

Appendix D:
Archaeology Resource Impact Assessment



April | 2013

Gaetz Brook Wind Project, Access Road

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Gaetz Brook Wind Project, Access Road Archaeological Resource Impact Assessment

Heritage Research Permit A2013NS012

Davis MacIntyre & Associates Limited

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Executive Summary

Davis MacIntyre & Associates Limited conducted an archaeological resource impact assessment of the proposed access road for the Gaetz Brook Wind Project in Halifax County. The assessment was precluded by a historic background study and field reconnaissance of the proposed wind turbine study area in 2012. The current included a field reconnaissance of the proposed access road alignment and concluded that the area is of low archaeological potential and therefore, no further mitigation in this area is recommended.

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1.0 Introduction

Davis MacIntyre & Associates Limited was retained by Natural Forces Wind Inc., on behalf of HG Wind Limited Partnership to conduct an archaeological resource impact assessment of the proposed access road for the Gaetz Brook Wind Project in Halifax County. The purpose of the assessment was to determine the potential for archaeological resources within the study area and to provide recommendations for further mitigation if necessary.

Davis MacIntyre & Associates Limited conducted an earlier assessment of the proposed wind turbine site in 2012 under Heritage Research Permit A2012NS124. That assessment included a historic background study and field reconnaissance of the proposed turbine site. The assessment concluded that turbine site was of low archaeological potential and no further mitigation was recommended. However, the alignment of the access road was not known at the time of the 2012 assessment and it was recommended that the road alignment be investigated by qualified archaeologists once the location was determined.

The current assessment was conducted under Category C Heritage Research Permit A2013NS012, issued by the Department of Communities, Culture and Heritage (DCCH). This report conforms to the standards required by the DCCH under the guidelines of the Special Places Protection Act.

2.0 Study Area

HG Wind Limited Partnership proposes to construct a 2.3 MW wind project in Gaetz Brook, Halifax Regional Municipality. The project will require a single turbine erected on a concrete pad, as well as an access road (Figure 2.0-1). The access road is 1.9 kilometers in length.

Gaetz Brook is located in the Halifax sub-Unit of the Quartzite Barrens (Natural Theme Region #413a) (Figure 2.0-2). The Quartzite Barrens region is interspersed by exposed quartzite bedrock between areas of deeper glacial till where drumlins of reddish Lawrencetown Till are found, derived from eroded sandstones and siltstones. American Beech, Yellow Birch, Red Maple and Sugar Maple prevail on the high broad ridges in this area. Along rivers and streams, the region is home to a moderately diverse array of small mammals.¹

¹ Davis and Browne, 1996:56-57.

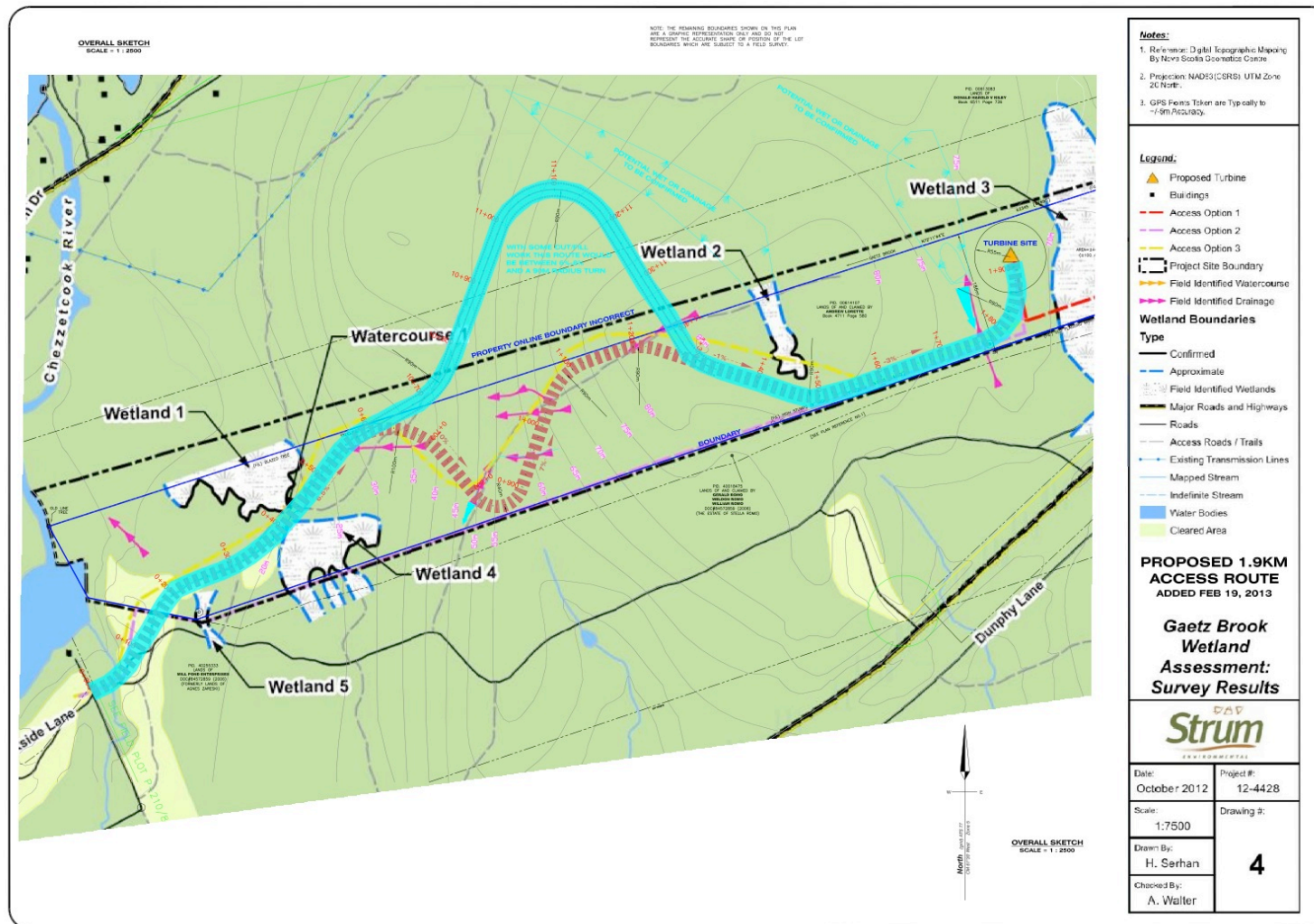


Figure 2.0-1: Map of the study area showing the proposed alignment of the access road highlighted in cyan. Map courtesy Natural Forces Wind Inc.

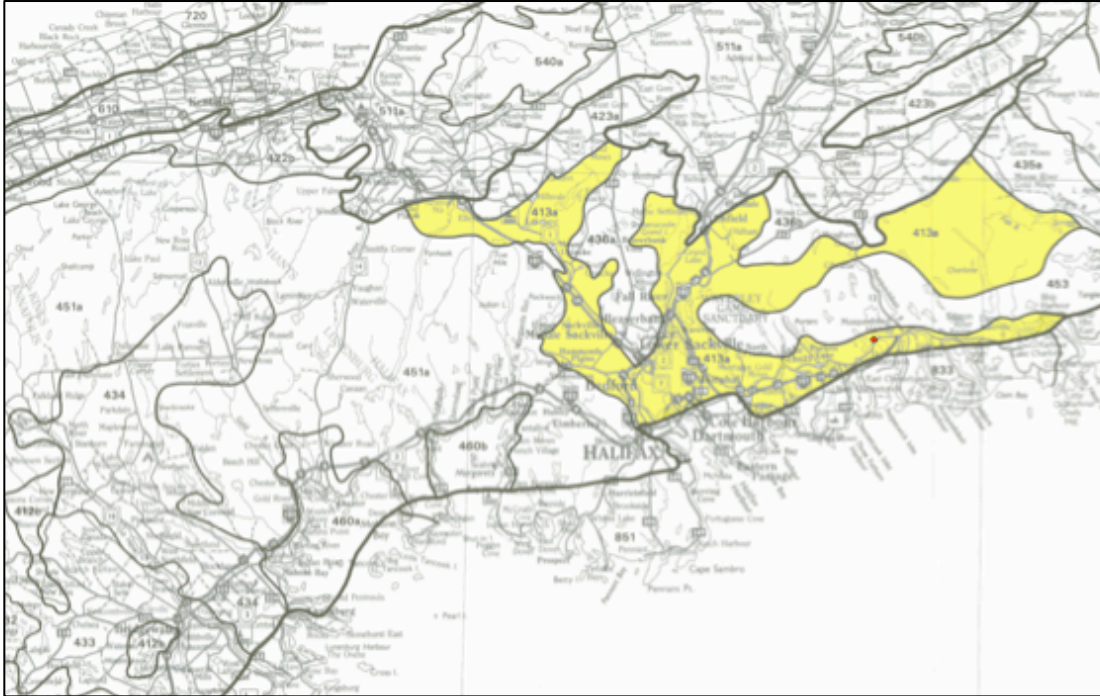


Figure 2.0-2: Natural Theme Regions of Nova Scotia, showing the Halifax Quartzite Barrens (region#413a).² The general location of the proposed wind project is indicated by a red circle.

3.0 Methodology

A historic background study was conducted by Davis MacIntyre & Associates Limited in September 2012 as part of the archaeological assessment of the proposed turbine site. That background study included consultation of historical maps and manuscripts and published literature held at Nova Scotia Archives in Halifax. The Maritime Archaeological Resource Inventory, a database of known archaeological resources in the Maritime region, was searched to understand prior archaeological research and known archaeological resources neighboring the study area and a second search was conducted in April 2013 to determine if any additional sites had been recorded since the initial assessment. Finally, a field reconnaissance of the proposed access road corridor was conducted once it was flagged in order to further evaluate the potential for both buried and surficial archaeological resources.

² After Davis and Browne, 1996.

3.1 Maritime Archaeological Resource Inventory

The Maritime Archaeological Resource Inventory was accessed on April 9, 2013 in order to determine if known archaeological sites or resources exist within or near the study area.

Four sites have been recorded in the vicinity of Gaetz Brook. All four sites date to the precontact period and include projectiles unearthed by fishermen followed by a jasper flake reported by an amateur archaeologist at Jam Falls on Musquidoboit River, an Archaic period grooved axe found on Chezzetcook Lake, a Woodland period projectile point fragment found on Porters Lake, and a mid to late Woodland period shell midden found in Grand Desert. The latter also had a deposit of clay tobacco pipes believed to be associated with historic Mi'kmaq presence.

3.2 Historic Background

A historic background study was conducted by Davis MacIntyre & Associates Limited in September 2012 as part of the initial archaeological assessment of the proposed turbine site. In summary, Nova Scotia was first occupied by First Nations peoples as early as 11,000 years BP. The only significant evidence of this earliest settlement, during the Palaeo-Indian period, is at Debert/Belmont in Colchester County. Following the Palaeo-Indian period, the Mi'kmaq inhabited the territory known as *Mi'kma'ki* or *Megumaage*, which included all of Nova Scotia including Cape Breton, Prince Edward Island, New Brunswick (north of the Saint John River), the Gaspé region of Quebec, part of Maine and southwestern Newfoundland (Figure 3.2-1). The area roughly encompassing Halifax, Lunenburg, Kings, Hants and Colchester Counties was known as *Sipekni'katik* or “wild potato area”.³ The Musquidoboit River was known to the Mi'kmaq as *Mooskūdōboogwěk* meaning “flowing out square and plump”.⁴

³ Fergusson, 1967:515.

⁴ Rand, 1875:92.

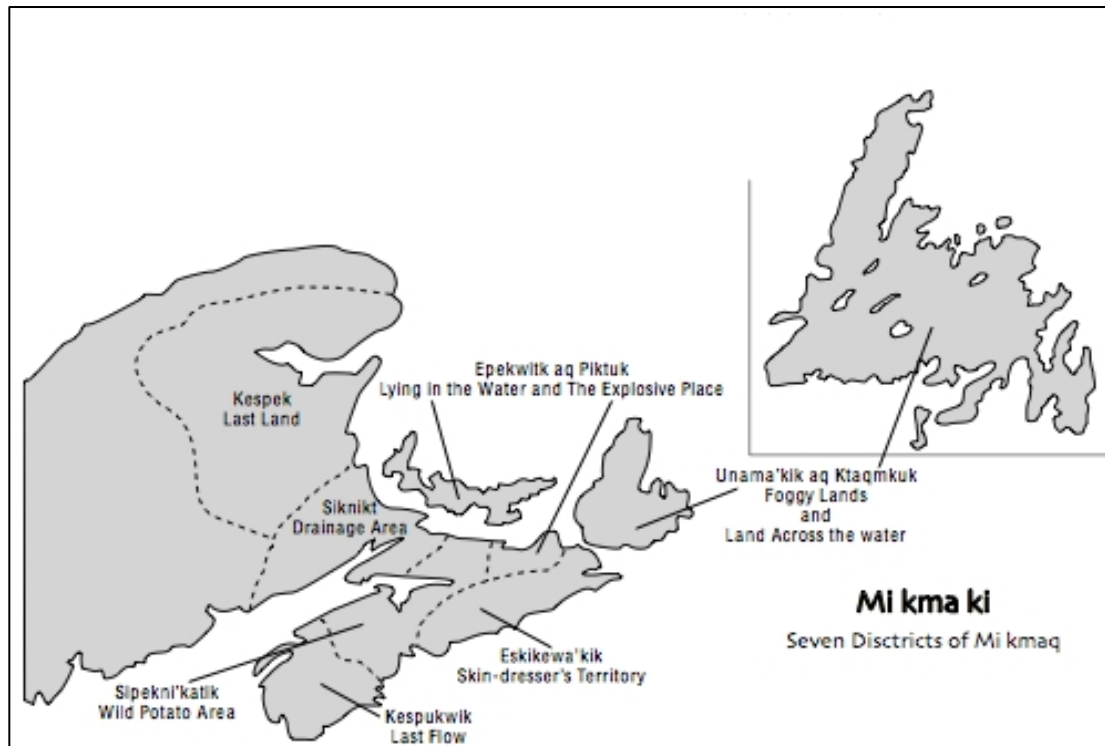


Figure 3.2-1: Map of the Mi'kmaq districts.⁵

There is very little documented in the history annals about the area of Gaetz Brook following European contact. The area around Chezzetcook was occupied in the late 17th century by Acadians. Acadians were expelled from British territory in 1755 but in 1768, authorities in Halifax began to issue licenses of occupation to Acadians and they once again took up land in Chezzetcook. It is not known if the study area was occupied at that time, although it was granted to one John Pettipas in 1787. He was also granted several lots to the north of the study area.

The village around the study area was eventually named Gaetz Brook after the Gates family who were granted lands at the turn of the 20th century. Beyond that, little is known of the small community. Ambrose F. Church's map of Halifax County, published in 1865, does not indicate any settlement in the study area. The nearest settlement was to the north, along the southeast shore of Chezzetcook Lake and along both sides of Petpeswick Inlet where the main roads ran (Figure 3.2-3).

⁵ Confederacy of Mainland Mi'kmaq, 2007:11.

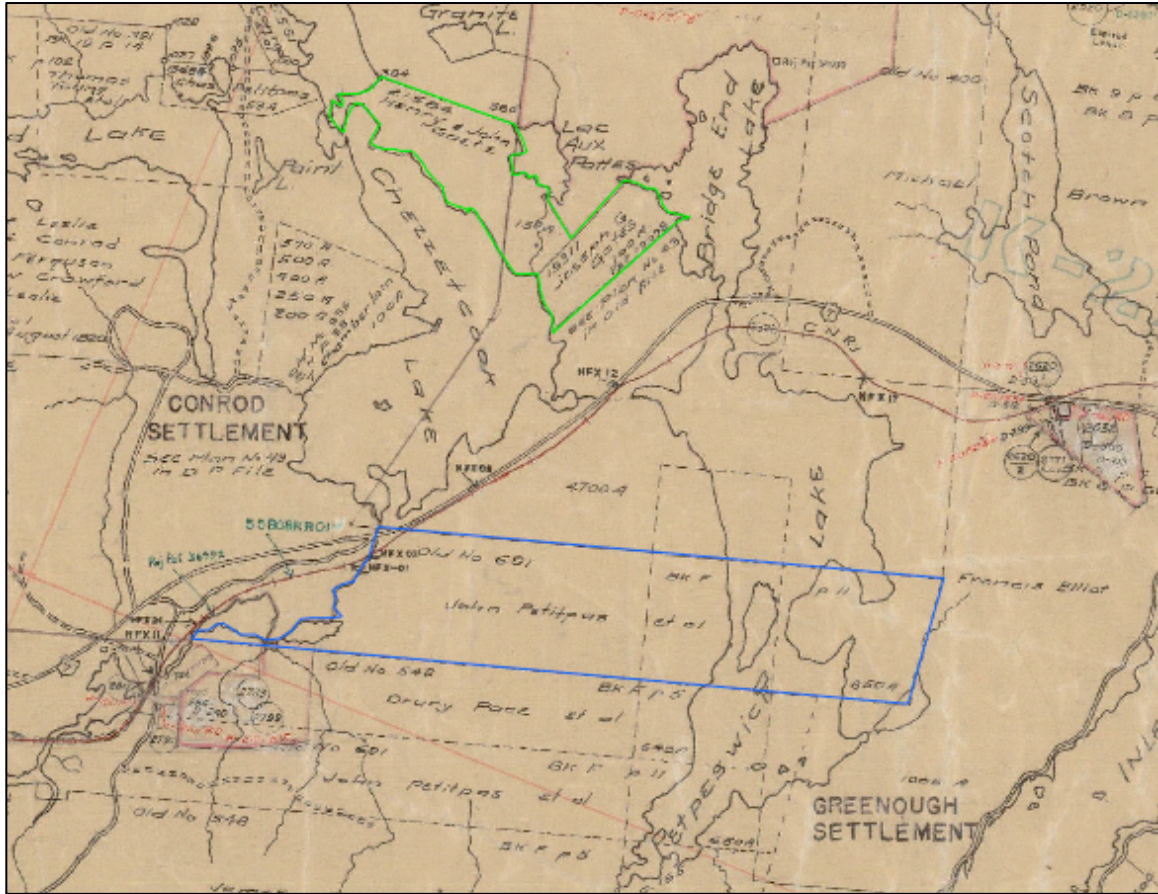


Figure 3.2-2: Part of the land grants index for eastern Halifax County.⁶ The lands granted to the Gates/Gaetz family are highlighted in green while the land grant which encompasses the study area, given to John (Jean Baptiste) Pettipas in 1787 is highlighted in blue.

Gold mining operations began in the area of Catcha Lake to the south of the study and is still carried on today, although activity and settlement does not appear to have extended into the study area (Figure 3.2-4).

⁶ Nova Scotia Department of Lands and Forests, 2009.



Figure 3.2-3: Part of A. F. Church's map of Halifax County (1865) showing the approximate location of the study area (red circle) in relation to nearby historic settlement.

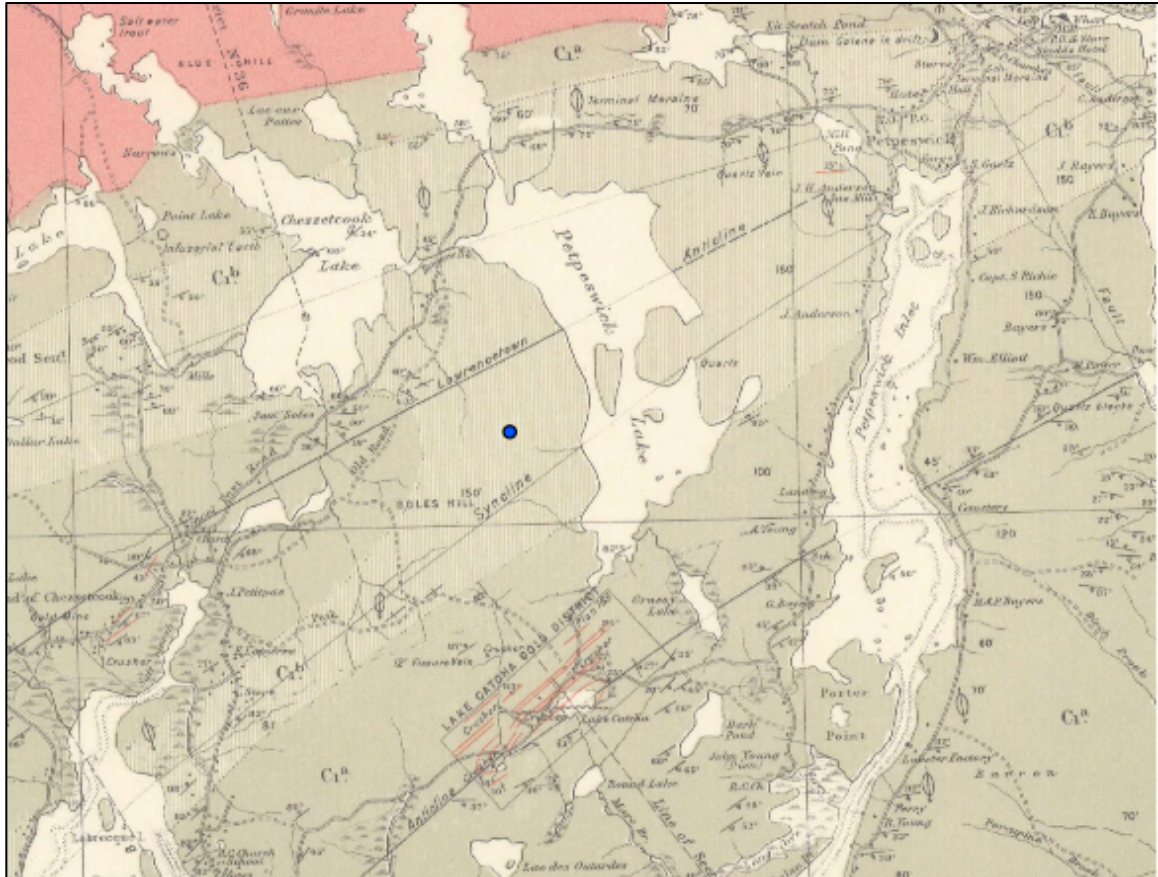


Figure 3.2-4: Part of the 1907 Geological Survey Map of Musquodoboit Harbor showing the approximate location of the study area (blue circle) in relation to historic settlement and gold mining activities.⁷

3.3 Field Reconnaissance

An archaeological field reconnaissance was conducted by April MacIntyre and Stephen Davis on April 3, 2013. The study area is accessed from Brookside Drive off Exit 21 of Highway 107. The proposed access road follows an existing unpaved road into a gravel pit (Plate 1). Approximately 400 meters up the unpaved road, at the northernmost end of the gravel pit, the road will then cut through a forested area, along an old skidder trail for some distance, leading to the proposed turbine site. For approximately the first 800 meters, the proposed road will cut through an area that was clear-cut within the last 15 years. This area is now a thickly regenerating spruce forest that steeply ascends some 50 meters in elevation above the gravel pit (Plate 2). The ground is very rugged and no signs of past cultural activity were noted.

⁷ Faribault, 1907.

Beyond the clear-cut area, the proposed road then cuts through a mature mixed-wood forest before returning to clear-cut again. This second clear-cut area is less densely regenerating than that to the west (Plate 3). Again, the ground here is rugged and interspersed with small wet areas, primarily along old skidder trails. There are many old skidder trails throughout but no other evidence of past cultural activity.

Aside from the numerous wet areas along the skidder trails and a small narrow stream just east of the westernmost end of the access road, there are no other sources of fresh water in the study area. The stream near the start of the access road is approximately 1.5 meters in width and was less than 30 centimeters in depth at the time of the reconnaissance, which was conducted in early spring immediately following the winter melt (Plate 4).

4.0 Results and Discussion

The historic background study indicates that the general area of Musquodoboit/Chezzetcook was inhabited by First Nations peoples prior to European contact. The study area may have been visited by First Nations peoples for hunting and gathering but settlement here was unlikely as there was no source of potable water or navigable waterways. Chezzetcook was settled by Acadians in the late 17th century but settlement and farming was likely focused in the area of the bay and adjacent marshlands and in the 19th century, settlement was to the north and east, where roads had been established.

The field reconnaissance indicated that not only was much of the area along the proposed access road disturbed by quarrying and logging, but also that the area was not likely an attractive area for settlement by First Nations or Euro-Canadian settlers as there is no nearby source of freshwater other than the small stream at the west end of the study area and the ground is very rugged. The stream at the west end of the access road would not sustain aquatic resources or provide a sufficient and reliable source of freshwater to support settlement.

5.0 Conclusions and Recommendations

The proposed access road corridor has been determined to be of low potential for archaeological resources related to both First Nations and Euro-Canadian resources. Therefore, no further mitigation for this area is recommended. Should the access road deviate from that which was surveyed by archaeologists, it is recommended that the deviated area be subjected to an archaeological reconnaissance by qualified archaeologists.

In the unlikely event that archaeological resources are encountered in the area of the turbine site, it is required that all activity cease and the Coordinator of Special Places, Ms. Laura Bennett (902-424-6475) be contacted immediately regarding a suitable method of mitigation.

6.0 References Cited

Church, Ambrose F. 1865. Topographical Township Map of Halifax County. A. F. Church & Co., Halifax.

Confederacy of Mainland Mi'kmaq. 2007. *Kekina'muek: Learning about the Mi'kmaq of Nova Scotia*. Eastern Woodland Publishing, Truro.

Davis, Derek and Sue Browne. 1996. Natural History of Nova Scotia, Volume II: Theme Regions. Nimbus Publishing and Nova Scotia Museum, Halifax.

Department of Lands and Forests. 2009 (updated). Crown Lands Index Sheet no. 75.

Faribault, E. R. 1907. Province of Nova Scotia: Halifax County, Musquodoboit Harbour Sheet, No. 54. Geological Survey of Canada, Multicoloured Map.

Fergusson, C. Bruce. 1967. Place-Names and Places of Nova Scotia. Public Archives of Nova Scotia, Halifax.

Consentino, Lucie LeBlanc. n.d. Acadian and French-Canadian Ancestral Home: Chezzetcook. URL: www.acadian-home.org/chezzetcook.html Accessed 27 September 2012.

Rand, Silas Tertius. 1875. A first reading book in the Micmac language comprising the Micmac numerals, and the names of the different kinds of beasts, birds, fishes, trees, &c. of the Maritime provinces of Canada. Halifax: s.n.

PLATES



Plate 1: Existing unpaved road into the gravel pit, looking northeast.



Plate 2: Clear-cut area near the west end of the proposed access road, looking east. The orange flagging tape marks the proposed road alignment.



Plate 3: Clear-cut area near the east end of the study area, looking west. Again, the orange flagging tape marking the proposed alignment can be seen just right of center.



Plate 4: The stream at the west end of the proposed road alignment, looking north.

Appendix A

Heritage Research Permit



Heritage Research Permit (Archaeology)

Special Places Protection Act 1989

(Original becomes Permit when approved by
Communities, Culture and Heritage)

Office Use Only
Permit Number:

A2013NS012

Greyed out fields will be made publically available. Please choose your project name accordingly	
Surname MacIntyre	First Name April
Project Name Gaetz Brook Wind Farm, access road	
Name of Organization Davis MacIntyre & Associates Limited	
Representing (if applicable)	
Permit Start Date 01 April 2013	Permit End Date 31 July 2013
General Location: Gaetz Brook, Halifax County	
Specific Location: (cite Borden numbers and UTM designations where appropriate and as described separately in accordance with the attached Project Description. Please refer to the appropriate Archaeological Heritage Research Permit Guidelines for the appropriate Project Description format) 20 T 4956074 m N 483817 m E	
Permit Category: Please choose one <input type="checkbox"/> Category A – Archaeological Reconnaissance <input type="checkbox"/> Category B – Archaeological Research <input checked="" type="checkbox"/> Category C – Archaeological Resource Impact Assessment <input checked="" type="checkbox"/> I certify that I am familiar with the provisions of the <i>Special Places Protection Act</i> of Nova Scotia and that I have read, understand and will abide by the terms and conditions listed in the Heritage Research Permit Guidelines for the above noted category.	
Signature of applicant 	Date 20 March 2013
Approved by Executive Director 	Date March 25/2013