

NATURAL ENVIRONMENT REPORT LEVEL I & II

GALWAY RIDGE QUARRY

Township of Galway-Cavendish & Harvey
County of Peterborough

P/N 10-2404

February 22, 2012
Revised: February 21, 2013



Prepared for: Fred T. Archibald Consulting



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NATURAL ENVIRONMENT REPORT LEVEL I & II
GALWAY RIDGE QUARRY
TOWNSHIP OF GALWAY-CAVENDISH & HARVEY
COUNTY OF PETERBOROUGH

P/N 10-2404

Revised: February 21, 2013

NATURAL ENVIRONMENT REPORT LEVEL I

1.0 INTRODUCTION

Skelton, Brumwell & Associates Inc. was retained by Fred T. Archibald Consulting Inc. to prepare a Natural Environment Report (NER) related to a proposed limestone dimension stone quarry, with extraction restricted to above the water table.

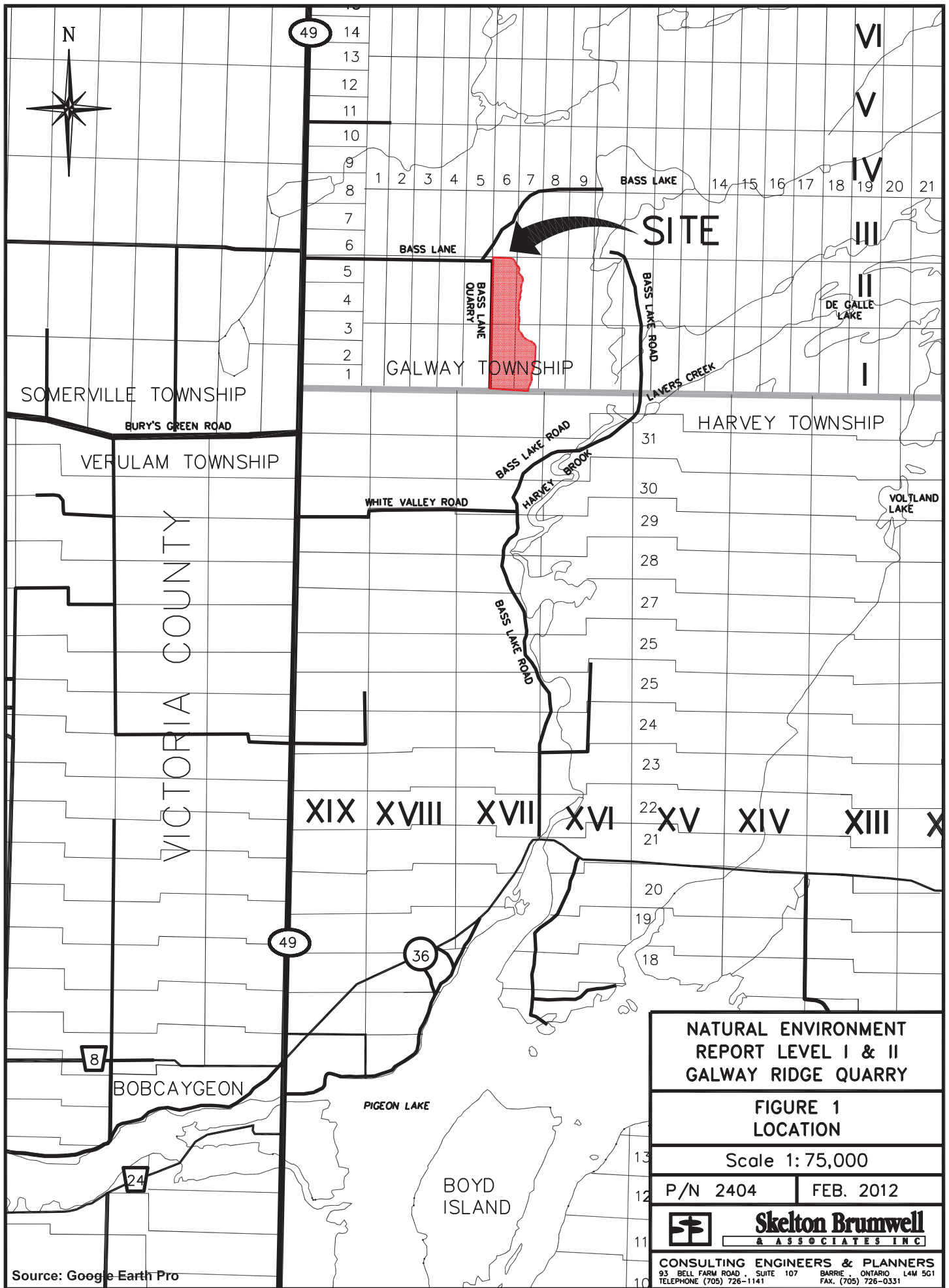
The proposed 107 hectare (ha) quarry is on Crown Lands in Lots 6 and 7, Concessions 1 and 2, in the geographic Township of Galway, now the Township of Galway-Cavendish & Harvey, as shown on Figure 1.

This NER is being submitted in support of the Aggregate Resources Act (ARA) application for a Category 11 Aggregate Permit. The purpose of the Level I & II report is to identify natural heritage features and functions within the permit area and the adjacent lands within 120 metres of the permit area to determine the potential for negative impacts from the proposed quarry expansion. The study area is shown on Figure 2.

2.0 PLANNING BACKGROUND



2.1 Aggregate Resources Act (ARA)

The Township of Galway-Cavendish & Harvey is designated under the Aggregate Resources Act (ARA). The Natural Environment Report Level I and II have been prepared in accordance with the Aggregate Resources of Ontario, Provincial Standards Version 1.0 for pit and quarry planning and related operations. Level I of the report identifies natural heritage features identified in the Provincial Policy Statement (PPS) on the subject and adjacent lands. The Level II part of this report identifies potential impacts and mitigation measures for those identified natural heritage features.





LEGEND

-  PERMIT BOUNDARY
-  120m FROM PERMIT

**NATURAL ENVIRONMENT
REPORT LEVEL I & II
GALWAY RIDGE QUARRY**

**FIGURE 2
STUDY AREA**

Scale 1:12,500

P/N 2404

FEB. 2012



**Skelton Brumwell
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Base: First Base Solutions 2002 Aerial Photography.

2.2 Provincial Policy Statement (PPS)

The Provincial Policy Statement (PPS) (Ontario Government, 2005) sets the policy foundation for regulating the development and use of land in Ontario. This report deals with Section 2.1 Natural Heritage. Within Section 2.1, development and site alteration is not permitted in:

- significant wetlands in Ecoregions 5E, 6E and 7E;
- significant habitat of endangered species and threatened species; and significant coastal wetlands.

Development and site alteration shall not be permitted in:

- significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E;
- significant woodlands south and east of the Canadian Shield;
- significant valleylands south and east of the Canadian Shield;
- significant wildlife habitat; and significant areas of natural and scientific interest

unless it can be demonstrated that there will be no negative impacts on those features or their functions.

Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.

Development and site alteration is also not permitted on adjacent lands to the natural heritage features listed above unless the ecological functions of the adjacent lands has been evaluated and it can be proven that there will be no negative impacts on the natural features or their functions.

2.3 Municipal Planning

The Township of Galway-Cavendish and Harvey Comprehensive Zoning By-law No. B2000-73 as amended zones the subject property is zoned Wilderness (WS) which is the zone that applies to all Crown Land in the Township. Rezoning is not required to permit the quarry as the Province has jurisdiction over the use of Crown Land.

3.0 METHODS

Preparation of this study involves review of background documents, field investigations, consultation with government officials and analysis.

A pre-consultation meeting was held with the Township and MNR on June 2, 2011 to provide available information relative to application, identify any concerns, and scope the requirements for field investigations.

3.1 Background Research

Background research was completed to identify natural heritage features and functions on/or adjacent to the permit area. The documents/sources listed below along with consultation with provincial agencies provided additional resources for this study:

- Ministry of Natural Resources (MNR) Natural Heritage Information Centre (NHIC);
- Township of Galway-Cavendish & Harvey Official Plan;
- County of Peterborough Official Plan; and
- ortho photography of the area.

3.2 Field Investigations

3.2.1 Vegetation

Vascular plant surveys were completed on June 14, August 4 and October 17th, 2011 within the woodlands during the spring and summer of 2011 which provided a good indication of the variation of flora across the growing season. Particular attention was paid during field investigations for rare species and Species at Risk listed in the Ontario Endangered Species Act (2007).

The significance of vascular plants sampled was assessed based on the Natural Heritage Information Centre's (NHIC) rankings for Ontario.

3.2.2 Vegetation Communities

Vegetation communities were identified using the Ecological Land Classification (ELC) for Southern Ontario, First Approximation (Lee et al., 1998). Polygons were delineated using aerial photography, field sampled and classified into the most appropriate vegetation type. The polygons were identified based on vegetative cover, soils and landscape features.

The significance of the vegetation communities was assessed based on the Natural Heritage Information Centre's (NHIC) rankings where applicable.

3.2.3 Fauna

3.2.3.1 Breeding Birds

Two breeding bird surveys were completed on June 14th and July 4th, 2011 using protocols in the Forest Bird Monitoring Program (Environment Canada 2004), which were adapted for use in this small site. All birds observed on site, suitable for that habitat, were assumed to be breeding on the property.

A dedicated survey was completed for the Whip-poor-will (*Caprimulgus vociferus*) on June 14, 2011 using protocols by Bird Studies Canada (May 2011).

3.2.3.2 Other Wildlife

Incidental observations were also made for mammals and herptiles (amphibians and reptiles) during field investigations through observations of physical evidence (scats, tracks) and for shelter, feeding and breeding sites (e.g. vernal pools, beneath logs, rocks, etc.).

3.2.4 Aquatic Features

No watercourses were identified during background research. During field investigations, observations were made for un-mapped watercourses, wetlands, groundwater discharge areas, and areas of vernal pooling.

4.0 EXISTING CONDITIONS

4.1 Background Documentation

A search of the MNR NHIC database was performed for all intersecting occurrence squares (1-km²) (17PK94_48, 17PK94_47, 17PK94_46, 17PK94_56).

The search revealed occurrences of "restricted records", which are not divulged by the MNR for protection of that species.

The MNR during the pre-consultation meeting identified potential species listed under the Endangered Species Act (2007) which may be found on the site, adjacent lands or along haul roads based on habitat and records in the area, including the eastern hog-nosed snake and Blanding's turtle. Specific surveys were completed as required.

The MNR also provided Natural Heritage Environmental Screening mapping for the subject lands. The MNR mapping does not illustrate any known natural heritage features (i.e. Watercourses, wetlands, ANSI's, Deer or Moose Wintering Area, Woodland Raptor Nests, etc.) within the permit area.

4.2 Vegetation

4.2.1 Vegetation Communities

Vegetation communities were identified using ELC to the Vegetation Type shown on Figure 3 and the Photo Page. Detailed descriptions of communities are provided below.

FOM2-1: Dry-Fresh White Pine- Oak Mixed Forest Type

Woodlands investigated tended to be largely a mix of semi-mature to mature white pine (*Pinus strobus*), eastern white cedar (*Thuja occidentalis*), red oak (*Quercus rubra*), hard maple (*Acer saccharum*) and poplar (*Populus sp.*). Associates include ironwood (*Ostrya virginiana*), eastern hemlock (*Tsuga canadensis*) and white birch (*Betula papyrifera*). Shrub layer included eastern hemlock, eastern white cedar, and round-leaved dogwood (*Cornus rugosa*). Groundcover includes Canada mayflower (*Maianthemum canadense*), goldthread (*Coptis trifolia*), wild sarsaparilla (*Aralia nudicaulis*) and partridgeberry (*Mitchella repens*).

This community occupies the majority of the proposed quarry and includes small inclusions of hemlock-hardwood mixed forest (FOM3-1).

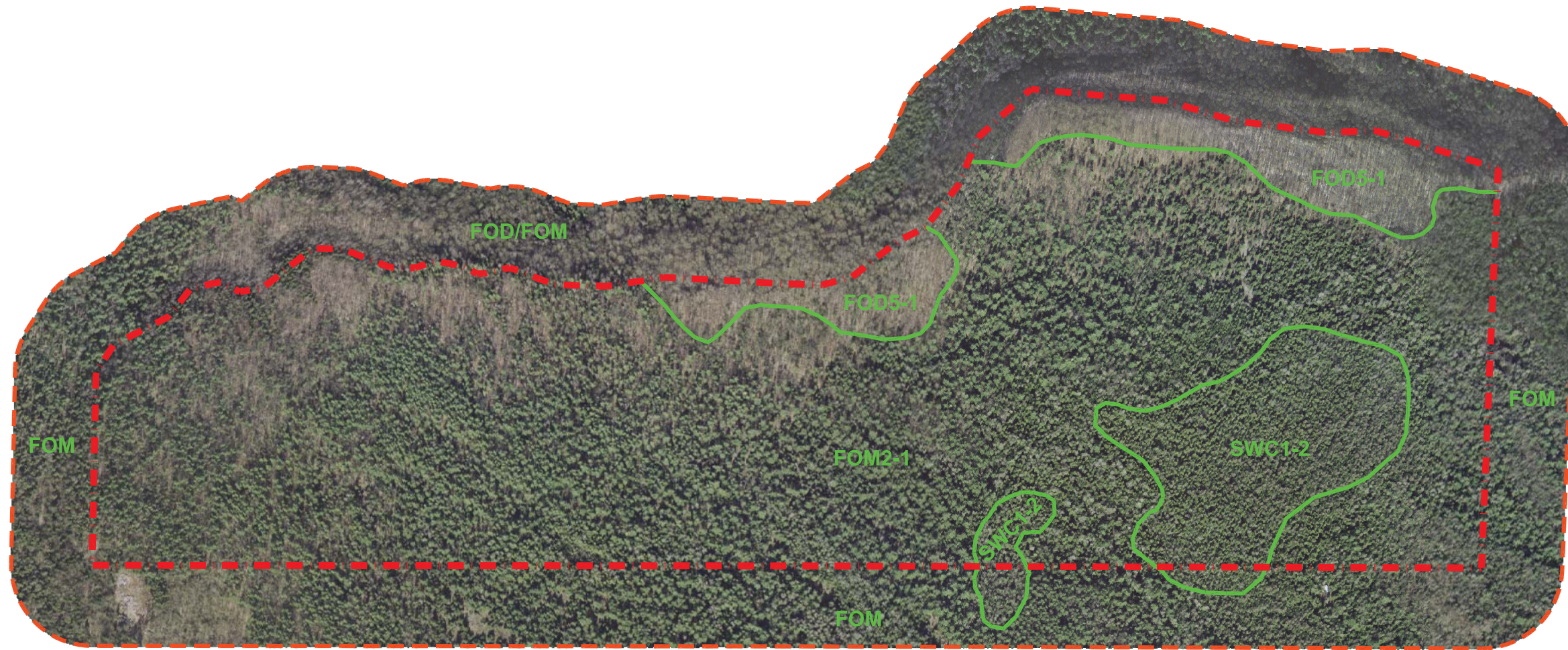
These types of communities are common in Ontario and this region and no significant features were identified.

SWC1-2: White Cedar- Conifer Mineral Coniferous Swamp Type

Swamp woodlands investigated tended to be largely semi-mature to mature eastern white cedar with associates of poplar, eastern hemlock and white birch. Shrub layer included eastern hemlock, eastern white cedar, and white elm (*Ulmus americana*). Groundcover included sensitive fern (*Onoclea sensibilis*), goldthread, bladder sedge (*Carex intumescens*) and bunchberry (*Cornus canadensis*). In many areas within this community, canopy cover was closed and leaf litter dominated.

This wetland community is a low area which is isolated and has no apparent discharge off site.

These types of communities are common in Ontario and this region and no significant features were identified.



LEGEND

- - - - PERMIT BOUNDARY
- - - - 120m FROM PERMIT
- ELC BOUNDARY
- FOM2-1 DRY-FRESH WHITE PINE-OAK MIXED FOREST TYPE
- FOD5-1 DRY-FRESH SUGAR MAPLE DECIDUOUS FOREST TYPE
- FOM MIXED FOREST
- FOD DECIDUOUS FOREST
- SWC1-2 WHITE CEDAR-CONIFAR MINERAL CONIFEROUS SWAMP TYPE

NATURAL ENVIRONMENT
REPORT LEVEL I & II
GALWAY RIDGE QUARRY

FIGURE 3
ECOLOGICAL LAND CLASSIFICATION

Scale 1:7500
P/N 2404 | FEB. 2012

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Base: First Base Solutions 2002 Aerial Photography.



FOM2-1: Dry-Fresh White Pine-Oak Mixed Forest Type



FOD5-1: Dry-Fresh Sugar Maple Deciduous Forest Type



SWC1-2: White Cedar-Conifer Mineral Coniferous Swamp Type



Easterly ridgeline looking west.

**Natural Environment Report
Level I & II
Galway Ridge Quarry**

Photo Page

P/N 2404

Feb. 2012



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SOURCE: Site photos taken by Kyle Fleming (SBA).

FOD5-1: Dry-Fresh Sugar Maple Deciduous Forest Type

Woodlands along the easterly ridge were largely mature hard maple with associates including red oak and white birch. Shrub layer included hard maple, eastern hemlock and ironwood. Groundcover included bishop's cap (*Mitella nuda*), maidenhair fern (*Adiantum pedatum*), Christmas fern (*Polystichum acrostichoides*), early meadow rue (*Thalictrum dioicum*) and white trillium (*Trillium grandiflorum*).

This community was found along the bottom of the easterly ridgeline within deeper soils opposed to shallow soil types found on the plateau.

These types of communities are common in Ontario and this region and no significant features were identified.

4.2.2 Vascular Flora

In total, 98 vascular plant species were identified within woodlands. Species observed on the property are found to be common to habitats found in Ontario. No species of concern, threatened or endangered species found.

A list of vascular plants and their status in Ontario observed during the field investigations is included in Appendix B.

4.3 Wildlife

4.3.1 Breeding Birds

In total, 23 bird species were detected during surveys within the woodlands. A list of birds found on the site is provided in Appendix B. There were no observations of endangered or threatened made during site visits.

Interior habitat for area sensitive bird species is present within woodland habitat, with species such as the veery (*Catharus fuscescens*), ovenbird (*Seiurus aurocapilla*) found during field investigations. Interior habitat is typically described as core woodlands 100 metres from the edge.

During the survey for whip-poor-will's, observations were made of common nighthawks (*Chordeiles minor*), a provincial species of concern, on adjacent lands within an existing quarry.

4.3.2 Other Wildlife

Incidental wildlife observations made during site visits including White-Tailed Deer (*Odocoileus virginianus*), eastern coyote (*Canis latrans*), black bear (*Ursus americanus*) and moose (*Alces alces*). These observations are included in Appendix B.

Vernal pool habitat was found which does support local populations of woodland amphibian species such as the grey tree frog (*Hyla versicolor*) and spring peeper (*Pseudacris crucifer*).

4.3.3 Wildlife Corridors

Wildlife corridors are evident through aerial photography of the permit area and adjacent lands. These corridors likely provide for wildlife movement in a north-south direction. Currently, the north-south corridor between the adjacent licensed quarry to the west and Nogie's Creek to the east is 1,300 metres.

North-south corridors are also present to the west between quarries along Bass Lane Road.

4.4 Aquatic Features

No watercourses are found within the within the proposed quarry area.

Vernal pooling was present within the woodlands, primarily white cedar swamp (SWC1-2) which occurs in lower areas of the proposed permit area.

5.0 PHYSICAL DESCRIPTION

5.1 Geology and Soils

The subject lands are located within the Georgian Bay Fringe, which is characterized by very shallow soils, bare rock knobs and ridges (Chapman & Putnam 1984). Thin soils and the scarcity of water on the plateau have discouraged agricultural development.

The Soil Associations of Southern Ontario lists the subject lands as containing Dummer Loam soils.

During field investigations, shallow sandy loam soils were confirmed over limestone bedrock.

5.2 Topography and Drainage

The subject lands are relatively flat with a general slope to the east to the ridgeline bordering the proposed permit area.

From field investigations, drainage appears to settle on site and within lower areas on the site. This overland flow naturally drains through fractures in the underlying limestone bedrock. Vernal pooling was observed in lower areas of the subject lands (Cedar Swamp- SWC1-2) which is present through the spring and early summer months.

6.0 ANALYSIS OF NATURAL HERITAGE FEATURES

The following sub-sections discuss whether any of the seven natural heritage features identified in the PPS are found on or adjacent to the proposed quarry. The identification of these features is the result of background research, fieldwork and analysis.

6.1 Significant Wetlands

There are no known provincially significant wetlands found within the subject lands or adjacent lands of 120 metres. Small isolated pockets of the wetland are found within the subject property, but these do not contain any significant features which would require their protection or further assessment for provincial significance.

As no significant wetlands have been identified, they will not be addressed in the Level II report.

6.2 Significant Habitat of Endangered or Threatened Species

The MNR has identified the presence of several species at risk in the vicinity of the permit area. Of these, habitat for one species, the eastern hog-nosed snake, is potentially present within the proposed permit area and may also be created as a result of quarry development.

In addition, as operations are in the vicinity of wetlands with habitat contiguous to the threatened Blanding's turtle, and haul roads will cross through and adjacent to these wetlands, there is the potential for indirect impacts to this species as a result of quarry development.

Therefore, Potential Significant Habitat of Endangered or Threatened Species will be discussed in the Level II report.

6.3 Significant Woodlands

Significant Woodlands have not been identified by the municipality within the permit area or adjacent lands.

Therefore, Significant Woodlands will not be discussed in the Level II report.

6.4 Significant Valleylands

There are no valleylands identified within the proposed quarry or on adjacent lands. Significant Valleylands will not be discussed in the Level II report.

6.5 Significant Wildlife Habitat

The evaluation and identification of Significant Wildlife Habitat is divided into four broad categories (OMNR 2000):

- Seasonal concentration areas;
- Rare vegetation communities or specialized habitats for wildlife;
- Habitats of species of conservation concern, excluding the habitats of endangered and threatened species; and
- Animal movement corridors.

The Significant Wildlife Habitat Technical Guide (OMNR 2000) details specific types of significant habitat associated within these broad categories. Candidate Significant Habitat identified within these categories on the subject and adjacent lands is summarized below.

The identification of specialized habitat for wildlife (habitat for area-sensitive species, amphibian woodland breeding ponds, woodland raptor nesting habitat) and an animal movement corridor, lay the groundwork for the identification of Candidate Significant Wildlife Habitat on the permit area.

Therefore, Candidate Significant Wildlife Habitat will be discussed in the Level II report.

6.6 Significant Areas of Natural and Scientific Interest (ANSI)

A search of the NHIC and consultation with the MNR found no ANSI's on the permit area or adjacent lands.

Therefore, ANSI's will not be discussed in the Level II report.

6.7 Fish Habitat

A review of OBM mapping, consultation with the MNR and field investigations found no fish habitat on the site or adjacent lands.

Therefore, Fish Habitat will not be discussed in the Level II report.

6.8 Summary of Natural Heritage Features

In summary, two natural heritage features were identified on and adjacent to the proposed expansion area. These are:

- Potential Significant Habitat for Endangered or Threatened Species; and
- Candidate Significant Wildlife Habitat.

Due to the presence of these natural heritage features on and adjacent to the proposed permit area, a Level II report is required. The Level II report will assess potential impacts and recommend mitigation measures to ensure no negative impacts to these features and their functions.

NATURAL ENVIRONMENT REPORT LEVEL II

7.0 IMPACT ASSESSMENT AND MITIGATION MEASURES

Two natural heritage features have been identified through the Level I report:

- Potential Significant Habitat for Endangered or Threatened Species; and
- Candidate Significant Wildlife Habitat.

This Level II report assesses potential negative impacts as a result of the extraction within the proposed quarry permit area and provides mitigation measures to ensure no negative impacts to these identified features and their ecological functions.

The PPS defines a negative impact “in regard to other natural heritage features and areas” as “..degradation that threatens the health and integrity of the natural features or ecological functions for which an area is identified due to single, multiple or successive development or site alteration activities.”

7.1.1 Significant Habitat for Endangered and Threatened Species

The potential for habitat for the threatened eastern hog-nosed snake and Blanding’s turtle has been identified through consultation with the MNR within the mixed woodlands in the permit area and wetlands in the vicinity, respectively.

The development of the site for a limestone dimension stone quarry may also create habitat for the hog-nosed snake, in the form of basking areas. In particular, tablerocks (i.e. flat elevated rocks), which would be stored on site which may be used by the snakes for thermoregulation/gestation.

While no direct observations were made of the eastern hog-nosed snake during site visits and the MNR has no specific records for the permit area, there is the potential for the snake to migrate through the area or begin to utilize the disturbed quarry once developed.

Haul roads from the proposed quarry lie adjacent to and/or cross wetlands which may contain Blanding’s turtles, thereby potentially increasing road mortalities in the area.

Therefore, in consultation with the MNR, the following mitigation measures are recommended to prevent any potential impacts to eastern hog-nosed snakes and Blanding’s turtles as a result of quarry activities:

- Training for all site staff that addresses:
 - the potential for the species on site;
 - the species appearance;
 - the need for avoidance of harm due to their status as a species at risk;
 - what to do if encounter an individual; and
 - what care must be undertaken during operational activities to avoid adversely affecting the species.
- Site searches for the eastern hog-nosed snake and Blanding’s turtle prior to any stripping and/or clearing during the species’ Active Season of April 15-October 31st;
- Signage installed on site (including haul roads) to alert drivers to the presence of the species at risk;
- Reduced speeds through the site; and
- Reporting of any observations of the species to the MNR Species at Risk Biologist.

It is recommended that during final rehabilitation, the proponent contact the MNR for opportunities to enhance potential habitat for the eastern hog-nosed snake within the permit area.

As a result of the recommended mitigation measures, we anticipate no impacts to threatened eastern hog-nosed snake or Blanding’s turtle from the proposed quarry development.

7.1.2 Significant Wildlife Habitat

Significant Wildlife Habitat has been identified within the proposed permit area through the Level I report. Specific functions which define this Significant Wildlife Habitat are:

- specialized habitat (habitat for area-sensitive species, amphibian woodland breeding ponds, and woodland raptor nesting habitat), and
- an animal movement corridor.

The PPS states that “Development and site alteration shall not be permitted in: d) Significant Wildlife Habitat; unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.”

Extraction will result in the temporary loss of the habitat for area-sensitive species on the permit area. However, abundant interior habitat is present to the east, north and south of the permit area, and wildlife species requiring this type of habitat will migrate to these locations.

It is recommended that no clearing occur between April 1 – July 31st to avoid direct impacts to nesting bird species and a contravention of the Migratory Birds Convention Act.

Progressive and final rehabilitation within the permit area, as shown on “Progressive and Final Rehabilitation Plan” (Dwg. 2404- 3 of 3), will involve the establishment of planting nodes within each phase of the quarry. These pods are oriented east to west, and will link to similar rehabilitation on the adjacent quarry (Bass Lane Quarry) to the west.

The planting nodes will provide for the initial establishment of vegetation on site and corridors for wildlife movement. It is expected that the remainder of the quarry area will be rehabilitated through natural succession.

It is recommended that monitoring of the planting nodes occur for the first three years after commencement of progressive rehabilitation by a qualified person. Monitoring will involve verifying the health, structure and success of the nodes. The results will be provided to the MNR to determine if rehabilitation is successful or alternative methods should be utilized.

Once planting nodes have been established, it is anticipated that wildlife will begin to return to the site.

Extraction will result in the temporary loss of amphibian woodland breeding ponds. Similar habitat is available to the east and north of the permit area and wildlife species will migrate to these locations. To avoid direct impacts to amphibians within woodland pools during the breeding season, no clearing/stripping is to occur between April 1-July 31st.

While no woodland raptor nests were observed during field visits from June-October- 2011, the potential for nests is present within the proposed permit area. Therefore, no logging/clearing is to occur during the nesting season of March 1-September 31 to avoid direct impacts.

Vernal pools will be created during progressive and final rehabilitation. This will occur primarily within the easterly part of the site where overland flow is expected to be concentrated due to a lower extraction depth. Pools are also planned for this area of the site to take advantage of remaining woodlands to the east, where breeding amphibians will migrate to once the larval stage of development is complete in early to mid summer.

Wildlife corridor functions exist within the permit area in conjunction with undisturbed forested lands to the east to Nogie’s Creek. This corridor allows for the local and regional dispersal of various flora and fauna and prevents the isolation of populations on a daily or seasonal basis.

While corridors of 50-100 metres can facilitate the movement of generalist species (Environment Canada 2005), larger corridors are necessary for specialist species.

Post-development, a corridor of approximately 600-900 metres in width will remain between the proposed quarry and Nogie's Creek, which will facilitate north-south movement. Once rehabilitation of the quarry is completed, wildlife will return to utilize the permit area as part of the corridor.

As a result of mitigation measures and the analysis provided above, we do not anticipate any significant impacts to Significant Wildlife Habitat within the permit area.

8.0 CONCLUSIONS

Skelton, Brumwell & Associates Inc. was retained by Fred T. Archibald Consulting Inc. to provide natural environmental services for preparation of a Natural Environment Report (NER) related to the proposed Aggregate Permit for an above the water table dimension stone quarry.

The study determined that two natural heritage features: Potential Significant Habitat for Endangered or Threatened Species and Significant Wildlife Habitat; were identified within the proposed permit area and adjacent lands.

Mitigation measures were recommended to address potential impacts as a result of the proposed quarry which are summarized below:

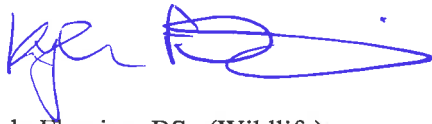
- Training for all site staff for the threatened eastern hog-nosed snake and Blanding's turtle;
- Site searches for species at risk prior to any stripping and/or clearing during the Active Season of April 15-October 31st;
- Signage installed on site (including haul roads) to alert drivers to the presence of the eastern hog-nosed snake;
- Reduced speeds through the site;
- Reporting of any observations of species at risk to the MNR Species at Risk Biologist;
- Prior to final rehabilitation, the MNR Species at Risk Biologist (Bancroft District) be contacted to provide input on rehabilitation for species at risk;
- No clearing/logging between March 1-September 31st to coincide with migratory bird and woodland raptor nesting seasons;
- No clearing/stripping between April 1-July 31st to coincide with the breeding season for woodland amphibians; and

- Monitoring of planting nodes for progressive and final rehabilitation occur for the first three years after commencement by a qualified person. Results are to be provided to the MNR to determine if rehabilitation is successful or alternative methods should be utilized.

In conclusion, through the implementation of mitigation measures in the Level II report, the proposed quarry will have no anticipated negative impacts on natural heritage features and functions within the permit area or adjacent lands.

All of which is respectfully submitted,
SKELTON, BRUMWELL & ASSOCIATES INC.

Per:



Kyle Fleming, BSc (Wildlife)
Ecologist

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APPENDIX A

Curriculum Vitae- Kyle Fleming

**Kyle Fleming, B.Sc. (Wildlife), Dip. Fish and Wildlife Tech.
Ecologist**

EDUCATION

Bachelor of Science in Wildlife Biology (2002)

University of Northern British Columbia

Diploma in Fish and Wildlife Technology (1998)

Sir Sandford Fleming College

PROFESSIONAL BACKGROUND

Skelton Brumwell & Associates Inc. (Barrie, ON)

Ecologist- May 2004-present

Kyle has over 10 years experience conducting field inventories of flora and fauna in wetland and terrestrial environments and identifying natural heritage features and functions. He is a Qualified Wetland Evaluator by the MNR, is trained and experienced in the use of Ecological Land Classification (ELC), and has been qualified as an expert at the Ontario Municipal Board.

Kyle has completed studies throughout Central and Southern Ontario, and the United States; including projects on the Oak Ridges Moraine, Niagara Escarpment, for Species at Risk and within Provincially Significant Wetlands. His work is readily accepted by municipalities and conservation authorities, and he is very familiar with their requirements and procedures. He is also well versed in municipal, provincial and federal policies and legislation.

Hamer Environmental L.P. (Mt. Vernon, WA, USA)

Project Supervisor/Field Biologist- April-August 2003

Responsible for supervising and managing a threatened seabird monitoring project on state lands.

Aqua Terre Solutions Inc. (Toronto, ON)

Environmental Technician- November-January 2002-2003.

Hamer Environmental L.P. (Mt. Vernon, WA, USA)

Field Biologist- April-August 2002.

Conducted threatened seabird surveys on state lands to determine presence/absence relative to forestry activities.

University of Washington (Seattle, WA., USA)

Field Technician- June-August 2001.

Research project on nest predation of threatened seabirds and impacts of forestry practices on nesting sites.

City of Barrie, Environmental Services. (Barrie, ON)

Junior Environmental Officer- May-August 2000.

Water sampling, investigations of pollution concerns and public consultation.

**Kyle Fleming, B.Sc. (Wildlife), Dip. Fish and Wildlife Tech.
Ecologist**

CERTIFICATIONS

Ontario Wetland Evaluation Training Course, 2004.

OPPI- The Planner at the Ontario Municipal Board Seminar, 2006

Ecological Land Classification for Southern Ontario Training Course, 2005.

Ministry of Natural Resources (MNR) Butternut Assessment Course, 2009.

KEY PROJECTS (AGGREGATES)

Miller Paving Ltd.- Natural Environment Report (NER) Level I & II (Township of Minden Hills)

NER was prepared in accordance with the Aggregate Resources Act (ARA) for a wayside quarry adjacent to an existing licensed pit. Natural heritage features included Provincially Significant Wetlands (PSW), Significant Wildlife Habitat and Significant Woodlands. Mitigation measures were recommended to avoid impacts to these features and their related ecological functions.

Robinson-Kovacs Pit- Natural Heritage Evaluation (Oak Ridges Moraine)

A natural heritage evaluation was prepared in accordance with the Oak Ridges Moraine Conservation Plan for an amendment to the Site Plan of an existing gravel pit.

Miller Paving Ltd.- Natural Environment Report Level I & II (Township of McNab-Braeside)

NER completed in support of major site plan amendment for expansion of quarry under ARA. Significant Wildlife Habitat was identified which included provincially rare plant species, amphibian woodland ponds, area sensitive bird habitat and deer wintering habitat.

Earth Resources Ltd.- Natural Environment Report Level I & II (Township of Galway-Harvey- Cavendish)

NER completed in support of new aggregate pit within Crown Land permit. Significant Wildlife Habitat (Great Blue Heron nesting site) and significant wetlands were identified and mitigation measures recommended for their protection.

**Kyle Fleming, B.Sc. (Wildlife), Dip. Fish and Wildlife Tech.
Ecologist**

KEY PROJECTS (AGGREGATES) cont'd.

Universal Sand & Gravel- Natural Environment Report Level I & II (Township of Garafraxa)

Natural Environment Report completed in support of a major site plan amendment for a small woodlot which had remain undisturbed. Field investigations were focused on this woodlot and identified butternut trees. The butternut trees were assessed using standard protocols.

Hillway Equipment Ltd- Butternut Assessment (Township of Oro Medonte)

An assessment was completed to Ministry of Natural Resource' standards for endangered butternut trees found within an existing pit.

Miller Paving Ltd.- Species at Risk Assessment (All of Ontario)

A species at risk assessment was completed for 64 aggregate properties in Ontario to determine potential for habitat of endangered or threatened species listed in the *Endangered Species Act* (2007). An exemption agreement with the MNR was completed each site identified as having potential habitat. These agreements included conducting surveys for species, exclusion fencing, timing of certain operations and training of site staff.

Earth Resources Ltd.- Natural Environment Report Level I & II (Township of Galway-Harvey- Cavendish)

A Natural Environment Report was completed for a proposed limestone quarry on 246 acres. Consultation with the Ministry of Natural Resources, field investigations and analysis identified the potential for habitat of a threatened species and significant wildlife habitat. Mitigation measures were recommended to ensure no negative impacts which included unique progressive and final rehabilitation requirements.

KEY PROJECTS (URBAN AND RURAL DEVELOPMENT)

Environmental Impact Study (EIS)- Rural Severances (Township of Oro- Medonte)

An EIS was prepared as part of a rezoning and official plan amendment to sever seven residential lots. Fieldwork identified the presence of Significant Wildlife Habitat (Species of Conservation Concern) within the property. Habitat was delineated and avoided as part of the conditions of the severance.

EIS- Rural Severance (Township of Clearview)

As part of a condition for severance of a large rural lot, an EIS was prepared. The EIS identified wildlife corridors functions, area sensitive habitat and locally significant wetland.

**Kyle Fleming, B.Sc. (Wildlife), Dip. Fish and Wildlife Tech.
Ecologist**

KEY PROJECTS (URBAN AND RURAL DEVELOPMENT) cont'd.

EIS- Rezoning (Township of Essa)

An EIS was prepared as part of an application for rezoning of a rural residential property to institutional use (church). Wetlands, significant woodlands and a cold-water stream were identified and setbacks established for protection of these features.

EIS- Building Permit (Township of Oro-Medonte)

In conjunction with the landowner and NVCA, development of a rural property was completed to avoid any impacts to significant woodlands and the habitat of endangered species.

Rare Species Surveys- Southshore Woods (Town of Innisfil)

Rare species surveys were conducted as part of Site Plan Control for 3 residential lots in the Town of Innisfil. The purpose of the surveys was to locate any populations of these rare species and avoid any impacts through proper placement of buildings and associated services.

Environmental Review Update and Tree Preservation Plan- Subdivision (Township of Severn)

An update to a previously completed Review for a residential subdivision along the Severn River was completed as part of Draft Plan conditions. Mitigation measures were recommended to avoid impacts to sensitive habitat. In addition, a tree preservation plan was developed to retain portions of wildlife habitat on the property and the rural aesthetics of the area.

Scoped EIS and Wetland Delineation- Skyline Development Inc. (Township of Tay)

Skelton Brumwell assisted with the completion of a Scoped EIS as required for clearance of Draft Plan conditions for waterfront redevelopment in the Town of Port McNicoll. Further to this work, SBA also assisted with the development of a Shoreline Buffer & Management Plan and completed wetland delineation of Provincially Significant Coastal Wetlands to the satisfaction of the Ministry of Natural Resources.

Natural Heritage Evaluation- Lakeridge Ski Resort (Town of Uxbridge and the Oak Ridges Moraine)

Required as part of rezoning application to permit four-season recreation use, a Natural Heritage Evaluation was completed per policies of the Official Plan and Oak Ridges Moraine Conservation Plan. The Evaluation was scoped to areas of new recreation uses.

**Kyle Fleming, B.Sc. (Wildlife), Dip. Fish and Wildlife Tech.
Ecologist**

KEY PROJECTS (URBAN AND RURAL DEVELOPMENT) cont'd.

Preliminary Species at Risk Assessment- Rural Development (District of Muskoka)

Due to the potential presence of the habitat of a threatened species, a Preliminary Species at Risk Assessment was completed for four rural severances. Potential habitat was identified and setbacks recommended for its protection.

EIS Update- Senior's Centre (Township of Severn)

Prior to final development of a site plan for a senior's centre in the town of Severn Falls, an update to a previously completed EIS was required. The EIS update found the presence of a threatened species. The habitat of this species was delineated and all development was located outside this area. Further mitigation measures were recommended to ensure no impacts to this species.

Environmental Evaluation- Shoreline Residential Severances (Township of Georgian Bay)

An evaluation was completed in support of an application to sever two shoreline residential lots. Field investigations and analysis identified appropriate setbacks and mitigation measures for the protection of fish habitat and water quality.

Tree Inventory and Butternut Assessment (Town of Innisfil)

A tree inventory was required for development of commercial site in the Town of Innisfil. The inventory provided a detailed account of tree species, size and health relative to areas proposed to be disturbed. During the surveys, endangered butternut trees were found and assessed using standardized protocols.

Natural Heritage Development Review- Big Chute (Crown Lands)

Field investigations and a review of background documentation was completed to determine the opportunities and constraints for construction of a cottage road through Crown Lands. Recommendations for placement of the road were made to avoid impacts to sensitive natural features.

APPENDIX B
Vascular Plant List

P/N 2404: Galway Ridge Quarry

Vascular Plant List (2011 Observations)

<i>MAIN LATIN NAME</i>	<i>ENGLISH NAMES</i>	<i>FAMILY</i>	<i>SRANK</i>	<i>GRANK</i>
<i>Abies balsamea</i> (L.) Miller	Balsam Fir	Pinaceae	S5	G5
<i>Acer pensylvanicum</i> L.	Striped Maple Moose Maple	Aceraceae	S5	G5
<i>Acer rubrum</i> L.	Red Maple Soft Maple	Aceraceae	S5	G5
<i>Acer saccharum</i> Marshall ssp. <i>saccharum</i>	Sugar Maple Hard Maple	Aceraceae	S5	G5T?
<i>Actaea rubra</i> (Aiton) Willd.	Red Baneberry	Ranunculaceae	S5	G5
<i>Adiantum pedatum</i> L.	Northern Maidenhair Fern Maidenhair Fern	Pteridaceae	S5	G5
<i>Amelanchier alnifolia</i> (Nutt.) Nutt. ex R.	Saskatoon Berry Northwestern Serviceberry	Rosaceae	S4?	G5
<i>Anemone acutiloba</i> (DC.) G. Lawson	Sharp-lobed Liver-leaf Sharp-lobed Hepatica	Ranunculaceae	S5	G5
<i>Anemone americana</i> (DC.) H. Hara	Round-lobed Hepatica American Liver-leaf	Ranunculaceae	S5	G?
<i>Anemone quinquefolia</i> L. var. <i>quinquefolia</i>	Windflower Wood Anemone	Ranunculaceae	S5	G5
<i>Aquilegia canadensis</i> L.	Rock-bells	Ranunculaceae	S5	G5

<i>MAIN LATIN NAME</i>	<i>ENGLISH NAMES</i>	<i>FAMILY</i>	<i>SRANK</i>	<i>GRANK</i>
<i>Aquilegia canadensis</i> L.	Wild Columbine	Ranunculaceae	S5	G5
<i>Aralia nudicaulis</i> L.	Virginian Sarsaparilla Wild Sarsaparilla	Araliaceae	S5	G5
<i>Asarum canadense</i> L.	Wild Ginger Indian Ginger	Aristolochiaceae	S5	G5
<i>Aster macrophyllus</i> L.	Large-leaved Aster	Asteraceae	S5	G5
<i>Athyrium filix-femina</i> (L.) Roth ex Mert.	Northern Lady Fern	Dryopteridaceae	S5	G5T5
<i>Betula alleghaniensis</i> Britton	Yellow Birch Southern Yellow Birch	Betulaceae	S5	G5
<i>Betula papyrifera</i> Marshall	Paper Birch White Birch	Betulaceae	S5	G5
<i>Brachyelytrum erectum</i> (Schreb.) P.	Bearded Short-husk Northern Short-husk	Poaceae	S4S5	G5
<i>Bromus ciliatus</i> L.	Fringed Brome Wood Chess	Poaceae	S5	G5
<i>Carex arctata</i> Boott	Compressed Sedge Drooping Wood Sedge	Cyperaceae	S5	G5?
<i>Carex communis</i> L.H. Bailey	Common Beech Sedge Fibrous Rooted Sedge	Cyperaceae	S5	G5
<i>Carex crinita</i> Lam.	Sickle-grass Fringed Sedge	Cyperaceae	S5	G5
<i>Carex intumescens</i> Rudge	Bladder Sedge	Cyperaceae	S5	G5

<i>MAIN LATIN NAME</i>	<i>ENGLISH NAMES</i>	<i>FAMILY</i>	<i>SRANK</i>	<i>GRANK</i>
Carex intumescens Rudge	Shinning Bur Sedge	Cyperaceae	S5	G5
Carex umbellata Schkuhr ex Willd.	Umbel-like Sedge Early Oak Sedge	Cyperaceae	S5	G5
Caulophyllum thalictroides (L.) Michx.	Blue Cohosh	Berberidaceae	S5	G
Chimaphila umbellata (L.) Barton ssp.	Prince's-pine Common Pipsissewa	Pyrolaceae	S5	G5T5
Chrysanthemum leucanthemum L.	Whiteweed Ox-eye Daisy	Asteraceae	SE5	G?
Circaea alpina L.	Smaller Enchanter's Nightshade Dwarf Enchanter's Nightshade	Onagraceae	S5	G5
Claytonia virginica L.	Virginia Spring Beauty Narrow-leaved Spring Beauty	Portulacaceae	S5	G5
Coptis trifolia (L.) Salisb.	Canker-root Goldthread	Ranunculaceae	S5	G5T5
Cornus canadensis L.	Bunchberry Dwarf Cornel	Cornaceae	S5	G5
Cornus rugosa Lam.	Round-leaved Dogwood Rough-leaved Dogwood	Cornaceae	S5	G5
Cornus stolonifera Michx.	Red-osier Cornel Red-osier Dogwood	Cornaceae	S5	G5
Dryopteris carthusiana (Vill.) H.P. Fuchs	Spinulose Shield Fern Spinulose Wood Fern	Dryopteridaceae	S5	G5

<i>MAIN LATIN NAME</i>	<i>ENGLISH NAMES</i>	<i>FAMILY</i>	<i>SRANK</i>	<i>GRANK</i>
<i>Epipactis helleborine</i> (L.) Crantz	Common Helleborine Bastard Hellebore	Orchidaceae	SE5	G?
<i>Erythronium americanum</i> Ker Gawl. ssp.	Yellow Dog's-tooth Violet Yellow Adder's-tongue	Liliaceae	S5	G5T5
<i>Fragaria virginiana</i> Miller ssp. <i>virginiana</i>	Scarlet Strawberry Virginia Strawberry	Rosaceae	SU	G5T?
<i>Fraxinus americana</i> L.	Cane Ash White Ash	Oleaceae	S5	G5
<i>Fraxinus nigra</i> Marshall	Black Ash Hoop Ash	Oleaceae	S5	G5
<i>Fraxinus pennsylvanica</i> Marshall	Green Ash Red Ash	Oleaceae	S5	G5
<i>Galium asprellum</i> Michx.	Rough Bedstraw	Rubiaceae	S5	G5
<i>Galium triflorum</i> Michx.	Sweet-scented Bedstraw Fragrant Bedstraw	Rubiaceae	S5	G5
<i>Geranium bicknellii</i> Britton	Bicknell's Crane's-bill Bicknell's Geranium	Geraniaceae	S4	G5
<i>Gymnocarpium dryopteris</i> (L.) Newman	Oak Fern	Dryopteridaceae	S5	G5
<i>Impatiens capensis</i> Meerb.	Spotted Touch-me-not Spotted Jewel-weed	Balsaminaceae	S5	G5
<i>Juniperus communis</i> L.	Eastern Red Cedar Common Juniper	Cupressaceae	S5	G5

<i>MAIN LATIN NAME</i>	<i>ENGLISH NAMES</i>	<i>FAMILY</i>	<i>SRANK</i>	<i>GRANK</i>
Lactuca canadensis L.	Canada Lettuce Tall Lettuce	Asteraceae	S5	G5
Larix laricina (Du Roi) K. Koch	American Larch Tamarack	Pinaceae	S5	G5
Linnaea borealis L. ssp. longiflora	Northern Twinflower Twinflower	Caprifoliaceae	S5	G5T?
Lonicera canadensis Bartram	American Fly Honeysuckle Fly Honeysuckle	Caprifoliaceae	S5	G5
Maianthemum canadense Desf.	False Lily-of-the-valley Wild Lily-of-the-valley	Liliaceae	S5	G5
Maianthemum racemosum (L.) Link ssp.	False Spikenard False Solomon's Seal	Liliaceae	S5	G5T
Maianthemum trifolium (L.) Sloboda	Three-leaved Solomon's Seal Lily-of-the-valley	Liliaceae	S5	G5
Medeola virginiana L.	Indian Cucumber-root Indian Cucumber	Liliaceae	S5	G5
Mentha arvensis L. ssp. borealis	Field Mint American Wild Mint	Lamiaceae	S5	
Milium effusum L.	Tall Millet Grass Wood Millet	Poaceae	S4S5	G5
Mitchella repens L.	Creeping Partridge-berry Twinberry	Rubiaceae	S5	G5
Mitella nuda L.	Naked Mitrewort	Saxifragaceae	S5	G5

<i>MAIN LATIN NAME</i>	<i>ENGLISH NAMES</i>	<i>FAMILY</i>	<i>SRANK</i>	<i>GRANK</i>
Mitella nuda L.	Naked Bishop's Cap	Saxifragaceae	S5	G5
Monotropa uniflora L.	One-flowered Indian-pipe Indian-pipe	Monotropaceae	S5	G5
Onoclea sensibilis L.	Sensitive Fern	Dryopteridaceae	S5	G5
Ostrya virginiana (Miller) K. Koch	Hop Hornbeam Ironwood	Betulaceae	S5	G5
Penstemon hirsutus (L.) Willd.	Hairy Beard-tongue	Scrophulariaceae	S4	G4
Petasites frigidus (L.) Fr.	Sweet Petasites Palmate-leaf Sweet-coltsfoot	Asteraceae	S5	G5
Pinus resinosa Sol. ex Aiton	Red Pine Norway Pine	Pinaceae	S5	G5
Pinus strobus L.	Eastern White Pine Weymouth Pine	Pinaceae	S5	G5
Polygala paucifolia Willd.	Fringed Polygala Gay Wings	Polygalaceae	S5	G5
Polystichum acrostichoides (Michx.)	Christmas Fern	Dryopteridaceae	S5	G5
Populus grandidentata Michx.	Large-tooth Aspen	Salicaceae	S5	G5
Populus tremuloides Michx.	Quiver-leaf Trembling Aspen	Salicaceae	S5	G5
Prunella vulgaris L. ssp. vulgaris	Selfheal Common Heal-all	Lamiaceae	SE3	G5T?
Prunus pensylvanica L. f.	Bird Cherry	Rosaceae	S5	G5

<i>MAIN LATIN NAME</i>	<i>ENGLISH NAMES</i>	<i>FAMILY</i>	<i>SRANK</i>	<i>GRANK</i>
<i>Prunus pensylvanica</i> L. f.	Pin Cherry	Rosaceae	S5	G5
<i>Prunus serotina</i> Ehrh.	Black Cherry Wild Black Cherry	Rosaceae	S5	G5
<i>Pteridium aquilinum</i> (L.) Kuhn var.	Eastern Bracken-fern Bracken	Dennstaedtiaceae	S5	G5T
<i>Pyrola minor</i> L.	Lesser Wintergreen	Pyrolaceae	S4	G5
<i>Quercus rubra</i> L.	Northern Red Oak Red Oak	Fagaceae	S5	G5
<i>Ranunculus acris</i> L.	Tall Buttercup Meadow Buttercup	Ranunculaceae	SE5	G5
<i>Rhus radicans</i> L. ssp. <i>negundo</i>	Poison-ivy Climbing Poison-ivy	Anacardiaceae	S5	G5T
<i>Rubus idaeus</i> L. ssp. <i>idaeus</i>	Red Raspberry	Rosaceae	SE1	G5T5
<i>Sanicula marilandica</i> L.	Black Sanicle Black Snakeroot	Apiaceae	S5	G5
<i>Shepherdia canadensis</i> (L.) Nutt.	Canada Soapberry Rabbit-berry	Elaeagnaceae	S5	G5
<i>Streptopus amplexifolius</i> (L.) DC.	Clasping-leaved Twisted-stalk Liverberry	Liliaceae	S4S5	G5
<i>Streptopus roseus</i> Michx.	Rose Twisted-stalk Sessile-leaved Twisted-stalk	Liliaceae	S5	G5
<i>Symphoricarpos albus</i> (L.) S.F. Blake	Thin-leaved Snowberry	Caprifoliaceae	S5	G5

<i>MAIN LATIN NAME</i>	<i>ENGLISH NAMES</i>	<i>FAMILY</i>	<i>SRANK</i>	<i>GRANK</i>
Symphoricarpos albus (L.) S.F. Blake	Snowberry	Caprifoliaceae	S5	G5
Taraxacum officinale G. Weber	Common Dandelion Blowball	Asteraceae	SE5	G5
Thalictrum dioicum L.	Early Meadow-rue	Ranunculaceae	S5	G5
Thuja occidentalis L.	Eastern White Cedar Arbor-vitae	Cupressaceae	S5	G5
Tiarella cordifolia L.	Heart-leaved False Mitrewort False Mitrewort	Saxifragaceae	S5	G5
Tilia americana L.	American Basswood White-wood	Tiliaceae	S5	G5
Trientalis borealis Raf. ssp. borealis	Star-flower Chickweed Wintergreen	Primulaceae	S5	G5T?
Trillium erectum L.	Ill-scented Wake-robin Purple Trillium	Liliaceae	S5	G5
Trillium grandiflorum (Michx.) Salisb.	Large-flowered Trillium White Trillium	Liliaceae	S5	G5
Trillium undulatum Willd.	Painted Trillium Painted Wake-robin	Liliaceae	S5?	G5
Tsuga canadensis (L.) Carrière	Eastern Hemlock	Pinaceae	S5	G5
Ulmus americana L.	White Elm American Elm	Ulmaceae	S5	G5?
Vaccinium angustifolium Aiton	Low Sweet Blueberry	Ericaceae	S5	G5

<i>MAIN LATIN NAME</i>	<i>ENGLISH NAMES</i>	<i>FAMILY</i>	<i>SRANK</i>	<i>GRANK</i>
Vaccinium angustifolium Aiton	Lowbush Blueberry	Ericaceae	S5	G5
Viburnum lantanoides Michx.	Hobblebush American Wayfaring Tree	Caprifoliaceae	S5	G5
Viola adunca Sm.	Heath Dog Violet Hooked-spur Violet	Violaceae	S4S5	G5
Viola pubescens Aiton	Hairy Violet Downy Yellow Violet	Violaceae	S5	G5

APPENDIX C
Breeding Birds
Incidental Wildlife Observations

P/N 2404- Galway Ridge Quarry

Breeding Bird List (2011 Observations)

Scientific Name	English Name	G-rank	S-rank	COSEWIC Status	SARO Status	Notes
<i>Bonasa umbellus</i>	Ruffed Grouse	G5	S4			
<i>Catharus fuscescens</i>	Veery	G5	S4B			
<i>Chordeiles minor</i>	Common Nighthawk	G5	S4B	THR	SC	Aerial displays at adjacent quarry to the west.
<i>Colaptes auratus</i>	Northern Flicker	G5	S4B			
<i>Contopus virens</i>	Eastern Wood-pewee	G5	S4B			
<i>Corvus brachyrhynchos</i>	American Crow	G5	S5B			
<i>Cyanocitta cristata</i>	Blue Jay	G5	S5			
<i>Dendroica caerulescens</i>	Black-throated Blue Warbler	G5	S5B			
<i>Dendroica petechia</i>	Yellow Warbler	G5	S5B			
<i>Dendroica virens</i>	Black-throated Green Warbler	G5	S5B			
<i>Melospiza melodia</i>	Song Sparrow	G5	S5B			
<i>Mniotilta varia</i>	Black-and-white Warbler	G5	S5B			
<i>Poecile atricapillus</i>	Black-capped Chickadee	G5	S5			
<i>Seiurus aurocapilla</i>	Ovenbird	G5	S4B			
<i>Sitta canadensis</i>	Red-breasted Nuthatch	G5	S5			
<i>Spizella passerina</i>	Chipping Sparrow	G5	S5B			
<i>Turdus migratorius</i>	American Robin	G5	S5B			
<i>Vermivora ruficapilla</i>	Nashville Warbler	G5	S5B			
<i>Vireo gilvus</i>	Warbling Vireo	G5	S5B			
<i>Vireo olivaceus</i>	Red-eyed Vireo	G5	S5B			
<i>Zonotrichia albicollis</i>	White-throated Sparrow	G5	S5B			

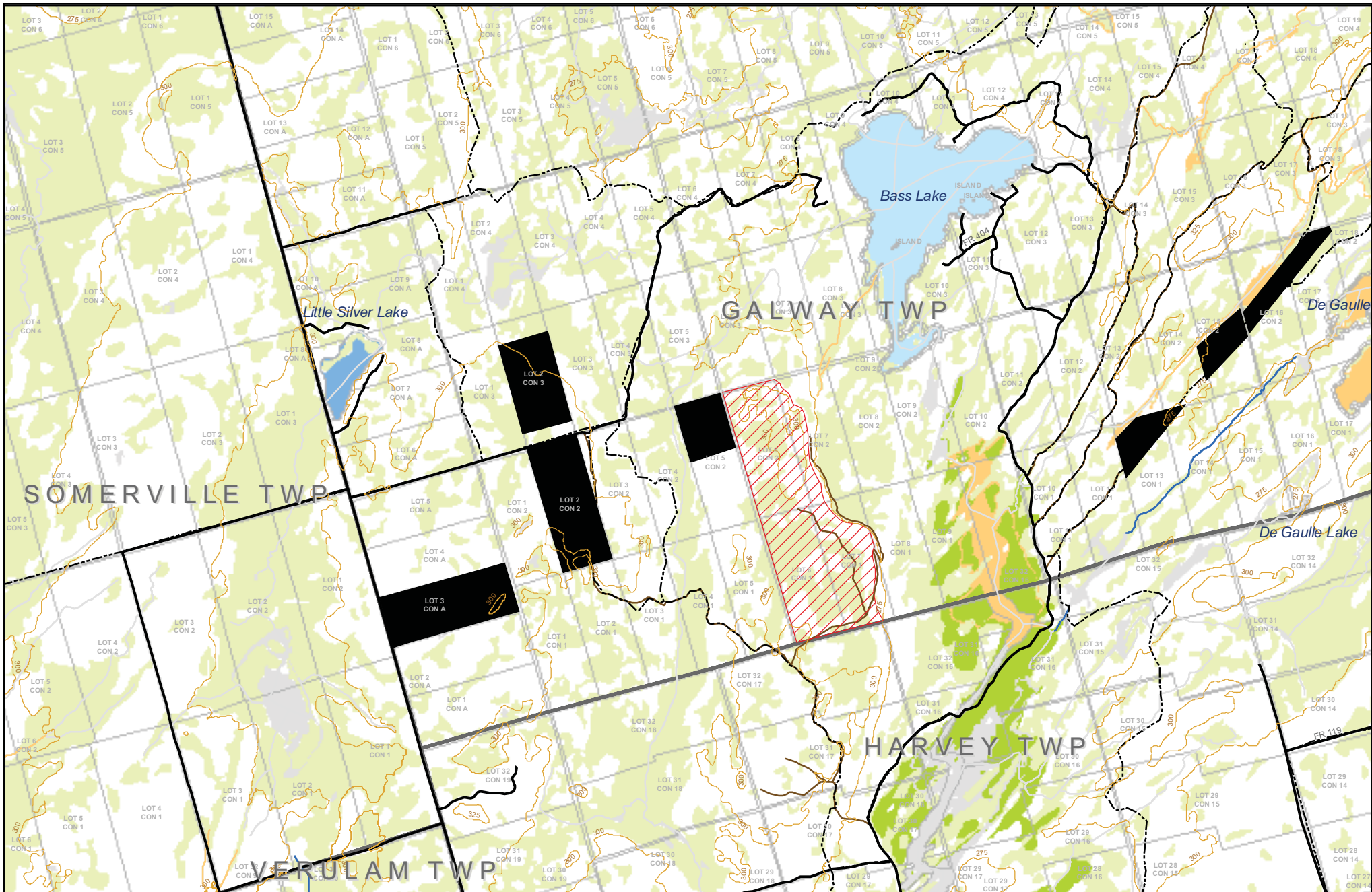
P/N 2404- Galway Ridge Quarry

Incidental Wildlife Observations (2011 Observations)

Scientific Name	English Name	S-rank	SARO Status
Mammals			
<i>Odocoileus virginianus</i>	White-Tailed Deer	S5	
<i>Alces alces</i>	Moose	S5	
<i>Tamiasciurus hudsonicus</i>	Red squirrel	S5	
<i>Erethizon dorsatum</i>	Porcupine	S5	
<i>Tamias striatus</i>	Eastern chipmunk	S5	
<i>Canis latrans</i>	Coyote	S5	
<i>Ursus americanus</i>	Black bear	S5	
Amphibians			
<i>Rana pipiens</i>	Leapord frog	S5	
<i>Hyla versicolor</i>	Grey Tree Frog	S5	
<i>Bufo americanus</i>	American toad	S5	
<i>Pseudacris crucifer</i>	Spring Peeper	S5	

APPENDIX D

MNR Environmental Screening Maps

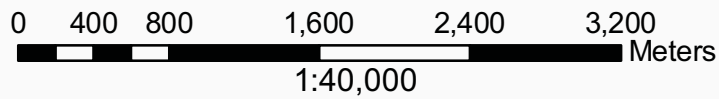


- Legend**
- Contours
 - Trails
 - Utility Line
 - Railway/Trail
 - Highway
 - Road
 - Resource Road
 - Permit Application Area
 - Pit / Quarry
- Thermal Regime**
- Cold
 - Cool
 - Warm
 - Unknown
 - Geographic Townships
 - Lots/Concessions
- Thermal Regime**
- Cold
 - Cool
 - Unknown
 - Warm
 - Waterbodies
 - Evaluated Wetland
 - Unevaluated Wetland

Ontario Ministry of Natural Resources
Bancroft District

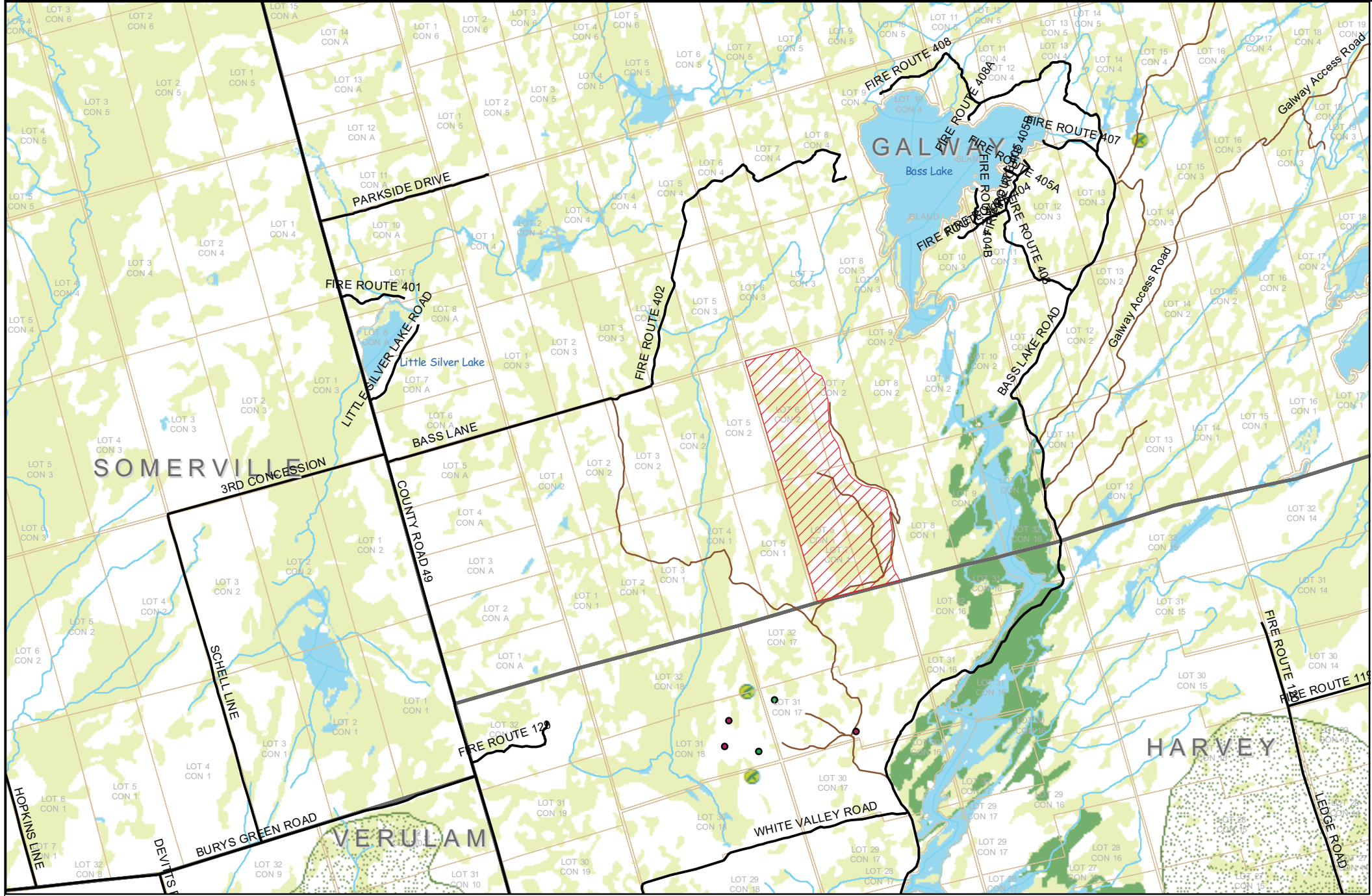
Fisheries Environmental Screening

Galway Twp Lot 6&7 Concession 1&2



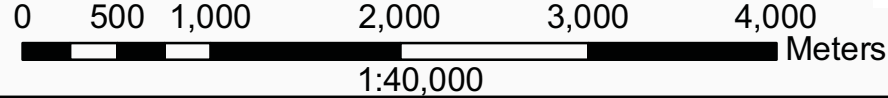
Notes:
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Bancroft District GIS
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- Legend**
- Nesting Sites
 - Utility Line
 - Railway and Trails
 - Streams & Creeks
 - Highway
 - Road
 - Resource / Recreation
 - Application Area
 - Geographic Townships
 - Lots and Concessions
 - Provincial Park, Regulated
 - CA/Nature Reserve
 - Unevaluated Wetland
 - Evaluated Wetland
 - Waterbodies
 - Deer Wintering Area's
 - Moose Early Wintering Area
 - Deer Wintering Area
 - ANSI, Earth Science
 - ANSI, Life Science

Ontario Ministry of Natural Resources
Bancroft District
Natural Heritage Environmental Screening
Galway Township
Concession 1&2 Lot 6&7



Notes:
Produced by: Ministry of Natural Resources
Bancroft District GIS
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