



Appendix N.2

Beaver Dam Gold Project Archaeological Assessment Halifax Regional
Municipality, Nova Scotia - March 2015
Completed for the Updated 2021 Beaver Dam Mine EIS

CONESTOGA-ROVERS & ASSOCIATES

BEAVER DAM GOLD PROJECT
ARCHAEOLOGICAL ASSESSMENT
HALIFAX REGIONAL MUNICIPALITY, NOVA SCOTIA

FINAL REPORT

Submitted to:
Conestoga-Rovers & Associates
and the
**Special Places Program of the Nova Scotia Department of
Communities, Culture and Heritage**

Prepared by:
Cultural Resource Management Group Limited
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Report Preparation: Kathryn J. Stewart & Kyle G. Cigolotti

Heritage Research Permit Number: A2014NS101

CRM Group Project Number: 2014-0015-01

MARCH 2015



*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Consequently, the report must not be published or made public without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
ARCHAEOLOGICAL ASSESSMENT
HALIFAX REGIONAL MUNICIPALITY
NOVA SCOTIA**

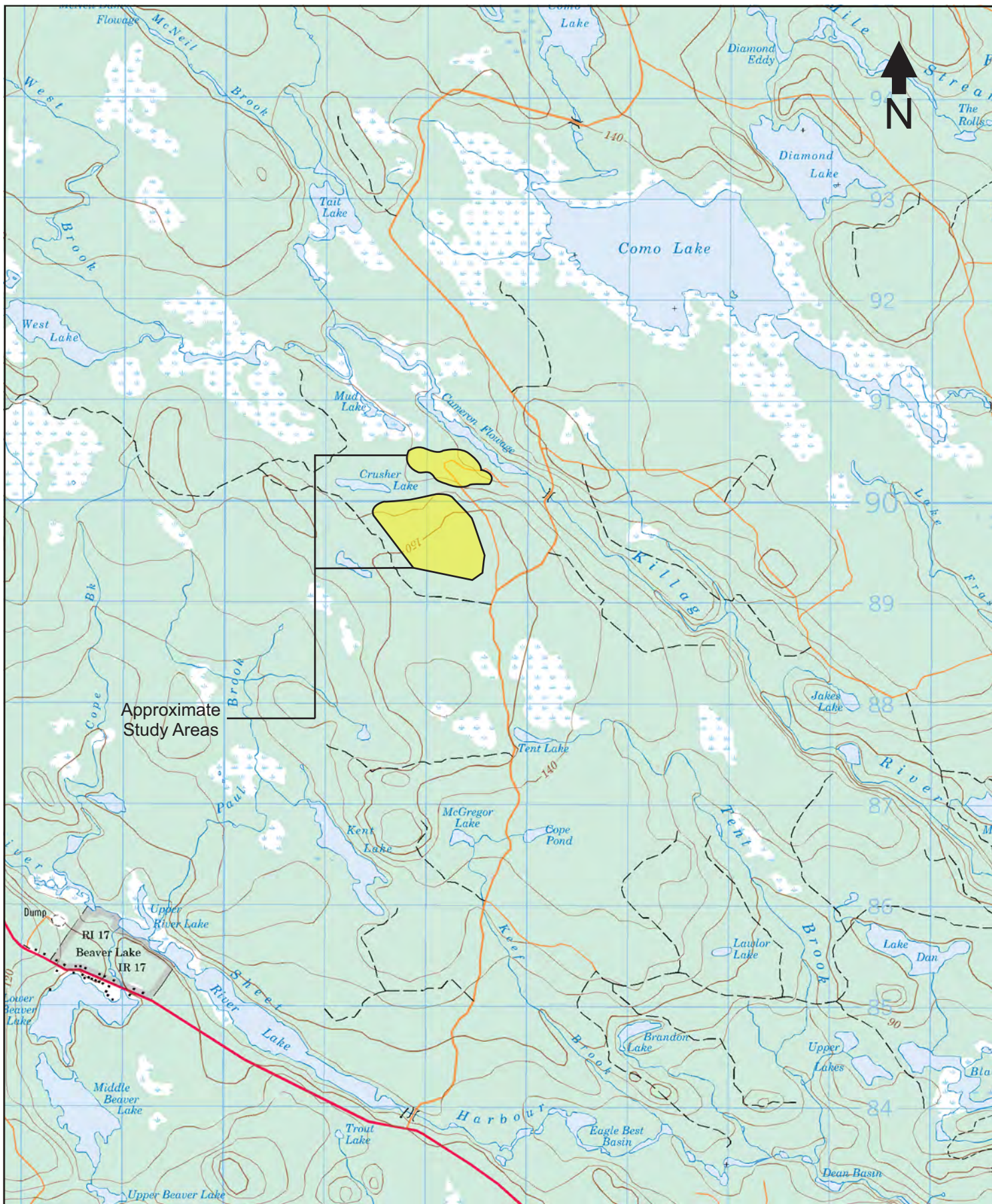
1.0 INTRODUCTION

Atlantic Gold Corporation (Atlantic Gold) is proposing to develop the Beaver Dam Gold Project located in the north-eastern corner of Halifax Regional Municipality, approximately 21 kilometres northwest of Sheet Harbour (*Figures 1 & 2*). The present assessment builds upon the research and reconnaissance of the Beaver Dam property on behalf of Acadian Mining (Acadian) undertaken by Cultural Resource Management (CRM) Group in 2008 (Beanlands 2008). Atlantic Gold is proposing to develop an open pit, as well as establish a waste rock storage pile (WRSP) and a crusher location.

In order to investigate the potential for encountering archaeological resources during any redevelopment of the facility, CRM Group was retained by Conestoga-Rovers & Associates (CRA) on behalf of Atlantic Gold to undertake archaeological screening and reconnaissance of the proposed mine expansion and conduct limited shovel testing where proposed development overlapped with previously identified archaeological features. However subsequent changes to the project study area removed from consideration the area of identified archaeological features that were to be shovel tested.

The fieldwork was undertaken by Staff Archaeologist, Kathryn J. Stewart with the assistance of W. Bruce Stewart, President and Senior Technical Advisor of CRM Group.

The archaeological investigation was conducted according to the terms of Heritage Research Permit A2014NS101 (Category 'C'), issued to K. Stewart through the Special Places Program (SPP). In addition to the elimination of the requirement for shovel testing, the proposed location of the crusher site was also modified so that it now falls within the overall area of the WRSP. This report describes the archaeological assessment of the proposed redevelopment area, presents the results of these efforts and offers cultural resource management recommendations.



Approximate Study Areas

Approximate Study Areas

BEAVER DAM GOLD PROJECT
 ARCHAEOLOGICAL ASSESSMENT
 HALIFAX REGIONAL MUNICIPALITY


Figure 1

March 2015

Scale 1:50 000





	<i>Pit and Waste Rock Storage Pile</i>	<i>Figure 2</i>
	BEAVER DAM GOLD PROJECT ARCHAEOLOGICAL ASSESSMENT HALIFAX REGIONAL MUNICIPALITY	March 2015

2.0 STUDY AREA

The Beaver Dam Gold Project property 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*). The property comprises the historic Beaver Dam Gold District situated between Crusher Lake and Cameron Flowage (*Figure 2; Plate 1*). The study area, consisting of proposed pit and WRSP, covers an area of approximately 87 hectares. 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.



PLATE 1: Abandoned mining pit within the Beaver Dam Gold Project area; facing southeast. October 21, 2014.

3.0 METHODOLOGY

CRA retained CRM Group to undertake archaeological reconnaissance of the Beaver Dam study area. To address the potential of encountering significant archaeological resources within the study area, CRM Group developed a work plan consisting of the following components: review relevant site documentation to develop archaeological potential model (screening); archaeological reconnaissance of the area(s) to be impacted by development activities; and, prepare a report summarizing the results of the background research, and field survey, as well as recommend strategies for assessment and management of areas exhibiting high archaeological potential and/or features.

3.1 Background Research

The archival research 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. Topographic maps and aerial photographs, both current and historic, were also used to evaluate the study area. 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 areas, 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 areas. 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 Development 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 dam is located at the southeastern end of Cameron Flowage. Several small lakes also fall in close proximity to the study area, including Crusher Lake and Mud 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

The study area is located within the greater terrestrial region known as the Atlantic Interior – Quartzsite Barrens (Guysborough) Unit (Davis & Browne 1996: 134). The bedrock-dominated topography can be generally described as undulating to rolling. Elevation within the study area ranges from approximately 109 metres to 171 metres above sea level. Low-lying areas are typically swampy. Elevated areas within the study area may have provided important vantage points for viewing the surrounding region and for sighting large game. The Beaver Dam Gold Project property is located within the Goldenville Group of the Meguma terrane of Nova Scotia, a sequence of Cambro-Ordovician-aged metasedimentary rocks and Devonian-aged granitoid intrusives. Gold deposits are present throughout much of the exposed stratigraphy of the Goldenville Group (Sangster & Smith 2007).

Soils

The Beaver Dam area is covered primarily by *Halifax* series (ST2, ST14) soils, although concentrations of *Bridgewater* (ST2 and ST8) and *Aspotogan* (ST4) series soils and peat are also found within the study area. *Halifax* 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* soils are too stony for agriculture (MacDougall *et. al.* 1963: 32-33). The well-drained *Bridgewater* soils are developed from a medium-textured, olive coloured glacial till that is derived principally from Precambrian slates. The *Bridgewater* soils in the Beaver Dam area are moderately stony and unsuitable for cultivation (MacDougall *et. al.* 1963: 28). *Aspotogan* 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)

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

Balsam Fir, 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, located approximately 700 metres south of the study area, 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 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. LeStrange, 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 Development property 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 occupies portions of at least eight historic lots. These properties were granted to, or otherwise obtained by, George H. Starr, David Allison, James F. Avery, J. Moll, R. Moseley, D. W. Archibald and the Pittsburgh Mining Co. (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 1899 Faribault map indicates the presence of approximately seven features within the study area (*Figures 3*). Four of those features, 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 (*Plate 1*). The other three features are depicted in the vicinity of another quartz vein running along the northern shore of Crusher Lake.

In 1928, Faribault did a geological survey of the Beaver Dam mine site, at this time indicating 10 structures associated with the mine (*Figure 4*). This includes 2 cookhouses, an engine house, the Austen mill, an office, an old mill 5 stamps and sluice, Gordon Zwicker & Levi Dimock's cabin, an old mill 8 stamps, the Bellemore cabin and an unnamed structure. According to a compilation of Faribault's memoirs (Malcolm 1976: 57), Zwicker and Dimock's cabin would date to between 1896 and 1904. He identifies the 5-stamp mill as being constructed in 1904 by W. H. Redding. The Austen mill may correspond with the 10-stamp mill erected by J. H. Austin when he became the owner of the mine in 1896 (Malcolm 1976: 57).

According to artist Joseph Purcell, the cabin portrayed in the painting below was built during the late 1920s by a miner named Johnnie Crouse who apparently lived and worked just north of Crusher Lake (*Plate 2*).

Aerial photographs from 1982 and 1992 show that the mine underwent a significant amount of development in this time period. This development likely destroyed any remains of features in this area, such as one of the cookhouses, the Austen mill, the Bellemore cabin and the unnamed structure.

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 as well as for identifying areas more likely to contain archaeological features. According to the database, 20 AMOs are associated with Beaver Dam.

Based on the historical setting within the study area, the Beaver Dam Development property is ascribed elevated potential for encountering historic Euro-Canadian archaeological resources.

4.1.4 Archaeological Potential

Based on the various components of the background study, including environmental setting, Native land use and property history, the Beaver Dam Development property is considered to exhibit high potential for encountering Precontact and historic Native archaeological resources and high potential for encountering historic Euro-Canadian archaeological resources.



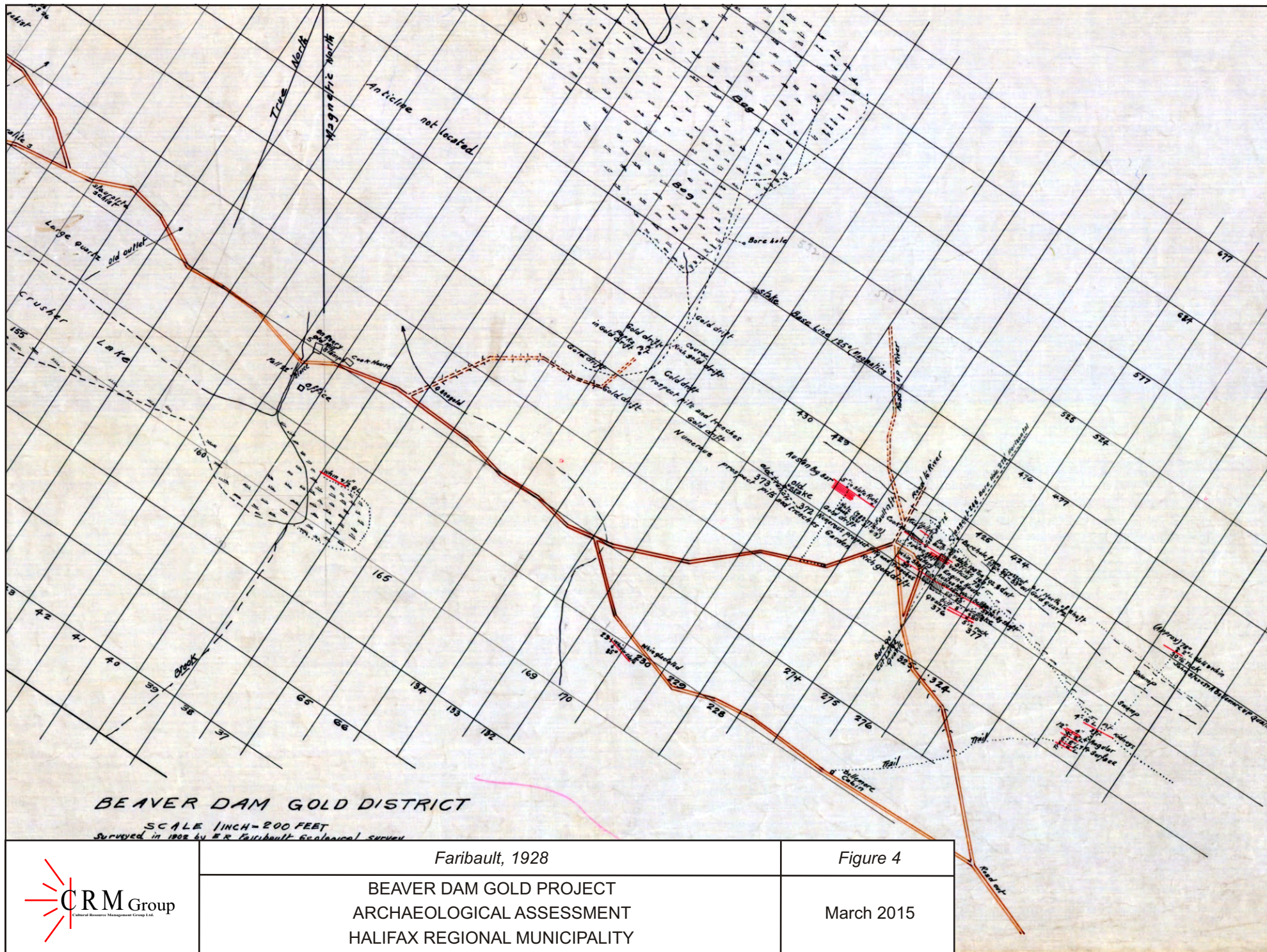
Faribault, 1899

Figure 3

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 ARCHAEOLOGICAL ASSESSMENT
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Faribault, 1928

Figure 4

BEAVER DAM GOLD PROJECT
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PLATE 2: "Crouse's Cabin, Beaver Dam Mine" by Joseph Purcell.

4.2 Field Reconnaissance

Fieldwork, consisting of a visual inspection of the study area, was conducted by CRM Group archaeologists on October 21 and November 8, 2014. The primary goals of the visit were to assess the archaeological potential of the proposed development area and to investigate various topographical and cultural features, which had been identified as areas of elevated potential during the background research.

The majority of the reconnaissance was focused within the Pit and WRSP study areas, but CRM Group was also asked to further investigate the area to the north of Crusher Lake. Each area will be discussed separately.

Pit

The Pit study area is located to the southwest of the Cameron Flowage. Background research indicated that four mine structures had been located within the study area. These include a cookhouse, the Austen Mill, the Engine house and an unnamed structure. According to the DNR AMO Database, 18 of the 20 open mine shafts associated with Beaver Dam are within the Pit study area (*Plates 3 & 4*).

Reconnaissance demonstrated that the area was heavily disturbed by exploration and mining activities. Large spoil piles and borrow pits dominated the landscape and much of the vegetation consists of young trees and brush (*Plate 5*). A pond, measuring approximately 90 metres (north/south) by 550 metres (east/west) covers areas that had been mined in the past (*Plate 1*). At least since the damming of the Cameron Flowage, the area of the pond has been low and marshy. The pond was developed as settling pond for the mine development activities in the mid-80s. No remains of the four features could be found.

Waste Rock Storage Pile

The WRSP study area is located to the south of the Pit. Background research did not identify any features within the area. The area has been heavily cut in recent years as can be seen with the vast sections of new growth and patchwork of skidder trails (*Plate 6*). According to the base mapping provided by CRA, a portion of the WRSP study area is marshy, particularly along the southern part. Low, wet areas were noted elsewhere as well. No features were noted or areas of high archaeological potential.

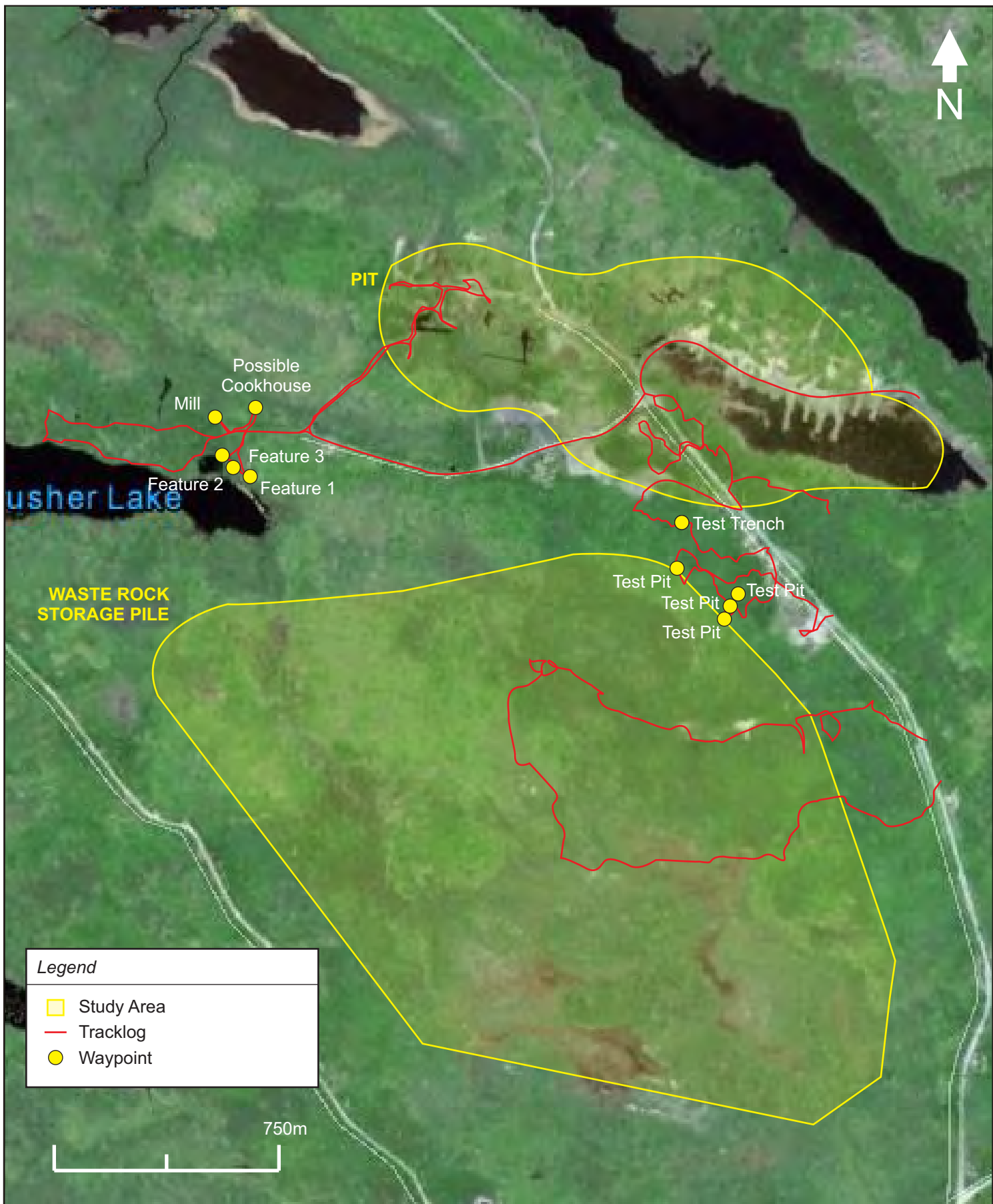
It was originally suspected that the Bellemore Cabin marked on Faribault's 1928 map would be within WRSP area. Upon further review, it seems it would have been between the WRSP and Pit study areas. A return to the Beaver Dam Development was made on November 8 in an attempt to identify any remains of the cabin in case of later changes to the boundaries of the study areas. This further assessment determined that extensive exploration/mining and woods clearing activities had occurred within this section, likely in conjunction with the same activities relating to the pit and had destroyed any architectural remains (see *Figure 5* for test pits and trenches; *Plate 7*).

While conducting reconnaissance on the northern side of Crusher Lake, Historic and Modern features were noted. Features 1 and 2, documented in the 2008 screening and reconnaissance report, were revisited.

Historic Features

Feature 1 (Corresponds with Site 1 from 2008)

Reconnaissance in 2008: Feature 1, located approximately 40 metres north of Crusher Lake, includes the remains of a wooden structure measuring approximately 6.5 metres east-west by 6 metres north-south (UTM: 20T 521571E, 4990205N). Visual examination of the collapsed feature revealed the remains of a log cabin with interlocking saddle-notch corners. The cabin had a cellar, however, visibility was obscured




	<i>Pit and Waste Rock Storage Pile Tracklog</i>	<i>Figure 5</i>
	BEAVER DAM GOLD PROJECT ARCHAEOLOGICAL ASSESSMENT HALIFAX REGIONAL MUNICIPALITY	March 2015



Plate 3: AMO included in DNR Database; facing southeast. October 21, 2014.



Plate 4: Either an abandoned mine shaft or borrow pit; facing north. October 21, 2014.



Plate 5: Example of disturbance in the Pit study area; facing north. October 21, 2014.



Plate 6: Following a skidder trail in WRSP study area; facing northwest. October 21, 2014.



Plate 7: Borrow pit; facing north. November 8, 2014.

due to the structural collapse. Careful inspection of the remains revealed the presence of wire nails and linoleum flooring. The presence of these materials suggests the feature was occupied during the twentieth century.

A cursory review of historic property documentation revealed that the parcel of land encompassing Feature 1 was originally obtained by the Pittsburgh Mining Co. (Crown Land Grant Sheet 89). The Faribault map indicates the presence of three unidentified features situated in the vicinity of Feature 1 at the turn of the century. Based on the observed artifacts, however, it is possible that Feature 1 represents the remains of a twentieth-century structure, much like the Crouse cabin.

Reconnaissance in 2014: The wooden structure has now completely collapsed and most of the remaining wood is obscured by moss (*Plate 8*). More recent modern refuse is also present. Based on the background research, this structure could correspond with the office depicted on Faribault's 1928 map. The location was recorded on current GPS technology at UTM 20T 521579E, 4990205N

Feature 2 (Corresponds with Site 2 from 2008)

Reconnaissance in 2008: Feature 2, located approximately 20 metres southeast of Feature 1, includes the potential remains of a partially in-filled cellar hole (UTM: 20T 521584E, 4990190N). The feature measures approximately 5 metres east-west by 4 metres north-south and is littered with twentieth-century refuse. Careful examination of the feature revealed no visible structural remains.

A cursory review of historic property documentation revealed that the parcel of land encompassing Feature 2 was originally obtained by the Pittsburgh Mining Co. (Crown Land Grant Sheet 89). The Faribault map indicates the presence of three unidentified features situated in the vicinity of Feature 2 at the turn of the

century. Based on the Faribault map, it is assumed that Feature 2 represents the remains of one of these nineteenth-century features.

Reconnaissance in 2014: There was no change noted with Feature 2 except for the possible accumulation of more refuse within the depression (**Plate 9**). The location was recorded on current GPS technology at UTM 20T 521586E, 4990192N.

Old Mill - Five Stamps (Feature 4)

Faribault's 1928 map indicated the presence of a mill on the north side of the mine road that runs on the north side of Crusher Lake. During reconnaissance the remains of the mill were noted, now just a rough outline composed of several large foundation stones (**Plate 10**). It measured approximately 10 metres north/south and 4 metres east/west. The remains are situated 14 metres east of a small unnamed stream flowing from Crusher Lake. Although there are no remains of the sluice depicted on the Faribault map, at the north end of the depression, a number of large stones and timber were observed, which could have formed the tail race (**Plate 11**). According to Faribault, this mill was built in 1904. The mill feature was recorded at UTM 20T 521571E, 4990253N.

Possible Cookhouse (Feature 5)

Faribault's 1928 map (**Figure 4**) of the Beaver Dam mine depicts a cookhouse on the north side of the mine road that runs along the north side of Crusher Lake. During reconnaissance, no structural remains were encountered to suggest the presence of the cookhouse, but a slight depression was noted and a heavy iron pot was discovered *in situ* in conjunction with the depression (**Plate 12**). It may indicate the site of the former cookhouse. The possible cookhouse feature was recorded at UTM 20T 521612E, 4990254E.



Plate 8: Feature 1; facing northwest. October 21, 2014.



Plate 9: Feature 2 with accumulation of refuse; facing southeast. October 21, 2014.



Plate 10: Standing in approximate centre of mill foundation; facing north. October 21, 2014.



Plate 11: Possible tailrace along the north side of mill foundation; facing southwest. October 21, 2014.



Plate 12: Possible cookhouse location; facing northwest. October 21, 2014.

Modern Features

Feature 3

Feature 3 was present but not recorded in 2008. During previous reconnaissance, a single cabin and outhouse had been noted which was likely used as a hunting cabin. On returning to the site in 2014, the original cabin had been updated with new siding and a shed had been erected nearby (**Plate 13**). The additional accumulation of garbage within the depression of Feature 2 may have come from these cabins. The centre point of the cabins was recorded at UTM 20T 521602E, 4990184N.



Plate 13: Modern hunting cabin and shed; facing northwest. October 21, 2014.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The 2014 archaeological screening and reconnaissance of the Beaver Dam Gold Project site consisted of a visual inspection of the ground surface and did not involve sub-surface testing. The archaeological background research conducted by CRM Group archaeologists identified numerous historic features within the Pit study area, which through reconnaissance were determined to have been destroyed by mining activities undertaken in the 1980s. No archaeological features were identified within the WRSP study area, either during the background or the field reconnaissance.

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

1. It is recommended that the current orientation of the Pit and WRSP study areas be cleared of any requirement for further archaeological investigation.
2. It is recommended that if any development is to occur within 100 metres of Crusher Lake, intensified reconnaissance should be conducted to identify any additional features.
3. It is recommended that if any development is to occur specifically around the historic features identified during the 2008 and/or 2014 reconnaissance, intensified historical research and archaeological shovel testing should be conducted in advance of disturbance.
4. It is recommended that any further changes in the layout of the mine and associated facilities be evaluated as to potential impacts to archaeological resources.
5. In the event that archaeological deposits or human remains are encountered during any ground disturbance associated with the Beaver Dam Development, 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

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June 3, 2015

Kathryn Stewart
CRM Group Ltd.
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Dear Ms. Stewart:

**RE: Heritage Research Permit Report
A2014NS101 – Beaver Dam Redevelopment**

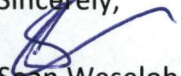
We have received and reviewed your report on work conducted under the terms of Heritage Research Permit A2014NS101 for an archaeological resource impact assessment of the Beaver Dam Redevelopment Project.

The report details the archaeological assessment of the proposed waste rock storage pile and pit areas within the Beaver Dam Gold Project property near the Killag River, Halifax County, by CRM Group Ltd. in the fall of 2014. Based on the background and environmental research the project area was determined to exhibit high potential for archaeological resources. The field reconnaissance focused on the pit and WRSP areas as well as an area north of Crusher Lake. Several features identified during the background research required field inspection. Reconnaissance determined the features within the Pit study area to have been destroyed by mining activities. No archaeological features were identified within the WRSP study area.

Based on the above, the reporter recommends that the current layout of the Pit and WRSP study areas be cleared of any requirement for further archaeological investigation. It is recommended that if any development is to occur within 100 meters of Crusher Lake, intensified reconnaissance should be undertaken. It is recommended that if any development is to occur around the historic features identified during the 2008 and/or 2014 reconnaissance, intensified historical research and shovel testing should be conducted in advance of disturbance. It is recommended that any further changes in the mine layout and associated facilities be evaluated as to potential impacts to archaeological resources. Finally, in the event that archaeological deposits or human remains are encountered during any ground disturbance activities, all work in the associated areas should stop and contact made with the Coordinator of Special Places.

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

Sincerely,


Sean Weseloh McKeane
Coordinator, Special Places

GHD

**BEAVER DAM GOLD PROJECT
ADDITIONAL ARCHAEOLOGICAL RECONNAISSANCE 2015
HALIFAX REGIONAL MUNICIPALITY, NOVA SCOTIA**

FINAL REPORT

Submitted to:

GHD

and the

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

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Report Preparation: Kathryn J. Stewart & Kyle G. Cigolotti

Heritage Research Permit Number: A2015NS043

CRM Group Project Number: 2014-0015-02

MARCH 2016



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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
ADDITIONAL ARCHAEOLOGICAL RECONNAISSANCE 2015
HALIFAX REGIONAL MUNICIPALITY
NOVA SCOTIA**

1.0 INTRODUCTION

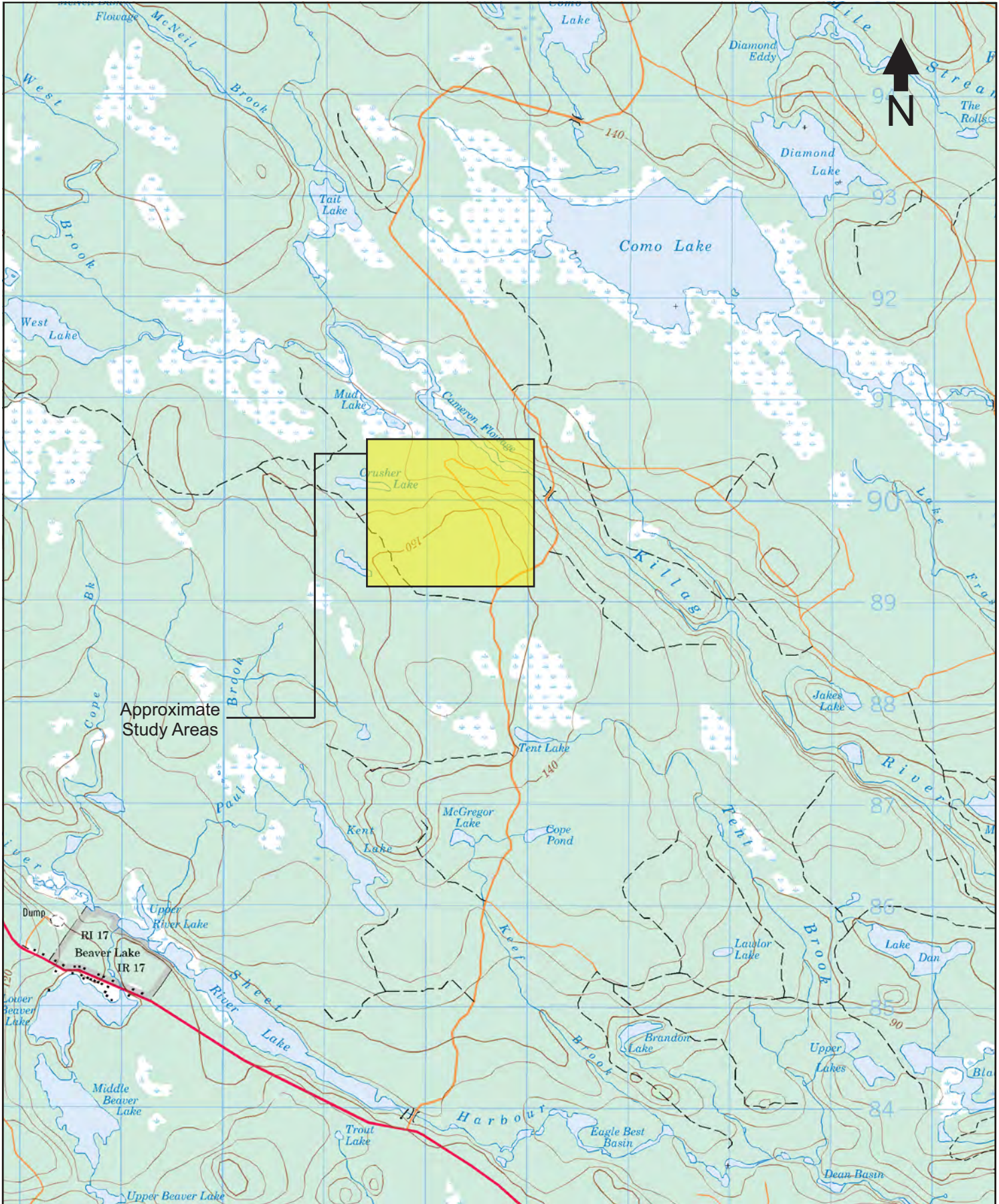
Atlantic Gold Corporation (Atlantic Gold) is proposing to redevelop the Beaver Dam Gold Project located in the north-eastern corner of Halifax Regional Municipality, approximately 21 kilometres northwest of Sheet Harbour (*Figures 1 & 2*).

In the fall of 2014, Cultural Resource Management (CRM) Group was retained by GHD (then 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 the terms of Heritage Research Permit A2014NS107 (Category 'C'), issued to Kathryn J. Stewart through the Special Places Program (Special Places).

Subsequent changes to the layout of the proposed facility led to additional archaeological reconnaissance being undertaken in the summer of 2015. Previously investigated mine features, such as the waste rock storage (WRS) and the crusher site had been shifted to a different configuration. New work areas (two till piles, two ore piles, two settling ponds and a Run-of-Mine (ROM)/crusher/service pad site) were added to the project. The archaeological investigation was conducted according to the terms of Heritage Research Permit A2015NS043 (Category 'C'), issued to Stewart. The fieldwork was undertaken by Stewart with the assistance of Staff Archaeologist Kiersten Green.

The primary focus of the study was to assess the potential for encountering archaeological resources during redevelopment of the mine site. 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).

It should be noted that the final design of the Beaver Dam Gold Mine has yet to be determined. This report describes the archaeological reconnaissance of the current orientation of features at the mine site, presents the results of these efforts and offers cultural resource management recommendations.



Approximate Study Areas

Approximate Study Areas

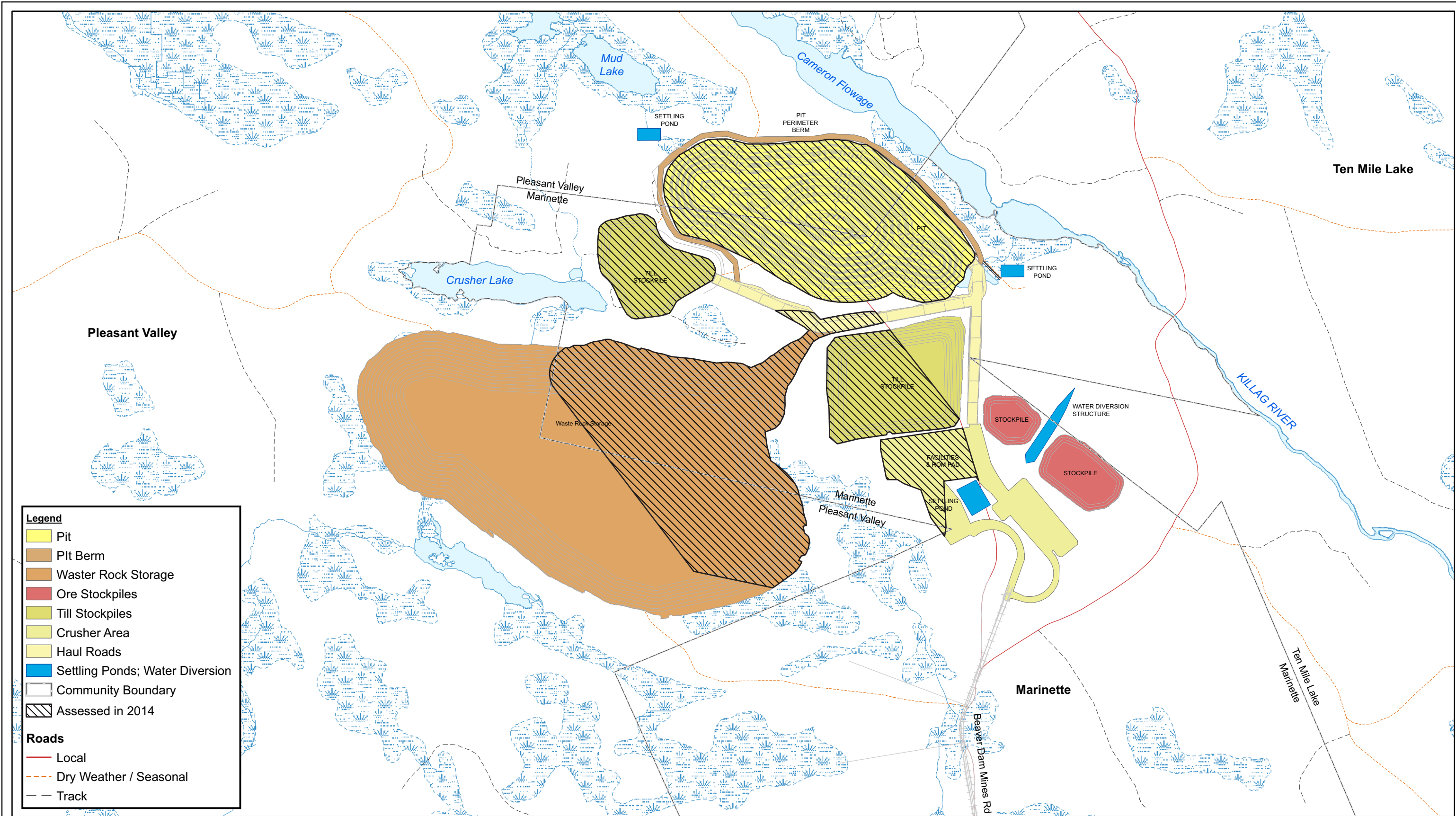
Figure 1

BEAVER DAM GOLD PROJECT
 ARCHAEOLOGICAL ASSESSMENT
 HALIFAX REGIONAL MUNICIPALITY

March 2016

Scale 1:50 000





Source: Atlantic Gold, Service Nova Scotia, NS Natural Resources, NS Environment



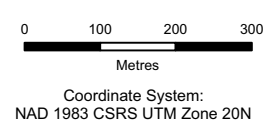
Detailed Study Areas

BEAVER DAM GOLD PROJECT
 ARCHAEOLOGICAL ASSESSMENT
 HALIFAX REGIONAL MUNICIPALITY

Figure 2

March 2016

Scale 1:10 000



ATLANTIC GOLD CORPORATION
 MARINETTE, NOVA SCOTIA
 BEAVER DAM MINE

GENERAL MINE ARRANGEMENT

2.0 STUDY AREA

The Beaver Dam Gold Project property 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**). The property comprises the historic Beaver Dam Gold District situated between Crusher Lake and Cameron Flowage (**Figure 2; Plate 1**). The study area, consisting of proposed pit, WRS, two till piles, two ore pills, two settling ponds and a ROM/crusher/service pad site, covers an area of approximately 87 hectares. 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.



PLATE 1: The Settling Pond within the Pit study area; facing west. June 19, 2015.

3.0 METHODOLOGY

GHD retained CRM Group to undertake additional archaeological reconnaissance of the Beaver Dam study area. To address the potential of encountering significant archaeological resources within the study area, CRM Group developed a work plan consisting of the following components: archaeological reconnaissance of the areas to be impacted by development activities; and, prepare a report summarizing the results of the field survey, as well as recommend 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, 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. Topographic maps and aerial photographs, both current and historic, were also used to evaluate the study area. 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 areas, 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 areas. 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 Development 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 dam is located at the southeastern end of Cameron Flowage. Several small lakes also fall in close proximity to the study area, including Crusher Lake and Mud 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

The study area is located within the greater terrestrial region known as the Atlantic Interior – Quartzsite Barrens (Guysborough) Unit (Davis & Browne 1996: 134). The bedrock-dominated topography can be generally described as undulating to rolling. Elevation within the study area ranges from approximately 109 metres to 171 metres above sea level. Low-lying areas are typically swampy. Elevated areas within the study area may have provided important vantage points for viewing the surrounding region and for sighting large game. The Beaver Dam Gold Project property is located within the Goldenville Group of the Meguma terrane of Nova Scotia, a sequence of Cambro-Ordovician-aged metasedimentary rocks and Devonian-aged granitoid intrusives. Gold deposits are present throughout much of the exposed stratigraphy of the Goldenville Group (Sangster & Smith 2007).

Soils

The Beaver Dam area is covered primarily by *Halifax* series (ST2, ST14) soils, although concentrations of *Bridgewater* (ST2 and ST8) and *Aspotogan* (ST4) series soils and peat are also found within the study area. *Halifax* 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* soils are too stony for agriculture (MacDougall *et. al.* 1963: 32-33). The well-drained *Bridgewater* soils are developed from a medium-textured, olive coloured glacial till that is derived principally from Precambrian slates. The *Bridgewater* soils in the Beaver Dam area are moderately stony and unsuitable for cultivation (MacDougall *et. al.* 1963: 28). *Aspotogan* 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)

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

Balsam Fir, 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, located approximately 700 metres south of the study area, 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 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. LeStrange, 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 Development property 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 occupies portions of at least eight historic lots. These properties were granted to, or otherwise obtained by, George H. Starr, David Allison, James F. Avery, J. Moll, R. Moseley, D. W. Archibald and the Pittsburgh Mining Co. (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 1899 Faribault map indicates the presence of approximately seven features within the study area (**Figures 3**). Four of those features, 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 (**Plate 1**). The other three features are depicted in the vicinity of another quartz vein running along the northern shore of Crusher Lake.

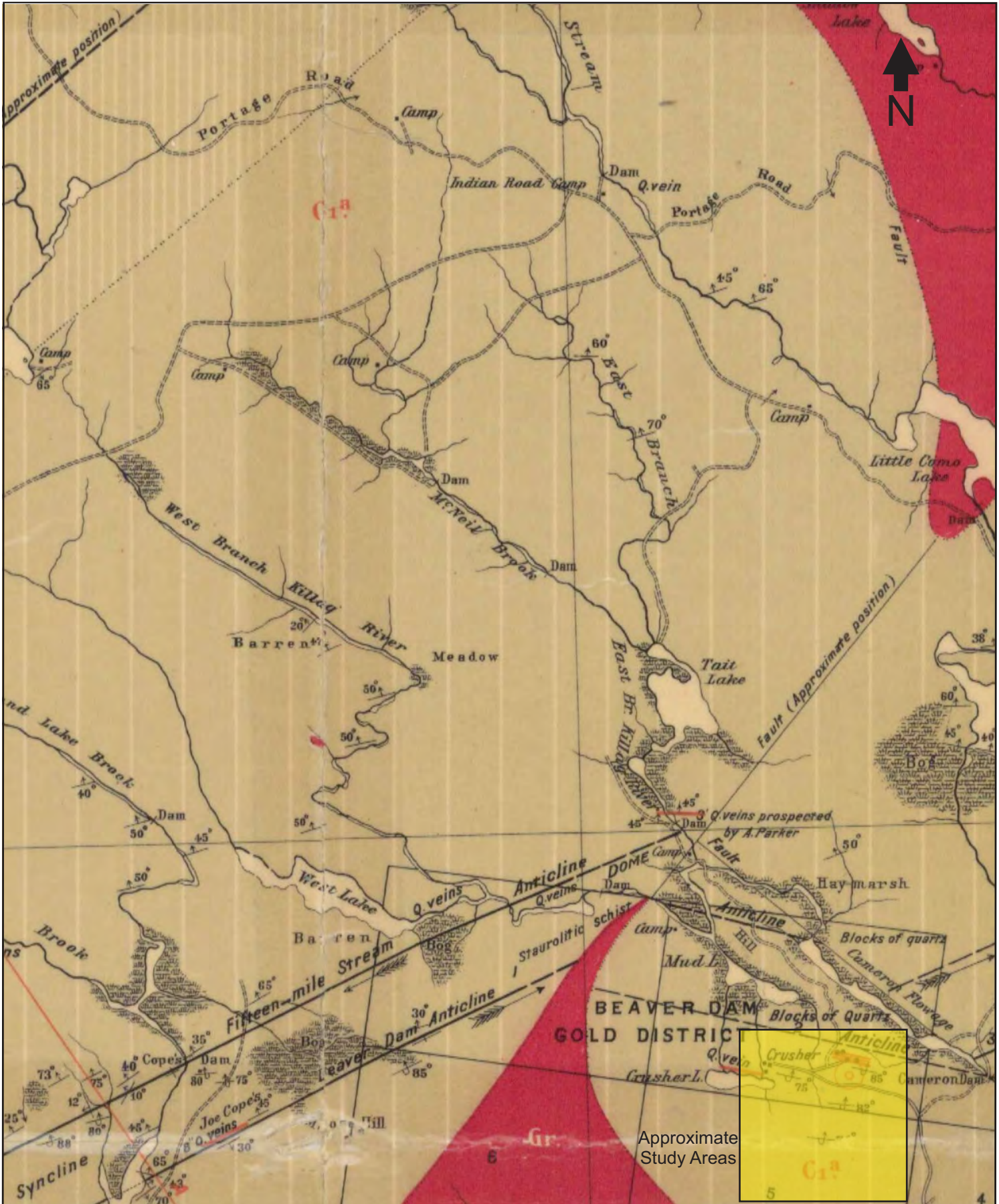
In 1928, Faribault did a geological survey of the Beaver Dam mine site, at this time indicating 10 structures associated with the mine (**Figure 4**). This includes 2 cookhouses, an engine house, the Austen mill, an office, an old mill 5 stamps and sluice, Gordon Zwicker & Levi Dimock's cabin, an old mill 8 stamps, the Bellemore cabin and an unnamed structure. According to a compilation of Faribault's memoirs (Malcolm 1976: 57), Zwicker and Dimock's cabin would date to between 1896 and 1904. He identifies the 5-stamp mill as being constructed in 1904 by W. H. Redding. The Austen mill may correspond with the 10-stamp mill erected by J. H. Austin when he became the owner of the mine in 1896 (Malcolm 1976: 57).

According to artist Joseph Purcell, the cabin portrayed in the painting below was built during the late 1920s by a miner named Johnnie Crouse who apparently lived and worked just north of Crusher Lake (**Plate 2**).

Aerial photographs from 1982 and 1992 show that the mine underwent a significant amount of development in this time period. This development likely destroyed any remains of features in this area, such as one of the cookhouses, the Austen mill, the Bellemore cabin and the unnamed structure.

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 as well as for identifying areas more likely to contain archaeological features. According to the database, 20 AMOs are associated with Beaver Dam (Stewart and Cigolotti 2015).

Based on the historical setting within the study area, the Beaver Dam Development property is ascribed elevated potential for encountering historic Euro-Canadian archaeological resources.



Faribault, 1899

Figure 3

BEAVER DAM GOLD PROJECT
 ARCHAEOLOGICAL ASSESSMENT
 HALIFAX REGIONAL MUNICIPALITY

March 2016





PLATE 2: "Crouse's Cabin, Beaver Dam Mine" by Joseph Purcell.

4.2 Field Reconnaissance

CRM Group archaeologists conducted fieldwork, consisting of a visual inspection of the study area, on June 19, 2015. The primary goals of the revisit were to assess the archaeological potential within the expanded development area and to investigate various topographical and cultural features that had been identified as areas of elevated potential during the background research.

The reconnaissance was focused within the pit, the WRS, the till piles, the ore piles, the settling ponds and the ROM/crusher/service pad site study areas (*Figure 5*). Each of these areas will be discussed separately.

Pit

The pit study area is located southwest of the Cameron Flowage. The layout of the pit remained the same as when the reconnaissance was conducted in the fall of 2014, so a return visit was not required. Reconnaissance in the fall had demonstrated that the area was heavily disturbed by exploration and mining activities.

Waste Rock Storage

The WRS study area is located to the southwest of the pit. Background research did not identify any features within the new layout of the proposed WRS. The area has been heavily cut in recent years as can be seen in the vast sections of new growth (*Plate 3*). According to the base mapping provided by GHD, parts of the WRS study area are marshy, particularly along the southeast and western portions. A large pit was noted along the mine road, just outside of the study area, likely attributable to recent mining/exploration activities (*Plate 4*). No features or areas of high archaeological potential were noted within the WRS study area.

Till Piles

Till Pile 1, although a new mine feature added this year, had already been addressed by the field reconnaissance conducted in the fall of 2014. It is suspected that the Bellemore Cabin marked on Faribault's 1928 map had been located within the Till Pile 1 footprint or immediately adjacent to it. Reconnaissance determined that extensive exploration/mining and tree clearing activities had occurred within this section, likely in conjunction with the same activities relating to the pit, and had destroyed any architectural remains that might have been found in that area.

Till Pile 2 is located to the southwest of the pit and north of the WRS. While it overlaps with the historic mine road, the only feature that appears within or immediately adjacent to the study area is the possible location of the cookhouse (Feature 5) identified during reconnaissance in 2014. The location was revisited and was confirmed to be on the western edge of the Till Pile 2 study area (*Plate 5*). No other areas of high archaeological potential were noted.

Ore Piles

The two ore piles are located to the southeast of the pit and immediately east of Till Pile 1. Portions of these two study areas had been heavily harvested and much of the two areas was wet, marshy and undulating (*Plate 6*). No areas of archaeological potential were noted within either of the ore piles.

Settling Ponds

The two proposed settling pond locations were investigated during the course of the reconnaissance. The first was located at the southeastern end of the existing settling pond, where there is an outflow to Cameron Flowage. This section was heavily disturbed by extensive exploration and mining activities related to the mine development activities in the mid-80s (*Plate 7*). In addition to the disturbance, much of

the area was undulating, low and marshy, with the small outflow winding its way to the Cameron Flowage (**Plate 8 & 9**).

The second proposed settling pond location is situated to the northwest of the pit area and encompasses a small stream that flows out of Mud Lake (**Plate 10**). This location was also undulating, low and marshy (**Plate 11**). No areas of archaeological potential were noted within either of these study areas.

ROM/Crusher/Service Pad

The west side of the ROM/crusher/service pad study area was covered in the reconnaissance conducted in the fall of 2014 as part of for the old layout for the WRS. Reconnaissance undertaken this spring focused on the east side of the study area (**Plate 12**). The area was similar to that of the nearby ore piles, with undulating ground that was often low and marshy. Particular attention was paid to the area where the service road connecting the crusher and service pad crossed over the Beaver Dam Mine Road. No areas of archaeological potential were noted.

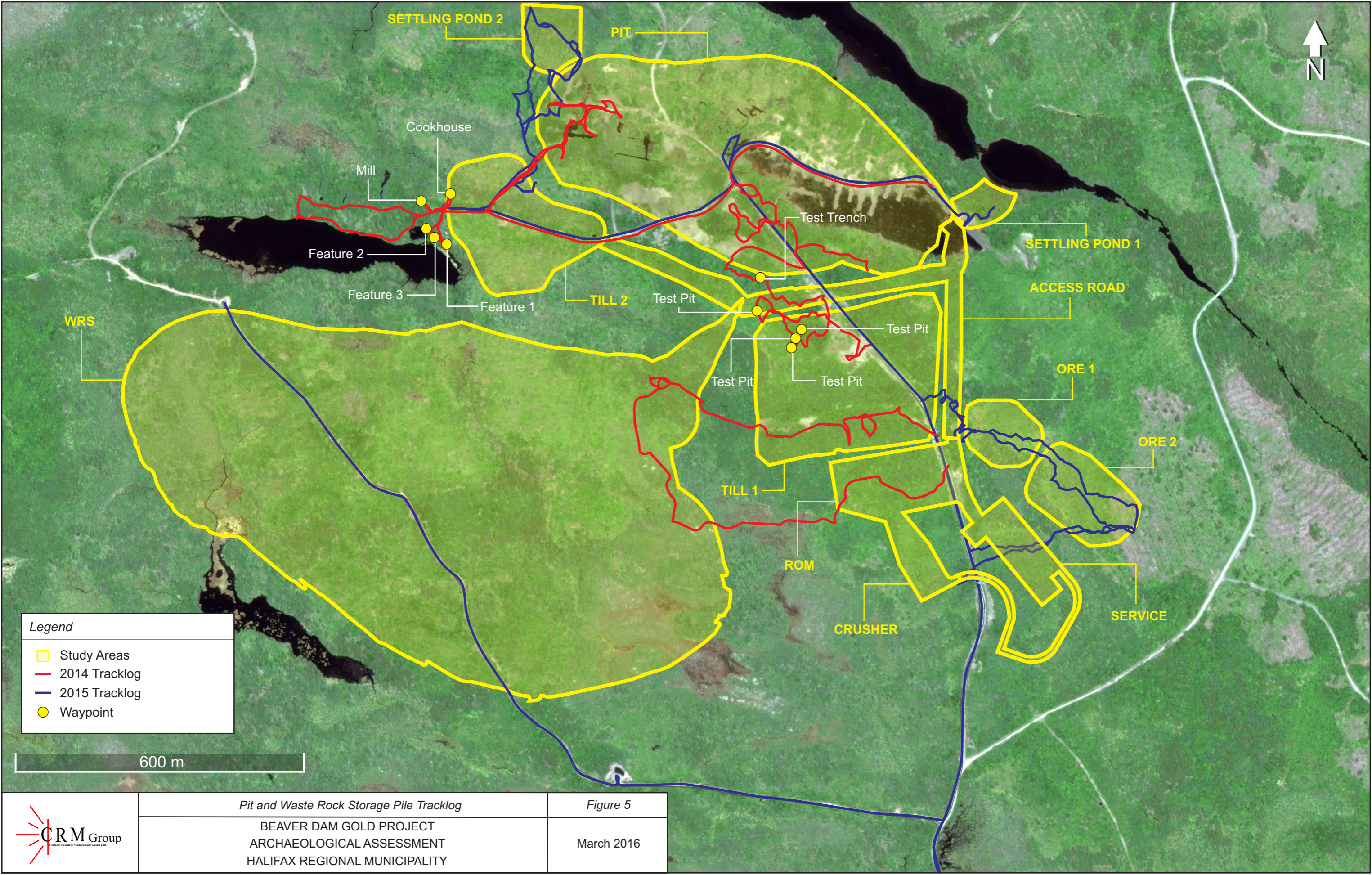
Access Road

The layout of the proposed access road was covered both by reconnaissance conducted in the fall of 2014 and the spring of 2015. Areas of the access road close to the pit were heavily disturbed by exploration/mining activities. Undulating and marshy, no areas of archaeological potential were noted.

After the reconnaissance had been completed, another settling pond was added, as well as a water diversion structure. Although these were not in the initial plans when the reconnaissance was conducted, their orientation fell within areas that had been assessed in the spring of 2015.



Plate 3: WRS study area; facing northeast. June 19, 2015.



Legend

- Study Areas
- 2014 Tracklog
- 2015 Tracklog
- Waypoint

600 m



Plate 4: Recent exploration/mining activities; facing northeast. June 19, 2015.



Plate 5: Possible location of the cookhouse (Feature 5) within the footprint of Till Pile 2; facing east. June 19, 2015.



Plate 6: Ore Pile 2 study area; facing east. June 19, 2015.



Plate 7: Investigating the outlet of the Settling Pond; facing southeast. June 19, 2015.



Plate 8: Small winding stream; facing north. June 19, 2015.



Plate 9: Low and marshy area around Cameron Flowage; facing northeast. June 19, 2015.



Plate 10: Mud Lake; facing northwest. June 19, 2015.



Plate 11: Marshy area by Mud Lake; facing west. June 19, 2015.



Plate 12: Access Road study area; facing east. June 19, 2015.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The additional archaeological reconnaissance of the Beaver Dam Gold Project site undertaken in the spring of 2015 consisted of a visual inspection of the ground surface and did not involve sub-surface testing. The archaeological background research conducted by CRM Group archaeologists for the screening and reconnaissance conducted in 2008 and 2014 identified numerous historic features within the pit study area. Reconnaissance determined that the features had been destroyed by mining activities undertaken in the 1980s. One historic feature (Feature 5) was identified within the Till Pile 2 study area. No archaeological features or areas of archaeological potential were identified within any of the other study areas, either during the background or field reconnaissance.

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

1. It is recommended that the current orientation of the Pit, the WRS, Till Pile 1, the Ore piles, the Settling Ponds and the ROM/crusher/service pad study areas as identified in this report (*Figure 5*) be cleared of any requirement for further archaeological investigation.
2. It is recommended that either a program of shovel testing be conducted around the possible cookhouse (Feature 5) or a buffer of 20 metres be put in place around the feature to protect it from any mining activities. No further archaeological work is required for the rest of the Till Pile 2 study area.
3. It is recommended that if any development is to occur specifically around the historic features identified during the 2008 and/or 2014 reconnaissance, intensified historical research and archaeological shovel testing should be conducted in advance of disturbance.
4. It is recommended that any further changes in the layout of the mine and associated facilities be evaluated as to potential impacts to archaeological resources.
5. In the event that archaeological deposits or human remains are encountered during any ground disturbance associated with the Beaver Dam Development, 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

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April 20, 2016

Kathryn Stewart
Cultural Resource Management Group
6040 Almon Street, Halifax, NS
B3K 1T8

Dear Ms. Stewart:

**RE: Heritage Research Permit Report
A2015NS043 – Beaver Dam Gold Project**

We have received and reviewed your report on work conducted under the terms of Heritage Research Permit A2015NS043 for the archaeological resource impact assessment of the Beaver Dam Gold Project expansion in HRM County.

The report details the additional archaeological reconnaissance of the proposed Beaver Dam Gold Project expansion area northwest of Sheet Harbour, HRM, by CRM Group Ltd. in the summer of 2015. The assessment included a review of previously compiled background and historical research, including indigenous land use, as well as previous archaeological assessments of the study area, and field reconnaissance of the new project layout. The goal of the assessment was to assess the potential for encountering archaeological resources during redevelopment of the mine site. One historic feature (Feature 5) was identified within Till Pile 2. No archaeological features or areas of archaeological potential were identified within any of the other study areas, either during the background review or field reconnaissance.

Based on the above, it is recommended that the current orientation of the Pit, the WRS, Till Pile 1, the Ore piles, the Settling Ponds and the ROM/crusher/service pad areas as defined in the report be cleared of any requirements for further archaeological investigation. It is recommended that either a program of shovel testing around the possible cookhouse (Feature 5) or a buffer of 20 meters be put in place around the feature for protection. No other archaeological work is required for the rest of Till Pile 2. It is recommended that if any development is to occur around the historic features identified in 2008 and/or 2014, reconnaissance, intensified historical research and shovel testing should be conducted in advance of disturbance. It is recommended that any further changes in the layout of the mine and associated facilities be evaluated as to potential impacts to archaeological resources. Finally, in the event that archaeological deposits or human remains are encountered during any ground disturbance associated with the Beaver Dam Gold Project, all work in the associated areas should stop and the Coordinator of Special Places contacted.

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