Appendix N.6

Beaver Dam Gold - Archaeological Screening & Reconnaissance 2019
Beaver Dam, Nova Scotia - August 2020
Completed for the Updated 2021 Beaver Dam Mine EIS

McCALLUM ENVIRONMENTAL LIMITED

BEAVER DAM GOLD
ARCHAEOLOGICAL SCREENING & RECONNAISSANCE 2019
BEAVER DAM, NOVA SCOTIA

FINAL REPORT

Submitted to:
McCallum Environmental Limited
and the
Special Places Program of the
Nova Scotia Department of Communities, Culture & Heritage

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Heritage Research Permit Number: A2019NS074

CRM Group Project Number: 2018-0015-03

AUGUST 2019

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 Consequently, the report must not be published or made public without the written consent of Nova Scotia's Coordinator of Special Places Program, Department of Communities, Culture and Heritage.

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ARCHAEOLOGICAL SCREENING & RECONNAISSANCE 2019
BEAVER DAM, NOVA SCOTIA

1.0 INTRODUCTION

Atlantic Mining Nova Scotia Corporation (Atlantic Gold) is proposing to redevelop the Beaver Dam Gold Mine located in the northeast corner of Halifax Regional Municipality, approximately 21 kilometres northwest of Sheet Harbour. Atlantic Gold is proposing to develop a surface mine, composed of an open pit, waste rock storage facilities, a tailing pond, stockpiles and an associated plant. The mine site will be connected to processing facilities at Moose River Gold Mine by means of a haul road running between the mine site and the plant.

In 2008, Cultural Resource Management (CRM) Group was retained by Acadian Mining Corporation (Acadian) to undertake a screening and reconnaissance of the Beaver Dam property. As a result of the archaeological assessment, several historic mining features and two areas of elevated potential for encountering Precontact and/or early historic Mi'kmaq archaeological resources were identified. The archaeological investigation was conducted under the terms of Heritage Research Permit A2008NS21 (Category 'C'), issued to CRM Group President and Senior Technical Advisor, W. Bruce Stewart, through the Special Places Program (Special Places).

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

Subsequent changes to the layout of the proposed facility led to additional archaeological reconnaissance in the summer of 2015. Previously investigated proposed mine features were relocated and added to the project. The archaeological investigation was conducted according to the terms of Heritage Research Permit A2015NS043 (Category 'C'), issued to Kathryn 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 Archaeologist Kiersten Green with the assistance of Kathryn J. Stewart. The primary focus of the study was to assess the potential for encountering archaeological resources during upgrading of the haul road. No archaeological resources were identified during this reconnaissance. In the spring of 2016, a second option was proposed for that section of the haul road located to the west of Highway 224. The reconnaissance work was conducted under the terms of Heritage Research Permit A2016NS044 by Kathryn J. Stewart with the assistance of Archaeologist Kyle G. Cigolotti.

In the summer of 2018, CRM Group was retained by McCallum Environmental Limited (McCallum) on behalf of Atlantic Gold to undertake archaeological screening and reconnaissance of a proposed waste rock storage pile related to the associated Beaver Dam mining plant and features. This proposed WRSP was located on the west end of the proposed mine layout, on the west side of Crusher Lake. The archaeological screening and reconnaissance was directed by

CRM Group Archaeologist Kyle G. Cigolotti. The archaeological investigation was conducted under the terms of Heritage Research Permit A2018NS085. As a result of the reconnaissance one area was identified as having elevated archaeological potential for encountering Precontact and/or early historic archaeological resources. Historic mining features, initially identified in 2008, were ascribed elevated potential for encountering archaeological resources as a result of intensified historic research and field survey.

In the summer of 2019, CRM Group was retained by McCallum on behalf of Atlantic Gold to undertake archaeological screening and reconnaissance of a proposed expansion of the western waste rock storage facility (WRSF), as well as an eastern extension including a proposed organic material stockpile – related to the associated Beaver Dam mining plant and features. The proposed WRSF is located on the western end of the proposed mine layout. The proposed eastern extension, including the organic material stockpile, is located on eastern end of the proposed mine layout – southeast of areas previously subjected to archaeological assessment.

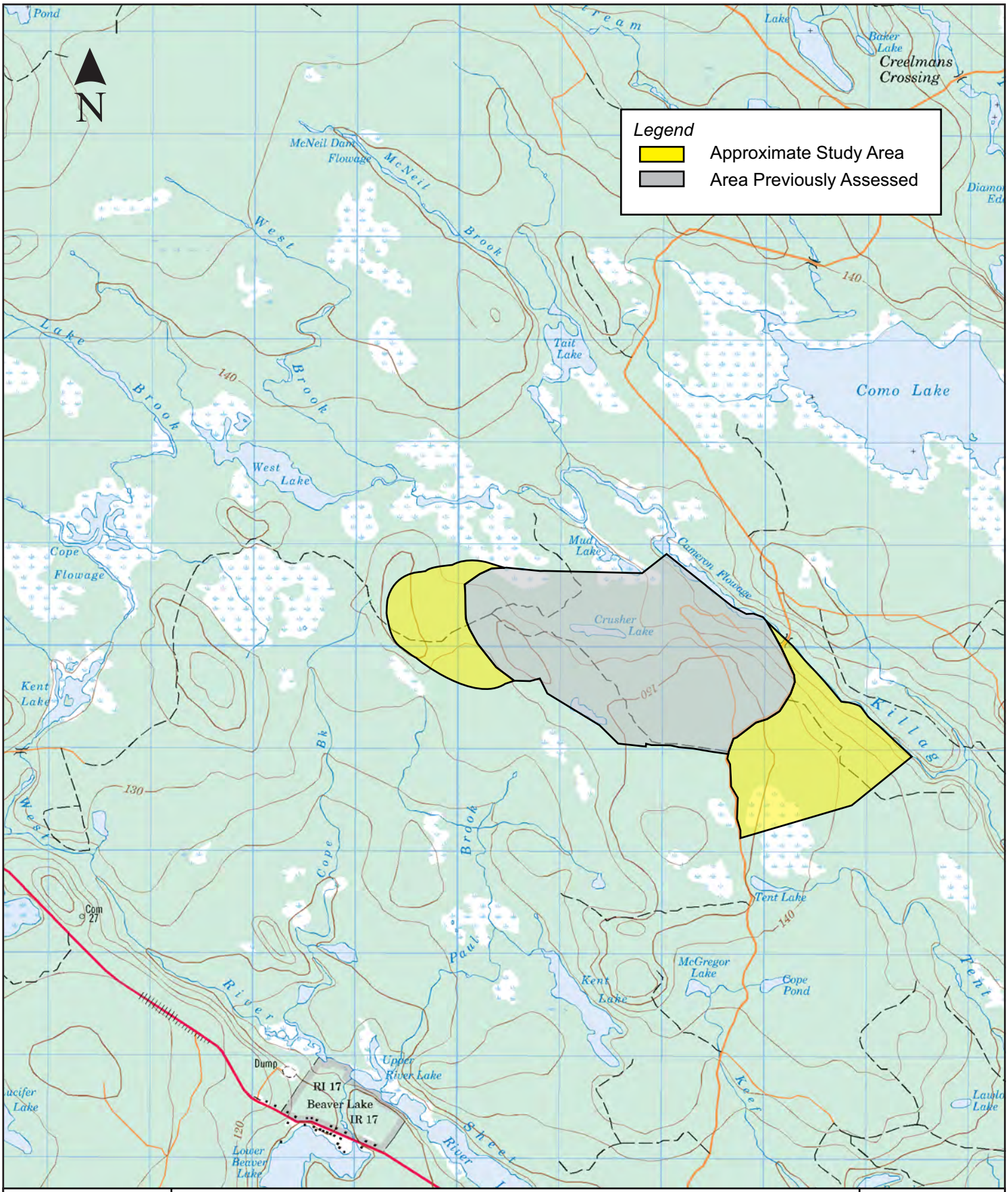
The archaeological screening and reconnaissance was directed by CRM Group Archaeologist Kyle G. Cigolotti. Cigolotti was assisted during the field reconnaissance by Archaeologist Emily Redden. Technical input on the project was provided by CRM Group President and Senior Technical Advisor W. Bruce Stewart.

The archaeological investigation was conducted according to the terms of Heritage Research Permit A2019NS074 (Category 'C'), issued to Cigolotti through Special Places. This report describes the archaeological screening and reconnaissance of McCallum's proposed Beaver Dam Gold study area, presents the results of these efforts and offers cultural resource management recommendations.

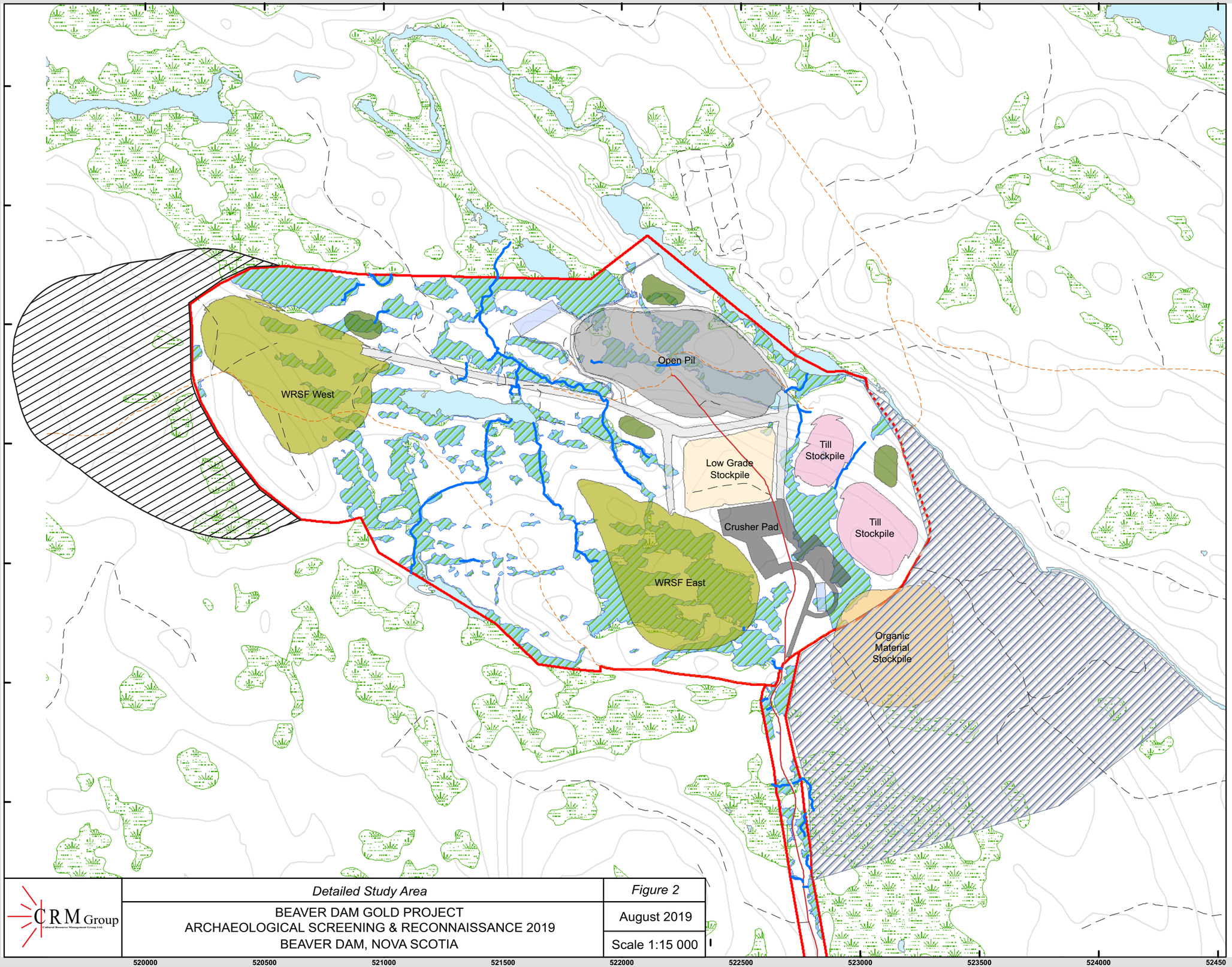
2.0 STUDY AREA

The Beaver Dam Gold study area is located approximately 21 kilometres northwest of Sheet Harbour on the western side of the Killag River in the northeastern corner of Halifax Regional Municipality (***Figures 1 & 2***). The property comprises portions of the historic Beaver Dam Gold District situated between Crusher Lake and Cameron Flowage and the area to the east of Crusher Lake (***Plate 1***). The current focus for screening and reconnaissance consists of two separate areas, one to the west and the other to the east of the main mine site. The western survey addressed one property (PID 40200990), with the study area covering approximately 163 hectares. The eastern study area addressed portions of five properties (PID 40201048, 40200941, 40200966, 40200958 and 40201063)., with the study area covering approximately 84 hectares. Access to the study area was gained from Beaver Dam Mines Road, via Highway 224.

PLATE 1: **Eastern section of the study area, Beaver Dam Mine development. Facing east, toward the east bank of the Killag River; July 22, 2019.**



CRM Group Cultural Resource Management Group Ltd.	*Approximate Study Area*	*Figure 1*
	BEAVER DAM GOLD PROJECT ARCHAEOLOGICAL SCREENING & RECONNAISSANCE 2019 BEAVER DAM, NOVA SCOTIA	August 2019 Scale 1:50 000



Prepared For:

ATLANTICGOLD

Beaver Dam
EIS Infrastructure Layout
Extended Area for Review

Location
Melrose, NS

Study Areas
- 190628 BD Extended Area
- 190714 BD Western Extended Area

Updated Infrastructure
- LG SP
- Open Pit
- Crusher Pad
- Organic Material Stockpile
- Road
- Topsoil Stockpile
- Till Stockpile
- WRSF
- Water Management
- Field Delineated Watercourses
- Field Delineated Wetlands
- NSE Wetlands
- Project Area

Coordinate System: NAD 1983 CSRS UTM Zone 20N
Projection: Transverse Mercator
Datum: North American 1983 CSRS
Units: Meter

0 175 350 700 m

1:15,000 Scale when printed @ 11" x 17"

Drawn By: LP

Date: 6/28/2019

McCallum Environmental Ltd.

CRM Group
Cultural Resource Management Group Ltd.

Detailed Study Area

BEAVER DAM GOLD PROJECT
ARCHAEOLOGICAL SCREENING & RECONNAISSANCE 2019
BEAVER DAM, NOVA SCOTIA

Figure 2

August 2019

Scale 1:15 000

Document Name: 190627 INFRASTRUCTURE UPDATE

3.0 METHODOLOGY

In the summer of 2019, McCallum retained CRM Group on behalf of Atlantic Gold to undertake archaeological screening and reconnaissance of the proposed expansion of the WRSF, as well as an eastern extension including a proposed organic material stockpile – related to the associated Beaver Dam mining plant and features. The objective of the archaeological assessment was to evaluate archaeological potential within the area that may be disturbed by subsequent development activities. To address this objective, CRM Group developed a work plan consisting of the following components: a background study of relevant site documentation to identify areas of elevated archaeological potential; Mi'kmaw engagement; archaeological reconnaissance of the areas that may be impacted by development activities; and, preparation of a report summarizing the results of the background research and field survey, as well as providing cultural resource management recommendations.

3.1 Background Study

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 these goals, CRM Group utilized the resources of various institutions including documentation available through the Nova Scotia Archives, Nova Scotia Land Information Centre, the Department of Natural Resources, the Nova Scotia Registry of Deeds, Dalhousie University Archives and the Nova Scotia Museum.

The background study included a review of relevant historic documentation incorporating land grant records, legal survey and historic maps, local and regional histories, previous archaeological reports and consultation with knowledgeable parties. 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 that 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.

3.2 Mi'kmaw Engagement

Although there was no known Mi'kmaq association with this study area, CRM Group contacted the Kwilmu'kw Maw-Klusuaqn Negotiation Office's Archaeological Research Division (KMKNO's ARD) to see if they have any information pertaining to traditional or historical Mi'kmaw use of the study area. Millbrook and Sipekne'katik First Nations were also approached regarding potential traditional or historic Mi'kmaw use of the area. CRM Group staff engaged with Gerald Gloade and Shelly Martin from the Millbrook First Nation in reference to the production of a Mi'kmaw Ecological Knowledge Study (MEKS) and Traditional Land Use Study (TLUS) of the proposed Beaver Dam Mine project.

3.3 Field Reconnaissance

The goals of the archaeological field reconnaissance were to conduct a visual inspection of the study area, document any areas of archaeological sensitivity or archaeological sites identified during the course of either the background study or the 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 watchful 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.

Hand-held Global Positioning System (GPS) units were used to record track logs and UTM coordinates for all survey areas, as well as any identified diagnostic artifacts, formal tools, isolated finds and site locations.

4.0 RESULTS

4.1 Background Study

The following discussion details the environmental and cultural setting of the study area, as well as previous archaeological research conducted in the general 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 (Faribault 1899). The dam is located at the southeastern end of Cameron Flowage, approximately one kilometre northeast of Crusher Lake. 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 Mi'kmaq, as well as early Euro-Canadian, archaeological potential.

Topography

The study area is located within the ecoregion known as the *Eastern* Region *(300)* (Neily, Basquill, Quigley & Keys 2018: 110). This geographically diverse ecoregion slopes gently toward the Atlantic Ocean and is made up of slate ridges, granite uplands, drumlin fields, wetlands and rolling glacial till plains (Neily et al. 2017: 110). Chains of lakes, streams and stillwaters comprise a significant portion of the ecoregion. These, along with large wetlands, provide headwaters for some of the ecoregions longest rivers including the Sheet Harbour River (Neily et al. 2017: 110).

The study area's specific ecodistrict is known as the *Eastern Interior* District (440) (Neily et al. 2017: 121). This expansive tract of upland topography is a rolling till-plain comprised of generally gravelly and stony soils. Bedrock ridging is highly visible and the topography follows the gentle rise and fall of underlying bedrock and glacial deposits (Neily et al. 2017: 121).

These hardwood covered hills and slopes are 150-300 metres above sea level, with elevations within the study area ranging from approximately 150 to 160 metres above sea level (Neily et al. 2017: 69). The higher steep-sloped hills are underlain with older, erosion resistant rocks. the lower more gradually sloping hills are underlain by coarse sandstone, shale and conglomerate (Neily et al. 2017: 70). The general topography of the Beaver Dam study area is described as rolling, and elevation within the study area ranges from approximately 130 metres to 165 metres above sea level (Hilchey et al. 1964: 134).

Soils

The Beaver Dam area is covered by *Gibraltar* (ST2) and *Halifax Series* soils (ST2, ST14) (Keys 2007: 8). ST2 is mainly associated with fresh, coarse-loamy soils dominated by sandy loam texture with moderate drainage. ST2 is generally poor to medium in fertility with moisture limited during the growing season (Keys, Neily and Quigley 2011: 36). ST14 is mainly associated

with thick organic layers derived from wetland vegetation. Drainage is poor to very poor with fertility ranging from poor to rich, both depending on seepage inputs or ground water quality (Keys et al. 2011: 60).

Flora
Within the *Eastern Interior* ecodistrict, there are several significant forest ecosystems: the Spruce Pine Forest Group, with black spruce; the Spruce Hemlock Forest Group, with red spruce, hemlock, yellow birch and red maple; and a Tolerant Hardwood forest, with sugar maple, yellow birch and red maple (Neily et al. 2017: 123). The composition of the forests in this ecodistrict strongly reflects the depth of the soil profile. On shallow soils, scrub hardwoods are present underlain by a dense layer of ericaceous vegetation. On deeper soils, stands of red spruce are found. On crest and upper slopes of hills, drumlins and some hummocks, stands of tolerant hardwood occur. On the imperfectly and poorly drained soils, black spruce, tamarack and red maple dominate stand composition (Neily et al. 2017: 122).

4.1.2 Mi'kmaw Land Use
The land within the study area was once part of the greater Mi'kmaw territory known as *Eskikewa'kik*, meaning 'skin dressers territory' (Rand 1875). 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 previously assessed section of the haul road crosses at an established bridge, would have been part of a transportation route facilitating travel inland from Sheet Harbour on the Atlantic Ocean, and a significant source of salmon and other fish species.

In Nova Scotia, information regarding archaeological sites is stored in the Maritime Archaeological Resource Inventory (MARI), a provincial archaeological site database, maintained by the Nova Scotia Museum. This database contains information on archaeological sites registered with the province within the Borden system. The Borden system in Canada is based on a block of latitude and longitude. Each block is referenced by a four-letter designator. Sites within a block are numbered sequentially as they are recorded. The study area is located within the BgCq Borden Block.

A review of MARI 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. The nearest registered archaeological sites are BhCp-01, BfCo-01, BfCo-02, BfCo-03, BgCp-01, BgCp-02, BgCp-03, BgCp-04 and BfCp-1. BhCp-01, the site of a historic Mi'kmaq burial, is located approximately 21 kilometres northeast from the study area and recorded by Harry Piers in 1900. According to Piers, Seloam Lake was named after Matteo Seloam, a local Mi'kmaq resident, who buried his wife on one of the islands in the lake. BfCo-01 and 02, located approximately 22 kilometres southeast from the study area, are both Precontact lithic finds identified during a survey of the Nova Scotia Power Incorporated (NSPI) Malay Falls Reservoir conducted by Darryl Kelman in 2013 while water levels in the Reservoir were below normal seasonal levels. BfCo-03 is a historic complex consisting of a road, three foundations and a slipway, all identified during the same survey at Malay Falls. BgCp-01 through BgCp-04, located approximately 18 kilometres east of the study area, are Precontact lithic finds indentified during a survey of NSPI's water drawn down related to the Malay Falls Dam. These were identified in 2013 by Darryl Kelman near Marshall Falls while water levels were below seasonal levels. BfCp-1, located approximately 25 kilometres south of the study area, is a historic house cellar identified in 2016 by Davis MacIntyre & Associates.

According to an environmental screening prepared by the Special Places (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 Special Places encompassed a larger area than that subjected to archaeological screening and reconnaissance by CRM Group for this particular study.

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.*

CRM Group contacted KMKNO's ARD requesting information regarding traditional or historic Mi'kmaq use of the study area and they provided information that was taken into consideration when preparing the archaeological assessment. This information is confidential in nature and cannot be reproduced in this report. During the 2018 fieldwork, CRM Group staff engaged with Gerald Gloade and Shelly Martin from Millbrook First Nation in reference to the production of a Mi'kmaw Ecological Knowledge Study (MEKS) and Traditional Land Use Study (TLUS) of the proposed Beaver Dam Mine project.

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

4.1.3 Historic Land Use

The Beaver Dam Development property has a long history of mining activity. 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 1980s, changing mining rights at least a dozen times. More recently, a number of other companies, including Seabright Resources Incorporated, 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. An examination of historic mapping revealed that the study areas occupy portions of four historic lots (Crown Land Grant Sheet 89). According to the Crown Land Index Sheet 89, these four properties were granted to Havelock McCall Hart to the

northwest and southeast of Crusher Lake, W.D. Veadon also to the west of Crusher Lake, T.L. Dwyer to the southeast of Crusher Lake and David Allison along the Killag River (***Figure 3***).

The 1899 Faribault map indicates the presence of approximately seven features within the Beaver Dam Mine Gold District but no features within the proposed study area (***Figure 4***). 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. This map also identifies an "Old Indian Road" as well as a "Portage Road" approximately six kilometres north of the study area. These roads are no longer visible on satellite images but the 1899 map shows several unnamed camps along the routes.

In 1928, Faribault completed a geological survey of the Beaver Dam mine site, at this time indicating 10 structures associated with the mine, once again no features were noted within the proposed study area (***Figure 5***). This includes 2 cookhouses, an engine house, the Austen mill, an office, an old 5-stamp mill and sluice, Gordon Zwicker & Levi Dimock's cabin, an old 8-stamp mill, 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).

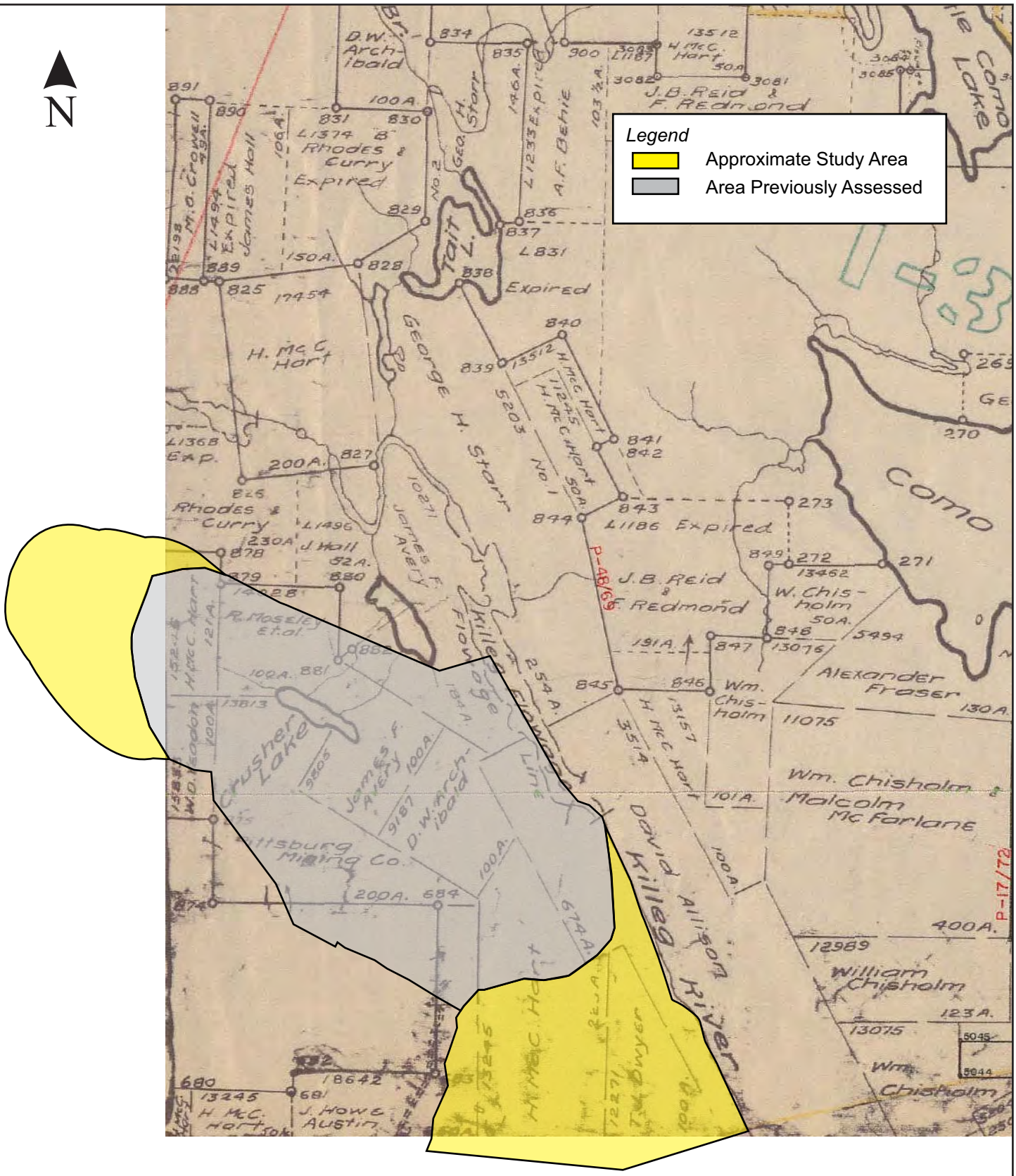
According to artist Joseph Purcell, the cabin portrayed in the painting below was built during the late 1920s by a miner named Johnnie Crouse who apparently lived and worked just north of Crusher Lake (***Plate 2***).

Although aerial photos from 1931 does not show any features within the current study area, it does identify what is possibly the Zwicker and Dimock cabin intact as well as features of the old 8-stamp mill on the west end of Crusher Lake (***Figure 6***). Aerial photographs from 1982 and 1992 (***Figure 7***) show that the mine underwent a significant amount of development in this time period. This development likely destroyed any remains of features in the area east of Crusher Lake, such as one of the cookhouses, the Austen mill, the Bellemore cabin and the unnamed structure.

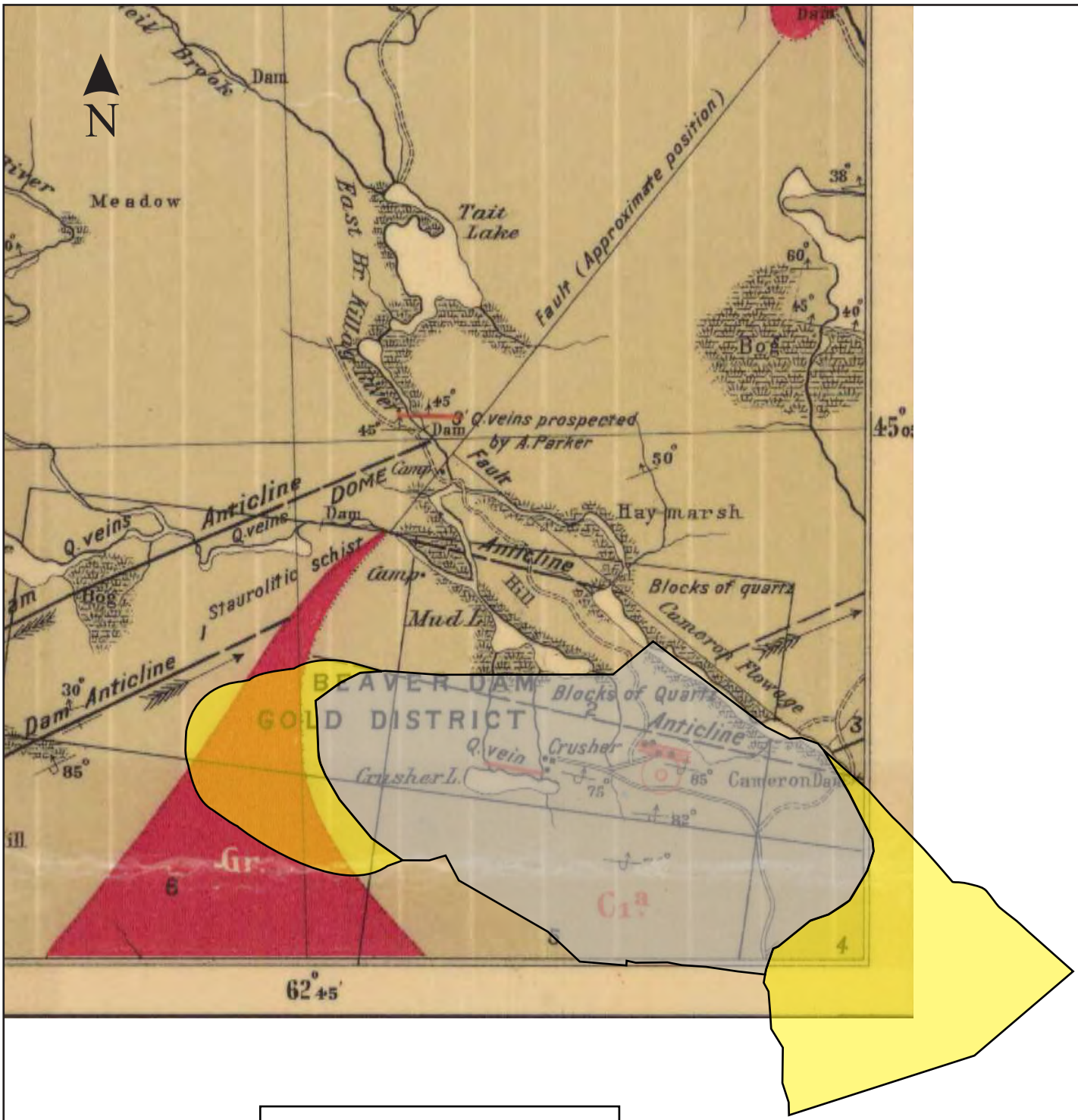
The DNR Abandoned Mine Opening (AMO) Database was used to identify where open mine shafts were located. The data was used both as a safety measure and for identifying areas more likely to contain archaeological features. According to the database, 20 AMOs are associated with Beaver Dam Mine site, but none are located within the current study area (Stewart and Cigolotti 2015).

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

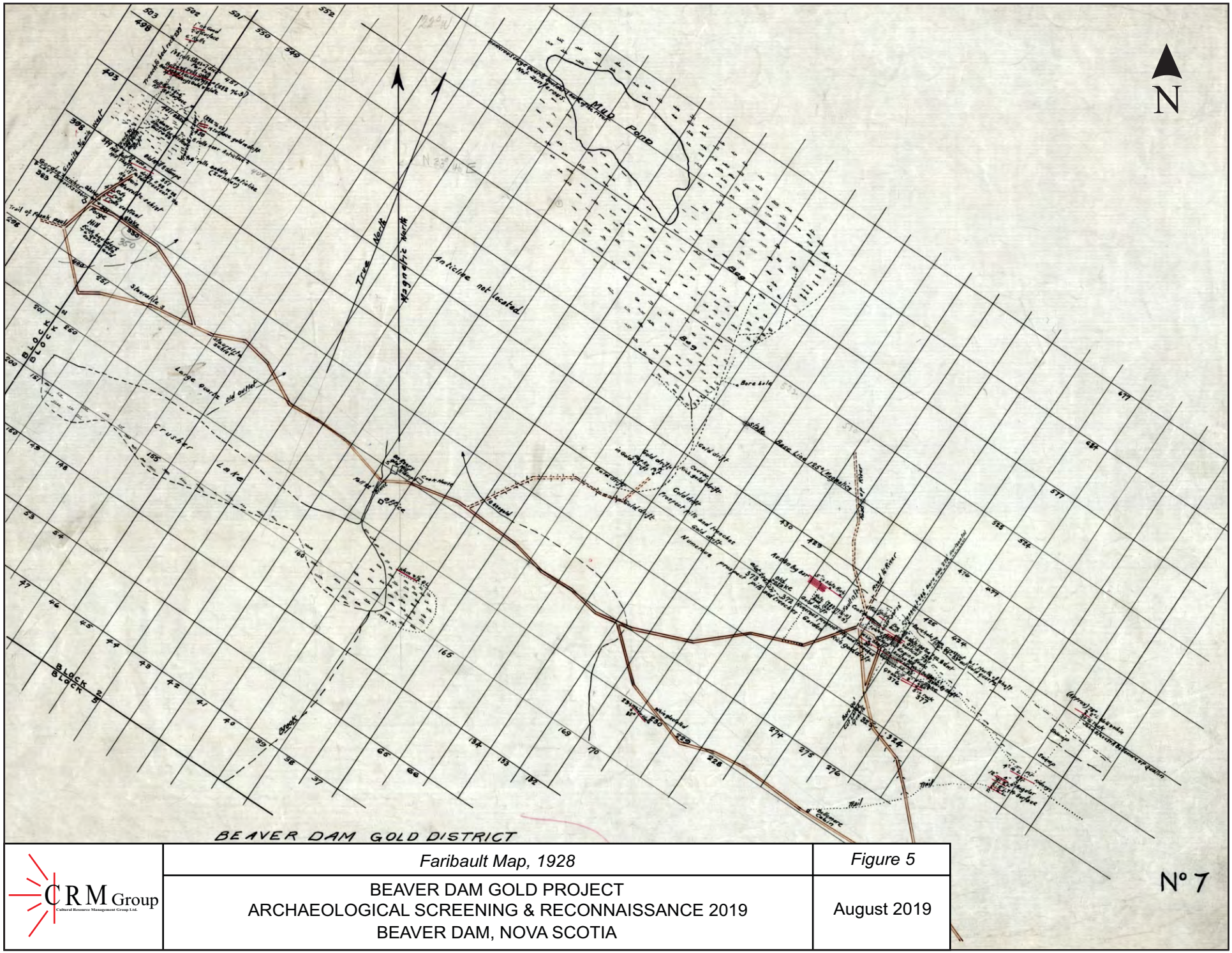
PLATE 2: "Crouse's Cabin, Beaver Dam Mine" by Joseph Purcell.



CRM Group	*Crown Land Index, Sheet 89*	*Figure 3*
	BEAVER DAM GOLD PROJECT ARCHAEOLOGICAL SCREENING & RECONNAISSANCE 2019 BEAVER DAM, NOVA SCOTIA	August 2019



CRM Group	*Faribault Map, 1899*	*Figure 4*
	BEAVER DAM GOLD PROJECT ARCHAEOLOGICAL SCREENING & RECONNAISSANCE 2019 BEAVER DAM, NOVA SCOTIA	August 2019



CRM Group Cultural Resource Management Group Ltd.	*Faribault Map, 1928*	*Figure 5*
	BEAVER DAM GOLD PROJECT ARCHAEOLOGICAL SCREENING & RECONNAISSANCE 2019 BEAVER DAM, NOVA SCOTIA	August 2019

CRM Group Cultural Resource Management Group Ltd.	*Aerial Photographs, 1931*	*Figure 6*
	BEAVER DAM GOLD PROJECT ARCHAEOLOGICAL SCREENING & RECONNAISSANCE 2019 BEAVER DAM, NOVA SCOTIA	August 2019

CRM Group Cultural Resource Management Group Ltd.	*Aerial Photographs, 1982 & 1992*	*Figure 7*
	BEAVER DAM GOLD PROJECT ARCHAEOLOGICAL SCREENING & RECONNAISSANCE 2019 BEAVER DAM, NOVA SCOTIA	August 2019

4.2 Previous Archaeological Assessment

Between 2008 and 2018, CRM Group was retained on a number of occasions to undertake archaeological screening and reconnaissance of the Beaver Dam Gold development. As a result of these assessments, several areas of elevated archaeological potential for encountering Precontact and/or early historic Mi'kmaq archaeological resources, as well as several sites related to historic mining activities were identified (***Figure 8***). The following paragraphs detail all areas of elevated potential for encountering Mi'kmaw archaeological resources and areas related to historic mining resources that have been identified since 2008 (***Tables 1 & 2***).

Areas 1-5

Area 1

Identified in 2018, *Area 1* measures approximately 100 metres east/west by 15 metres north/south and is located approximately 25 metres north of Crusher Lake. This plateau was identified as having elevated potential for encountering Precontact and/or early historic Mi'kmaq archaeological resources due to its close proximity to water and its relatively high and flat location (Cigolotti & Stewart 2019:19).

Areas 2 & 3

Identified in 2008, previously unnamed *Areas 2 and 3* are located on the western bank of the main Cameron Flowage watercourse. Although the original shoreline has been altered by the creation of Cameron Flowage, *Areas 2 and 3* are high, dry and level enough to be considered as exhibiting elevated potential for encountering Precontact and/or early historic Mi'kmaq archaeological resources (Beanlands & Stewart 2009:12).

Areas 4 & 5

Identified in 2019, *Areas 4 and 5* are located on the western side of the Killag River. Both areas are level, elevated plateaus, the first measuring approximately 20 metres by 10 metres (***Plate 7***) and the second measuring approximately 20 metres by 20 metres (***Plate 8***). *Areas 4 and 5* were identified as having elevated potential for encountering Precontact and/or early historic Mi'kmaq archaeological resources due to their close proximity to water and relatively high and flat locations.

If areas identified as exhibiting high archaeological potential for encountering Precontact and/or historic Mi'kmaq archaeological resources are to be impacted by future development, these areas should be subjected to a program of shovel testing to determine whether or not buried archaeological resources are present.

Sites 1-8

Site 1

Identified in 2008, *Site 1* is located approximately 40 metres north of Crusher Lake. The site includes the remains of a wooden structure measuring approximately 6.5 metres east/west by 6 metres north/south. 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 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 (Beanlands & Stewart 2009:15).

A review of historic property documentation revealed that the parcel of land encompassing Site 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 Site 1 at the turn of the century. Based on the observed artifacts, however, it is possible that Site 1 represents the remains of a twentieth century structure, much like the Crouse cabin (***Plate 2***).

Site 2
Identified in 2008, *Site 2* is located approximately 20 metres southeast of *Site 1*, and includes the potential remains of a partially in-filled cellar. The depression measures approximately 5 metres east/west by 4 metres north/south and was littered with twentieth-century refuse. Careful examination of the feature revealed no visible structural remains (Beanlands & Stewart 2009:17).

A review of historic property documentation revealed that the parcel of land encompassing *Site 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 *Site 2* at the turn of the century. Based on the Faribault map, it is assumed that *Site 2* represents the remains of one of these nineteenth century features.

Site 3
Identified in 2008, *Site 3* is located approximately 30 metres east of *Site 2*. The site includes a depression feature that may represent the remains of an in-filled cellar. At the time of its identification, visibility of the feature was greatly obscured by overgrowth (Beanlands & Stewart 2009:17).

A review of historic property documentation revealed that the parcel of land encompassing *Site 3* 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 *Site 3* at the turn of the century. *Site 3* may represent the remains of one of these nineteenth century features.

Site 4
Identified in 2008, *Site 4* is located approximately 70 metres southeast of *Site 3*. The site includes a small wooden structure measuring approximately 2.5 metres east/west by 2 metres north/south. Visual inspection revealed that the partially collapsed structure, which opens to the north, has a peaked roof covered with tarpaper. Careful examination also revealed the presence of wire nails. The presence of these materials suggests the feature was utilized during the twentieth century and may represent the remains of an outhouse. At the time of its identification, visibility of the feature was obscured by overgrowth (Beanlands & Stewart 2009:19).

A review of historic property documentation revealed that the parcel of land encompassing *Site 4* was originally obtained by the Pittsburgh Mining Co. (Crown Land Grant Sheet 89). A review of the Faribault map failed to identify any structures depicted in the vicinity of *Site 4*. Based on the observed artifacts, however, it is possible that *Site 4* represents the remains of a twentieth century structure.

Site 5
Identified in 2008, *Site 5* is located approximately 10 metres north of Crusher Lake and 150 metres west of *Site 1*. The site includes the potential remains of a moss-covered foundation measuring approximately 10 metres east/west by 4 metres north/south. The surrounding terrain is densely forested, rough and undulating. The lack of obvious field clearing or artificial levelling suggests that the feature may be industrial rather than domestic (Beanlands & Stewart 2009:20).

A review of historic property documentation revealed that the parcel of land encompassing *Site 5* was originally obtained by the Pittsburgh Mining Co. (Crown Land Grant Sheet 89). A review of the 1899 Faribault map failed to identify any structures depicted in the vicinity of *Site 5*. The site, however, overlies a quartz vein and may be related to mineral exploration and/or extraction activities.

Site 6
Identified in 2008, *Site 6* is located on the eastern side of a logging road that runs west of Crusher Lake. The site, situated on a small elevated plateau, bounded to the south, east and west by a transition to a more densely forested and naturally hummocky terrain, consists of two depressions. The first depression measures approximately 3 metres east/west by 3 metres north/south. The second, smaller depression measures approximately 2 metres east/west by 2 metres north/south (Beanlands & Stewart 2009:21). *Site 6* was revisited during a separate screening and reconnaissance in 2018. During this revisit, an area measuring approximately 25 metres by 25 metres was identified as moderate to high potential for encountering historic Euro-Canadian archaeological resources (Cigolotti & Stewart 2019:18-19).

The area directly corresponds with what Faribault had called "Forge Hill", approximately 5 metres east of the Zwicker and Dimock Cabin. A historic mining road was identified but running east/west for approximately 100 metres through rocky and wet terrain. Several depressions, likely test pits, were identified during the intensified reconnaissance to the north of *Site 6*. One pit contained portions of a broken cast iron stove. No identifying markings could be found on the stove to assign it an approximate date range.

Site 7
Identified in 2014, *Site 7* (previously referred to as *Feature 4: Old Mill – Five Stamps*) is located approximately 14 metres east of a small unnamed stream flowing from Crusher Lake (Stewart & Cigolotti 2015:17). The site includes the remains of a mill indicated on Faribault's 1928 map, situated on the north side of the mine road that runs along the north side of Crusher Lake. The mill, now just a rough outline composed of several large foundation stones, measures approximately 10 metres north/south and 4 metres east/west. 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. According to Faribault, this mill was built in 1904.

Site 8
Identified in 2014, *Site 8* (previously referred to as *Feature 5: Possible Cookhouse*) is located on the north side of the mine road that runs along the north side of Crusher Lake, as indicated on Faribault's 1928 map of the Beaver Dam mine. 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. It may indicate the site of the former cookhouse (Stewart & Cigolotti 2015:17).

Table 1: Areas of Elevated Potential UTM Coordinates

Area #	UTM COORDINATES
1	20 T 521244.00 m E 4990237.00 m N
2	20 T 522201.00 m E 4990701.00 m N
3	20 T 522626.00 m E 4990393.00 m N
4	20 T 523567.00 m E 4989683.00 m N
5	20 T 523810.00 m E 4989437.00 m N

Table 2: Sites Identified 2008-2019 UTM Coordinates

Site #	UTM COORDINATES
1	20 T 521571.00 m E 4990205.00 m N
2	20 T 521584.00 m E 4990190.00 m N
3	20 T 521617.00 m E 4990189.00 m N
4	20 T 521685.00 m E 4990158.00 m N
5	20 T 521408.00 m E 4990203.00 m N
6	20 T 521077.00 m E 4990410.00 m N 20 T 521077.00 m E 4990422.00 m N
7	20 T 521571.00 m E 4990253.00 m N
8	20 T 521612.00 m E 4990254.00 m N

Cameron Flowage

Mud Lake

N

SITE 6

AREA 1

SITE 5

Crusher Lake

SITE 1

SITE 7

SITE 8

SITE 3

SITE 4

SITE 2

AREA 2

AREA 3

AREA 4

AREA 5

1 km

Legend

- Study Area
- Study Area Previously Assessed
- Area of Elevated Archaeological Potential
- Historic Site

CRM Group
Cultural Resource Management Group Ltd.

Areas of Elevated Archaeological Potential	*Figure 8*
BEAVER DAM GOLD PROJECT ARCHAEOLOGICAL SCREENING & RECONNAISSANCE 2019 BEAVER DAM, NOVA SCOTIA	August 2019 Scale Bar

4.2 Field Reconnaissance

CRM Group archaeologists conducted a visual inspection of the study area, on July 22-24, 2019 (***Figure 9***). Weather conditions were overcast, warm and, at times, rainy. The primary purpose of the visit was to assess the area for archaeological potential and investigate any topographical and/or cultural features that had been identified as areas of elevated potential during the background research or during the previous field visits.

CRM Group archaeologists accessed the study areas via Beaver Dam Road from Highway 224 and existing logging and mining roads while on site. Reconnaissance began in the eastern or proposed organic material stockpile study area, which is located along the western side the Killag River, at the base of a steep slope (***Plate 3***). An automated lime dosing station and signage for the "West River Acid Rain Mitigation Project" were noted at the start of survey along the river (***Plates 4 & 5***). The terrain, generally low-lying, wet and marshy with undulating boulder fields, was indicative of seasonal flooding, upwards of approximately 10 metres from the watercourse in some areas. Tree throws exhibited the area's shallow topsoil and underlying bedrock (***Plate 6***). Vegetation consisted of a mix of mature and regenerating hardwood and softwood species typical of Nova Scotian forests. Ground cover consisted of a mix of moss, ferns and small shrubs (***Plate 7***).

Two areas of elevated potential for Precontact and/or early historic Mi'kmaw archaeological resources were identified within the eastern study area, *Areas 4 and 5*. *Areas 4 and 5* are located on the western side of the Killag River (***Plates 8 & 9***). Both areas are level, elevated plateaus, the first measuring approximately 20 metres by 10 metres and the second measuring approximately 20 metres by 20 metres.

Reconnaissance continued along the top of the steep slope down to the river, on either side of an existing, overgrown forestry road. Terrain on the eastern side of the road was generally hummocky with undulating boulder fields. Vegetation was a mix of open clear-cut forest and dense undergrowth including raspberry and wild rose bushes (***Plate 10***). Several areas previously identified as having elevated potential, through the use of LiDAR during the screening process were investigated. Upon direct inspection, all of these areas were determined to exhibit low archaeological potential and did not represent historic mining activities or other cultural resources.

The terrain through the study area west of the overgrown forestry road was generally hummocky with undulating boulder fields and many low-lying marshy, wet areas (***Plate 11***). Vegetation consisted of dense, mature mixed-woods and ground cover consisted of a mix of moss, ferns and small shrubs. Evidence of historic forestry activity was prevalent throughout the study area. Once again, areas previously identified as having elevated potential for historic occupation, through the use of LiDAR during the screening process were investigated and evidence of historic and modern mining activities was identified in the form of two overgrown geological test pits (***Plate 12***).

The study area for the proposed expansion of the western WRSF, located northwest of Crusher Lake, does not contain any major water courses. The landscape directly northwest of Crusher Lake is wet and boggy, with drainage leading directly from the lake into the bog. The western study area was accessed using existing mine exploration roads. Terrain throughout the study area was mostly hummocky and wet with undulating boulder fields (***Plate 13***). Quartz cobbles and boulders, as well as large boulders with quartz veins were frequently noted throughout the study area (***Plate 14***). Exposed bedrock was visible in many places. Vegetation consisted of dense mature mixed woods with dense low shrubs and ferns. The majority of tree growth appears to be

approximately 20 to 40 years old, with evidence of historic forestry noted throughout. Several recent tree clearing operations, which avoided low wet areas with standing water, were identified and used to assess portions of the study area (***Plate 15***). A stone pile and wooden marker painted white, with a visible date of 1977, were identified within a clear-cut area (***Plate 16***).

Based on the various components of the background study, including environmental setting, Mi'kmaw land use, property history and field reconnaissance, the study areas associated with the proposed organize material stockpile and the proposed expansion of the WRSF are both ascribed low potential for encountering either Mi'kmaw or early Euro-Canadian archaeological resources. The only exceptions to this determination are Areas 4 and 5, which are ascribed elevated potential for encountering Mi'kmaw archaeological resources.

PLATE 3: **Base of the steep slope up from the west side of the Killag River. Facing south; July 22, 2019.**

PLATE 4: **Automated lime dosing station on the west bank of the Killag River. Facing northeast; July 22, 2019**

PLATE 5: **Signage for the West River Acid Rain Mitigation Project on the west bank of the Killag River. Facing east; July 22, 2019.**

PLATE 6: **Example of a tree throw on the west side of the Killag River. Facing east; July 22, 2019.**

PLATE 7: **Example of vegetation and ground cover on the west side of the Killag River. Facing east; July 22, 2019.**

PLATE 8: **High and level terrain of Area 4, on the west side of the Killag River. Facing north; July 22, 2019.**

PLATE 9: **High and level terrain of Area 5, on the west side of the Killag River. Facing east; July 22, 2019.**

PLATE 10: **Dense low vegetation in a clear-cut area at the top of a steep slope down to the Killag River. Facing northeast; July 22, 2019.**

PLATE 11: Example of low-lying marshy, wet terrain within the study area. Facing southwest; July 23, 2019.

PLATE 12: One of two overgrown geological test pits identified. Facing south; July 23, 2019.

PLATE 13: Example of boulders and dense mixed vegetation throughout the western study area. Facing north; July 23, 2019.

PLATE 14: An example of quartz cobbles found throughout the study area. July 23, 2019.

PLATE 15: **Recent tree clearing operations, avoiding the surrounding low wet areas with standing water. Facing southwest; July 23, 2019.**

PLATE 16: **Stone pile and wooden marker, c. 1977. Facing west; July 23, 2019.**

Cameron Flowage

Mud Lake

N

Guidepost

Crusher Lake

Trench

Trench

1 km

Legend

- Study Area
- Study Area Previously Assessed
- GPS Tracklog

CRM Group	*GPS Tracklog*	*Figure 9*
	BEAVER DAM GOLD PROJECT ARCHAEOLOGICAL SCREENING & RECONNAISSANCE 2019 BEAVER DAM, NOVA SCOTIA	August 2019
		Scale Bar

5.0 CONCLUSIONS AND RECOMMENDATIONS

The 2019 archaeological screening and reconnaissance of the Beaver Dam Gold Development, proposed organic material stockpile and proposed expansion of the two study areas associated with the WRSF study areas consisted of historical background research and a visual inspection. It did not involve sub-surface testing. Based on background research alone, the study areas were ascribed elevated potential for encountering Precontact and/or early historic Mi'kmaw archaeological resources and elevated potential for encountering Euro-Canadian archaeological resources.

Based on the field reconnaissance and the background screening, Areas 4 and 5 are ascribed elevated potential for encountering Mi'kmaw archaeological resources.

Given the rocky, wet and isolated nature of the terrain encountered during field reconnaissance, the remainder of the two study areas consisting of the proposed organic material stockpile and proposed expansion of the WRSF were ascribed low potential for encountering Mi'kmaw (either Precontact or historic) or Euro-Canadian archaeological resources.

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

1. If any development is to occur with Areas 4 or 5, it is recommended that a program of archaeological shovel testing be conducted in advance of any disturbance.

2. If any development is to occur specifically around the areas identified during the 2008 and/or 2018 reconnaissance as exhibiting high archaeological potential for encountering Precontact and/or historic Mi'kmaq archaeological resources, these areas should be subjected to a program of shovel testing to determine whether or not buried archaeological resources are present.

3. If any development is to occur specifically around the historic sites identified during the 2008, 2014 and/or 2018 reconnaissance, it is recommended that a program of intensified historical research and archaeological shovel testing be conducted in advance of any disturbance.

4. It is recommended that the remainder of the current layout for the proposed organic material stockpile and proposed expansion of the WRSF study areas be cleared of any requirement for further archaeological investigation.

5. If any further changes are made to the layout of the mine and associated facilities it is recommended that those new areas be evaluated as to potential impacts to archaeological resources.

6. 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).

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