



Appendix N.4

Beaver Dam Gold Project - Haul Road Archaeological Reconnaissance
Halifax Regional Municipality, Nova Scotia
March 2016

Completed for the Updated 2021 Beaver Dam Mine EIS

GHD LIMITED

**BEAVER DAM GOLD PROJECT
HAUL ROAD ARCHAEOLOGICAL RECONNAISSANCE
HALIFAX REGIONAL MUNICIPALITY, NOVA SCOTIA**

FINAL REPORT

Submitted to:

GHD Limited

and the

**Special Places Program of the Nova Scotia Department of
Communities, Culture and Heritage**

Prepared by:

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Heritage Research Permit Number: A2015NS101

CRM Group Project Number: 2014-0015-02

MARCH 2016



*The following report may contain sensitive archaeological site data.
Consequently, the report must not be published or made public without
the written consent of Nova Scotia's Coordinator of Special Places Program,
Department of Communities, Culture and Heritage.*

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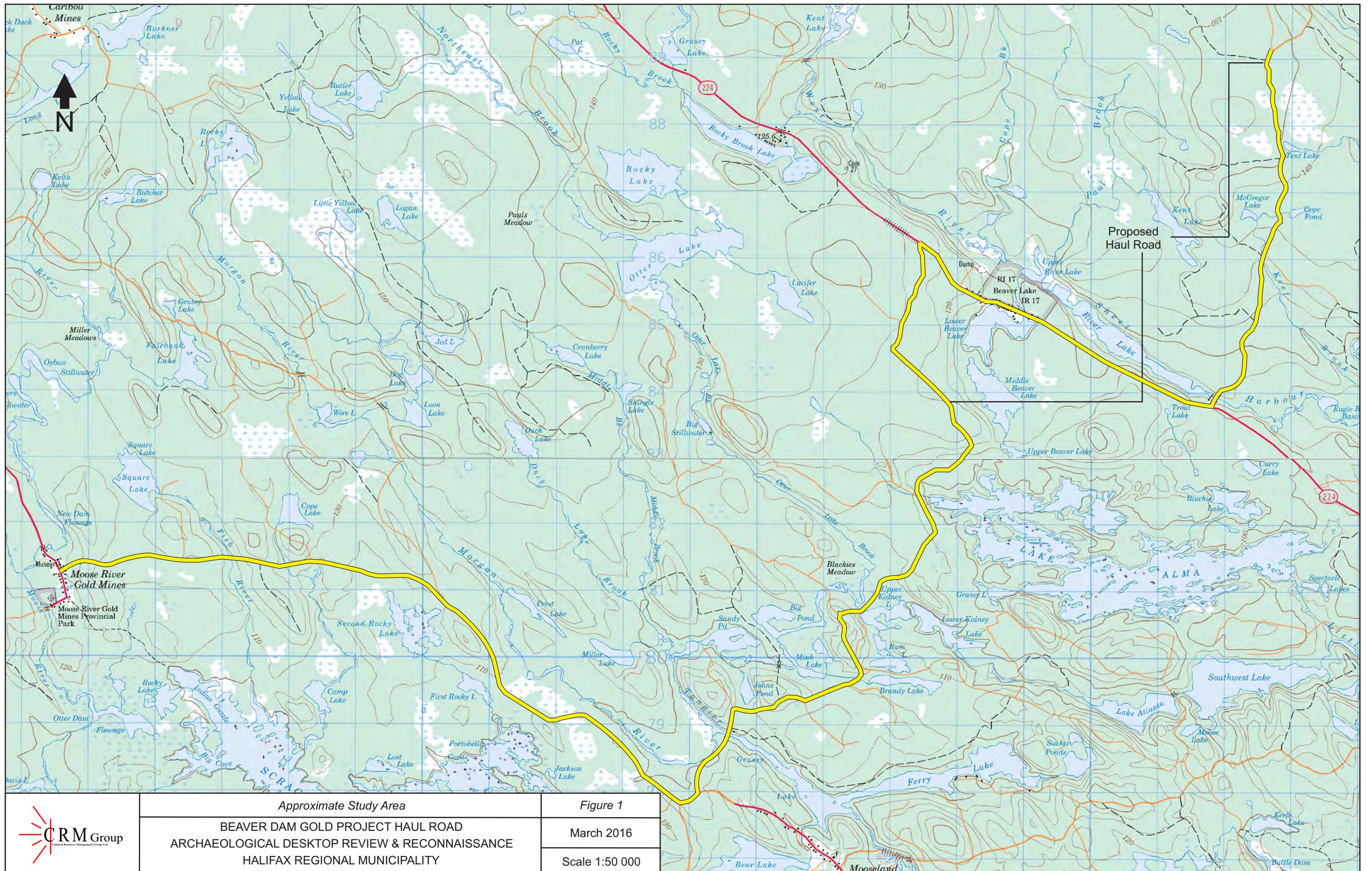
**BEAVER DAM GOLD PROJECT
HAUL ROAD ARCHAEOLOGICAL RECONNAISSANCE
HALIFAX REGIONAL MUNICIPALITY
NOVA SCOTIA**

1.0 INTRODUCTION

Atlantic Gold Corporation (Atlantic Gold) is proposing to redevelop the Beaver Dam Gold Project located in the northeastern corner of Halifax Regional Municipality, approximately 21 kilometres northwest of Sheet Harbour (*Figures 1 & 2*). In the fall of 2014 CRM Group was retained by GHD Limited (formerly Conestoga-Rovers & Associates) on behalf of Atlantic Gold to undertake archaeological screening and reconnaissance of the proposed mine expansion. The archaeological investigation was conducted under to the terms of Heritage Research Permit A2014NS107 (Category 'C'), issued to Staff Archaeologist Kathryn J. Stewart through the Special Places Program (Special Places).

Subsequent changes to the layout of the proposed facility led to additional archaeological reconnaissance in the summer of 2015. Previously investigated mine features such as the waste rock storage (WRS) and the crusher site had shifted to different locations within the overall development site. New work areas were added to the project, in the form of two till piles, two ore piles, two settling ponds and a Run-of-Mine (ROM)/crusher/service pad site. The archaeological investigation was conducted according to the terms of Heritage Research Permit A2015NS043 (Category 'C'), issued to K. J. Stewart. No additional features were identified during this reconnaissance.

In the fall of 2015, CRM Group was retained to conduct archaeological screening and reconnaissance of the proposed haul road connecting the Beaver Dam Mine and the Touquoy Mine sites. The work was conducted under the terms of Heritage Research Permit A2015NS101 by Staff Archaeologists Kiersten Green and K. J. Stewart. The primary focus of the study was to assess the potential for encountering archaeological resources during upgrading of the haul road. The assessment builds upon the research and reconnaissance of the Beaver Dam property undertaken on behalf of Acadian Mining (Acadian) by CRM Group in 2008 (Beanlands 2008). This report describes the archaeological reconnaissance of the proposed haul road, presents the results of these efforts and offers cultural resource management recommendations.



Approximate Study Area

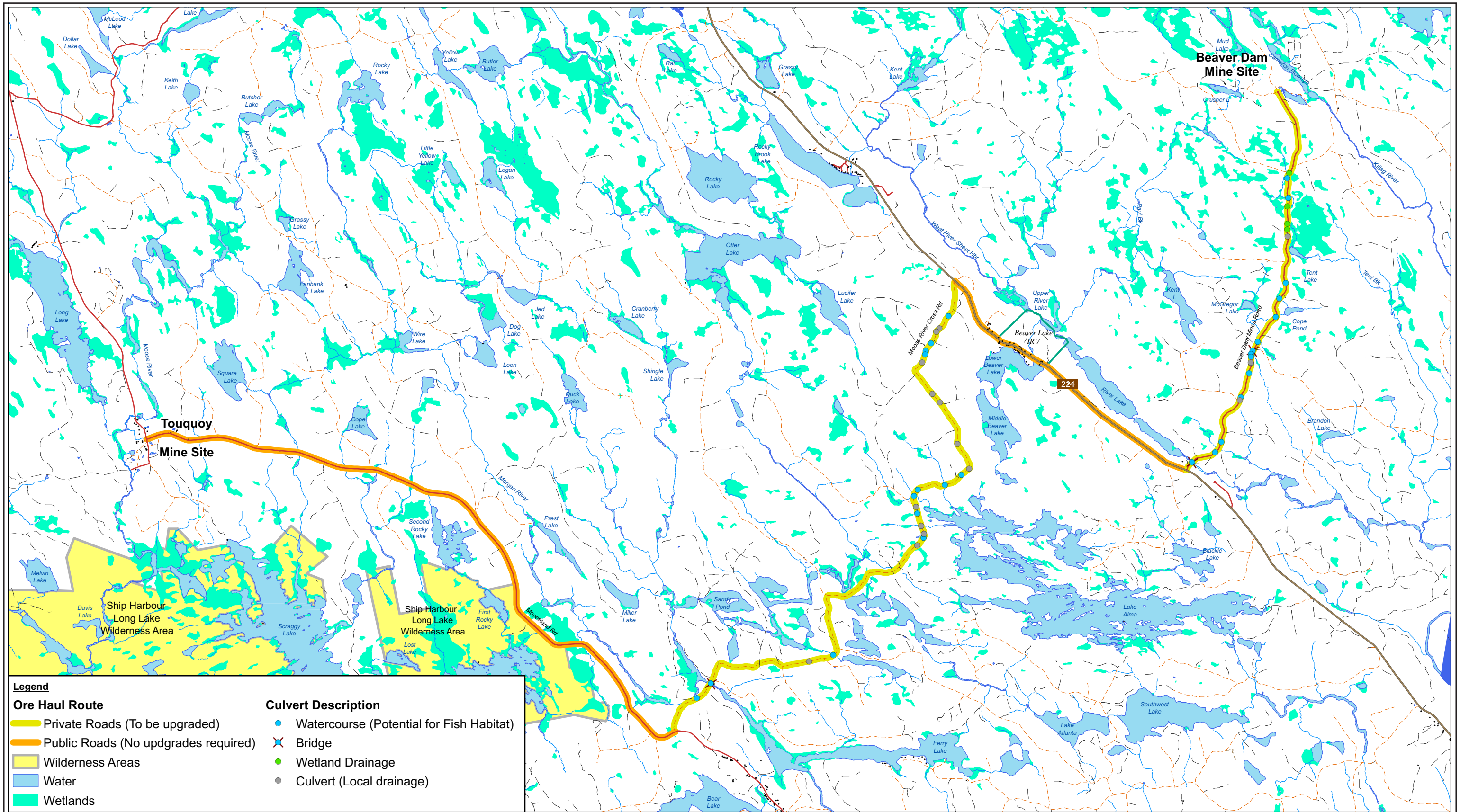
Figure 1

BEAVER DAM GOLD PROJECT HAUL ROAD
 ARCHAEOLOGICAL DESKTOP REVIEW & RECONNAISSANCE
 HALIFAX REGIONAL MUNICIPALITY

March 2016

Scale 1:50 000





Source: Service Nova Scotia, NS Environment, GHD (Field)



<i>Detailed Study Area</i>	<i>Figure 2</i>
BEAVER DAM GOLD PROJECT HAUL ROAD ARCHAEOLOGICAL RECONNAISSANCE HALIFAX REGIONAL MUNICIPALITY	March 2016

	ATLANTIC GOLD CORPORATION MARINETTE, NOVA SCOTIA BEAVER DAM MINE	0 250 500 750 1,000 Meters Coordinate System: NAD 1983 CSRS UTM Zone 20N	
HAUL ROAD CONFIGURATION			

2.0 STUDY AREA

The Beaver Dam Gold Project mine site is located on the western side of Killag River in the northeastern corner of Halifax Regional Municipality, approximately 21 kilometres northwest of Sheet Harbour (*Figure 1*). Access to the property can be gained by following Highway 224 approximately 17 kilometres northwest from Highway 7 to Beaver Dam Mines Road, then following Beaver Dam Mines Road north. The haul road overlaps with Beaver Dam Mine Road, which is the access road to the mine, then follows Highway 224 for 5.1 kilometres to the northwest (*Figure 2*). Turning left onto Moose River Cross Road, the haul road meanders for 12.1 kilometres along gravel roads heading southwest toward Mooseland Road. Upon reaching Mooseland Road, it turns northwest again, reaching the Touquoy Mine site after 11.2 kilometres.

Only portions of the proposed haul road require upgrades to allow for truck travel, so the focus of the reconnaissance was on Beaver Dam Mines Road and Moose River Cross Road. It is projected the upgrade will expand these sections of haul road to 20 metres wide.



PLATE 1: Small water crossing in the haul road study area; facing southwest. November 13, 2015.

3.0 METHODOLOGY

GHD retained CRM Group to undertake archaeological reconnaissance of the proposed haul road connecting the Beaver Dam Mine and Touquoy Mine sites. To address the potential of encountering significant archaeological resources within the proposed haul route, CRM Group developed a work plan consisting of the following components: archaeological reconnaissance of the area to be impacted by development activities; and, preparation of a report summarizing the results of the field survey, as well as recommending strategies for assessment and management of areas exhibiting high archaeological potential and/or features.

3.1 Background Research

The archival research had already been completed during the initial screening and reconnaissance of the Beaver Dam Mine site, so no additional background research was conducted. This component of the archaeological screening and reconnaissance was designed to explore the land use history of the study area, and provide information necessary to evaluate the area's archaeological potential. To achieve this goal, CRM Group utilized the resources of various institutions including documentation available through Nova Scotia Archives, the Department of Natural Resources (DNR) and Crown Land Information Management Centre.

The background study included a review of relevant historic documentation incorporating land grant records, legal survey and historic maps, as well as local and regional histories. This data facilitated the identification of environmental and topographic features, which would have influenced human settlement and resource exploitation patterns. The historical and cultural information was integrated with the environmental and topographic data to identify potential areas of archaeological sensitivity. In preparation for the archaeological reconnaissance, the information obtained from this suite of research materials was reviewed to facilitate the interpretation of any archaeological features encountered within the study area.

3.2 Field Reconnaissance

The goals of the archaeological field reconnaissance were to conduct visual inspection of the study area, document any areas of archaeological sensitivity or archaeological sites identified during the course of visual inspection, and design a strategy for testing areas of archaeological potential, as well as any archaeological resources identified within the study area. Although the ground search did not involve sub-surface testing, the researchers were alert for topographic or vegetative anomalies that might indicate the presence of buried archaeological resources. The process and results of the field reconnaissance were documented in field notes and photographs.

A hand-held Global Positioning System (GPS) unit was used to record UTM coordinates (NAD 83) for all survey areas, as well as any identified diagnostic artifacts, formal tools, isolated finds and site locations.

4.0 RESULTS OF SCREENING AND RECONNAISSANCE

4.1 Background Study

The following discussion details the environmental and cultural setting of the study area. This background study provides a framework for the evaluation of archaeological potential and the initial interpretation of any resources encountered during the field component of the assessment.

4.1.1 Environmental Setting

A number of environmental factors such as water sources, physiographic features, soil types and vegetation have influenced settlement patterns and contribute to the archaeological potential of the area.

Water Sources

The Beaver Dam Gold Project property is drained by way of the Killag River, a tributary of West River Sheet Harbour that flows south across the eastern portion of the study area. The Killag River has been dammed creating a reservoir along the eastern edge of the study area, known as Cameron Flowage. The haul road runs adjacent or crosses a number of watercourses and lakes, including River Lake, West River Sheet Harbour, Lake Alma and Ferry Lake. Proximity to water, for both drinking and transportation, is a key factor in identifying Precontact and historic Native, as well as early Euro-Canadian, archaeological potential.

Topography

Part of the study area is located within the greater terrestrial region known as the Quartzite Barrens Unit – Guysborough (Davis & Browne 1996: 56). This region is characterized by rocks belonging to the Meguma supergroup, which in this region is greywacke dating to between the Cambrian and Ordovician periods (White & Barr 2010; Davis & Browne 1996: 44). The topography of the bedrock-dominated barrens could be described as "ridge-swamp-swale". The area is almost completely covered by a quartzite till that ranges in thickness from 1 to 10 metres (Davis & Browne 1996: 56). In addition, a portion of the haul road is with the region known as Eastern Shore Drumlins Unit - Tangier River. This region is underlain by greywacke and slate interfolded into a series of wide bands that are oriented east-west (Davis & Browne 1996: 74). The general topography of the Beaver Dam region varies from level to rolling, and elevation within the study area ranges from approximately 92 metres to approximately 165 metres above sea level (Hilchey et al. 1964; 134).

Soils

The Beaver Dam area is covered primarily by *Halifax Series* (ST2, ST14) soils, although concentrations of *Bridgewater* (ST2 and ST8), *Aspotogan* (ST4), *Danesville* (ST3) and *Gibraltar* (ST2) *Series* soils and peat are also found within the study area (Keys 2007: 8). *Halifax Series* soils are well drained but typically shallow, stony and porous. The parent material is olive to yellowish-brown sandy loam to gravelly sandy loam glacial till derived primarily from quartzite. In general, *Halifax Series* soils are too stony for agriculture (MacDougall et al. 1963: 32-33). The well-drained *Bridgewater Series* soils are developed from a medium-textured, olive coloured glacial till that is derived principally from Precambrian slates. The *Bridgewater Series* soils in the Beaver Dam area are moderately stony and unsuitable for cultivation (MacDougall et al. 1963: 28). *Aspotogan Series* soils are described as a dark grayish brown sandy loam overlaying and mottled with a dark reddish brown sandy loam. The soil has poor drainage and is considered too stony for cultivation. The parent material is an olive stony loam till derived from quartzite or granite (MacDougall et al. 1963: 35). *Danesville Series* is a glacial till comprised of a grayish-brown gravelly sandy loam. This composition, principally derived from quartzite, is imperfectly drained (MacDougall et al. 1963: 33-34). The parent material of *Gibraltar Series* soils has a sandy loam texture

derived from granite. It is a shallow soil, with poor moisture-holding capabilities and is extremely stony (MacDougall *et. al.* 1963: 34).

Vegetation

The forest growth within this ecological region includes Balsam Fir, Red Spruce, White Spruce, Eastern Hemlock and Yellow Birch. Slow-moving streams are bordered by broad swampy areas populated with Red Maple and Black Spruce. The nature of the soils found within the study area does not encourage heavy forest growth (Davis & Browne 1996: 56-57).

4.1.2 Native Land Use

The land within the study area was once part of the greater Mi'kmaq territory known as *Eskikewa'kik*, meaning 'skin dressers territory'. The rivers in the surrounding area would have been important transportation corridors and a resource base for the Mi'kmaq and their ancestors for millennia prior to the arrival of European settlers. The West River Sheet Harbour in particular, which the haul road crosses at a previously established bridge, would have been part of a transportation route facilitating travel inland from Sheet Harbour on the Atlantic Ocean.

A review of the Maritime Archaeological Resource Inventory, a provincial archaeological site database maintained by the SPP, determined that there are no registered archaeological sites within or close to the study area. The lack of archaeological data for the area may reflect a lack of archaeological investigation, rather than an absence of archaeological sites. According to an environmental screening prepared by the SPP (Ogilvie 2008), the greater project area, which is dense with lakes and watercourses, is considered to exhibit moderate to high potential for encountering Precontact archaeological sites. It should be noted, however, that the project area as reviewed by the SPP encompassed a larger area than that subjected to archaeological screening and reconnaissance by CRM Group.

Based on available historic documentation, there is evidence to suggest a historic Mi'kmaq presence in the Beaver Dam area. The following account was related to Harry Piers by Jeremiah Bartlett Alexis (Jerry Lonecloud) in 1918 (Whitehead 1991: 310):

The death occurred at Stewarts, Upper Musquodoboit, on 31st, August, of an old and well-known Indian, John Cope, at the age of 71 years, he having been born at Beaver Dam, Halifax County, in April 1847, son of old Molly Cope who is said to have been 113 years of age when she passed away about 13 years ago . . . John Cope had considerable fame as a hunter, at least judging by the number of moose he shot, and acted as a guide for various Halifax sportsmen some thirty years ago. He used to hunt back of Beaver Dam and Moose Head [?] with Captain C. Lestrangle, who was formerly well-known here. One winter, probably about forty years ago, Cope by himself killed eighteen moose . . . The meat of these he sold to Fifteen-Mile Stream gold camp, which was then in operation.

Based on the environmental setting and Native land use, the Beaver Dam Gold Project haul road is ascribed elevated potential for encountering Precontact and/or early historic Native archaeological resources.

4.1.3 Property History

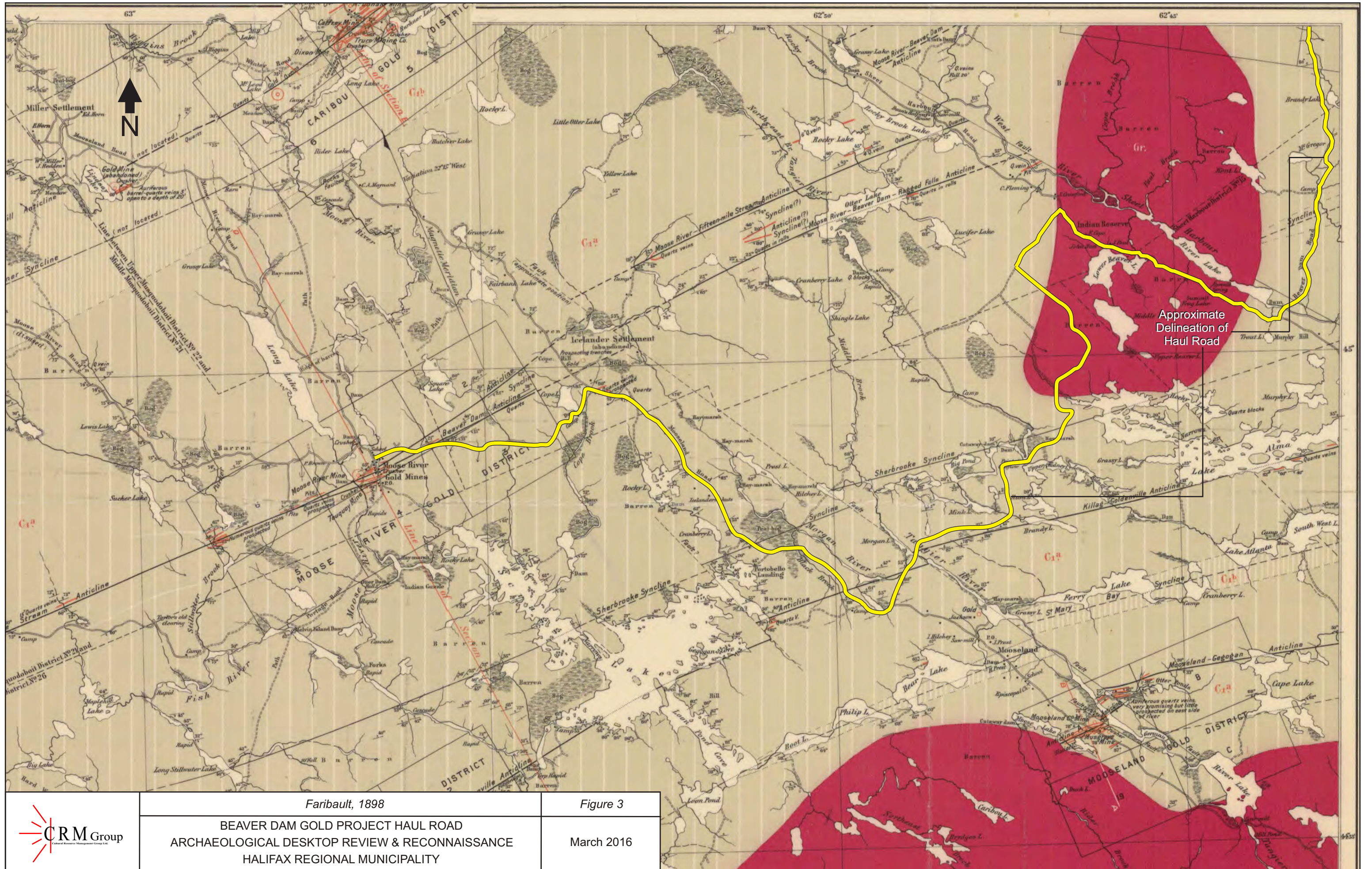
The Beaver Dam Development property has a long history of industrial use. Gold was discovered in the Beaver Dam district in 1868. By 1871, two belts of veins had been opened and a 15-stamp mill erected (Malcolm 1976: 57). However, the property remained largely inactive until 1886, when extensive prospecting and development work began. A 4-stamp mill run by water power was constructed at this time.

In 1891, the Beaver Dam Mining Company acquired the site. This new company expanded operations on the property with the construction of a 10-stamp mill. Four years later, the property was leased to G.M. Christie and William Tupper, who employed fifteen men at the Beaver Dam Mine. In 1896, the mine was acquired by J. H. Austin, who erected a 10-stamp mill. Work at the Beaver Dam Mine site continued intermittently until the late 80s, changing mining rights at least a dozen times (Jacques Whitford 1986). More recently, a number of other companies, including Seabright Resources Inc., have conducted extensive exploration on the property.

Euro-Canadian settlement of the Beaver Dam area began in the second half of the nineteenth century and centered on mining activities. A cursory examination of historic mapping revealed that the study area including the haul road occupies portions of at least two dozen historic lots (Crown Land Grant Sheet 89). An examination of the A. F. Church map of Halifax County failed to identify any structures depicted within the study area as of 1865. The 1898 Faribault map indicates the presence of approximately seven features within the mine study area but no features along or adjacent to the haul road (*Figures 3*). Four of those features in the mine study area, however, are depicted as overlying a quartz vein located near the centre of the Pit study area. This area was subsequently mined and the abandoned pit is now partially flooded. The other three features are depicted in the vicinity of another quartz vein running along the northern shore of Crusher Lake.

The DNR Abandoned Mine Opening (AMO) Database was used to identify where open mine shafts were located. The data was used both as a safety measure and for identifying areas more likely to contain archaeological features. According to the database, 20 AMOs are associated with Beaver Dam Mine site, and no AMOs are associated with the haul road (Stewart and Cigolotti 2015).

Based on the historical setting within the study area, the Beaver Dam Mine Project haul road is ascribed low potential for encountering historic Euro-Canadian archaeological resources.



Faribault, 1898

Figure 3

BEAVER DAM GOLD PROJECT HAUL ROAD
 ARCHAEOLOGICAL DESKTOP REVIEW & RECONNAISSANCE
 HALIFAX REGIONAL MUNICIPALITY

March 2016



4.2 Field Reconnaissance

CRM Group archaeologists conducted fieldwork, consisting of a visual inspection of the study area, on November 13, 2015 under sunny and warm conditions. The primary goals of the reconnaissance were to assess the archaeological potential of the proposed haul road area and to investigate various topographical and cultural features, which had been identified as areas of elevated potential during the background research.

The water crossings exhibited the highest potential in the background research and were the focus of the reconnaissance.

The survey began by driving to the mine development site and then returning to Highway 224. All water crossings were investigated along the Beaver Dam Mines Road (*Plates 2 & 3*). The only crossing of significant size was West River Sheet Harbour, flowing out of River Lake alongside the highway. Areas immediately adjacent to the bridge were heavily disturbed as a result of bridge construction - bulldozing and importing gravel to build up the road. Outside the disturbance, the land is mostly low, wet and rocky (*Plates 4, 5 & 6*). In other areas the land dropped sharply down to the water over a bald rock face. The crossing exhibits low archaeological potential.

The other section of haul road that requires upgrading is Moose River Cross Road. Survey of this section resulted in the identification of one water crossing of significant size: Morgan River. The area around the river exhibits low potential as it is low and wet, with large boulders scattered throughout. As with the bridge over the West River Sheet Harbour, some disturbance was identified immediately adjacent to the bridge. The area had been built up for the construction of the bridge (*Plates 7 & 8*).

During the reconnaissance for the Beaver Dam Mine haul road, no areas were ascribed high archaeological potential.



Plate 2: A flooded area along the proposed haul road; facing southeast. November 13, 2015.



Plate 3: Water crossing along the proposed haul road; facing south. November 13, 2015.



Plate 4: West River Sheet Harbour crossing; facing northeast. November 13, 2015.



Plate 5: West River Sheet Harbour crossing; facing southeast. November 13, 2015.



Plate 6: West River Sheet Harbour crossing, exhibiting some disturbance; facing north. November 13, 2015.



Plate 7: Morgan River crossing; facing east. November 13, 2015.



Plate 8: Morgan River crossing; facing west. November 13, 2015.

5.0 CONCLUSIONS AND RECOMMENDATIONS

In the fall of 2015, CRM Group was retained by GHD to conduct archaeological screening and reconnaissance of the proposed haul road connecting the Beaver Dam Mine and the Touquoy Mine sites. Archaeological reconnaissance was conducted on November 13, 2015 under sunny and warm conditions. Visual inspection of the study area did not identify any areas exhibiting high archaeological potential.

Based on these results, CRM Group offers the following management recommendations for the study area:

1. It is recommended that the alignment of the haul road, as specified in this report, be cleared of any requirement for further archaeological investigation.
2. In the event that archaeological deposits or human remains are encountered during any ground disturbance associated with the Beaver Dam Gold Project haul road, all work in the associated area(s) should be halted and immediate contact made with the Special Places Program (Sean Weseloh-McKeane: 902-424-6475).

6.0 REFERENCES CITED

- Beanlands, Sara
2009 *Beaver Dam Development Archaeological Screening & Reconnaissance, Halifax Regional Municipality, Nova Scotia*. Report for Heritage Research Permit A2008NS21. Manuscript on file with the Nova Scotia Museum.
- Church, Ambrose F.
1865 *Topographical Township Map of Halifax County, Nova Scotia*. Halifax: A.F. Church & Co.
- Davis, Derek & Sue Browne, eds.
1996 *The Natural History of Nova Scotia*. Vol. 2. *Theme Regions*. Halifax: Nimbus, Nova Scotia Museum.
- Department of Land and Forests.
1946 *Crown Land Grant Index Sheet 89 – Halifax County*. Nova Scotia Department of Natural Resources.
- Faribault, E. R.
1899 *Province of Nova Scotia, Colchester & Halifax Counties, Upper Musquodoboit Sheet, No 49*. Geological Survey of Canada.
- MacDougall, J.I. et. al.
1963 *Soil Survey of Halifax County, Nova Scotia*. Report No. 13. Nova Scotia Soil Survey. Truro: Minister of Supply and Services.
- Malcolm, W.
1976 *Gold Fields of Nova Scotia*. Geological Survey of Canada, Memoir 156.
- Ogilvie, Robert.
2008 Environmental Screening 07-12-20d – Beaverdam Site. Report on file with the SPP-HD, Halifax.
- Sangster, Alan & Paul Smith.
2007 Metallogenic Summary of the Meguma Gold Deposits, Nova Scotia in *Mineral Deposits of Canada*. Geological Association of Canada, Special Publication No. 5.
- Stewart, Kathryn & Kyle G. Cigolotti
2015 *Beaver Dam Gold Project Archaeological Assessment, Halifax Regional Municipality, Nova Scotia*. Report for Heritage Research Permit A2015NS107. Manuscript on file with the Nova Scotia Museum.
- White, C.E. & S.M. Barr
2012 *Revised Stratigraphy and Tectonic Evolution of the Meguma Terrane*, Nova Scotia Department of Natural Resources, Halifax.
- Whitehead, Ruth Holmes.
1991 *The Old Man Told Us: Excerpts from MicMac History 1500-1950*. Halifax: Nimbus.



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June 10, 2016

Kathryn Stewart
Cultural Resource Management Group
6040 Almon Street, Halifax, NS
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Dear Ms. Stewart:

**RE: Heritage Research Permit Report
A2015NS101 – Beaver Dam Gold Haul Road Project**

We have received and reviewed your report on work conducted under the terms of Heritage Research Permit A2015NS101 for the archaeological resource impact assessment of the Beaver Dam Gold Project expansion in HRM County.

The report details the archaeological screening and reconnaissance of the proposed Beaver Dam Gold Project haul road area near Sheet Harbour, HRM by CRM Group Ltd. in November 2015. The screening and reconnaissance project included a review of past archaeological work for the area, a review of compiled background and historical research, and detailed field inspection of two sections of road planned for upgrading. No areas of elevated archaeological potential or areas with archaeological resources were identified.

Based on the above, the reporter recommends that the alignment of the haul road, as specified in the report, be cleared of any requirement for further archaeological investigation. In the event that archaeological deposits or human remains are encountered during any ground disturbance associated with the Beaver Dam Gold Project haul road, all work in the associated areas should stop and contact made with the Coordinator of Special Places.

CCH Staff agrees with the recommendations and finds the report acceptable as submitted. Please do not hesitate to contact me should you have any questions or concerns.

Sincerely,

Sean Weseloh McKeane
Coordinator, Special Places