

CAPE BRETON POWER LIMITED

**GLACE BAY / LINGAN WIND POWER PROJECT
ARCHAEOLOGICAL SCREENING
CAPE BRETON REGIONAL MUNICIPALITY**

ARCHAEOLOGICAL SCREENING REPORT

Submitted to:
Cape Breton Power Limited
and the
Special Places Program - Heritage Division

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TABLE OF CONTENTS

	Page
1.0 INTRODUCTION	1
2.0 STUDY AREA	2
3.0 METHODOLOGY	7
4.0 RESULTS	8
4.1 Background Research	8
4.2 Field Investigations	10
5.0 CONCLUSIONS AND RECOMMENDATIONS	17
6.0 REFERENCES CITED.....	19

LIST OF FIGURES

Figure 1:	Study Areas	3
Figure 2:	Lingan Wind Farm	4
Figure 3:	1-B Colliery Turbine Site.....	5
Figure 4:	Port Caledonia Turbine Site	6

LIST OF PLATES

Plate 1:	North edge of Lingan Wind Farm site	11
Plate 2:	North Head Forward Observation Post	11
Plate 3:	Wet area at south end of 1-B Colliery Turbine Site	14
Plate 4:	New turbine base and access road at the 1-B Colliery site	14
Plate 5:	North end of Port Caledonia Turbine Site.....	16
Plate 6:	Remains of a modern log cabin near the Port Caledonia Turbine base	16

GLACE BAY / LINGAN WIND POWER PROJECT ARCHAEOLOGICAL SCREENING

1.0 INTRODUCTION

In July of 2005, Cultural Resource Management (CRM) Group was retained by Dillon Consulting Limited on behalf of Cape Breton Power Limited to conduct archaeological screening for the Glace Bay / Lingan Wind Power Project. CRM Group performed the archaeological screening as part of the overall environmental screening for the construction of three wind turbine facilities, in the communities of Lingan, Bridgeport and Port Caledonia in Cape Breton Regional Municipality (CBRM). The goal for CRM Group was to evaluate archaeological potential within each of the three proposed sites by conducting archival research and on-site visual assessment.

The archaeological screening was conducted according to the terms of Heritage Research Permit A2005NS76 (Category "C"), issued by the Heritage Division - Nova Scotia Museum (HD-NSM) to W. Bruce Stewart, CRM Group President and Senior Consultant. This report describes the screening, presents its results and offers resource management recommendations.

2.0 STUDY AREAS

The three turbine sites for the Glance Bay / Lingan Wind Power Project are all situated in elevated coastal positions in the vicinity of Lingan and Glance Bay (*Figure 1*).

Lingan Wind Farm

Lingan Wind Farm consists of a 47.7 hectare site beside Gillis Cove, north of the existing Lingan Generating Station (*Figure 1*). The site extends from Davys Head to North Head, and from the shore of Gillis Cove southward approximately halfway to Hinchey Avenue. It is composed of four properties (PIDs 15501489, 15510407, 15501505 and 15501513).

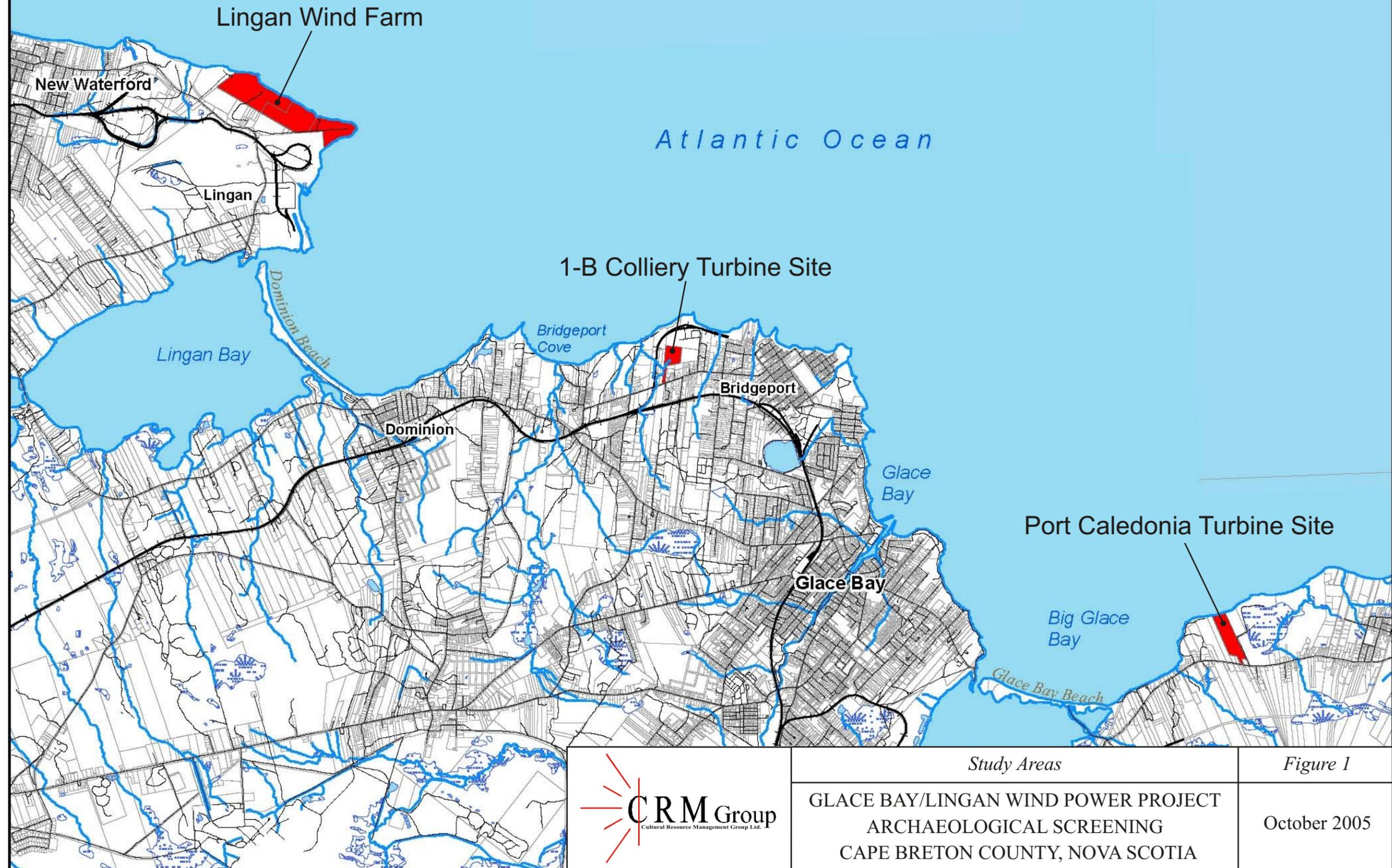
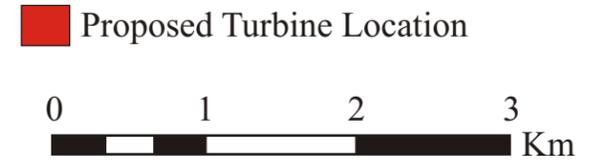
Current plans indicate that, by the fall of 2006, seven 2MW wind turbines will be erected on the site. Identified as Turbines 1 through 7 extending from west to east, these turbines will be situated in a line down the centre of the site, extending from Davys Head to North Head (*Figure 2*).

1-B Colliery Turbine Site

The 1-B Colliery Turbine Site is located immediately southwest of the abandoned 1-B Colliery at O'Neils Point, in Bridgeport (*Figure 1*). The site consists of a 4.8 hectare property (PID 15448335) on which a single 800KW turbine will be built. The property extends northward from Connaught Avenue, ending approximately 300 metres south of the shore. When subjected to reconnaissance on September 8, 2005, the facility's turbine access road had already been constructed, extending westward from 1B Road. The concrete turbine base had also already been built (*Figure 3*).

Port Caledonia Turbine Site

The Port Caledonia Turbine Site is a 9.2 hectare property (PID 15448335) located on the east side of Whelan Point in Port Caledonia (*Figure 1*). The property, which is the proposed location of a single 800 KW turbine, extends from the Marconi Trail (Highway 6 or Mines Road No. 6) northward to the shoreline. When the site was subjected to reconnaissance on September 8, 2005, the turbine access road had already been constructed, extending westward from a service road leading to five nearby communication towers. The concrete turbine base had also already been completed (*Figure 4*).

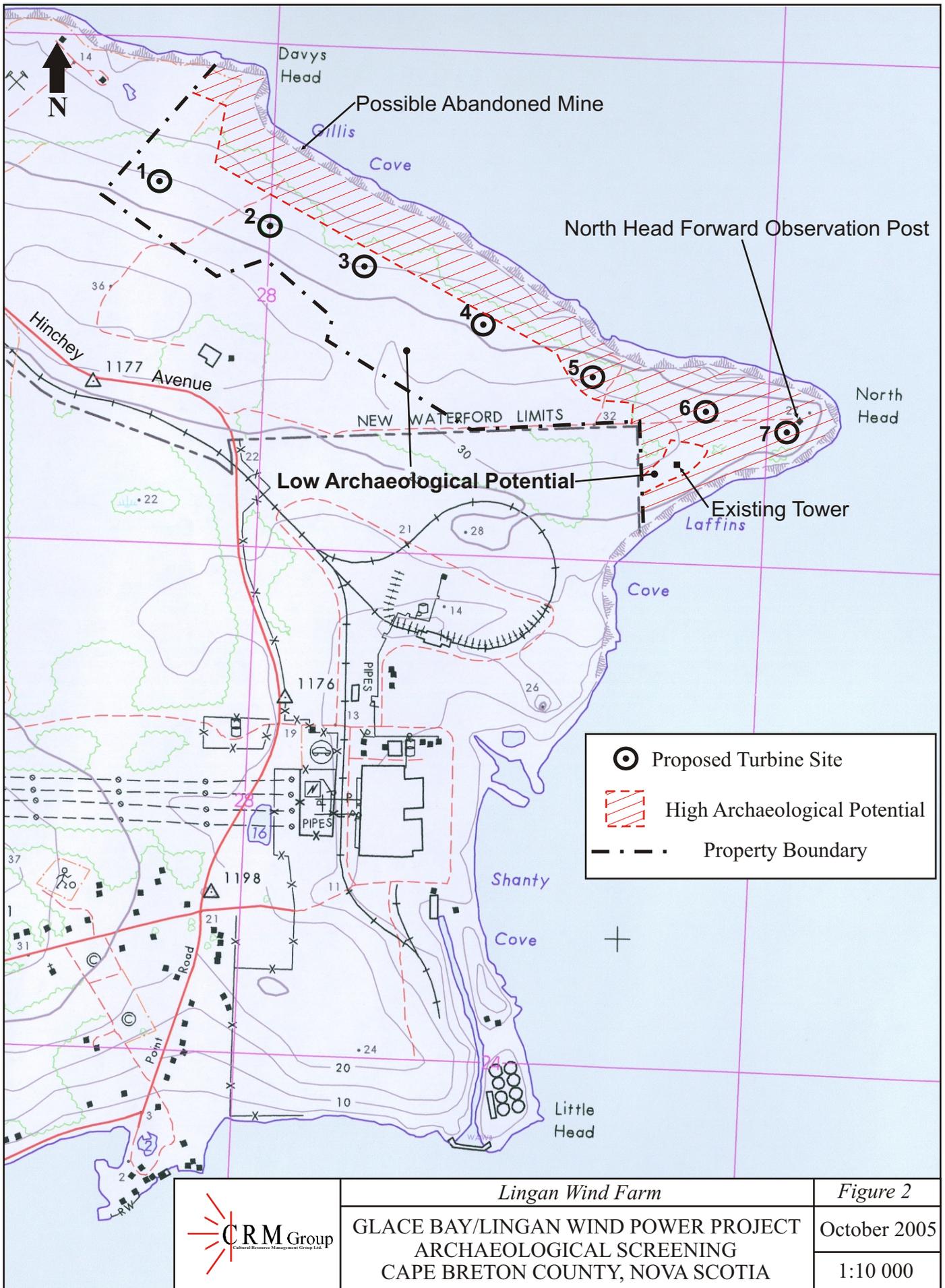


Study Areas

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Figure 1

October 2005



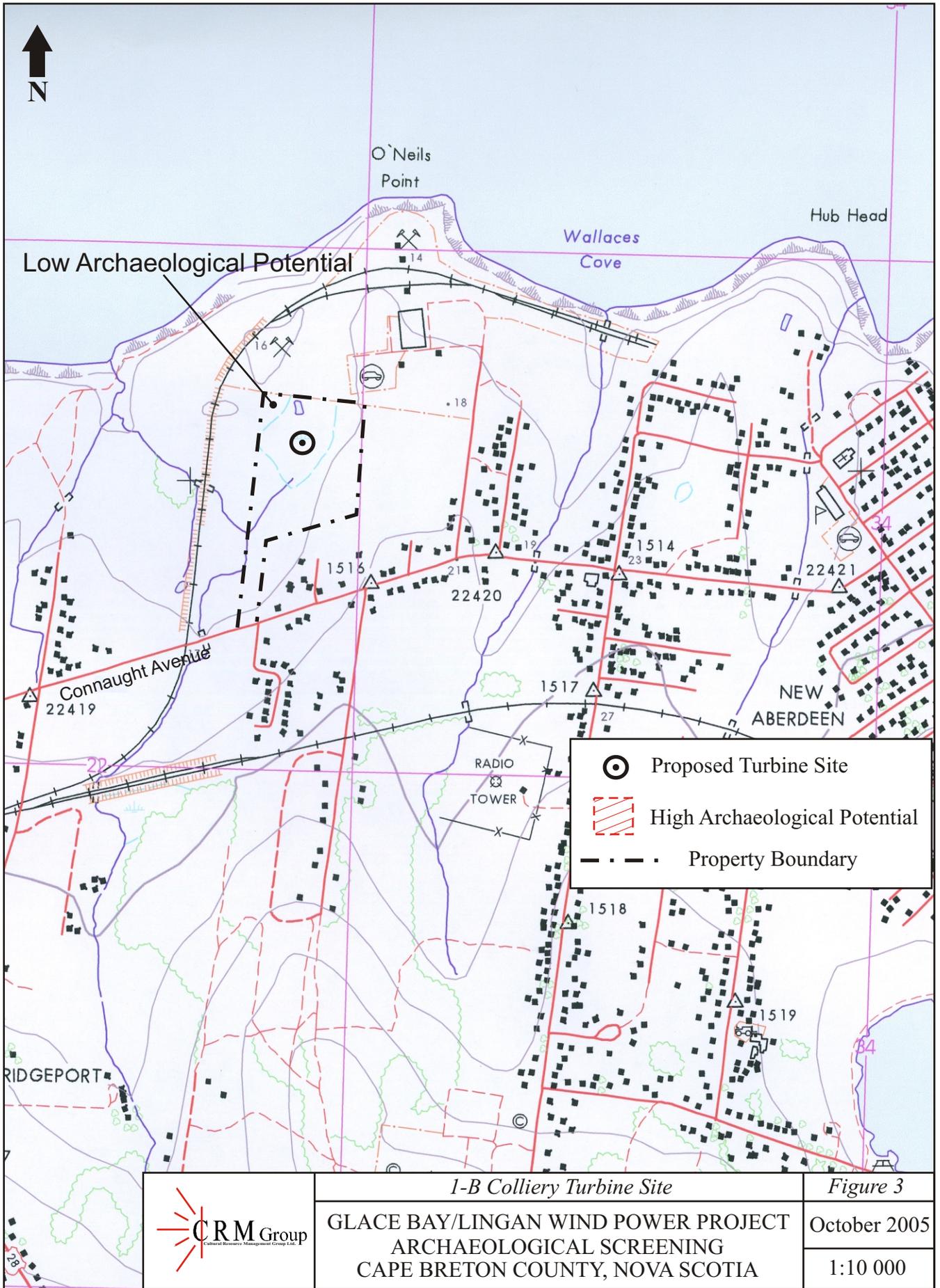
Lingan Wind Farm

**GLACE BAY/LINGAN WIND POWER PROJECT
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CAPE BRETON COUNTY, NOVA SCOTIA**

Figure 2

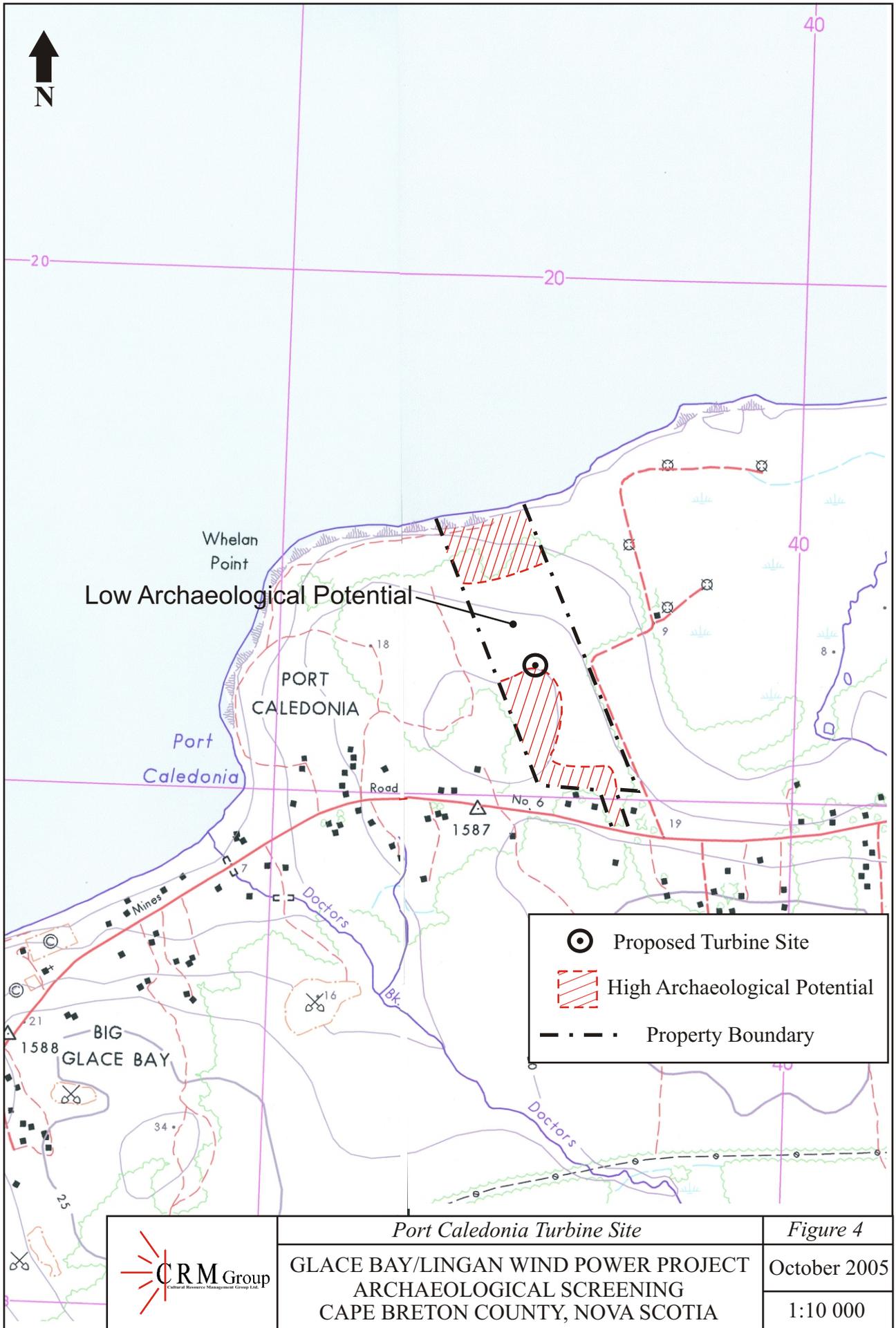
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1:10 000



1-B Colliery Turbine Site
 GLACE BAY/LINGAN WIND POWER PROJECT
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 CAPE BRETON COUNTY, NOVA SCOTIA

Figure 3
 October 2005
 1:10 000



Low Archaeological Potential

-  Proposed Turbine Site
-  High Archaeological Potential
-  Property Boundary



Port Caledonia Turbine Site

**GLACE BAY/LINGAN WIND POWER PROJECT
ARCHAEOLOGICAL SCREENING
CAPE BRETON COUNTY, NOVA SCOTIA**

Figure 4

October 2005

1:10 000

3.0 METHODOLOGY

The archival research component of the archaeological screening was designed to explore the land use history of the study areas and their environs, providing the information necessary to evaluate the properties' archaeological potential. To achieve this goal, CRM Group utilized the resources of Cape Breton University's Beaton Institute (BI) in Sydney, the Parks Canada archives at the Fortress of Louisbourg and several provincial record facilities in Halifax.

Research at the BI, the Department of Natural Resources Library and the Public Archives of Nova Scotia (PANS) identified many relevant historic maps. Others were found in the collection of the Fortress of Louisbourg Archives. Investigation at the Provincial Crown Lands Record Centre (PCLRC) exposed land grant records for the subject properties. Research at BI and PANS yielded historic documents and written histories that proved useful. Records of previous archaeological discoveries in the Glace Bay / Lingan area were sought using the Maritime Archaeological Resource Inventory, maintained by the HD-NSM. Modern maps (1:10 000 and 1:50 000 topographic) and aerial photographs (1999) were obtained at the Provincial Land Information Centre.

Fieldwork consisted of a brief visual inspection of each study area, conducted on September 8 and 9 by CRM Group archaeologists Mike Sanders and Jonathan Kyte. These limited pedestrian surveys utilized existing roads and trails, but also involved walking transects through wooded areas following compass headings. The ground searches did not involve sub-surface testing. The researchers were watchful for topographic or vegetative anomalies that might indicate the presence of buried archaeological resources. The process and the results were documented in field notes and photographs.

4.0 RESULTS

4.1 Background Research

An examination of HD-NSM records indicated that there were no recorded archaeological sites in the vicinity of Glace Bay or Lingan. It was determined, however, that none of the study areas had previously been subjected to archaeological investigation.

Lingan Wind Farm

Early Mi'kmaw habitation in the general Lingan area is suggested by the fact that North Head was once known as Indian Head (Wyld 1845) and Lingan Bay was once known as Harvre de l'Indienne or Indian Bay. The name Lingan is a corruption of l'Indienne (PANS 1967). The Lingan area is known as Milisek in the Mi'kmaw language (PANS 1967).

The Lingan area was settled by the French prior to 1716 (PANS 1967), but research at the Public Archives of Nova Scotia, the Fortress of Louisbourg Archives and the Beaton Institute revealed no maps depicting the precise location of the French settlement. North Head, however, is identified as Cap Charbon (Coal Cape) on a 1751 map of the area (Anonymous 1751). The community at L'Indienne was destroyed in 1748 when several of the inhabitants took the British Oath of Allegiance, against the wishes of their neighbours (PANS 1967). No settlement is depicted in the Lingan area on identified maps dating to the 1750s (Anonymous 1751; Anonymous 1750s).

The Lingan area was repopulated in the late 1700s by Irish settlers. By 1788 there were 13 residents at "L'Indian" (PANS 1967). The precise location of their residences has not been determined.

The label "Coal" is applied to North Head on maps dating to 1794 (Miller) and c. 1828 (Wyld), indicating a continued interest in this local resource. The General Mining Association began mining coal at Lingan in 1854. Known as the Lingan or Lincoln Mine, this operation was situated south of the study area, in the vicinity of the present Lingan Generating Station (Church 1877; McKenzie 1883; Robb & Fletcher 1898). The facility operated until 1886 (PANS 1967).

Although Hinchey Avenue, a short distance southwest of the study area, was established sometime before 1831 (Johnston 1831), none of the identified detailed nineteenth century maps of the area depict any cultural features within the study area (Johnston 1831; Hendry 1862; Church 1877; Robb & Fletcher 1898).

The study area remained Crown land until 1908, when it was part of a 100 acre lot granted to John T. Laffin - a Lingan ship captain (PCLRC Grant Book 75, page 179). Gillis Cove is believed to have derived its name from a family that occupied an early twentieth century farm on the site of Bruce Fraser's residence, located on the north side of Hinchey Avenue, but outside of the study area (Fraser 2005).

1-B Colliery Turbine Site

Although the 1B Road study area lies near the bay known historically as the “Harvre de l’Indienne, research revealed no record of Mi’kmaq habitation specific to O’Neils Point.

While the British held Louisbourg between the years of 1745 and 1749, they operated a coal mine at Burnt Head, approximately 1.0 kilometre east of the study area. Several dwellings were built in association with the colliery, but it is unlikely that any of those dwellings would have been located as far west as the study area at O’Neils Point. In the spring of 1748, Fort William - a fortified blockhouse - was built at Burnt Head for the protection of the mining operation. Despite this precaution, several of the homes were destroyed in a Mi’kmaq attack that came in July of that year. The French assumed control of the fort and the mine in 1749 and the colliery remained active until 1752, when the mine was set ablaze by mutineers, resulting in the destruction of the fort as well. The fire in the mine continued to burn until 1764 (Holland & Goldfrap 1767; Dawson 1988: 66; PANS 1967; website of the Cape Breton Miners Museum).

Bridgeport Cove, immediately west of the study area, was known as Dead Man’s Cove throughout the 19th century (Anonymous n.d. a; MacKenzie 1883; Robb & Fletcher 1898). This name possibly reflects the existence of an early cemetery on or near “Deadman Point” (now Timmons Point), at the opposite end of the cove, 1.7 kilometres west of the study area (Church 1877).

By the early 1800s, the right-of-way for the present Connaught Avenue, had already been established (Anonymous early 1800s). In the late 1820s or early 1830s, new coal mines were established east of the study area, in the vicinity of New Aberdeen and Table Head (Johnston 1831; MacKay 1834). Names of mines in that area ultimately included the Glace Bay Mines, the Stirling Mines, the Roost Works and the Hub Mine (Church 1877; McKenzie 1883; Robb & Fletcher 1898).

The study area, itself, remained Crown land until 1864, when it was part of a 135 acre lot granted to John O’Neil - a Bridgeport farmer (PCLRC Grant Book 32, page 160). By the 1870s, the Bridgeport Mines were established about 1.0 kilometre southwest of the study area (Church 1877).

None of the identified detailed nineteenth century maps of the area depict any cultural features on or near the study area at O’Neils Point (Johnston 1831; MacKay 1834; Wyld 1845; Hendry 1862; Church 1877; McKenzie 1883; Robb & Fletcher 1898). Development of the 1B Colliery, which impacted the study area, did not begin until 1924,

Port Caledonia Turbine Site

Historic Mi’kmaq settlement near the study area is suggested by the label “Indian Brook” which was applied to Doctors Brook on a c. 1829 map (Anonymous c. 1829). The mouth of this brook lies approximately 600 metres west of the study area, on the far side of Whelan

Point.

Bordens Cove, which is located approximately 4.0 kilometres east of the study area, is identified as Baye au Charbon on a map of the coast made in 1744 (Bellin 1744). Translating as Coal Bay in English, this name indicates that the local coal outcrops were well known to the French prior to the capture of the Fortress of Louisbourg by New England forces in 1745.

By the late 1820s, Mines Road (now Highway 6) was established in its present alignment, serving as part of a long coastal road linked to Sydney. A map drawn in 1829 or shortly thereafter depicts several residences along the road in the Port Caledonia area (Anonymous c. 1829). One is on a Whelan Point lot which encompasses the study area. The lot is labelled “James English’s Ticket”. This identifier suggests that, perhaps as the result of a draw among Loyalists in the mid 1780s, James English was the first to receive the property. The house, itself, is labelled “Samuel Boutilier”, indicating the name owner at the time the map was drawn.

Comparison with modern property maps suggests that Samuel Boutilier’s house was located near the summit of the rise at the southwest edge of the study area. It is unclear whether the house site would have been inside or outside of the study area boundary.

By 1877, a coal mine known as the Clyde Mine was established approximately 300 metres west of the study area, on the west side of Whelan Point. Its entrance, named the “Ontario Slope”, is depicted on Ambrose Church’s 1877 map of Cape Breton County (Church 1877). The map also indicates that the mine had a railway that led westward to the Port Caledonia Shipping Station and Glance Bay, away from the study area. Residences of “J. Boutilier”, “P. McAuley” and a second “J. Boutilier” are depicted standing on the north side of Highway 6 in the vicinity of the south end of the study area.

4.2 Field Investigations

Lingan Wind Farm

Field reconnaissance on September 9 revealed that the majority of the Lingan Wind Farm site is relatively flat, dry and densely wooded. Although the site lies immediately adjacent to the coast, it consists of an elevated plateau that is physically separated from the actual shore by a steep escarpment. The escarpment is actively eroding along the full length of the study area. Seasonal exposure to harsh environmental conditions has kept the ground surface at the outer edge of the plateau quite clear of trees and bushes (*Plate 1*). This naturally denuded zone (generally 50 to 100 metres in width) could have attracted settlement in the past, given its favourable ground conditions and exceptional view. However, access directly to or from the water would always have been difficult.



PLATE 1: North edge of Lingan Wind Farm site, looking southeast from Davys Head to North Head.



PLATE 2: North Head Forward Observation Post. Facing south.

Reconnaissance along the length of the plateau “clearing” revealed no exposed archaeological features, artifact exposures or suspicious topographic or vegetative anomalies. Despite this fact, the surface of the plateau within 100 metres of the escarpment and across the width of North Head is still ascribed high archaeological potential.

An abandoned concrete building lies within the study area near the tip of North Head (*Plate 2*). Signage on the grounds of the Fort Petrie Museum in Victoria Mines identifies this structure as the North Head Forward Observation Post. This facility was built c. 1939 and served as a key element of the Sydney Harbour Coastal Defences during the Second World War (1939 to 1945). The presence of a small (2 metre diameter) circular pit a short distance (4.5 metres) to the southeast of this building suggests that there may have been outbuildings, such as a privy, associated with the post. The dirt road that runs east / west between the observation post and the Lingan Beach Road is also thought to be a Second World War military feature (Fraser 2005). Reconnaissance on either side of the road revealed no archaeological features.

A tall metal tower was recently erected within the study area. It is situated to the west of the abandoned observation post and south of the military road, near Laffins Cove. Grubbing performed in advance of its construction stripped the topsoil from around its base, outwards to a distance of up to 50 metres. This impact area is now considered to have low archaeological potential. No artifacts were observed in any of the soil exposures.

The broad wooded area along the southwest edge of the study area is considered to have low archaeological potential, being relatively distant from the shore and any historic roads. A farm existed near this area during the early 1900s, but it was on the site of Bruce Fraser’s residence, southwest of the study area limits.

The study area is underlain by a coal seam, which is plainly visible in the face of the escarpment. Timber cribwork protrudes from this exposed seam near the head of Gillis Cove. This wooden structure is believed to represent shoring at the mouth of an abandoned mine. The good condition of the shoring suggests that the mine is recent and not an archaeological feature.

1-B Colliery Turbine Site

CRM Group conducted field reconnaissance at the 1-B Colliery Turbine Site on September 8, 2005. Reconnaissance revealed the study area to be generally level and open, reflecting the natural topography of O’Neils Point and the artificial levelling it sustained during the twentieth century operation of the 1-B Colliery. The southern end of the site is quite marshy, consisting of a small bog surrounded by a dense growth of alders (*Plate 3*). The central portion of the site, though dry, has been stripped of topsoil. Here, a recent growth of cranberry plants provides incomplete cover over bare subsoil. Modern maps indicate that the northern end of the site was marshy prior to recent infilling for the construction of the turbine base and its access road (*Plate 4*).



PLATE 3: Wet area at south end of 1-B Colliery Turbine Site. Facing south toward Connaught Avenue.



PLATE 4: New turbine base and access road at the 1-B Colliery site in Bridgeport. Facing northeast.

No archaeological features were encountered during the survey. The only cultural material found in the abundant soil exposures was domestic refuse and industrial building materials dating to the second half of the twentieth century.

On the basis of these observations, the entire study area was ascribed low archaeological potential.

Port Caledonia Turbine Site

Like the Lingan Wind Farm site, the Port Caledonia Turbine Site consists of an elevated plateau that is separated from the Atlantic shoreline by a steep escarpment. Reconnaissance on September 8 revealed that the north end of the site, along the top edge of the escarpment, is relatively flat and clear (*Plate 5*). Tree growth in this margin appears to have been naturally suppressed by wind and salt spray. Despite its exposure to the elements and its lack of direct marine access, the plateau margin, within 100 metres of the escarpment, is ascribed high archaeological potential. Attributes such as its strategic view and its proximity to coal exposures along the escarpment may have attracted past settlement.

The remainder of the study area is densely wooded, with an undulating surface that is primarily dry. The majority of this was ascribed low archaeological potential, as it exhibits no sign of cultural modification or suspicious topographic or vegetative anomalies. However, elevated areas along the southwest edge of the study area display artificial levelling indicative of historic farming and pits indicative of unauthorized or “bootleg” mining. The mine pits are probably modern, but the horticultural landscape is likely associated with a farm established by Samuel Boutilier by the late 1820s. Boutilier’s residence, depicted on a map dating to c. 1829 (Anonymous c. 1829), appears to have been located on high ground near the southwest corner of the study area. Based on the combined results of background research and reconnaissance, the elevated ground at the southwest edge of the study area is ascribed high archaeological potential (*Figure 4*). This area includes the turbine site, itself, and the site of a modern log cabin that lies in ruin a short distance to the west (*Plate 6*).



PLATE 5: North end of Port Caledonia Turbine Site, looking west toward Whelan Point and Glace Bay.



PLATE 6: Remains of a modern log cabin near the Port Caledonia turbine base. Facing south.

5.0 CONCLUSIONS AND RECOMMENDATIONS

On the basis of the archaeological screening program, which combined archival research and limited field reconnaissance, archaeological potential was evaluated across each of the three wind farm sites proposed for the Glace Bay / Lingan Wind Power Project. High archaeological potential was ascribed to the following areas:

Lingan Wind Farm

- within 100 metres of the coastal escarpment
- across the top of North Head, except for the area grubbed for the installation of the existing tower

Port Caledonia Turbine Site

- within 100 metres of the coastal escarpment
- across the elevated areas at the southwestern edge of the study area

The remainder of the proposed wind farm land, including all of the 1-B Colliery Turbine Site, is considered to have low archaeological potential.

Based on these results, CRM Group offers the following management recommendation:

1. It is recommended that the 1-B Colliery Turbine Site as defined in this report (Figure 3) be cleared of any further archaeological investigation prior to development.
2. It is recommended that the areas of low archaeological potential in the Lingan Wind Farm Site (Figure 2) and the Port Caledonia Turbine Site (Figure 4) be cleared of any further archaeological investigation prior to development.
3. It is recommended that, within the areas of high archaeological potential ascribed to the Lingan Wind Farm Site (Figure 2) and the Port Caledonia Turbine Site (Figure 4), archaeological assessment involving subsurface testing precede any ground impacts. This assessment could be limited to the proposed impact area(s), but should precede any grubbing for access road construction, staging area preparation, turbine construction, etc.
4. It is recommended that the North Head Forward Observation Post be recognized as a significant built heritage feature that should be avoided by construction impacts. It is further recommended that consideration be

given to the situation of the turbines so that the visual isolation of the post is maintained.

5. In the event that archaeological deposits or human remains are encountered during construction, all work in the associated area(s) should be halted and immediate contact made with the Special Places Program - Heritage Division (David Christianson: 424-6461).

6.0 REFERENCES CITED

PANS = Public Archives of Nova Scotia

BI = Beaton Institute

PCLRC = Provincial Crown Lands Record Centre

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