will be excluded from the site is incorrect. The statement that a permit to authorize activities that would affect these species would be required from Environment Canada is also incorrect. In the event that habitat for the Blanding's turtle was going to be affected, any permits that might be required would be from the Ministry of Natural Resources and Forestry, not Environment Canada. However, this species will not be affected, so no permit is required at any level. In addition, no permit is required for the snapping turtle because it is listed as special concern and therefore is not subject to the provisions of either the provincial *Endangered Species Act, 2007* or the federal *Species at Risk Act*. Habitat for the snapping turtle may be considered significant wildlife habitat under the Provincial Policy Statement. In the case of Hidden Quarry, habitat for the snapping turtle will be maintained and enhanced through retention of the existing wetlands and creation of additional open water and wetland habitat.

GAIA appears to have no expertise in hydrology and therefore the comments in the last paragraph of the report should be given no weight.

In summary, the report by GAIA was unnecessary, essentially added nothing regarding Species at Risk, and many of the conclusions made were erroneous, using the wrong legislation and incorrectly concluding that the on-site wetlands would be lost. No attempt was made to determine where the Barn Swallow was nesting and the location of the area that would be considered habitat under the ESA for this species.

Yours truly,

GWS Ecological & Forestry Services Inc.



Greg Scheifele, M.A., R.P.F.
Principal Ecologist/Forester

Gray Owl Environmental Inc.

Al Sandilands, B.Sc.
Principal, Senior Ecologist

Legislative & Planning Services
Planning Services
1151 Bronte Road
Oakville ON L6M 3L1
Fax: 905-825-8822

September 16, 2014

Ms. Kim Wingrove
Township of Guelph/Eramosa
8348 Wellington Road 124
P.O. Box 700
Rockwood, ON N0B 2K0

Dear Ms. Wingrove:

RE: Region of Halton Technical Comments
"Hidden Quarry" – James Dick Construction Ltd.
Proposed Class 'A' Category 2 License – Aggregate Operation
Township of Guelph/Eramosa Zoning By-law Amendment Application ZBA 09/12
West Half Lot 1, Concession 6, former geographic area of the Township of Eramosa

The following correspondence is provided to outline technical comments on the natural heritage related matters as they relate to the above noted Zoning By-law Amendment application and *Aggregate Resource Act* application. These comments are not intended to supplant our July 5, 2013 letter as the requested additional studies and updates to the existing studies prepared in support of this proposal remain outstanding.

NATURAL HERITAGE SYSTEM RELATED TECHNICAL COMMENTS:

a) **Field Survey on Adjacent Lands:** Wildlife Survey records contained in Appendix C of the NE Report indicate whether species were observed on adjacent lands but do not indicate on which area of adjacent lands (i.e. north, south, east, west side?). The extent of Field Surveys and Species observations conducted on adjacent lands in Halton Region should be clarified and detailed.

b) **Significant Woodlands on Adjacent Lands:** According to our mapping, candidate significant woodlands are located just south of the property, along the south side of Highway 7, within the 120m Adjacent Lands study area surrounding the proposed new extraction operation. This woodland is identified as vegetation community FOD5-6 in the NE Report. A portion of this woodland area would likely meet criteria for designation as significant woodland in accordance with Section 277 of the 2006 Regional Official Plan (Interim Office Consolidated Official Plan). Regional Staff note that the Level II Report should have assessed the significance of this feature in accordance with Regional Significant Woodlands Criteria and demonstrated no negative impact in accordance with the Provincial Policy Statement. However, it is recognized that the potential to negatively impact this feature is low given the substantial setback from quarry operations, physical separation from the quarry site by Highway 7, and mitigation measures already proposed. Therefore no further assessment of this feature is required in regard to the present application.

c) **Surface Water/Fish Habitat Monitoring:** Regional Staff recognize that JDCL has agreed in correspondence (Harden response to Burnside June 10, 2014) to conduct flow and water quality testing of the Brydson Spring to establish baseline conditions including temperature, but not to undertake ongoing monitoring of the spring. Staff note that the Brydson Spring may contribute to base flow and water temperature attenuation of sensitive ecological receptors downstream of the subject property (Blue Springs coldwater fishery, PSW) and therefore recommend that ongoing monitoring of the spring (including water flow, quality and temperature) be undertaken in addition to baseline characterization of the spring, particularly given that no direct monitoring of downstream ecological receptors is planned.

Please note that Regional Staff do not concur with the statement (provided by JDCL correspondence dated August 1, 2014 in response to Halton Region Comments) that monitoring of this feature is redundant, because the source of the spring has not been satisfactorily identified. Staff recognizes that baseline characterization and ongoing monitoring are subject to landowner permission to access the spring.

d) **Haul Route Study:** Regional Comments of July 5, 2013, requested a Haul Route Study, prepared in accordance with Terms of Reference to be prepared in consultation with staff from Halton Region, Milton, and Halton Hills. Although this request remains outstanding, Regional Staff understands that the Terms of Reference for this study are currently being developed. It is recommended that the Terms of Reference require criteria for route selection to include impact minimization and avoidance for environmental features and functions in Halton Region and that any negative environmental impacts resulting from the chosen route should be identified and evaluated, be deemed unavoidable, and mitigated as appropriate.

e) **Blue Springs Creek Tributary and Associated Wetlands:** The proposed quarry operation has requested a reduced setback to a tributary of Blue Springs Creek traversing the subject lands. Typically, setbacks to watercourses are applied buffers for their protection from development related impacts and to ensure maintenance of their ecological functions. The Natural Heritage Reference Manual provides guidance to municipalities on appropriate buffer widths to achieve this objective.

In considering this requested setback, Regional Staff understands that the GRCA and MNR have evaluated and provide comments/clearance on this reduced setback/buffer. Regional Staff encourage the proponent to maintain the greatest setback possible to this tributary in order to implement the Natural Heritage Reference Manual and the PPS to minimize impacts Blue Springs Tributary and downstream significant features.

f) **Greenbelt Plan - External Connections Policies:** Regional Comments of July 5, 2013, request that various supporting materials be updated to reflect the policies of the Greenbelt Plan, 2005. On further review, staff notes that lands within Halton Region immediately to the south of Highway 7 are within the Greenbelt Plan's Protected Countryside and are designated Greenbelt Natural Heritage System (NHS). As such, Key Natural Heritage Features (KNHF) and Key Hydrologic Features (KHF) within the NHS are located on adjacent lands south of Highway 7 (i.e. the tributary and woodland area referred to above), along the south side of Highway 7. The proposed quarry, however, is outside of the Greenbelt Plan Protected Countryside; therefore the only policies in the Greenbelt Plan, 2005, that may apply would be those policies pertaining to External Connections (Sec. 3.2.5). Policies within the Greenbelt Plan related to External Connections beyond the boundaries of the Greenbelt were reviewed. The external connections to

which these policies apply are illustrated on Schedules 1 and 4 of the Greenbelt Plan. As no external connections are shown in the vicinity of the subject property, External Connection policies of the Greenbelt Plan would not apply in this instance.

g) **Missing Materials/Correspondence:** Regional Staff note that the following materials were not copied to the Region or provided through the Township's website. To complete regional records to this point, the following materials are requested:
   i. Figures 10 and 11 were missing from the Natural Environment Report (the NE Report).
   ii. Peer Review Comments prepared by Williams & Associates Forestry Consultants Ltd., dated June 13, 2013.
   iii. Agency Review Comment prepared by GRCA, to GWS, dated July 15, 2013.
   iv. MNR Comments to JDCL, dated July 11, 2013.
   v. MOE Comments to MNR, dated April 15, 2013
   vi. Response Letter regarding "Hidden Quarry – Response to MNR Comments" to JDCL prepared by GWS, dated May 27, 2013.
   vii. Response Letter regarding "Burnside Review of Summary of Drilling and Testing of New Well M15 at Hidden Quarry Site" to Burnside, prepared by Harden, dated January 14, 2014.
   viii. Response Letter regarding "GRCA's Letter of July 8, 2014", to GRCA, prepared by JDCL, dated July 10, 2014.
   ix. Site Visit Notes regarding "June 7, 2014, Site Visit" prepared by JDCL, dated August 22, 2013.
   x. Materials in response to GRCA's Letter of November 4, 2013, dated December 5, 2013.
   xi. Materials in response to GRCA's Letter of November 4, 2013, dated January 23, 2014.
   xii. Drawings submitted to GRCA on March 19, 2014.

In the meantime, please forward any further materials to Adam Huycke, Planner at (905) 825-6000 Ext. 7604 (adam.huycke@halton.ca).

Sincerely,

Brian Hudson

Brian Hudson, MCIP, RPP
Senior Planner
Ext. 7209
Brian.hudson@halton.ca

Cc Greg Sweetman, James Dick Construction Limited
Ron Glenn, Director of Planning Services and Chief Planning Official
Adam Farr & Jeff Markowiak, Town of Halton Hills Planning Services
Barb Koopmans, Town of Milton Planning and Development Department
Liz Howson, Macaulay Shiomi Howson Ltd.
Linda Sword, Concerned Residents Coalition

Region of Halton **Hydrogeological Comments July 28,2014** Response Date August 1, 2014

#	Contact	Date	Question	Response	Action Item	Who
1	Region Halton	28-Jul-14	**Surface Water Features:** • Based on the GRCA's correspondence of April 23, 2014, Brydson Creek (i.e. an extension of Tributaries B+C south of Hwy 7) is classified as cold-water fish habitat. Except for SW3 at Hwy 7 crossing, there does not appear to be any surface water monitoring proposed at the Brydson Creek south of Hwy 7. Is SW3 representative of cold-water fish habitat at Brydson Creek? Are any fish habitat/ecological monitoring proposed along some specific section(s) of the creek? There is no evidence of such monitoring in any of the reviewed documents.	James Dick Construction has agreed in correspondence (Harden response to Burnside June 10, 2014), providing that permission is given by the owner, to conduct flow and water quality testing of the spring to establish baseline conditions. The hydraulic potential at the southern edge of the quarry will increase, thereby increasing the hydraulic gradient between the quarry and the spring. If the hydraulic gradient is maintained at current or higher levels there will be no detrimental change to the Brydson Spring. SW3 is a monitoring station within 100 m downgradient of the Hidden Quarry Property. In this way SW3 is a good proxy monitoring location for Brydson Spring. In addition, the volume of water stored in the quarry will moderate seasonal groundwater level change, thereby providing a more stable source of water during drier conditions. It is likely that the infiltrating waters of Tributary B and C contribute significantly to the Brydson Spring discharge. Since flow in Tributary B and C will not be affected by the quarry operation, no change in the outflow from Brydson Spring will occur. As such, no fish habitat monitoring along the lower reaches of Brydson Creek is necessary or recommended. The Grand River Conservation Authority is aware of the Brydson Spring and has not recommended any biological or water quality/quantity monitoring of the spring. In correspondence dated April 7, 2014, R.J Burnside and Associates, the GET Peer Review consultant on the Natural Environment, also concurred that the application had satisfied all of their concerns, and no fisheries monitoring in the Brydson Creek was reccommended. MOE has also indicated in correspondence dated October 10 2013 that the proposed monitoring plan is appropriate for ascertaining and addressing potential surface water impacts from quarrying activities.	Attach April 7, 2014 letter from Burnside & Associates to GET and July 29, 2014 GRCA Signoff letter.	JDCL
2	Region Halton	28-Jul-14	• Brydson Farm Spring is located south of Hwy 7 and within Halton Region. There does not appear to be any monitoring proposed in regards to groundwater spring which is apparently attributed to re-emergence of Tributary B about 400m south of the proposed quarry site (i.e. at the Brydson's Farm in Milton). Harden Environmental asserts that water levels at Brydson Spring will increase, if anything, as a result of the quarry and that 600 m travel-distance from the extraction edge to the Brydson Spring would be more than sufficient to attenuate thermal changes in the groundwater. A permanent monitoring station should be established (subject to property owners' permission) at spring re-emergence to monitor for flow, temperature, water quality and any groundwater-uses and groundwater-dependant habitats in this area.	James Dick Construction has agreed in correspondence (Harden response to Burnside June 10, 2014), providing that permission is given by the owner, to conduct flow and water quality testing of the Brydson Spring to establish baseline conditions, including temperature. This baseline data will be helpful should any issues arise in future concerning flow conditions at the Brydson Spring. Groundwater levels and groundwater quality including temperature will be measured at several groundwater monitors downgradient of the quarry (M15, M16, M4). This monitoring will allow JDCL to measure changes in the groundwater flow system several hundreds of metres from Brydson Spring. The additional monitoring at the Brydson Spring is redundant and unnecessary.	Attach June 10, 2014 Harden letter.	JDCL

3	Region Halton	28-Jul-14	**Groundwater Levels:** • In their November 12, 2013 correspondence, Burnside indicated that there is significant potential for impacts from the proposed quarry activities on the groundwater resources in the surrounding area. This correspondence recommended, among other things, that all domestic wells within 500m of the quarry site be inspected and tested to evaluate how susceptible they are to water level variations, and that the proposed monitoring program should be expanded to include representative domestic wells. The groundwater levels and temperature monitoring at the south side of the subject lands should be expanded beyond M4, to all accessible domestic wells south of Hwy 7, as noted below.	James Dick Construction Ltd. has agreed to undertake a voluntary detailed well inventory and water quality assessment of wells within 500 m of the quarry, for residents who consent to give access to their wells for this purpose. This will be conducted to establish baseline water quality and quantity conditions. Harden Environmental has already undertaken three such studies as summarized in attached Table 9 and Figure 10. Since 1995, Harden has surveyed forty local residents and has on at least one occasion, visited every residence within 500 metres of the quarry. James Dick Construction Ltd. has agreed to upgrade wells, those in pits or buried, to facilitate water level monitoring of up-gradient wells, if agreed to by the home owner. Based on previous surveys, this will include wells W5, W8 and possibly W7. Down-gradient wells and those distant from the quarry are not expected to experience any significant water level change or will likely see a small increase in water level. Water quality samples can be obtained from the existing plumbing system. Residents at locations W25 to W30 and W36 to W40 (W38,39 and 40 located in Halton Region) will be asked if they are willing to participate in the voluntary baseline monitoring program. These wells are beyond the 500 metre distance and unlikely to be impacted by the quarry. However, a one-time baseline survey will be conducted. There will be a minimum period of two years after the quarry is given approval before below-water-table extraction can commence. This provides ample opportunity to obtain seasonal water quality data as recommended by Burnside and Associates.	Attach June 10, 2014 Letter and Figures. Attach modified Figure 6.1 Well Survey Locations Figure.	JDCL
4	Region Halton	28-Jul-14	**Domestic Wells:** • Little is known of the current status of private wells in Halton Region south of Hwy 7 as the last well survey was conducted in mid-1990s. Both a survey and well assessment should be carried on all wells in Halton Region potentially under the influence of the flow from the quarry site. At a minimum, all properties that lie within the 500m zone should be subject to a well survey, including wells at these properties that might be located somewhat outside of the 500m zone.	Agreed. Please see Response #3 above. Also please find attached a figure entitled "Down Gradient Wells" that illustrates the four wells in Halton Region that are down gradient from the quarry. All of these wells have been included in the Voluntary Well Survey. Please also know that with the reduction in quarry depth, there remains considerable rock left in situ beneath the quarry to allow for groundwater to continue to underflow the Quarry in undisturbed fracture sets. This allows the opportunity to retrofit downgradient wells to access this lower area of the dolostone aquifer. In the Harden June 10, 2014 correspondence to Burnside, James Dick Construction Limited agreed to the following pro active approach, subject to the request of the landowner. Pro-active modifications or retrofitting of these down gradient wells such that they are only taking water from the deeper fracture sets will be undertaken at the request of the landowner. Out of an abundance of caution we have also recommended that at-source domestic UV treatment systems be installed at the downgradient wells. UV systems should be in place in this fractured bedrock environment area in any event even without a quarry. All modifications will be done at no cost to the landowners. With these measures in place it is Harden's opinion that there will remain access to abundant high quality domestic water supplies at all receptors.	Attach June 10, 2014 Letter and Figures. Also attach Figure 4 Dec 2013 "Down Gradient Wells".	JDCL
5	Region Halton	28-Jul-14	• Burnside stated that the monitoring program should reference the pre-extraction well survey that would include water quality/quantity testing and indicate which wells will be potentially involved in the monitoring program. Should access be limited to private wells within the Region for the purpose of long-term monitoring and testing, then additional (multi-level) monitoring installations should be established along the southerly boundary of the subject lands for monitoring and "early warning" purposes (i .e. west and east of the existing monitoring well M4).	James Dick Construction Ltd. agrees to install additional groundwater monitoring locations along the southern property line (i.e. approximately mid-way between M7 and SW3 and west of M4) prior to extraction in this area. The installations will be multi-level to adequately represent groundwater levels and quality throughout the bedrock profile. JDCL has also agreed to incorporate the Voluntary Well Survey for properties within 500m of the quarry.	Amend Figures to include two additional multi level monitors as indicated.	Harden
6	Region Halton	28-Jul-14	**Well Complaint Protocol:** • JDCL proposed to involve Water Well Drilling Company and have Harden on stand-by to address any water quantity or quality issues that arise. We assume that the "well complaint protocol" would encompass Halton residences downgradient of the site. Confirmation of this understanding is required from both JDCL and Burnside.	James Dick Construction Limited confirms that the "well complaint protocol" would encompass Halton residents.	None required.	

7	Region Halton	28-Jul-14	Water Quality: Burnside expressed concerns that quarrying activities could impact current concentrations of nitrate, iron and also introduce surface water pathogens into the nearby groundwater system. We agree with Burnside's comments and recommendations on the protection, monitoring and mitigation of water quality, and recommends further improvements as summarized below: • Burnside suggested the establishment and sampling of on-site multi-level MI5 to determine nitrate concentrations with depth and that any nitrate contributed by the blasting should be quantified and included in the mass balance. We recommend installing an additional multi-level monitor at the southern site boundary and incorporating monitoring data (water level and quality) in the mass balance nitrate calculations to better understand nitrate concentrations leaving the site (pre- and during extraction).	Please see attached response to Burnside dated June 10, 2014 that provides a detailed response to this issue. Specifically please see sections 2,3 and 4.	Attach June 10, 2014 Letter and Figures.	JDCL
8	Region Halton	28-Jul-14	• Burnside noted that Harden should provide commentary as to the impact of water fowl on surface water in the quarry and how this may impact downgradient wells. We agree that additional information on the matter is required.	Please see attached response to Burnside dated June 10, 2014 that provides a detailed response to this issue. Specifically please see sections 2,3 and 4. The use of the East and West Pond by waterfowl will be limited by characteristics of the pond such as deep water, rocky shoreline and dense shoreline vegetation as discussed by GWS Ecological and Forestry Services. Waterfowl were observed in the Guelph Limestone Pond at the time of the water quality sampling for E. Coli, cryptosporidium an giardia. None of these bacteria were detected in the water. It is GWS's and Harden's conclusion that the natural introduction of nutrients and bacteria by waterfowl and wild mammals will not occur on a significant level.	Attach June 10, 2014 Letter and Figures.	JDCL
9	Region Halton	28-Jul-14	• Burnside noted that Harden should provide additional detail on how the existing monitoring well network would provide sufficient early warning so that the treatment system can be installed in downgradient domestic wells before unacceptable impacts to drinking water occur, and also that Harden would need to qualify if any existing wells could be deepened or whether the installation of water treatment equipment would be the preferred option. We support a pro-active approach to protection and mitigation of private wells in Halton Region.	Please see response to Comment 4 above. Please also know that with the reduction in quarry depth, there remains considerable rock left in situ beneath the quarry to allow for groundwater to continue to underflow the Quarry in undisturbed fracture sets. This allows the opportunity to retrofit downgradient wells to access this lower area of the dolostone aquifer. Harden responded in detail to this issue in Section 4.4 of their June 10, 2014 letter to R.J. Burnside and Associates. In general, there will be several years of monitoring during Phase 1 of the quarry to observe water quality changes. In addition, at the end of Phase 1 there are only two wells downgradient of the quarry (W10 and W16). The detailed pre-quarry well survey will determine the construction details of the private wells and apon which mitigation strategies can be based, if needed. In the Harden June 10, 2014 correspondence to Burnside, James Dick Construction Limited agreed to the following pro active approach, subject to the request of the landowner. Pro-active modifications or retrofitting of these down gradient wells such that they are only taking water from the deeper fracture sets will be undertaken at the request of the landowner. Out of an abundance of caution we have also recommended that at-source domestic UV treatment systems be installed at the downgradient wells. UV systems should be in place in this fractured bedrock environment area in any event even without a quarry. All modifications will be done at no cost to the landowners. With these measures in place it is Harden's opinion that there will remain access to abundant high quality domestic water supplies at all receptors.	See Attachments in Response to Comment 4.	JDCL

10	Region Halton	28-Jul-14	Review of Monitoring Adjacent to Halton Region Lands: It appears that JDCL intends to utilize two established monitoring locations at the southern boundary of the proposed Hidden Quarry and immediately north of Hwy 7: (i) M4 - a 18.6m deep bedrock monitoring well south of the Phase 3 area and (ii) SW3 -surface water flow station at the Tributary B crossing Hwy 7. It appears that drive-point(s) M7/M7R (i.e. 2.8m/3.1 m deep overburden piezometers just east of M4) are not proposed for monitoring (we assume they are mostly dry). Our comments regarding the proposed monitoring program are as follows:Groundwater monitoring program: The extraction depth of the proposed quarry is approximately 30 metres below the water table using subaqueous methods without dewatering. It is noted that fully-penetrating bedrock wells are not proposed along the southern property line adjacent to the Phase 3 lands. Therefore, the full influence on water resources south of the quarry would not be known unless adequate instrumentation is added downgradient of the Phase 3 lands. As M4 (18.6m deep) is the only observation well proposed for monitoring in this area, we recommend additional groundwater monitoring locations along the southern property line (i.e. approximately mid-way between M7 and SW3 and west of M4) prior to extraction in this area. The installations should be multi-level to adequately represent groundwater levels and quality throughout the bedrock profile and to protect private wells and properties located downgradient of the site in Halton Region. The new wells should be established sufficiently ahead of the extraction in Phase 2 and 3 in order to collect representative baseline data (both water levels and water quality). The monitoring should provide information on changing groundwater regime and serve as "early warning" for downgradient private wells in Halton Region.	In response to comments by Burnside, James Dick Construction Ltd. has agreed to limit the depth of the quarry to a minimum elevation of 327 masl (a 7m reduction from the original proposal). Please see response to Comment 5 above where JDCL agrees to install additional groundwater monitoring locations along the southern property line (i.e. approximately mid-way between M7 and SW3 and west of M4) prior to extraction in this area. The installations will be multi-level to adequately represent groundwater levels and quality throughout the bedrock profile. Please also see the response to Comment 4 above.	Amend Figures to include two additional multi level monitors as indicated.	Harden
11	Region Halton	28-Jul-14	Surface water monitoring program: Based on the GRCA's correspondence of April 15/13, Brydson Creek is classified as cold-water fish habitat south of Hwy 7. There does not appear to be any surface water monitoring proposed at the Brydson Creek south of Hwy 7. There does not appear to be any monitoring proposed in regards to the groundwater spring attributed to re-emergence of Tributary B about 400m south of the site in Halton Region (i.e. at the Brydson farm in Milton). Further Regional comments on surface water will be provided in our technical comments on the Natural Environment Technical Report (to be provided under separate cover).	James Dick Construction has agreed in correspondence (Harden response to Burnside June 10, 2014), providing that permission is given by the owner, to conduct flow and water quality testing of the spring to establish baseline conditions. The hydraulic potential at the southern edge of the quarry will increase, thereby increasing the hydraulic gradient between the quarry and the spring. If the hydraulic gradient is maintained at current or higher levels there will be no detrimental change to the Brydson Spring. SW3 is a monitoring station within 100 m downgradient of the Hidden Quarry Property. In this way SW3 is a good proxy monitoring location for Brydson Spring. In addition, the volume of water stored in the quarry will moderate seasonal groundwater level change, thereby providing a more stable source of water during drier conditions. It is likely that the infiltrating waters of Tributary B and C contribute significantly to the Brydson Spring discharge. Since flow in Tributary B and C will not be affected by the quarry operation, no change in the outflow from Brydson Spring will occur. As such, no fish habitat monitoring along the lower reaches of Brydson Creek is necessary or recommended. The Grand River Conservation Authority is aware of the Brydson Spring and has not recommended any biological or water quality/quantity monitoring of the spring. In correspondence dated April 7, 2014, R.J Burnside and Associates, the GET Peer Review consultant on the Natural Environment, also concurred that the application had satisfied all of their concerns, and no fisheries monitoring in the Brydson Creek was reccommended. MOE has also indicated in correspondence dated October 10 2013 that the proposed monitoring plan is appropriate for ascertaining and addressing potential surface water impacts from quarrying activities.	None required. Brydson Spring has already been added to the monitoring program if the landowner grants access.	

12	Region Halton	28-Jul-14	Private Well Monitoring: We note that the Harden Environmental February 5, 2014 letter indicates that a well monitoring program for water quality and an action plan to remedy any issues is proposed to protect neighbouring private wells. It is not clear to Regional Staff how this program protects or addresses private wells within the Region of Halton. Further, it is not clear to Regional Staff that all private wells in close proximity to the extraction site have been evaluated or are included in this program.	Please see attached Modified Figure 6.1 illustrating all wells located within the 500m Well Survey Zone. These wells include private wells located in the Region of Halton, specifically the Town of Milton.	Attach June 10, 2014 Letter and Figures 6.1.	JDCL
13	Region Halton	28-Jul-14	Additionally, the private well complaint protocol (Section 6.0 of the February 5, 2014 Harden letter) should be revised to include the Region of Halton and the Town of Milton as parties to be notified in the event that a water well complaint is received. Further, clarity on how the complaints will be handled should be provided.	James Dick Construction Agrees to include the Region of Halton and the Town of Milton as parties to be notified in the event that a water well complaint is received. A well complaint protocol was prepared in September 2013 and presented to R.J. Burnside. This protocol is attached.	Amend Well Complaint Protocol.	Harden
14	Region Halton	28-Jul-14	Other: • Trigger levels and contingency measures are proposed for northwest and north areas of the proposed quarry site, mainly in association with the on-site wetlands. No trigger water levels are proposed on at the south end of the extraction area. Further discussion to this point is requested.	Groundwater levels will rise at the south end of the quarry and since a) there are no water level sensitive features proximal to the south side of the quarry and b) the water level will not rise enough to cause issues in the root zone of the forest on the south side of Hwy 7; trigger levels are not necessary. Nonetheless, trigger levels set at the northern (upgradient) portion of the property are also protective of water levels at the south end of the property (the lake has a common elevation). The final water level in the quarry pond is estimated to be 348.6 m AMSL which is above the maximum high water elevation recorded at M4. These factors make trigger levels along the southern boundary, unnecessary. The trigger levels have been added on a table on Page 4 of the updated (July 14, 2014) site plans (attached) at the request of the GRCA.	Attach Updated Site Plans.	JDCL
15	Region Halton	28-Jul-14	• The apparent "benefits" of the on-site pond creation (subject to approval) on downstream wells, springs, ponds or streams, and properties should be subject to confirmation (through modeling) based on future (enhanced & multi-level) monitoring results; however, no off-site downgradient monitoring is proposed.	The water level at the south end of the property will increase with the creation of the lake and the leveling of the water table. As such basic engineering principals dictate that flow will increase to the south (Darcy's Law). No modeling is required. The groundwater model prepared for the site predicts a water level rise and the proposed detailed monitoring program will determine the actual water level rise. Additional modelling is not needed to confirm the benefits of the on-site pond, this will be achieved via the detailed groundwater and surface water monitoring program.	None.	
16	Region Halton	28-Jul-14	• The effects of blasting on private wells within Halton Region are not known and should be addressed.	No effect on the wells in Halton Region will occur due to blasting. Any impact on wells would be captured in the well complaint protocol. Explotech and the GET Peer review consultant Novus Environmental concur that blasting operations required for operations at the proposed James Dick Construction Ltd. Hidden Quarry site can be carried out safely and well within governing guidelines set by the Ministry of the Environment. In addition, quarrying will commence along the northern end of the quarry providing ample opportuntiy for monitoring water quality and observing the effects of blasting on on-site wells for several years before blasting near to Halton Region occurs. Please also see response to Comment 19 below for details of the Blast Monitoring.	None.	
17	Region Halton	28-Jul-14	Based on Site Plans; Stovel & Associates, June 6, 2014: As the site plan does not refer to any downgradient private well /private property monitoring.	The June 10, 2014 Harden response to Burnside details of the most-up-to-date monitoring program. The monitoring program has been updated (as of June 2014) to include monitoring of down gradient private well/private property monitoring as outlined in this response and the responses to other agencies and peer reviewers. This report is and will be referenced on the site plans. A summary table has been included on the site plans for onsite monitoring.	Update Monitoring Plan and reference Updated Plan on Site Plans	Harden, Stovel

18	Region Halton	28-Jul-14	• Page 2 of 5: (i) "extraction footprint" on the site plan and in the latest hydrogeology reports do not align (ii) in regards to "a main processing area will be developed in the southwestern portion of the site once a sufficient area had been cleared", this area is not identified as part of any extraction stage; does the extraction include overburden only? (iii) "spills" protocol should include immediate notification to downgradient properties utilizing domestic wells as their primary drinking water supply.	(i)The extraction footprint on the site plan has been revised and is shown on the updated site plans. Some figures in the hydrogeology report are symbolic and do not align exactly with the site plans which are the legal document that will govern extraction. (ii)The extraction in the main processing area involves removal of vegetation, topsoil and overburden as well as the extraction and processing of above water table gravel. In this way the processing plant can be located at as low an elevation possible for noise and visual mitigation purposes. (iii)James Dick Construction Limited agrees to amend the Spills Contingency Plan to include the immediate notification of downstream properties utilizing domestic wells as their primary drinking water supply. The Spills Contingency Plan will be updated following the baseline private well survey and will include the names, addresses and contact telephone numbers for the five wells downgradient that could be impacted. If a spill is reportable to the MOE, the neighbours will be notified immediately.	Amend Spills Contingency Plan to include Halton Region and the Town of Milton as well as downstream domestic well users as parties to be notified (upon completion of the Baseline Private Well Survey).	Harden
19	Region Halton	28-Jul-14	• Page 3 of 5: (i) What are the anticipated "silt pond" depth/fill elevation in relation to groundwater levels to the south? The pond is proposed almost directly to the north of a sensitive receptor (private well W 19 defined as R16 on the site plan) in Halton Region. Is M4 installed to monitor potential impact from this pond? In reference to a "blasting line' on the south side of the west extraction area, what monitoring is proposed to ensure that private wells and other structures to the south (i.e. in Halton Region) are not affected by blasting activities?	The silt pond will be located above the bedrock and will be above water table (please note that the silt pond is generally located in the blasting setback where bedrock quarrying will not be taking place- Site Plan Page 3 of 5). Water in the washing system is closed loop and all water is recycled. Private well W19 is located to the south of the silt pond. Examination of bedrock ground water pre-extraction contours in this area (Figure 3.17 Bedrock Groundwater Contours of the September 2012 Harden Report) demonstrate that groundwater flow is almost due east, not towards W19. The overburden is dry in this area. Only during the later stages of extraction, with the establishment of the lake, does this well begin to draw water directly from the quarry area (please see the figure "Downgradient Private Wells" attached). Monitor M4 is located between the quarry and well W19 and would function to ensure water quality and quantity in off site wells located in a southerly direction. Washing aggregates is a clean activity and no chemicals are added to the process. Water is used to physically sort virgin, native materials of different grain sizes. Water naturally infiltrating the site today comes into intimate contact with these particles prior to recharging the bedrock aquifer. Water quality and quantity will be assessed in private wells prior to blasting operations. A well complaint protocol has been established should a resident feel that their well has been affected by blasting or other quarry activities. Furthermore, on-site monitoring will assess water levels and groundwater quality before leaving the siteon a regular basis. All blasting events will be monitored to ensure compliance with MOE Blasting Guidelines. All blasts shall be monitored for both ground vibration and overpressure at the closest privately owned sensitive receptors adjacent the site, or closer, with a minimum of two (2) digital seismographs – one installed in front of the blast and one installed behind the blast. Monitoring shall be performed by an independent third party engineering firm with specialization in blasting and monitoring.	Attach Figure 4 "Downgradient Private Wells" and Figure 3.17 "Bedrock Groundwater Contours"	JDCL
20	Region Halton	28-Jul-14	Further to our July 5, 2013 letter, Regional Staff requested that an Adaptive Management Plan (AMP) be prepared as part of the review process for this proposed quarry. Regional Staff believe that this plan would provide for an effective tool to formalize any resolutions and commitments to monitor and mitigate water resources issues which would include Halton Region lands. It is noted that further technical comments with respect to other Regional interests on this proposed quarry will be forthcoming under separate cover.	Given the minimal potential for off site groundwater impacts in Halton Region from this site, there is no need for an Adaptive Management Plan at this site. A detailed Groundwater and Surface Water Monitoring Plan has been presented along with a Well Complaint Protocol and Spills Contingency Plan. Threshold values for water level changes and water quality changes are found within these documents including details of the required response by JDCL. These commitments made by JDCL include wells within Halton Region. Various agencies noted in response to Comment 1 have indicated that the proposed monitoring program is appropriate.	None.	

21	Region Halton	28-Jul-14	Regional Staff note that the Region 's Review fee ($18,714.19) remains outstanding. As noted in our April 2, 2013 correspondence, we kindly request that James Dick Construction Limited submits this review fee to the Region in accordance with the Region's Development Application Requirements.	Respectfully, JDCL declines to pay a review fee to Halton Region. We have recieved advice that demand for such a fee is not legal according to the Municipal Act, given that the Hidden Quarry lands are outside the municipal boundary of Halton Region. All fees have been paid to the Township of Guelph/ Eramosa in accordance with their requirements, including robust Peer Review Fees. Additional substantial fees have also been paid to the GRCA. The application is also consistant with the Wellington County Official Plan which designates this property as a Mineral Resource Area.	None.	

The following materials have been reviewed as part of the Halton comments:

22	Halton Region	28-Jul-14	Letter from MOE's Carl Slater to James Dick Construction Ltd. (JDCL), dated July 3, 2013.	This letter has been superceded by MOE correspondence dated October 10, 2013. This letter states that the surface water and groundwater outstanding items have been addressed to MOE satisfaction.	Attach October 10, 2013 Letter from MOE	JDCL
23	Halton Region	28-Jul-14	Letter-report from Harden Environmental Services Ltd. (Harden) to JDCL, dated July 15, 2013, responding to MOE's comments of July 3, 2013.	See Response 22 above. MOE has signed off on all outstanding surface water and groundwater items.	Attach October 10, 2013 Letter from MOE	JDCL
24	Halton Region	28-Jul-14	(i) Hydrogeological Summary (letter) Report for Township of Guelph Eramosa from Harden to JDCL, dated September 5, 2013; (ii) Burnside's comments dated November 12, 2013 on Harden's Hydrogeological Summary Report, and (iii) Burnside's responses dated April 8, 2014 (CI) and April9, 2014 (C2) to Harden's letter (dated January 14, 2014) responding to Burnside's comments of November 12,2013.	Latest Response to Burnside Comments April 8th and 9th comments are the June 10th, 2014 response from Harden Environmental.	Attach June 10th, 2014 response from Harden Environmental.	JDCL
25	Halton Region	28-Jul-14	(i) Letter from Grand River Conservation Authority (GRCA) to Township of Guelph/Eramosa dated November 4, 2013), and (ii) Letter from GRCA to Township of Guelph/Eramosa dated March 28, 2014; and (iii) Letter from GRCA to Township of Guelph!Eramosa dated April 23,2014	GRCA correspondence has been superceded by sign off from GRCA sent to Guelph/Eramosa dated July 29, 2014. This letter staes that GRCA has no further comments on the Hidden Quarry application and as such has no objection to the application being brought forward.	Attach July 29th, 2014 GRCA letter.	JDCL
26	Halton Region	28-Jul-14	Letter-report from Harden to JDCL, dated February 5, 2014, concerning "timeline for changes to monitoring plan"	This document will be updated, including revisions as requested by Halton that have been agreed to by James Dick Construction Limited as confirmed in this document.	Revise Monitoring Section of Hydrogeolgical Investigation Report Level 1 and 2 with reccommended changes once agency reviews are complete.	Harden
26	Halton Region	28-Jul-14	Site Plans; Stovel & Associates, June 6, 2014	These site plans have been updated at the request of GRCA. Please see Site Plans dated Aug	Attach Site Plans dated Aug 1, 2014.	JDCL

NATURAL HERITAGE SYSTEM RELATED TECHNICAL COMMENTS September 16, 2014 Response Date September 23, 2014

27	Halton Region	16-Sep-14	**Field Survey on Adjacent Lands:** Wildlife Survey records contained in Appendix C of the NE Report indicate whether species were observed on adjacent lands but do not indicate on which area of adjacent lands (i.e. north, south, east, west side?). The extent of Field Surveys and Species observations conducted on adjacent lands in Halton Region should be clarified and detailed.	From GWS: "In response to the September 16, 2014 comments made by staff of Halton Region regarding our wildlife observations on adjacent lands, we normally do not record off-site data by property ownership. Furthermore, in this case our observations were only made from Highway 7, which forms a significant obstruction to wildlife movements, except in the case of the Brydson Farm where we are managing their woodlands under the Management Forest Tax Incentive Program (MFTIP). In any event, only common species of birds and mammals were observed utilizing properties in Halton Region. All reported Species at Risk were found inhabiting lands in Wellington County."	None	

28	Halton Region	16-Sep-14	**Significant Woodlands on Adjacent Lands**: According to our mapping, candidate significant woodlands are located just south of the property, along the south side of Highway 7, within the 120m Adjacent Lands study area surrounding the proposed new extraction operation. This woodland is identified as vegetation community FODS-6 in the NE Rep011. A portion of this woodland area would likely meet criteria for designation as significant woodland in accordance with Section 277 of the 2006 Regional Official Plan (Interim Office Consolidated Official Plan). Regional Staff note that the Level II Report should have assessed the significance of this feature in accordance with Regional Significant Woodlands Criteria and demonstrated no negative impact in accordance with the Provincial Policy Statement. However, it is recognized that the potential to negatively impact this feature is low given the substantial setback from quarry operations, physical separation from the quarry site by Highway 7, and mitigation measures already proposed. Therefore no further assessment of this feature is required in regard to the present application.	Agree.	None.	
29	Halton Region	16-Sep-14	**Surface Water/Fish Habitat Monitoring:** Regional Staff recognize that JDCL has agreed in correspondence (Harden response to Burnside June 10, 2014) to conduct flow and water quality testing of the Brydson Spring to establish baseline conditions including temperature, but not to undertake ongoing monitoring of the spring. Staff note that the Brydson Spring may contribute to base flow and water temperature attenuation of sensitive ecological receptors downstream of the subject property (Blue Springs coldwater fishery, PSW) and therefore recommend that ongoing monitoring of the spring (including water flow. quality and temperature) be undertaken in addition to baseline characterization of the spring, particularly given that no direct monitoring of downstream ecological receptors is planned. Please note that Regional Staff do not concur with the statement (provided by JDCL correspondence dated August 1, 2014 in response to Halton Region Comments) that monitoring of this feature is redundant, because the source of the spring has not been satisfactorily identified. Staff recognizes that baseline characterization and ongoing monitoring are subject to landowner permission to access the spring.	Agree. Water levels at the south end of the property are expected to rise over time as the quarry is excavated. As such, no decrease in flow is expected at the Brydson Spring. Notwithstanding the above, subject to landowner permission, JDCL agrees to include quarterly monitoring of the Brydson Spring for flow, quality and temperature, in the Monitoring Program. For clarity, if the landowner does not grant permission to access the spring, it will be deleted from the monit	Include new Surface Water Monitoring point at Brydson Spring	Harden
30	Halton Region	16-Sep-14	**Haul Route Study:** Regional Comments of July 5, 2013, requested a Haul Route Study, prepared in accordance with Terms of Reference to be prepared in consultation with staff from Halton Region, Milton, and Halton Hills. Although this request remains outstanding, Regional Staff understands that the Terms of Reference for this study are currently being developed. It is recommended that the Terms of Reference require criteria for route selection to include impact minimization and avoidance for environmental features and functions in Halton Region and that any negative environmental impacts resulting from the chosen route should be identified and evaluated, be deemed unavoidable, and mitigated as appropriate.	All Highways and Arterials that Hidden Quarry will be using have the planned function of carrying trucks and truck use is currently permitted. There are no new routes proposed that do not already carry significant volumes of truck traffic. As such there will be no "change in use" that would trigger an EA type assessment.	None.	
31	Halton Region	16-Sep-14	**Blue Springs Creek Tributary and Associated Wetlands:** The proposed quarry operation has requested a reduced setback to a tributary of Blue Springs Creek traversing the subject lands. Typically, setbacks to watercourses are applied buffers for their protection from development related impacts and to ensure maintenance of their ecological functions. The Natural Heritage Reference Manual provides guidance to municipalities on appropriate buffer widths to achieve this objective. In considering this requested setback, Regional Staff understands that the GRCA and MNR have evaluated and provide comments/clearance on this reduced setback/buffer. Regional Staff encourage the proponent to maintain the greatest setback possible to this tributary in order to implement the Natural Heritage Reference Manual and the PPS to minimize impacts Blue Springs Tributary and downstream signifcant features.	MNR and GRCA havereviewed and cleared the proposed setbacks.	None.	

32	Halton Region	16-Sep-14	**Greenbelt Plan - External Connections Policies:** Regional Comments of July 5, 2013, request that various supporting materials be updated to reflect the policies of the Greenbelt Plan, 2005. On further review, staff notes that lands within Halton Region immediately to the south of Highway 7 are within the Greenbelt Plan's Protected Countryside and are designated Greenbelt Natural Heritage System (NHS). As such, Key Natural Heritage Features (KNHF) and Key Hydrologic Features (KHF) within the NHS are located on adjacent lands south of Highway 7 (i.e. the tributary and woodland area referred to above), along the south side of Highway 7. The proposed quarry, however, is outside of the Greenbelt Plan Protected Countryside; therefore the only policies in the Greenbelt Plan, 2005, that may apply would be those policies pertaining to External Connections (Sec. 3.2.5). Policies within the Greenbelt Plan related to External Connections beyond the boundaries of the Greenbelt were reviewed. The external connections to which these policies apply are illustrated on Schedules 1 and 4 of the Greenbelt Plan. As no external connections are shown in the vicinity of the subject property, External Connection policies of the Greenbelt Plan would not apply in this instance.	Agree.	None.	
33	Halton Region	16-Sep-14	**Missing Materials/Correspondence:** Regional Staff note that the following materials were not copied to the Region or provided through the Township's website. To complete regional records to this point, the following materials are requested: **i.** Figures 10 and II were missing from the Natural Environment Report (the NE Report). **ii.** Peer Review Comments prepared by Williams & Associates Forestry Consultants Ltd., dated June 13,2013. **iii.** Agency Review Comment prepared by GRCA, to GWS, dated July 15,2013. **iv.**MNR Comments to JDCL, dated July 11, 2013. **v.** MOE Comments to MNR, dated April 15,2013 **vi.** Response Letter regarding "Hidden Quarry Response to MNR Comments'' to JDCL prepared by GWS. dated May 27,2013. **vii.** Response Letter regarding "Burnside Review of Summary of Drilling and Testing of New Well M 15 at Hidden Quarry Site" to Burnside, prepared by Harden, dated January 14, 2014. **viii.** Response Letter regarding "GRCA 's Letter of July 8, 2014" , to GRCA, prepared by JDCL, dated July 10,2014. **ix.** Site Visit Notes regarding "June 7, 2014, Site Visit" prepared by JDCL, dated August 22, 2013. **x.** Materials in response to GRCA's Letter ofNovember 4, 2013, dated December 5, 2013. **xi.**Materials in response to GRCA's Letter ofNovember 4, 2013, dated January 23.2014. **xii.**Drawings submitted to GRCA on March 19, 2014.	Township of Guelph/Eramosa is providing additional documents, JDCL will assist if required.	Done	K. Lang GET JDCL

Regon of Halton **General Comments July 5, 2013** Response Date September 23, 2014

34	Halton Region	05-Jul-13	**Haul Route Study** (terms of reference to be established based upon consultation with Regional Transportation Staff, the Town of Milton, and the Town of Halton Hills).	In general we believe that a haul route study is inappropriate given the fact that the Hidden Quarry is on a Provincial Highway with an established history of carrying inter-regional truck traffic. MTO has been circulated and has no objection to re-zoning the property to permit the establishment of a mineral aggregate operation. Notwithstanding the above, we will undertake to outline routes to various markets with a view to minimizing traffic through the central areas of Acton and Georgetown.	Identify existing truck routes to be used by Hidden Quarry traffic.	JDCL

35	Halton Region	05-Jul-13	Revisions to the Level I and II Hydrogeological Investigation dated September 2012, and completed by Harden Environmental Services Ltd. to include: o Detailed Baseline Well Survey for the lands within 1,000 m of the proposed quarry within Halton Region; o Details on the proposed Well Monitoring and Mitigation Program, and more detailed contingencies as they relate to private wells within Halton; and o Detailed 'Well Complaint Protocol'.	See response to Comments 3 , 4 and 13 above.	None	
36	Halton Region	05-Jul-13	The requested updates shall a1so include a consolidated version of the Hydrogeological Investigation which reflects and details all agency comments received to date.	Once all comments have been finalized a consolidated version will be available.	Consolidate all changes made in response to various agencies and reviewers into final report.	Harden
37	Halton Region	05-Jul-13	An Adaptive Environmental Management Plan.	See response to Comment 20 above.	None.	
38	Halton Region	05-Jul-13	Given the potential of groundwater impact downstream in Milton/Hatton Region, it is the expectation of the Region that a zone of influence for the proposed quarry be established based on a sound scientific and policy analysis. Once this basis is established to the satisfaction of the affected municipal partners, the Natural Environment Technical Report and any necessary field work will need to be revised or commissioned to assess the potential for impact.	The Hydrogeological Studiy and the natural Environment Study have been prepared based on sound scientific principles. GRCA, MNR, MOE are satisfied with the information provided.	None	
39	Halton Region	05-Jul-13	As is permitted by the policies of the Greenbelt Plan, 2005, the Natural Environment Technical Report, Hydrogeological Investigation, and the Planning Justification Report must be updated to reflect the policies and requirements ofthe Plan, and the potential impact of the proposed quarry development on the adjacent Key Natural Heritage System and Key Hydrologic Features located to the south of these lands (i.e. in Halton Region).	Please see Comment 32 above.	None.	
40	Halton Region	05-Jul-13	Updated copy of the Operations Plan reflecting all agency comments received to date.	Site Plans are updated from time to time and the updated version is available on the Township of Guelph/Eramosa website. A final version will be prepared once all comments have been considered.	Prepare final version of site plans once all comments received.	Stovel

AQUATIC HABITAT AND FISH SURVEY OF BRYDSON CREEK

Report prepared for:

Concerned Residents Coalition
P.O. Box 121
Rockwood, ON
N0B 2K0

Report prepared by:

K. Schiefer, Ph.D.,
Aquatic Ecologist

THIS SURVEY WAS MADE POSSIBLE THROUGH FUNDING PROVIDED BY THE BRYDSON FAMILY

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January 2015

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1.0 INTRODUCTION

On November 5, 2014, a visual and capture and release aquatic fish habitat survey was performed by Dr. K. Schiefer on the Brydson Creek in Rockwood Ontario. The Brydson Creek is a headwater tributary to Blue Springs Creek which is a tributary to the Eramosa River at Eden Mills, Ontario. The Eramosa River is a tributary to the Grand River, one of the largest watersheds in Southern Ontario. The general purpose of the survey was to evaluate the character and condition of stream habitats in this headwater tributary system, including an assessment of fish species which may be utilizing these habitats.

The study was commissioned by the Concerned Residents Coalition of Rockwood Ontario to determine if a viable population of Brook trout existed and reproduced in the Brydson Creek that may be negatively impacted by the proposed operation of a below the water table aggregate extraction operation by James Dick Construction Limited called the Hidden Quarry**.** The proposed site is located immediately upstream of of the Brydson Creek. . Of particular concern are any potential effects on the quantity or quality of water, including surface and groundwater, being discharged to Brydson Creek and the effects such changes could have on the aquatic ecosystem found here.

2.0 Brydson Creek

Brydson Creek is a small headwater tributary of the Blue Springs Creek, which is a tributary to the Eramosa River east of Guelph, Ontario. The Eramosa River and the Blue Spring Creek, have long been considered to contain some of the highest quality cold-water fish habitat within the Grand River Watershed. The location and general watershed area of Brydson Creek are shown on **Figure 1**. **Figure 1** also shows the location of the proposed Hidden Quarry in the middle reaches of the Brydson Creek watershed.

Figure 2 shows some of the important topographic and hydrologic features of Brydson Creek above and within the study area. Of particular significance is the large area of ponds and wetlands which comprise the headwaters of Brydson Creek. This large recharge area is likely a primary source of the groundwater springs which discharge on the Brydson property in the vicinity of the Brydson pond. This is discussed further in Section 2.1. As can be seen, the proposed Hidden Quarry site is located in the middle reaches of Brydson Creek and could intercept both surface and groundwater destined for the lower reaches of Brydson Creek on the Brydson property.

Figure 3 shows the section of Brydson Creek that was surveyed. during a 4 hour walk of the property The stream is referred to as Brydson Creek since the primary spring sources which form the permanently flowing section of the stream originate on the Brydson property, shown in the centre of **Figure 3** at the permanent pond. **Figure 3** also shows that the pond and its spring sources are only 300 m downstream of the Hidden Quarry site. The contour lines in Figure 3 illustrate the considerable elevation change between the Quarry site and the Spring sources downstream of it.

Figure 4 is an aerial photograph of the Brydson property and the stream flowing through it. The portion of Brydson Creek included in this survey only extended approximately 600 m downstream (south) from the Brydson pond.

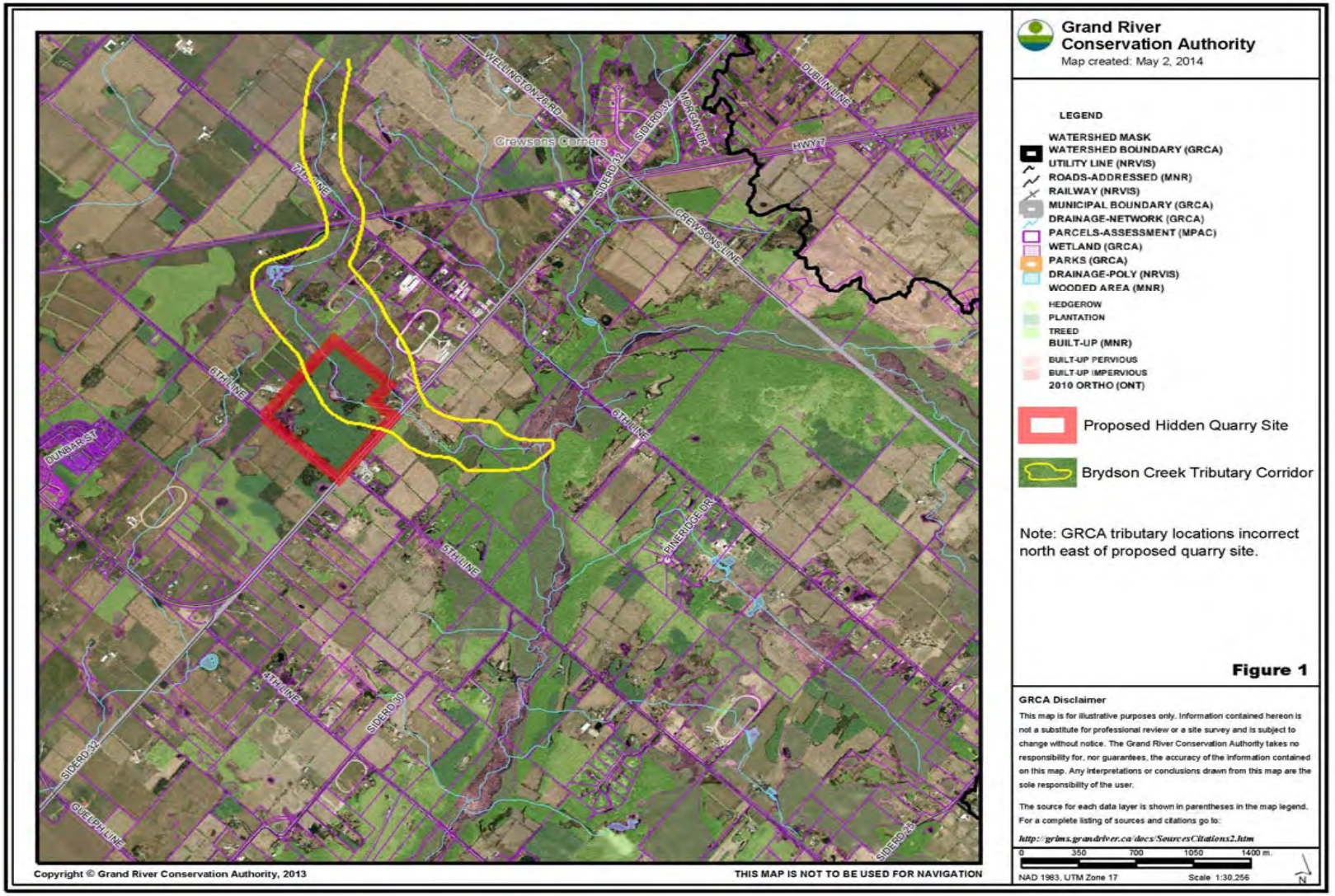

Figure 1: Brydson Creek Watershed

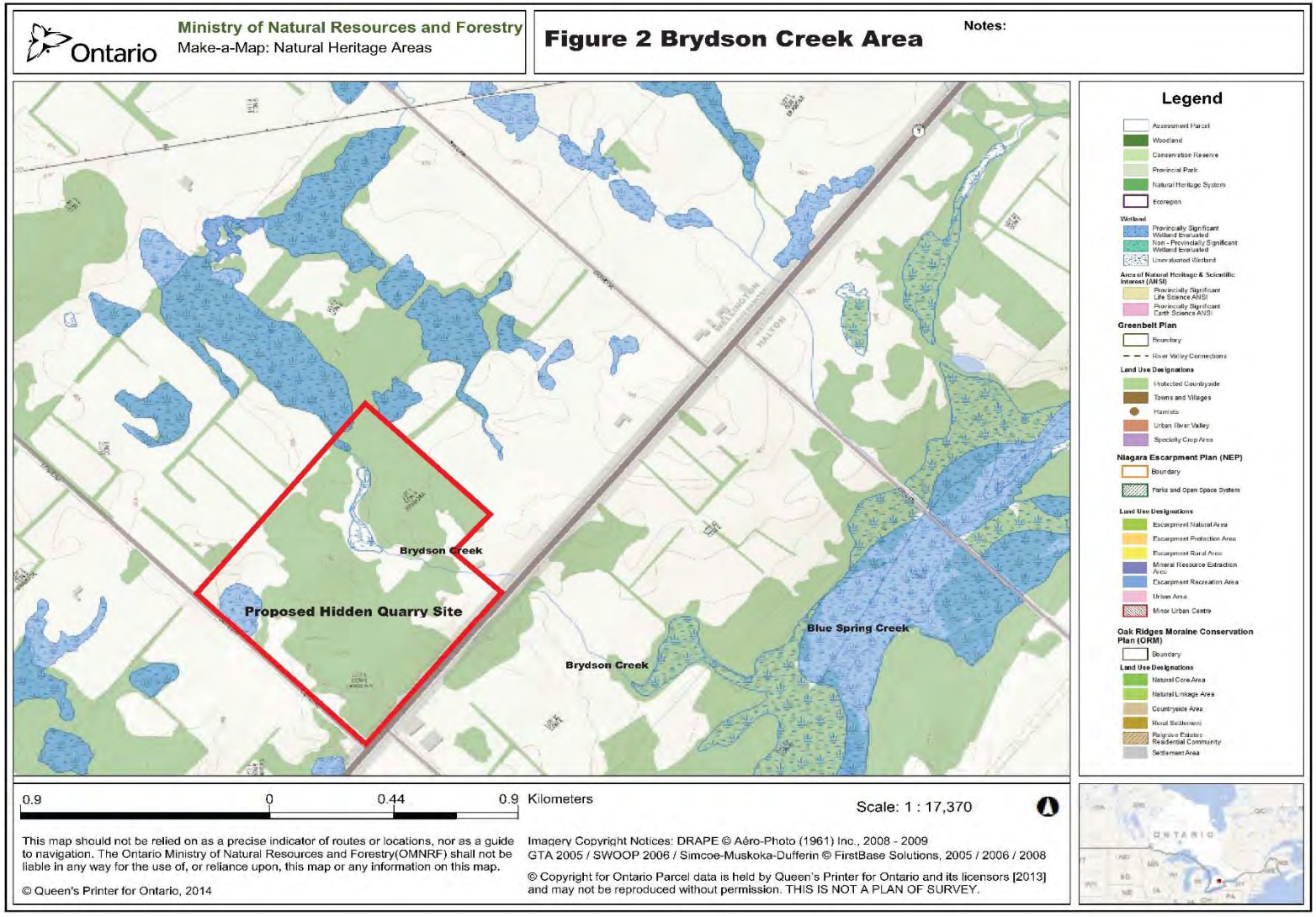

Figure 2: Brydson Creek Area

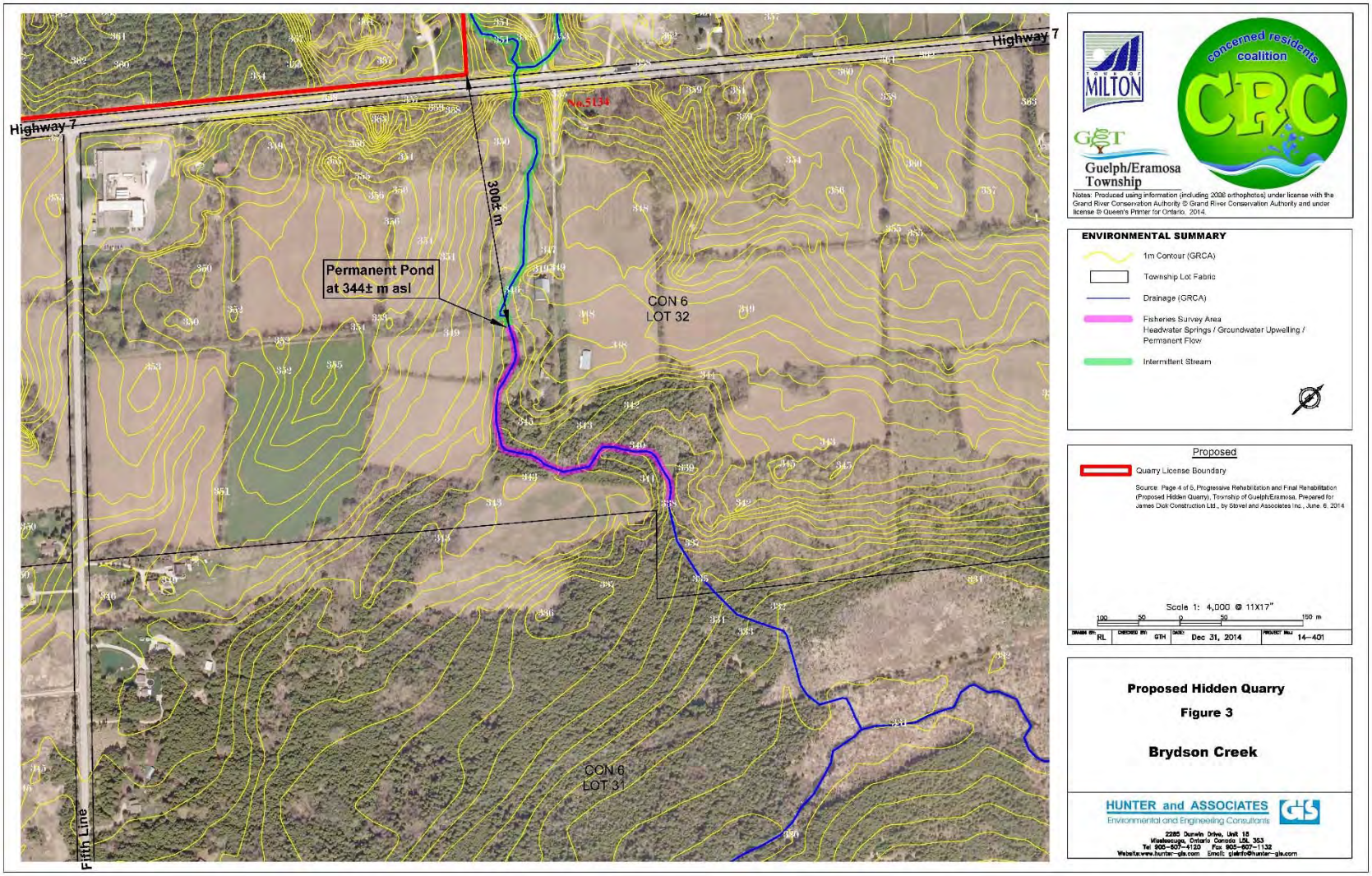

Figure 3: Aquatic Survey Area of Brydson Creek

Figure 4: Aerial photograph of Brydson property

2.1 BASIC HYDROLOGY

On the date of the site visit, the stream channel south of Highway 7 to the pond near the barn had no surface flow. This is seen in the center of **Figure 4** and indicated as an intermittent stream on **Figure 3**. **Photo 1** provides a ground level view of this dry channel from the pond north to Highway 7 seen in the background. However, historically this channel is not dry during other months of the year (Harden Environmental Hydrogeological report).

Photo 2 shows the Brydson pond from the south facing north to Highway 7 in the background. This pond and the area immediately south of it are the site of numerous major springs which join to form the permanently flowing section of Brydson Creek. From this point on, Brydson Creek flows through a continuously forested area, dominated by mature white cedar stands. This is shown in the centre and lower portions of **Figure 4** and the designated survey area shown in **Figure 3**.

Photo 3 is taken approximately 50 m downstream of the pond and illustrates the quantity of water being discharged by the springs in this vicinity. The small log structure in the background of this photograph is near the south end of the pond and appears to be a former milk storage shed which is sited on a major spring source. The large and constant supply of cold, clean spring water provided natural refrigeration for raw milk once produced on this farm.

It is very impressive that within a 100 to 150 m length of stream, Brydson Creek transforms from no surface flow to a high quality cold-water stream, as seen in **Photo 3**. As discussed in Section 2.0, these high volume spring discharges are likely a result of the large wetland recharge areas in the headwaters of this watershed. On the date of this survey, stream flow was estimated at 25 to 30 l/sec.

2.2 STREAM HABITATS

Photo 3 illustrates the typical stream channel morphology of Brydson Creek as it flows through this mature white cedar forest. The stream here has a moderate gradient which results in a riffle and pool habitat mix through most of this section. The average stream channel width is 3 to 5 m with the water depth varying from 20 to 50 cm. Water depths are somewhat greater in the two small ponds created by small concrete weirs in this section of stream. The stream substrate varies from silt and sand in depositional pools to gravel and cobble rocks in the abundant riffle habitats. There is also a large component of woody debris in the stream which adds to the high aquatic habitat diversity found here. Also shown in **Photos 2** and **3** are the moss and algae covered rocks and significant in-stream aquatic vegetation found in some areas.

Photos 4 and **5** show two old concrete weirs on Brydson Creek a short distance downstream from the main pond. The third weir was barely detectable as it had been destroyed by fallen tress (photo not shown). These create some pool habitats above them

but have accumulated considerable silt and large wood debris over the years. The weirs appear to have been non-operational for decades.

Photo 6 is a typical reach of rocky riffles found below the two weirs.

In summary, Brydson Creek provides a very diverse, stable and high quality cold-water stream habitat flowing through a mature white cedar riparian forest.

2.3 INVERTEBRATE COMMUNITY

The invertebrate animal community occupying Brydson Creek was also assessed visually during this survey. These invertebrates, or benthos as they are often called, consist largely of the larval stages of aquatic insects, but also include clams and other molluscs. There are two very good reasons for looking at the invertebrate fauna within a stream. The first is because they comprise the primary food chain for larger organisms inhabiting the stream, especially fish. The second is because they are recognised as the best biological indicators of water quality in a stream.

Brydson Creek was found to have a very diverse and relatively abundant invertebrate fauna. Larval stoneflies (Order Plecoptera), mayflies (Order Ephemeroptera) and caddisflies (Order Trichoptera) were found in rocky riffles where they provide an excellent food base for brook trout and other stream fishes. These organisms are also indicative of very high water quality in Brydson Creek, as would be expected given its nearby spring sources.

2.4 FISH COMMUNITY

The fish community in Brydson Creek was assessed visually and with the assistance of a small dip net. The dip net was used to briefly capture resident fish for identification, after which they were rapidly released and unharmed.

Brook trout (Salvelinus fontinalis) of all age classes were observed throughout this section of Brydson Creek. Brook trout require clear waters of high purity and a narrow pH range and are sensitive to poor oxygenation, pollution, high turbidity, high water temperatures, and changes in pH caused by environmental effects. No other fish species were observed or collected within a 3 hour period. As this was purely opportunistic sampling with a small dip net, other species may be present but not in abundance.

Brydson Creek provides excellent habitat diversity and quality for brook trout. As a result, brook trout populations here are relatively abundant and appear to be in good condition. **Photos 7** and **8** show two of the numerous brook trout spawning redds observed in Brydson Creek, all of which were actively being utilized by spawning trout on this early November survey date. The female constructs a depression in a location in the stream bed, referred to as a "redd". They consist of clean gravel substrate washed by clear, cold stream water. Groundwater upwellings are also an important component of these spawning habitats in Brydson Creek.

Within the 600 m of Brydson Creek included in this survey, at least 6 brook trout spawning redds were observed. The actual number was likely higher as this was not an intensive survey intending to quantify spawning activity. Even at an average of 1 brook trout redd per 100 m of stream, this is a much higher frequency of trout spawning activity than has been observed in fisheries surveys carried out on downstream Blue Springs Creek or the Eramosa River over the past 24 years. This is discussed further in Section 3.1.

Because Brydson Creek provides high quality habitat for all of the life stages of brook trout, the population of brook trout appears to be near the carrying capacity for this habitat, with all age classes relatively abundant. **Photo 9** shows two brook trout fry (close to one year old) which appear to be in excellent physical condition. **Photo 10** shows a mature adult brook trout in full spawning colour. This fish also appears to be in excellent physical condition.

Compared to brook trout populations examined in nearby Blue Springs Creek and the Eramosa River, this species appears to be much more abundant in Brydson Creek, especially on a per unit of habitat area or unit of stream flow basis. This is discussed further in Section 3.1.

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7

Photo 8

Photo 9

Photo 10

3.0 GRAND RIVER WATERSHED PERSPECTIVE

In much of the Grand River watershed, native brook trout populations have been relegated to smaller headwater tributaries where habitat conditions remain suitable. Clearing of forests, agricultural land uses, urbanization, construction of dams, and other anthropogenic activities have degraded cold water habitat conditions and greatly reduced brook populations in this watershed. The Eramosa River and some of tributaries, such as Blue Springs Creek and Brydson Creek, are exceptional in retaining high quality trout habitat and self-sustaining brook trout populations. They represent a valued heritage resource and should be afforded the protection necessary to sustain them.

3.1 Eramosa River and Blue Springs Creek

As noted earlier, Brydson Creek is a headwater tributary to Blue Springs Creek which is a tributary to the Eramosa River at Eden Mills, Ontario. The Eramosa River is a tributary to the Grand River, one of the largest watersheds in Southern Ontario.

The Eramosa River and several of its tributaries, including Blue Spring Creek, have long been considered to contain some of the highest quality cold-water fish habitat within the Grand River Watershed. These habitats support populations of native brook trout and non-native brown trout (Salmo trutta), both of which represent highly valued fishery resources.

Because of the importance and concern for these habitats and their trout population, a number of habitat and fisheries studies have been carried out on the Eramosa River and Blue Springs Creek over the past 50 years. The results of these studies have been summarized in a 2003 report by Gartner Lee titled “Arkell Spring Grounds Groundwater Supply Investigation-Appendices”. The following highlights some of the important results of these studies. It also provides some regional perspective for the fisheries information reported for Brydson Creek.

> Fisheries studies on Blue Springs Creek and adjacent sections of Eramosa River have been carried out in 1952, 1972, 1979 and 1995. Additionally, trout spawning surveys have been carried out in 1988, 1995 and 2002.
>
> In the period from 1952 to 1995, no brook trout were found in a 5,000 m section of the Eramosa River near the confluence with Blue Springs Creek, In Blue Springs Creek, brook trout were recorded in each of the surveys in 1952, 1972 and 1995.
>
> Spawning surveys also found no brook trout redds in this section of the Eramosa River. In Blue Springs Creek, 17 brook trout redds were recorded in a 1999 spawning survey. This intensive survey involved walking a 5,000 m length of the Eramosa River and approximately 6,000 m of Blue Springs Creek during the month of November in 1999 to record all brook trout spawning redds seen in the river. A second pass of spawning surveys was conducted in areas where spawning was identified in the first pass.

> For Blue Springs Creek, 17 brook trout redds observed over an approximate 6,000 m length of river yields an average density of 1 brook trout redd per 350 m of stream length. This is a relatively low number, generally indicating a correspondingly low abundance of mature adult brook trout. By comparison, a much less intensive survey of Brydson Creek in November of 2014 yielded an average density of 1 brook trout redd per 100 m of stream length, even though the total habitat area in Brydson Creek is much smaller than Blue Springs Creek.

An examination of this fisheries information would tend to imply that Brydson Creek supports a greater density of brook trout than Blue Springs Creek and that higher levels of trout reproduction occur here. The comparison would be even more dramatic if it were done on a per unit of habitat area or per unit of stream flow to take into account the much smaller size of Brydson Creek. Clearly, Brydson Creek supports a locally important population of brook trout within the Blue Springs Creek and Eramosa River watershed.

In the Grand River Fisheries Management Plan prepared by the Grand River Conservation Authority, Blue Springs Creek is identified as an important brook trout stream. It also recognises that there is inadequate information on fish communities and associated habitat in Blue Springs Creek and suggests that these coldwater tributaries should be managed to protect the ‘wild, native genetic stocks’ of brook trout which continue to exist here. Protecting the brook trout stocks in Brydson Creek should obviously be an important component of this management strategy and plan.

4.0 SUMMARY

Brydson Creek provides an exceptionally high quality, cold-water stream habitat for a natural and self-sustaining brook trout population. Stable, spring-sourced flows of very high quality ground-water are the major factor in sustaining this trout population. The preservation of a mature white cedar riparian forest and natural stream channel are also important factors in protecting this population. Areas with groundwater upwelling add to the high quality of trout spawning habitat in this stream.

Based on a review of fisheries studies carried out on nearby Blue Springs Creek and the Eramosa River over the past five decades, the brook trout population in Brydson Creek appears to be exceptional and very significant within this watershed.

It is also worth noting that some of these trout populations in smaller headwater tributaries, such as Brydson Creek, may have been isolated for a sufficient period of time that they have unique genetic characteristics. Certainly, this population appears to have adapted very well to thrive in the habitats provided by Brydson Creek.

5.0 CONCERNS

The future well-being of this stream ecosystem and its self-sustaining population of native brook trout is strongly linked to maintaining the quantities and quality of ground-water discharge which form Brydson Creek. **Figure 2** illustrates a considerable area of watershed northwest of highway 7 which contains numerous ponds and wetlands which serve as reservoirs and recharge areas for the lower watershed. These areas were also visited on November 5th. This area has a very high water table with large areas of ponded water and wetlands. There was also ample evidence of water flowing out of these ponds down-gradient toward Highway 7 and lower Brydson Creek. These discharges appear to go subterranean at some point and continue as groundwater, only to emerge again as the major spring sources on the Brydson property, as described and illustrated above.

The location of the proposed Hidden Quarry (**Figures 1 and 2**) and the fact that it will involve bedrock blasting and excavation well below the water table, raises serious concerns related to future hydrogeological conditions in this downstream area. There is clearly a need for very detailed and reliable sampling, measurement, modelling and assessment of these hydrogeological features as a precondition for providing adequate protection to these downstream aquatic ecosystems and brook trout populations.

Operation of Hidden Quarry would appear to have the potential to negatively effect both groundwater and seasonal surface runoff to Brydson Creek, which is adjacent to and immediately downstream of the quarry site.

In this area of Ontario, potential sites to quarry limestone bedrock are numerous. Healthy and self-sustaining populations of native brook trout are not.

6.0 REFERENCES

Gartner Lee, Limited 2003. Final Report. Arkell Spring Grounds Groundwater Supply Investigation – Appendix C. Fisheries Assessment. A report prepared for the City of Guelph.

The Grand River Conservation Authority 2005. A Community-Based Approach to Fisheries Management in the Grand River Watershed.

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BURNSIDE
[THE DIFFERENCE IS OUR PEOPLE]

March 4, 2015

Via: Email

Ms. Kim Wingrove
Chief Administrative Officer
The Township of Guelph-Eramosa
8348 Wellington Road 124,
Rockwood, ON N0B 2K0

Dear Ms. Wingrove:

**Re: James Dick Construction Limited Proposed Hidden Quarry,
Ecological Comments Response and Additional Studies Review
Project No.: 300032475.0000**

Introduction

This letter has been compiled to summarize R.J. Burnside & Associates' (Burnside) additional technical Peer Review of the James Dick Construction application for licensing under the Aggregate Resources Act (ARA) to extract below the water table at their proposed Hidden Quarry location between Acton and Rockwood. Burnside has been retained to act as the Ecology reviewer by the Township of Guelph-Eramosa. These comments are further to Burnside comments related to the Natural Environment of April 7, 2014.

The following provides peer review comments for the Response Matrix prepared by James Dick Construction Limited (JDCL) which provided comments submitted by Adam Huycke, Acting Intermediate Planner, Community Development at the Regional Municipality of Halton, dated September 23, 2014 and respective responses prepared by GWS Ecological & Forestry Services Inc. (GWS) dated September 23, 2014 on behalf of JDCL. In addition to the JDCL Response Matrix, this letter also responds to additional studies provided by the Concerned Residents Coalition (CRC), including:

- Species at Risk Evaluation, July 4, 2014 (Bill McMartin, GAIA EcoConsultants); and,
- Aquatic Habitat and Fish Survey of Brydson Creek, January 2015 (K. Schiefer, Ph.D., Aquatic Ecologist.

Regional Municipality of Halton Comments and JDCL Response Matrix

The following responses have been labelled to correspond with the numbering system applied to the matrix provided by JDCL. It should be noted that the comments provided in this letter are limited to the natural heritage ecology concerns raised in items numbered 27 to 38 of the matrix.

Comment 27: In general, Halton Region wished to have additional detail regarding the extent of Field Surveys and Species observations conducted on adjacent lands in Halton Region. GWS responded that their normal practice is to not record off-site data by property ownership and further that Highway 7 forms a significant obstruction to wildlife movement. GWS has also made a statement that only common birds and mammals were observed utilizing properties in Halton and that all reported Species at Risk were found inhabiting lands in Wellington County (north side of Highway 7). Burnside suggests that the locations of the species documented during field data collections should be mapped, especially for species that are sensitive, rare, threatened or endangered, or field data sheets should be included as an appendix. However, we do not believe the inclusion of these resources within the report would change the findings presented.

Comment 28: We agree with the conclusions presented for the Significant Woodland feature located on the lands adjacent to the site. No negative impacts are predicted provided that adequate buffers are established, mitigation measures are followed and that the existing water balance is maintained. We note that there is agreement between the Halton Region comment and the GWS response.

Comment 29: It would appear that the GWS response to the Halton Region comment is incomplete within the matrix. We note that JDCL undertakes that quarterly monitoring of the Brysdon Spring for surface water conditions, including temperature, quality and flow will be included in the monitoring program. We suggest that more frequent monitoring may be appropriate seasonally and in the early stages of development. Monthly monitoring is a more typical monitoring standard for aggregate operations.

Comment 30: Halton Region notes that a Haul Route Study has been requested and notes that the Terms of Reference should include criteria for route selection to include impact minimization and avoidance of environmental features and functions. The response notes that the Highways and Arterials that will be used by the proponent have the planned function of carrying trucks and truck use as currently permitted. As such no change in use on the haul routes is proposed. The Terms of Reference for the Haul Route Study requires an assessment of anticipated truck traffic volumes and if the truck volumes attributable to this proposal will increase that the evaluation approach for reviewing the alternative routes will include environmental criteria including disruption to sensitive land uses, impacts to residents, property impacts and disturbance to built heritage features and archaeological resources. It is suggested that matters related to the Haul Route Study will be dealt with through the review of that study.

Comment 31: As both MNRF and GRCA are satisfied with the proposed setbacks then we have no further comment.

Comment 32: Regarding the Greenbelt Planning designations related to the Site, we note that the Region has provided some explanation of the policies with specific references. The comments conclude, however, that there are no external connections in the vicinity of the subject property and hence the External Connections policies of the Greenbelt Plan would not apply for this proposal. GWS on behalf of JDCL agrees with this analysis.

Comment 33: No comments required regarding additional documents as we understand that they have been made available to Halton Region for review.

Summary of Matrix Comments Responses

In general Burnside feels based on our review that the findings of the Natural Heritage Reporting are accurate and provide appropriate recommendations for both protection (setbacks and buffers) and mitigation measures to minimize or negate any potential effects to the features and functions of the natural heritage system on and surrounding the proposed Hidden Quarry. Additional information may be helpful to the reader, as discussed above, to round out the technical reporting for this Site.

Species at Risk Evaluation

This report prepared by Mr. McMartin of GAIA EcoConsultants includes additional field data collection to determine if the Site and surrounding lands provide habitat for any Species at Risk (SAR) that may be located within the study area. The potential list of SAR is determined through a desktop review and verified through site specific surveys and ground truthing of habitat features. During this site visit a list of breeding birds and other incidental wildlife observations was compiled. Mr. McMartin then assessed the habitat conditions provided both within the Hidden Quarry site and on the adjacent lands.

Mr. McMartin did not find breeding evidence of any birds listed under the Endangered Species Act 2007 as Threatened or Endangered. He assessed that the Site has potential to provide feeding and foraging habitat for a number of these species; however, this was not confirmed during his Site visit. Snapping turtle, a species listed as Special Concern was documented on and in the immediate vicinity of the Site. This species is not regulated under the ESA 2007; however, its habitat may be considered Significant Wildlife Habitat, and should be discussed in further detail. We are not suggesting additional field data collection and mapping but rather that additional mitigation measures would minimize the potential for adverse effects. Potential impacts to this habitat may be mitigated through exclusion fencing, best management practices, worker education programs and pre-construction SAR surveys, minimizing the potential for any adverse effects. Rehabilitation and mitigation plans are required under the Aggregate Resources act and are expected to be included as notes on the application (site) plans.

According to the Site Plans date July 14, 2014, tree removal will not occur during the breeding bird season. Therefore, additional mitigation measures to ensure that the proposal is in accordance with the Migratory Birds Convention Act are not required.

Aquatic Habitat and Fish Survey of Brydson Creek

This survey and assessment included field classification of aquatic habitats and an opportunistic fish species inventory completed using dip nets in Brydson Creek. Through this assessment it was determined that this watercourse, originating on the lands located to the south west of the Hidden Quarry Site, provides coldwater habitat for brook trout. A number of different age classes of fish were captured using dip nets and redds (brook trout spawning beds) as noted during the survey. The frequency of redds and the heath and abundance of fish specimens indicates that this watercourse provides preferred habitat for brook trout.

This report also provides landscape scale assessment of the potential significance of the aquatic habitat within Brydson Creek and the existing brook trout fishery. Much of this assessment is not referenced adequately and would require additional background study support to confirm its conclusions.

In Section 5.0 Concerns of the Schiefer Report it discusses that *"...the future well-being of the stream ecosystem and brook trout population is strongly linked to maintaining the quantities and quality of groundwater discharge..."* Potential impacts to the brook trout habitat include: changes to water quality and quantity and temperature. Schiefer notes that *"...bedrock blasting and excavation well below the water table, raises serious concerns related to the future hydrogeological conditions in the downstream area...need for very detailed and reliable sampling, measurement, modelling and assessment of these hydrogeological features as a precondition..."* However, based on Burnside's detailed peer reviews of the proposed quarry application and supporting technical studies to date, including the Hydrogeology and Hydrology Study and the Level 2 Natural Environment Report, it is our opinion that the proposed quarry operations will not cause a change that is significant enough to result in adverse effects to the resident fish population.

This assessment is based on the conclusion that the water balance to the watercourse will be maintained with no predicted decrease in flow. The existing background studies did not definitively determine if water from the open water area of the quarry will be connected through groundwater to Brydson Creek beyond incidental infiltration. The outflow from the quarry will result in a localized increase to surface water temperatures in the Creek, however the extensive groundwater discharge to the Creek will quickly mitigate that temperature change. Any change in temperature will be within the preferred range for brook trout, and any additional species for which Brydson Creek may provide habitat. Water quality will not be affected by any discharge from the proposed open aquatic features in the quarry if the water quality parameters of the license are met. Therefore, it is not expected that the proposed Hidden Quarry will result in an adverse effect to the local brook trout fishery provided that best management practices and standard Erosion and Sediment Control mitigation measures are followed.

Summary

The Hidden Quarry site is located in an area that is surrounded by features that may provide habitat for a number of species; however, extraction of stone below the water table is an interim land use, which, through the application of the ARA required mitigation and rehabilitation plans, is not likely to result in a measurable impact to the natural heritage features or functions at a landscape scale.

Yours truly,

R.J. Burnside & Associates Limited

Nicholle Smith
Senior Terrestrial Ecologist
NJS/DM:sd

Don McNalty, P.Eng.
VP - Public Sector

cc: Liz Howson, MSH Planning (enc.) (Via: Email)