

## **ANNEX XVI**

# **ARCHAEOLOGY BASELINE REPORT FOR THE JAY PROJECT**



# **ARCHAEOLOGY BASELINE REPORT FOR THE JAY PROJECT**

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## Abbreviations

Abbreviation	Definition
AIA	Archaeological Impact Assessment
AOA	Archaeological Overview Assessment
ASTt	Arctic Small Tool tradition
BHP Billiton	BHP Billiton Canada Inc. including subsidiary BHP Billiton Diamonds Inc.
BP	before present
BSA	baseline study area
CEAA	Canadian Environmental Assessment Agency
Dominion Diamond	Dominion Diamond Ekati Corporation
e.g.	for example
Ekati Mine	Ekati Diamond Mine
et al.	and more than one additional author
GNWT	Government of the Northwest Territories
i.e.	that is
LKDFN	Lutselk'e Dene First Nation
NSMA	North Slave Métis Alliance
NWT	Northwest Territories
Project	Jay Project
PWNHC	Prince of Wales Northern Heritage Centre
RSA	regional study area
TG	Tłı̨chǫ Government
TK	Traditional Knowledge
WLWB	Wek'èezhii Land and Water Board
YKDFN	Yellowknives Dene First Nation

## Units of Measure

Unit	Definition
m	metre
m <sup>2</sup>	square metres
masl	metres above sea level
ha	hectare
km	kilometre
km <sup>2</sup>	square kilometre

# 1 INTRODUCTION

## 1.1 Background and Scope

Dominion Diamond Ekati Corporation (Dominion Diamond) is a Canadian-owned and Northwest Territories (NWT) based mining company that mines, processes, and markets Canadian diamonds from its Ekati Diamond Mine (Ekati Mine). The existing Ekati Mine is located approximately 200 kilometres (km) south of the Arctic Circle and 300 km northeast of Yellowknife, NWT (Map 1.1-1).

Dominion Diamond is proposing to develop the Jay kimberlite pipe (Jay pipe) located beneath Lac du Sauvage. The proposed Jay Project (Project) will be an extension of the Ekati Mine, which is a large, stable, and successful mining operation that has been operating for 16 years. Most of the facilities required to support the development of the Jay pipe and to process the kimberlite currently exist at the Ekati Mine. The Project is located in the southeastern portion of the Ekati claim block approximately 25 km from the main facilities and approximately 7 km to the northeast of the Misery Pit, in the Lac de Gras watershed (Map 1.1-2).

The archaeological baseline is part of a comprehensive baseline program to document the natural and socio-economic environments in the vicinity of the Project site.

## 1.2 Objectives

The objectives of the archaeology baseline are as follows:

- to conduct an Archaeological Overview Assessment (AOA) of the proposed Project areas to review known archaeological sites and mitigated archaeological sites in the regional study area, and to identify the potential for the Project footprint to contain undocumented sites;
- to survey for undocumented sites that may be affected by the Project; and,
- to review the cultural setting in the study area.

Archaeological resources are critical for understanding the cultural history of the NWT and are valued by community members. Archaeological sites in the NWT are protected by the *Mackenzie Valley Resource Management Act* (Statutes of Canada 1998, Chapter 25) and the *Northwest Territories Archaeological Site Regulations* (SOR/2001-219). An archaeological site is defined in the *Northwest Territories Archaeological Site Regulations* as “a site where an archaeological artifact is found.” An archaeological artifact is defined as “any tangible evidence of human activity that is more than 50 years old and in respect of which an unbroken chain of possession or regular pattern of usage cannot be demonstrated.”

Although excluded from the definition of an archaeological site under the *Northwest Territories Archaeological Site Regulations*, Land Use or Traditional Use sites are a product of the traditional and ongoing land use and should be respected and, wherever practicable, left undisturbed.



### LEGEND

- |  |  |  |                                 |
|--|--|--|---------------------------------|
|  | JAY PROJECT  |  | TERRITORIAL/PROVINCIAL BOUNDARY |
|  | EXISTING MINE OR PROJECT                               |  | TREELINE                        |
|  | TERRITORIAL CAPITAL                                    |  | WATERCOURSE                     |
|  | POPULATED PLACE  |  | WATERBODY                       |
|  | HIGHWAY  |  |                                 |
|  | ALL-SEASON ROAD  |  |                                 |
|  | WINTER ROAD  |  |                                 |
|  | TIBBITT TO CONTWOYT TO WINTER ROAD                     |  |                                 |
|  | NORTHERN PORTION OF TIBBITT TO CONTWOYT TO WINTER ROAD |  |                                 |

### REFERENCE

WATER OBTAINED FROM ATLAS OF CANADA  
NATURAL RESOURCES CANADA, CENTRE FOR TOPOGRAPHIC INFORMATION, 2012  
PROJECTION: CANADA LAMBERT CONFORMAL CONIC

### DOCUMENT

ARCHAEOLOGY BASELINE REPORT

150 0 150  
SCALE 1:6,000,000 KILOMETRES



DOMINION  
DIAMOND

JAY PROJECT  
NORTHWEST TERRITORIES, CANADA

TITLE

## LOCATION OF THE JAY PROJECT



Golder  
Associates

PROJECT	13-1328-0041	FILE No. B_JC_Archy_001_GIS
DESIGN	ANK	29/01/14
GIS	ANK	12/09/14
CHECK	CG	12/09/14
REVIEW	SM	12/09/14
SCALE AS SHOWN		REV. 0
MAP 1.1-1		



G:\CLIENTS\DOMINION\DEC\_Jay and Lynx Projects\Figures\13-1328-0041\_Jay & Lynx EA\Archy\BaselineB\_JC\_Archy\_004\_GIS.mxd



**LEGEND**

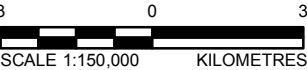
- EKATI MINE FOOTPRINT
- DIAMIK MINE FOOTPRINT
- PROPOSED JAY FOOTPRINT
- KIMBERLITE PIPE
- WINTER ROAD
- TIBBITT TO CONTWOYTO WINTER ROAD
- NORTHERN PORTION OF TIBBITT TO CONTWOYTO WINTER ROAD
- ELEVATION CONTOUR (10 m INTERVAL)
- ESKER
- WATERCOURSE
- WATERBODY



**REFERENCE**

CANVEC © NATURAL RESOURCES CANADA, 2012  
NATURAL RESOURCES CANADA, CENTRE FOR TOPOGRAPHIC INFORMATION, 2012  
DATUM: NAD83 PROJECTION: UTM ZONE 12N

**DOCUMENT**

ARCHAEOLOGY BASELINE REPORT



<b>PROJECT</b>		13-1328-0041		FILE No. B_JC_Archy_004_GIS	
 <b>DOMINION DIAMOND</b>		JAY PROJECT NORTHWEST TERRITORIES, CANADA			
<b>TITLE</b>					
<b>EKATI PROPERTY MAP</b>					
		DESIGN	SM	12/08/14	SCALE AS SHOWN
		GIS	ANK	12/09/14	REV 0
		CHECK	CG	12/09/14	<b>MAP 1.1-2</b>
		REVIEW	SM	12/09/14	



## **1.3 Spatial Boundaries**

### **1.3.1 Regional Study Area**

A regional study area (RSA) was selected to encompass all existing and proposed developments in the Lac de Gras region and an approximate 20-km buffer (Map 1.3-1). The RSA covers approximately 5,933 square kilometres (km<sup>2</sup>) and includes areas that will be influenced by the Project as well as areas that will remain unaffected.

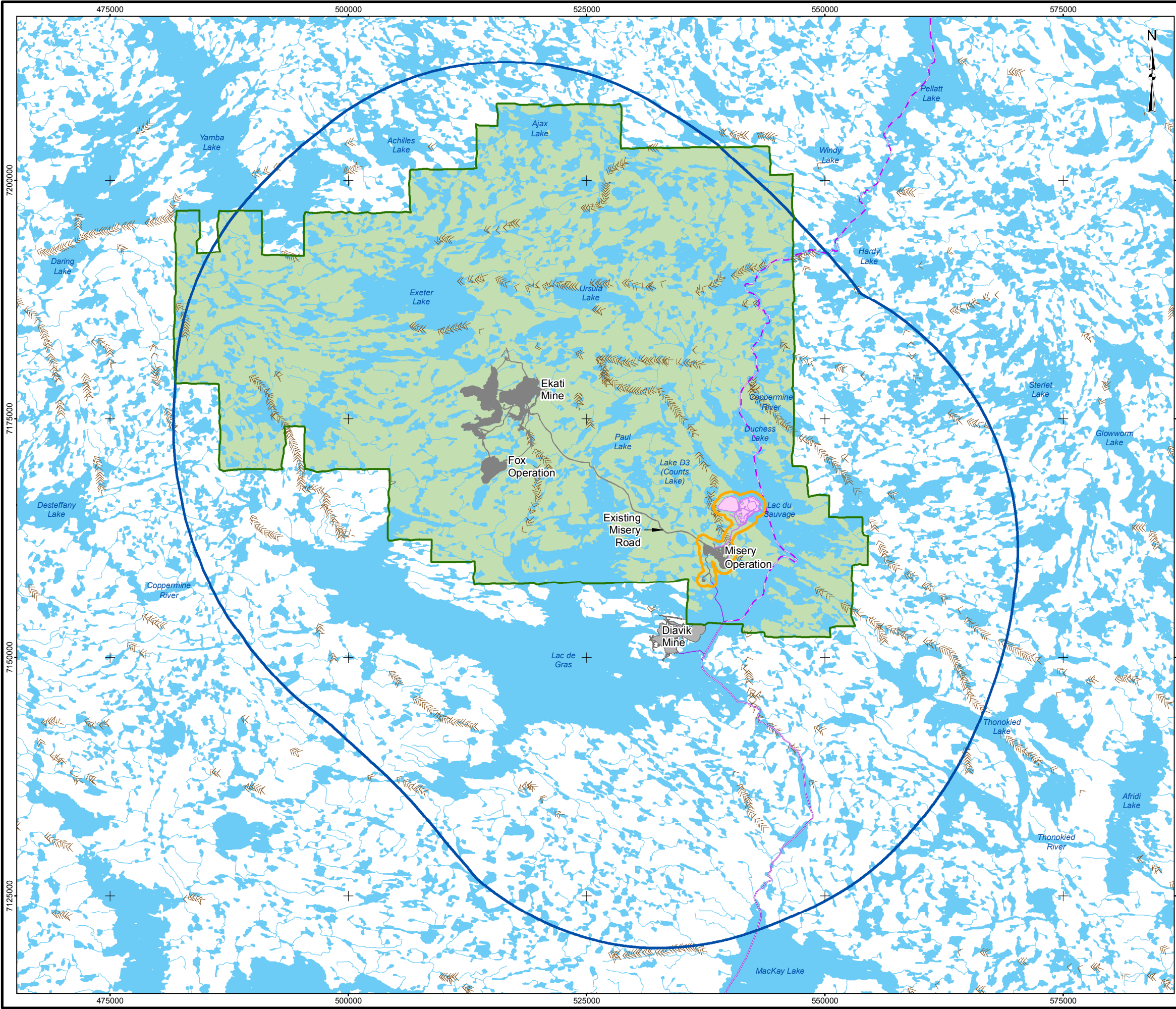
The Ekati claim block is within the traditional lands of the Yellowknives Dene First Nation (YKDFN), Łutselk'e Dene First Nation (LKDFN), the Tłıchǵ Government (TG), and Kitikmeot Inuit (Environmental Assessment Panel 1996). An RSA defined by these lands would be impracticable owing to its potential size and number of sites. The RSA as defined for this baseline provides sufficient context regarding the diversity and importance of the archaeological sites that may be affected by Project activities.

The RSA includes the Lac de Gras basin, which is located at the headwaters of the Coppermine River drainage basin (or watershed). Lac de Gras discharges water west into the Coppermine River, which flows north into the Arctic Ocean at the Hamlet of Kugluktuk (Map 1.1-1). More than 200 small tributary streams, many of which are ephemeral (i.e., flow intermittently), discharge directly into Lac de Gras.

### **1.3.2 Baseline Study Area**

To quantify baseline conditions, a baseline study area (BSA) was defined for archaeology. The BSA was defined as encompassing the Project footprint plus a 500 metre (m) buffer (Map 1.3-1). The BSA is approximately 31 km<sup>2</sup>, and includes portions of the Lac du Sauvage basin, which flows into Lac de Gras. The BSA was selected to encompass both the existing Misery mine site and the Project.

G:\CLIENTS\DOMINION\DEC Jay and Lynx Projects\Figures\13-1328-0041 Jay & Lynx EIA\Archy\Baseline\B\_JC\_Archy\_003\_GIS.mxd



#### LEGEND

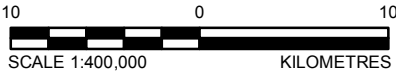
- EKATI MINE FOOTPRINT
- DIABIK MINE FOOTPRINT
- PROPOSED JAY FOOTPRINT
- WINTER ROAD
- TIBBITT TO CONTWOYTO WINTER ROAD
- NORTHERN PORTION OF TIBBITT TO CONTWOYTO WINTER ROAD
- ESKER
- WATERCOURSE
- WATERBODY
- BASELINE STUDY AREA
- EKATI CLAIM BLOCK
- REGIONAL STUDY AREA

#### REFERENCE


NATIONAL TOPOGRAPHIC BASE DATA (NTDB) 1:250,000  
CANVEC © NATURAL RESOURCES CANADA, 2012  
NATURAL RESOURCES CANADA, CENTRE FOR TOPOGRAPHIC INFORMATION, 2012  
DATUM: NAD83 PROJECTION: UTM ZONE 12N

#### DOCUMENT

ARCHAEOLOGY BASELINE REPORT



PROJECT




DOMINION  
DIAMOND

JAY PROJECT

NORTHWEST TERRITORIES, CANADA

TITLE

JAY ARCHAEOLOGICAL  
STUDY AREAS



Golder  
Associates

PROJECT	13-1328-0041		FILE No. B_JC_Archy_003_GIS	
DESIGN	RC	14/03/14	SCALE AS SHOWN	REV 0
GIS	ANK	12/09/14	MAP 1.3-1	
CHECK	CG	12/09/14		
REVIEW	SM	12/09/14		

## 2 ENVIRONMENTAL SETTING

The Project is located in the Level III Tundra Shield Low Arctic (south) Ecoregion in the Level II Tundra Shield Ecoregion (Ecosystem Classification Group 2012). The RSA is characterized by undulating to rolling terrain with northwest to southeast trending ridge features, known as eskers. The undulating to rolling terrain is controlled by the abundant, near-surface resistant Precambrian rock. Bare bedrock exposures do not have soil development. Esker and kame terrain features are composed of well-sorted sand and gravel. Areas of rolling terrain are associated with glacial till/morainal deposition and are typically shallow, sandy texture materials. Lacustrine plains are gently sloping areas associated with lakes and comprise a small portion of the region. Lacustrine terrain features are composed of silty and gravelly sands overlain by organic layers (Soils Baseline Report, Annex V).

The terrestrial vegetation community around the Ekati Mine is characterized by species adapted to long, cold winters and very short, cold summers. Heath tundra is the most abundant vegetation cover and is characterized by an abundance of low-growing heath plants, most belonging to the Ericacea (heath family). Characteristic species are narrow-leaved Labrador tea, lingonberry, alpine bilberry, bearberry species, black crowberry, and dwarf birch. Lichen-dominated communities are found on the crests and upper slopes of eskers where the snow does not accumulate, and on bedrock or boulder complexes where exposed rock outcrops support these communities. Shrubs species, such as willows and dwarf birch, are found in sheltered riparian areas along streams, seeps, and lakeshores associated with poorly drained soils. The vegetation characteristics of the sedge wetlands and tussock hummock plant communities occurring in depressions are dominantly sedges, cottongrasses, and peat mosses (Vegetation Baseline Report, Annex VI).

Despite the harsh climate, the area supports many species of mammals and birds. Most of these animals are migratory, moving onto the barrenlands in spring and summer, and migrating south as winter approaches (e.g., caribou, wolf, peregrine falcon). Others are non-migratory (e.g., the grizzly bear, wolverine, Arctic fox, red fox, Arctic hare, raven, and gyrfalcon). Although uncommon, muskoxen have been observed on the northeast side of the RSA (Wildlife Baseline Report, Annex VII).

The Bathurst caribou herd migrates through the RSA to access spring calving and winter forage grounds. Specifically, the outlet of Lac du Sauvage into Lac de Gras and along the esker on the west side of Lac du Sauvage are known to be important caribou movement sites (Section 12.2.2). Several large eskers in the RSA, in addition to travel routes for caribou, provide denning habitat for wolves and grizzly bears. Numerous grass and sedge wetland areas provide food for grizzly bears in the spring, and breeding habitat for migrating shorebirds, waterfowl, and some songbird species.

## 3 CULTURAL SETTING

### 3.1 Cultural Context

People have lived in and travelled across portions of the NWT since the end of the last ice age, approximately 10,000 years Before Present (BP). The earliest known inhabitants of the central District of the Mackenzie have been dated to approximately 7,000 BP and are known as Paleoindians or Northern Plano (plains) tradition. The tool assemblage associated with this population resembles those of early Aboriginal hunters of the northern plains, such as the Chipewyan (Wright 1981).

Until approximately 3,500 BP, the climate was warmer than today and established animal populations were larger. Paleoindian hunters from the northern plains may have moved north following the caribou as they migrated beyond the treeline and through the tundra of the barrenlands. Paleoindian sites in the NWT have been found in association with major caribou crossings that also provide good fishing (Wright 1981). These identified Paleoindian sites have been found mainly to the east of Great Slave and Great Bear Lakes (Noble 1981). The closest known Paleoindian sites to the Ekati Mine are found more than 160 km to the northeast at Rawalpindi Lake (Rescan 2006).

The earliest cultural remains identified on the Ekati claim block are from the Palaeoeskimo or Arctic Small Tool tradition (ASTt). The ASTt is characterized by spears, harpoons, stone burins (small chisel tools), and microblades. The microblades were thought to be part of a compound tool and at the time of use would have been inset into bone or antler.

The Palaeoeskimo likely migrated from Siberia approximately 4,000 BP. Most Palaeoeskimo sites in the barrenlands date from between 3,500 to 2,600 BP (Gordon 1996). This time period coincides with a cooling trend noted by the retreat of the treeline and a southern shift in human populations approximately 4,000 to 3,000 BP (Maxwell 1980). Palaeoeskimo sites have been identified on the Lac du Sauvage esker, at the Lac de Gras – Lac du Sauvage narrows, and at the outlet of Lac de Gras. It appears that the Palaeoeskimo fished and hunted the caribou crossing the narrows, tending to stay close to sources of water (Rescan 2006).

The Taltheilei tool tradition, found throughout the Athabasca, Great Slave Lake, and north to the Lac de Gras regions, is representative of early use and occupation of the land by the ancestral Athapascan or sub-Arctic Dene (Noble 1981). This tool assemblage, is less distinct than the ASTt and contains, among other things, large shale and quartzite lanceolates, bifacial knives, sandstone whetstones, and circular scrapers. The continuity of this tool assemblage for over 2,000 years, and which in some respects continues today, supports the Dene's assertions that they have been living in the region "since time immemorial." A small number of distinctly Taltheilei sites have been identified on inland eskers within the Ekati claim block. It is highly probable, however, that sites found without distinctive pieces can also be attributed to the Taltheilei – ancestors of the Dene (Rescan 2006).

Evidence of more recent, ongoing traditional use of the Lac de Gras region has been identified through physical remains, oral traditions, and the accounts of early European travellers. Before European contact, the Lac de Gras area was occupied by Dene groups such as the YKDFN, LKDFN, and TG, who employed traditional land use patterns that focused on the seasonal movements of culturally important wildlife (e.g., caribou and fish) (Helm 1981). From the north, the Copper Inuit also hunted, trapped, and travelled as far south as the Lac de Gras area. In the Lac de Gras region, the big game animals harvested were: barren-ground caribou, moose, and less commonly muskoxen. The Dene followed the migrating caribou into the barrenlands in the summer and fall, and continued hunting and trapping in the barrens throughout the winter. Small fur-bearing animals were taken regularly, with hare being an important winter food resource; grouse and ptarmigan were also taken when big game was scarce. Dried meat and fish were also important sources of food in the winter. Bows and arrows, spears, deadfalls, snares, clubs, and, more recently, rifles have been used to hunt a variety of big and small game (Smith and Rogers 1981; Traditional Land Use and Traditional Knowledge Baseline, Annex XVII).

Aboriginal people used a net, spear, or hook and line to harvest fish, another important food resource that was seasonally abundant during spawning runs. Waterfowl and their eggs provided an important seasonal component of their diet. Waterfowl were hunted by using bows and arrows tipped with blunt points, or by being driven into nets (Smith and Rogers 1981). Aside from the seasonal collection of berries, plants do not appear to have represented a large component of sub-Arctic Dene diets. However, plants were used for medicine and in the construction of living structures, canoes, snowshoes, sleds, weaponry, and a variety of other domestic items (Rescan 2006).

Since 1750, European iron was periodically available; by 1800 direct trading was occurring throughout most of the NWT. Changes in technology seem to vary depending on location. Helm (1981) suggests technology remained characteristically Aboriginal until the 20th century; however, Noble (1981) suggests the early historic period (1770 to 1840) is marked by a reduction in Aboriginal tools, at least from northern Great Slave Lake to the lower Coppermine River.

In 1890, Warburton Pike travelled with King Beaulieu, a Chipewyan Métis, to MacKay Lake and Lac de Gras to hunt muskoxen. Pike's descriptions of traditional hunting methods mirror the accounts given by modern Dene through Traditional Knowledge (TK) studies. Pike and Beaulieu were storm-bound on a promontory in Lac de Gras. This point has since been referred to as Pointe de Misère and is the current location of the Ekati Misery operation (Rescan 2006). In his journal, Pike reports that Lac du Sauvage was named by Beaulieu after the Inuit that he had once encountered there (Pike 1892).

Dene groups shared a similar loose social organization and were highly mobile, reflecting the seasonal distribution of the resources of the region. Easily transportable conical, skin-covered tipi-like structures were used, as well as temporary rectangular pole and brush-covered shelters. Travel during the warmer months tended to focus on the use of canoes along rivers and lakes and, in the colder months, on the use of snowshoes, dogsled, and toboggans (Smith and Rogers 1981).



The western interior of the barrenlands was inhabited at least periodically by the Copper Inuit. The precontact origins of the Copper Inuit ultimately lie in the Thule Tradition, which spread across the central and eastern Arctic approximately 750 BP (McGhee 2009). The Thule are traditionally known for their bone and antler technologies, as well as a ground stone slate technology. They are not known for chipped or flaked stone working; however, the use of quartzite and therefore chipping or flaking technology is more common on the barrenlands (Linnamae and Clarke 1976). Perhaps cooling during the Little Ice Age and access to European trade motivated the Thule to move from more traditional coastal hunting grounds to the barrenlands to fish and hunt caribou. Tent rings, caches, hunting blinds, and inuksuit (stone landmarks or cairns) would likely be the most common features remaining of their occupation. Inuit had a remarkable hunting technology, including kakaviks (three-pronged fishing tool), kayaks, bows and arrows, fishing weirs, spears, and harpoons (Maxwell 1985).

With the arrival of fur trade posts in the region in the late 1700s, conflict developed between the TG and the YKDFN, who had better access to trade goods (Gillespie 1981). Resolution of this conflict was eventually achieved in the latter part of the 19th century. The establishment of the fur trade posts slowly changed the migratory patterns of the Dene so that they could provide caribou, and later furs, to the posts around Great Slave Lake. Around the 1880s, following the destruction of the plains buffalo and a decline in caribou, the Inuit, Dene, and Métis shifted focus to the trade of muskoxen that were hunted to the northeast of Great Slave Lake. The trade of muskoxen ended around 1902, after which fur trapping became a major part of the economy for the Dene, Métis, and Inuit (Helm 1981). Throughout the 1950s, Inuit living at an outpost at Pellatt Lake fished and hunted caribou in the region, providing food and clothing to coastal populations. Use of the area has declined since the closing of fur trade posts, although Inuit, Dene, and Métis still use the area and continue to hunt in the vicinity of Lac de Gras and MacKay Lake (Rescan 2006).

## 3.2 Traditional Knowledge

The area around Lac de Gras provided plants and animals for year-round survival. The Tłıchǵ would travel by birchbark canoe or dogsled into and around the Lac de Gras area, which they refer to as 'ʔek'atı', meaning the "storage house" or "like a freezer", and "Kwek'a", which refers to the veins of quartz found in the area resembling caribou fat (Legat et al. 2001). People could count on survival in the area by taking advantage of the available resources including caribou, fish, berries, foxes, and wolves. This richness of biodiversity and the fragile relationships among the ecosystems (dè) in the region are important for maintaining the cultural significance of the land (Chocolate and Legat 2000).

The Weledeh Yellowknives Dene (1997) identify Ek'atı (Lac de Gras) as the heart of their history and life. Traditional trails and canoe routes run from Great Slave Lake beyond Mackay and Contwoyto lakes. From late summer to early fall each year, hunters took their handmade birchbark (and later, canvas) canoes, making camps below the treeline for their families, north to Courageous Lake, Mackay Lake, Lac de Gras, Lac du Sauvage, and the Coppermine River to hunt caribou. The rest of the winter was spent travelling through the barrenlands, hunting and trapping.

A TK study completed by the LKDFN on community health also identifies the land between MacKay Lake and Lac de Gras as part of its traditional travel and harvesting territory (Parlee and Marlowe 1998). The Elders interviewed for the study indicated that the maintenance of healthy lands and a healthy relationship with the land is critical for survival, both in the past and for the future. Similarly, the North Slave Métis Alliance (NSMA) has stated that the land should be protected as much as possible so that it can be used for traditional pursuits again in the future (Stevenson 1999). The NSMA point to the French names of the lakes in the area as having Métis influence and recall the stories of Elders and forefathers who would travel to the Lac de Gras region to trap and hunt muskoxen for subsistence and the fur trade industry.

During summer, inland Inuit from Tahikyoak (Contwoyto) travelled a large area including Aimaokatalok (Kathawachaga Lake), Aallik (Concession Lake), Tahikaffaloknahik (Itchen Lake), Nonatoklik (Pellatt Lake), Yamba Lake, and Tahikpak (Lac de Gras). Tahikpak is important to the Inuit for its richness in fish and springtime caribou. Inuit hunters and travellers have reported boating throughout Lac de Gras, and using the eskers around Lac de Gras, Yamba Lake, and the Tahikpak area to look out onto the surrounding landscape during all seasons. The Inuit have noted the important wolf and fox denning habitat that the eskers provide, and the many caribou trails and bedding sites around the lakes and on the islands. Major trapping areas are the inland areas of Contwoyto, Pellatt, Itchen, and Yamba lakes, and Lac de Gras. Elders remember travelling by dog team and snowmobile to hunt caribou in the spring in the Lac de Gras area (Banci and Hanks 2006).

A 2014 Traditional Land Use and Traditional Knowledge Baseline Report (Annex XVII) was prepared in support of the Project. Yellowknives Dene First Nation Elders have observed a lowering of the water levels at Ek'ati and have demonstrated how this changes the location of the campsites in relation to the existing shorelines. A recommendation from the 1997 Ek'ati TK study (Weledeh Yellowknives Dene 1997) was that archaeologists check for ancestral evidence of former campsites inland from existing shorelines. Major wildlife migration paths are also located around and through Lac de Gras and Lac du Sauvage.

People camped where caribou, fish, and water were available: at the narrows; on small bays along the shore; and, on islands with channels where swift currents kept the water open in winter. Travellers would walk along eskers, which were also often used for gravesites. Elders discouraged the use of eskers for camping, recommending places behind high points instead to provide protection from the wind. The type of shelters used at campsites depended on the purpose and duration of the stay. Because the Dene took their supplies with them, rings of stones that surrounded fire pits or held down the hem of hide tents are often all that is left (Weledeh Yellowknives Dene 1997).

Traditional Tłıchq trails to Ek'ati from Tłıchq territory have also been mapped. The traditional names provide important information about the environment and resources along traditional routes. The Tłıchq identify open, sparse areas with a variety of vegetation as preferred habitat for establishing campsites. Different forms of vegetation could be used for different purposes including starting fires and protecting meat. The Tłıchq also identify the preferred habitat for hunting caribou and obtaining other resources such as berries, medicine, and mending fibres. Traditional use sites have already been destroyed by mining activities, and the Tłıchq believe that development will continue to affect the value of the resources and the cultural connection with the region (Chocolate and Legat 2000).

The Inuit who have lived in the vicinity of Lac de Gras are known as the Copper Inuit. Copper Inuit harvested caribou, seals, grizzly bears, fish, waterfowl, wolves, wolverines, muskoxen, and moose from around the Coppermine River and Contwoyto Lake in the spring and summer (Sadownik and Harris 1995). There were many Inuit campsites at Lac de Gras. The Inuit (like the Dene) camped at the narrows of large lakes, where they would capture and spear fish. Inuit Elders recall men carving in higher areas, away from where they camped around the Ekati Mine site. They liken the remains expected from those activities to those that have been found within the RSA.

The Inuit have helped to distinguish between the remains of Dene and Inuit campsites by describing the Dene camps as circular and Inuit camps as rectangular. As children, inland Inuit remember meeting Dene while hunting and trapping at large winter camps, such as at Tahikyoak (Contwoyto Lake), Kaomaogaktok (Rockinghorse Lake), and Lac de Gras. The Inuit and Dene crossed trails, especially in the winter, when the Dene were travelling north and Inuit were trapping to the south. These visits were occasions for celebrations and for trading. Major items exchanged were dogs, harnesses, food, furs, and tools such as snow knives (Banci and Hanks 2006). During a TK study of the proposed Ekati Mine, Inuit participants expressed their opinions that archaeological sites should be left undisturbed if possible (CEAA 1996).

Métis voyageurs arrived in the Mackenzie Valley with the first wave of European fur traders in the late 18th century. The Métis often set up trading posts and accompanied explorers and scientists into the barrenlands, becoming major players in the geologic exploration of the North while living and teaching a traditional lifestyle of life on the land (Bohnet 1995). Métis involved in TK studies for the proposed Ekati Mine indicated that, although the area has not been used regularly for quite some time, all archaeological sites and traditional use values should be protected (CEAA 1996).

## 4 METHODS

### 4.1 Previous Research

Published and unpublished archaeological and cultural resources were consulted. Archaeological site data were obtained from the Prince of Wales Northern Heritage Centre (PWNHC) Archaeological Site Database in July 2013 (GNWT not dated). The data requested extended beyond the proposed Project area so that site locations and types for the RSA could be established. Archaeological site data include the location of currently recorded sites along with data and details such as site type, features present, and cultural affiliation. The unpublished permit reports summarizing past field work were also reviewed (Bussey 1994, 1995, 1997, 2007, 2008; Fedirchuk 1996, 2000; Unfreed 1997).

The data collected and summarized for each site included 11 specific attributes: site name or Borden number, classification or site type class, site type, features, cultural affiliation, site condition, previous mitigation, site location, elevation, size, and significance.

The Borden number is equivalent to the name or unique identifier for each site. The Borden system is a Canada-wide means of labelling archaeological sites based on their location and the sequence in which they are recorded. The upper case Borden letter indicates the north–south and east–west location of a site. The upper case letters represent blocks of 2 degrees latitude and 4 degrees longitude. The lower case Borden letters indicate 10 minutes each of latitude and longitude. The numeric value is assigned sequentially (Borden and Wilson 1952). The prefix “ZAVR-#” is a code internal to the PWNHC to indicate sites that have been recorded by non-professional archaeologists.

Classification or site type class provides a general temporal identification for a site such as prehistoric, indigenous historic, historic, contemporary, or undetermined (see Glossary). Site type provides a general function attribute for a site such as campsite, quarry, burial, or lithic (stone) scatter. Features in archaeological terminology are evidence of human activity that are non-portable such as a tent ring or hearth. Cultural Affiliation associates specific archaeological cultural group(s) to a site; diagnostic artifacts are often required to make this determination.

Site condition provides a summary of either the natural or non-natural impacts evident or likely to happen at the site location. Sites may be at risk of disturbance by natural erosion, animal process, or owing to human use on the landscape. Previous mitigation attributes indicate the degree to which an archaeological site has been subject to scientific data collection, beyond initial documentation.

Site location, elevation, and size are three critical physical attributes used to determine the level of risk of disturbance a site might be at by proposed development. Site location is not presented in this document owing to restriction on the distribution to the public of archaeological site information based on the *Access to Information and Protection of Privacy Act*.

Site significance determination is discussed in Section 4.3 and typically refers to scientific significance. A high significance rating based on local cultural assessment is always assigned if a grave or burial is identified. While burials are often referred to in the TK documents (Dene Cultural Institute 1995; Environmental Assessment Panel 1996; Weledeh Yellowknives Dene 1997; Banci et al. 2006), burials are not as evident in the archaeological record.

The permit number indicates under which NWT Archaeologist's Permit the site was documented. If the permit year is after 2003, site geographic locations are precise to the degree required by the PWNHC (2005). A "?" indicates that the original researcher was uncertain about the descriptive attribute assigned.

Published archaeological literature was consulted and provided insight into land use practices of specific cultures and history of use of the area. The *Handbook of North American Indians: Volume 6 Subarctic* (Sturtevant and Helm 1981) and *North of Athabasca: Slave Lake and Mackenzie River Documents of North West Company, 1800 -1821* (Keith 2001) are additional sources that provide information on land use throughout the Canadian sub-Arctic.

Due to confidentiality concerns, land claim negotiations, context concerns, and intellectual property issues, there is often a reluctance to release TK into the public domain (CEAA 1996). However, the following documented and publicly available TK resources were reviewed for information pertaining to archaeological resources and land use:

- TK documentation presented in the previous BHP Billiton and current Dominion Diamond Management Plans (BHP Billiton 2011a) and Closure and Reclamation Plans (BHP Billiton 2011b) found on the Wek'èezhii Land and Water Board's (WLWB) public registry;
- community-based projects;
- TK documented in the Environmental Impact Statement for the NWT Diamond Project (BHP 1995);
- the West Kitikmeot Slave Study (West Kitikmeot Slave Study 2001);
- the Dene Mapping Project (presented in Weledeh Yellowknives Dene 1997); and,
- other reports obtained through the Independent Environmental Monitoring Agency's library.

## 4.2 Field Inventory and Evaluation

The previous research was used along with topographic and surficial geological data to write the AOA. The AOA identified previously recorded archaeological sites and currently undisturbed lands identified as having moderate to high archaeological potential. Previously recorded sites in the BSA thought to be less than 150 m from the proposed Project development were revisited. Areas with moderate to high potential for archaeology were evaluated using helicopter and pedestrian reconnaissance. Any fortuitous subsurface exposures that might be present were visually inspected. Subsurface techniques involved placement of shovel tests or test units in areas identified as having high archaeological potential and covered by vegetation.

## 4.3 Archaeological Site Evaluation

The archaeological sites were evaluated during the field investigations. These evaluations considered perceived heritage resource value and community cultural value, as well as the predicted potential impact from the proposed Project.



Site evaluation included documenting physical attributes, including site size, depth, character of deposits, and assemblage density, diversity, and current condition. Consideration was also given to traditional importance reported by local community representatives assisting on the Project, to cultural historic context, and to relative frequency in the region. Sites or areas of traditional importance that were not considered archaeological sites were also recorded in detail. These results are included in written submissions to the PWNHC.

Archaeological site significance can be related to the historic, scientific, ethnic, public, and economic value of a site (Appland and Kenny 1989; Hart 1998). Historic significance might relate to sites or locations where known historic events took place, or locations, such as old Fort Providence, known as one of the initial fur trade posts on Great Slave Lake. Sites assigned scientific significance are those that have at least perceived potential to answer specific academic research questions. Scientific significance designation can change during excavation depending on results obtained from the site. Ethnic significance relates to whether a given site or location is of importance to a specific ethnic group. Sites of significance to the public are often those accessible to the public for education or recreational purposes. Economic significance often overlaps with other classifications of significance but is associated with sites that will assist an organization (local, territorial, or federal) to accumulate revenue.

Predominately in this report archaeological site significance is based on a scientific perspective; however, when engagement with local residents provided insight, this insight is included in the significance assignment. In general, disturbed sites with limited cultural remains would be assigned lower archaeological significance than undisturbed sites, large sites with large amounts of cultural material, complex sites, and multicomponent sites. Undisturbed multicomponent sites would generally be assigned the highest archaeological significance.

Community input plays a role in the evaluation of site value. When possible, a member of the local community was included on the field crew, which aided discussions about site significance. Site significance assessments may change if subsequent visits identify new data.

## 4.4 Reporting and Conservation

A professional conservator was consulted about specific conservation requirements for the collected artifacts. The artifacts were then cleaned, catalogued, identified, and inventoried, and a description of each individual piece was prepared for inclusion in the final report. The collected artifacts will be submitted and then held in long-term storage at the PWNHC.

Site location information, using a Global Positioning System, was provided to PWNHC and the Canadian Museum of Civilization for archival purposes. This information is not included in the final versions of the report owing to restriction on the distribution to the public of archaeological site information based on the *Access to Information and Protection of Privacy Act*.

After the field components were completed, a final permit report on the archaeological studies was prepared on behalf of Dominion Diamond for review by PWNHC. This report includes a project description, environmental setting, cultural and archaeological context for the project area, field methodology, and the results of the field reconnaissance. All identified sites are documented on appropriate site inventory forms.

## 4.5 Community Consultation

Dominion Diamond has incorporated the Project into their ongoing consultation and engagement activities for the Ekati Mine. This approach acknowledges the Project is a direct extension of the mining activities that have been undertaken at the Ekati Mine for the past 16 years.

Dominion Diamond is involved in numerous community engagement activities routinely as part of its management of the Ekati Mine. The engagement activities range from formal Impact Benefit Agreement meetings with leadership from each of the Ekati Mine Impact Benefit Agreement groups to site-based activities wherein leaders, Elders, and youth are invited to visit the Ekati Mine and take part.

Representatives from local communities are often invited to participate in archaeological field work and Ekati site archaeological tours. In previous years, Ekati hosted archaeological tours for community members from the YKDFN, the NSMA, the TG, the Kitikmeot Inuit Association, and the LKDFN. In 2013, a Tłıchq representative, Alfred Whane, and a member of the YKDFN, Morris Martin, assisted Golder Associates Ltd. with the field work component of the Archaeological Impact Assessment (AIA).

In addition to ongoing meetings and site visits, reports are routinely submitted to the WLWB. These reports are posted to the WLWB's public registry, and are available for all parties to provide comments or ask questions.

During the archaeological permit application process, the YKDFN, the NSMA, the TG, and the LKDFN were consulted by the Government of the Northwest Territories (GNWT) through the PWNHC's Cultural Places Program. Summaries of the AOA and the AIA will be available on the WLWB registry for public review and comment; copies of final permit reports are often provided to the community or communities as identified in the NWT Archaeologist's Permit.

## 5 RESULTS

### 5.1 Previous Archaeological Research

Previous archaeological work in the Ekati claim block has been conducted over several years by Bussey (1994, 1995, 1997, 2007, 2008). Fedirchuk (1996, 2000) and Unfreed (1997) have carried out related work for the development of the neighboring Diavik Diamond Mine. The results of these investigations are presented in several archaeological reports and summaries on file with the PWNHC.

Based on TK studies, the Lac du Sauvage narrows was important to more than just the YKDFN (Annex XVII). Investigations at the narrows have confirmed the importance of the area for fishing and hunting caribou. Many large archaeological sites have been recorded on both sides of the narrows (Bussey 2000, 2001, 2002, 2003, 2004, 2005, 2007, 2008), and the potential for more sites in the vicinity is considered high (Environmental Assessment Panel 1996).

Based on the previous research, 444 sites have been recorded in the RSA and 6 sites in the BSA. However, only portions of the BSA have been systematically investigated to date. Because some of the sites were recorded before the PWNHC Global Positioning System standards, their site co-ordinates may not be accurate.

### 5.2 Regional Study Area

Five previously unrecorded archaeological sites were identified in 2013, which brings the total number of recorded sites in the RSA to 449 (Appendix A, Archaeological Sites in Regional Study Area).

The sites in the RSA are predominately considered prehistoric (Table 5.1-1). The cultural affiliations are diverse; in part, this diversity reflects individual researcher preferences and changes in accepted names over time. The majority of sites are associated with an undetermined cultural affiliation. The information on Inuit traditional land use (Riewe 1992) suggests that there should be sites identified with Neoeskimo, Thule, or Inuit; however, these cultural affiliations are not apparent in the site attribute tables. One previously unrecorded hunting blind located in the RSA may be associated with a Neoeskimo affiliation.

Site types typically identified in the region are isolated finds, lithic scatters, and quarries. The most common site type is a lithic scatter. One site can have many different attributes for each descriptive field; therefore, the total number in each attribute characteristic is not expected to equal 449.

**Table 5.1-1 Summary of Archaeological Sites Located in the Regional Study Area**

Attribute Characteristic	Number of Sites
<b>Classification</b>	
Prehistoric	435
Historic	3
Indigenous	2
Undetermined	8
Natural	1
<b>Culture Affiliation</b>	
ASTt/Palaeoeskimo	7/2
Pre-Dorset	1
Taltheilei	1
Precontact Dene	44
Undetermined	394
<b>Site Type<sup>(a)</sup></b>	
Lithic scatter	349
Isolated find	63
Burial	1
Campsite	11
Tool manufacture/workshop	1
Lookout	9
Cairn	1
Quarry	104
Hearth	1
Undetermined	8
<b>Site Archaeological Significance<sup>(b)</sup></b>	
Low	73
Low to Moderate	1
Moderate	73
Moderate to High	4
High	14

a) Feature attribute data also considered to complete this table.

b) Only assessed for sites in Ekati claim block.

ASTt = Arctic small tool tradition.

## 5.3 Baseline Study Area

Only six sites have been recorded in the BSA. When available, the same 11 site attributes identified in the RSA are also discussed for the BSA (Appendix B, Archaeological Sites in Baseline Study Area). The sites in the BSA consist of five lithic scatters (LdNs-2, 3, 5, 7, and 16) and one isolated find (LdNs-4), see below for detailed description.

## **LdNs-2**

LdNs-2 is approximately 3 km north of the northwest of Pointe de Misère, Lac du Gras, on a well-drained landform next to the unnamed lake associated with LdNs-4. The site is a lithic scatter. The single tool artifact, which led to the site being identified, is a long piece of grey shale with continuous unifacial retouching along the lateral edge. Under the authority of a NWT Archaeologist's Permit, mitigation occurred in 1995. Twenty-six flakes and the uniface were collected. The site is approximately 450 metres above sea level (masl) and is approximately 3 m north–south by 3 m east–west. The site has low archaeological significance (Bussey 1994, 1995, 2006).

## **LdNs-3**

LdNs-3 is located west of the main esker located to the west of Lac du Savage and the unnamed lake that LdNs-4 is located near. The site consists of a thin scatter of surface lithics including eight greyish-black shale flakes. The site is approximately 460 masl and is approximately 40 m north-south by 25 m east–west. The assigned significance of the site is low (Bussey 1998).

## **LdNs-4**

LdNs-4 is an isolated find site that was found on a game trail at the north end of Thinner Lake, approximately 4 km northwest of Pointe de Misère, Lac du Gras. The site consists of a rectangular-shaped biface with extensive retouching that may have been used as a knife. The biface is made from either chert or basalt. The site is approximately 460 masl. Under the authority of a NWT Archaeologist's Permit, Bussey (1994) collected the isolated find. The site has low archaeological significance and is considered to have been mitigated (Bussey 1994).

## **LdNs-5**

LdNs-5 is located on the west side of the large esker approximately 4 km west of Lac du Sauvage. The site consists of a lithic scatter consisting of approximately 40 pieces of unworked greyish-black shale. Precontact Dene is the archaeological culture assigned to the site. The site is 437 masl or 20 m above lake level. The site is approximately 25 m north–south by 10 m east–west and has low archaeological significance (Bussey 1994).

## **LdNs-7**

LdNs-7 is located on an esker chain which runs along the west side of the North Arm of Lac du Sauvage. The esker is now approximately 2.5 km west of Lac du Sauvage and south of the North Arm. The site consists of a lithic scatter of approximately 50 to 100 flakes. Precontact Dene is the archaeological culture assigned to the site. The site is 445 masl or 29 m above lake level. The site is 35 m north–south by 22 m east–west. Under the authority of a NWT Archaeologist's Permit, Bussey (1994) collected five unworked shale flakes and an unworked quartz biface. The site has low archaeological significance (Bussey 1994).



**LdNs-16**

LdNs-16 is approximately 3 km north of the northwest of Pointe de Misère, Lac du Gras. It is on the south end of a crested section of esker that broadens to the south. The site was identified in 1995, consists of several scatters, and was possibly a location for tool manufacture. The site was revisited in 1995, 1997, 2002, 2005, and 2007, and under the authority of a NWT Archaeologist's Permit, mitigation occurred in 1997 and 2000. Over a thousand artifacts were recovered from the site. Precontact Dene is the archaeological culture assigned to the site. The site is approximately 450 masl, is 12 m north–south by 6 m east–west, and has moderate archaeological significance (Bussey 1996, 1998, 2003, 2006, 2008).

## 6 SUMMARY

Archaeological resources are critical for understanding the cultural history of the NWT and are valued by local community members. In the NWT, archaeological sites are protected by the *Mackenzie Valley Resource Management Act* and the *Northwest Territories Archaeological Site Regulations*.

As a result of the previous research from 1994 to 2013, 449 sites have been recorded in the RSA. One hundred and ninety of these sites are located in the Ekati claim block. Most of the sites are considered prehistoric. The majority of the sites are associated with an undetermined cultural affiliation. Site types typically identified in the region are isolated finds, lithic scatters, and quarries.

Six sites have been recorded in the BSA. The sites in the BSA typically reflect the more common site types found in the RSA (Table 6-1). The sites in the BSA were not assigned a high cultural or scientific significance. All of the sites are classified as prehistoric, with either Precontact Dene or undetermined cultural affiliation. Five of the sites are lithic scatters ranging in size and one is an isolated find.

**Table 6-1 Comparison of Archaeological Sites in the Regional Study Area and Baseline Study Area**

Attribute Characteristic	Number of Sites in Regional Study Area	Number of Sites in Baseline Study Area
<b>Classification</b>		
Prehistoric	435	6
Historic	3	0
Indigenous Historic	2	0
Undetermined	3	0
Natural	1	0
<b>Culture Affiliation</b>		
ASTt/Palaeoeskimo	7/2	0
Pre-Dorset	1	0
Taltheilei	1	0
Precontact Dene	44	4
Undetermined	389	2
<b>Site Type<sup>(a)</sup></b>		
Lithic scatter	349	5
Isolated find	63	1
Burial	1	0
Campsite	11	0
Tool manufacture, workshop	1	0
Lookout	9	0
Cairn	1	0
Quarry	104	0
Hearth	1	0
Undetermined	8	0

**Table 6-1 Comparison of Archaeological Sites in the Regional Study Area and Baseline Study Area**

Attribute Characteristic	Number of Sites in Regional Study Area	Number of Sites in Baseline Study Area
<b>Site Archaeological Significance<sup>(b)</sup></b>		
Low	73	5
Low to Moderate	1	7
Moderate	73	1
Moderate to High	4	0
High	14	3

a) Feature attribute data also considered to complete this table.

b) Only assessed for sites in Ekati claim block.

ASTt = Arctic small tool tradition.

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## 8 GLOSSARY

Term	Description
?ek'ati	Meaning the "storage house" or "like a freezer" (Tłı̨chǫ Community Services Agency 2007).
All-season road	A road that can be driven all year by the prevailing means of rural transport.
Archaeology	The study of past cultures through the scientific investigation of their material remains.
Archaeological site	A site where an archaeological artifact is found A site or work within the Nunavut Settlement Area of archaeological, ethnological, or historical importance, interest or significance or a place where an archaeological specimen is found, and includes explorers' cairns.
Artifact	Any tangible evidence of human activity that is more than 50 years old and in respect of which an unbroken chain of possession or regular pattern of usage cannot be demonstrated.
Baseline	A surveyed or predicted condition that serves as a reference point to which later surveys are coordinated or correlated.
Bedrock	The solid rock (harder than 3 on Moh's scale of hardness) underlying soils and the regolith in depths ranging from zero (where exposed to erosion) to several hundred metres.
Bifacial knife	A lithic tool manufactured by removing flakes from all or part of both major surfaces.
Biodiversity	The variety of life included at the genetic, individual organism, species, population, community, ecosystem and landscape levels of organization and all the ecological and biological processes through which they are connected.
Borden number	The Borden system of site designation is a nationally adopted system for providing archaeological sites a unique identification number. The system is a series of four letters determined by the latitude and longitude of the site followed by a number that is sequentially provided by the local regulatory agency (provincial or federal).
Burin	A small chisel tool specifically produced by a flake/blade removed at right angles to the long axis of the tool and then subsequent flakes/blades removed at an angle to the initial blade to produce and maintain a working edge.
BP	Archaeologists use this term to refer to dates that were obtained through the radiocarbon method; it means "years Before the Present." As the present year is a moving target, 1950 is considered the origin of the age scale and reflects the fact that radiocarbon dating became practicable in the 1950s. For example, 1,000 BP = 1,000 years before 1950 AD or approximately 1,000 AD.
Cache	A stone feature used to store meat, carcasses, or equipment.
Cairn	A man-made pile or stack of stones.
Circular scraper	A rounded unifacial tool used for hide working or woodworking purposes.
Compound tool	A tool made of two different types of raw material.
Contemporary	Sites dated post-1950 which are deemed of importance by the reporting researcher and which qualify for a Borden according provincial/territorial regulations
Core	A stone or source rock from which flakes have been intentionally removed.
Debitage	Stone flakes or waste by-products from stone tool manufacture.
Ecosystem	A relatively homogeneous area of organisms interacting with their environment.
Ekati Mine	Ekati Diamond Mine, Canada's first diamond mine.
Ek'ati	Yellowknives Dene First Nation name for Lac de Gras referring to "ek'a", meaning "fat" (Weledeh Yellowknives Dene 1997).
Esker	A long, winding ridge of stratified sand and gravel believed to form in ice-walled tunnels by streams, which flowed within and under glaciers. After the retaining ice walls melt away, stream deposits remain as long winding ridges.
Feature	Evidence of human activity which is non-portable (cannot be removed from a site without disturbing it), such as a tent ring or hearth.
Flake	A stone fragment intentionally detached from a source rock during tool manufacture.
Footprint	The proposed development area that directly affects the soil and vegetation components of the landscape.

Term	Description
Graves	Graves in the region typically date to the 20th century and can include a ring of rocks or cairn of rocks on the surface covering a wooden plywood "casket" or human remains. Bones may be visible on the surface.
Headwater	The source and upper reaches of a stream; also, the upper reaches of a reservoir. The water upstream from a structure or point on a stream.
Indigenous	Pertaining to the original occupants of a given region. Native to, originating in, or occurring naturally in a given place.
Indigenous historic	Sites that are of indigenous origin during the period after European contact.
Heath tundra	A closed mat plant community that grows on moderate to well-drained soils, covering most of the upland areas. Plants generally belong to the heath family, the Ericaceae. The vegetation layer forms a mat of low shrubs dominated by dwarf birch and Labrador tea.
Hearth	A specific type of feature created to build a fire or that is the remnant of physical alteration of sediments resulting from the maintenance of a deliberate fire. Three rocks are usually placed in a square pattern with one open side. The feature was used to create a small wind break and create a platform to set containers to cook food and boil water.
Heritage resources	Includes, but not limited to, archaeological and historical sites, burial grounds, palaeontological sites, historic buildings, and cairns.
Historic	Refers to the period after European contact.
Hunting blind	A stone feature used to observe game while hunting. It can be a simple wall of two or more upright boulders, or a more complex semi-circular wall constructed of stacked rocks.
Inuksuk	Although several forms exist, those identified in this study are stacked stone features ranging from columns of flat rock or boulders to anthropomorphic figures of more recent construction. Inuksuit (plural) have been interpreted as guides or markers strategically placed on terrain to mark trails, good hunting and fishing locations, spiritual places, or to help herd caribou during migrations.
Kame	Ice contact deposits associated with the concurrent processes of melting ice and flowing meltwater.
Kimberlite	Igneous rocks that originate deep in the earth's mantle and intrude the earth's crust. These rocks typically form narrow pipe-like deposits that sometimes contain diamonds.
Kimberlite pipe	A more or less vertical, cylindrical body of kimberlite that resulted from the forcing of the kimberlite material to the Earth's surface.
'Kwek'a'	Refers to the veins of quartz found in the area resembling caribou fat.
Lacustrine	Sediment that have been transported or deposited by water or wave action. Generally consisting of stratified sand, silt or clay deposited on a lake bed or moderately well sorted and stratified sand and coarser material.
Lanceolate	A projectile (spear) point with a general shape of a leaf, longer than it is wide, with a rounded base tapering towards the point.
Lithics	A general term used to refer to stone artifacts such as debitage or tools.
Lithic scatter	A concentration of stone flakes resulting from the production or rejuvenation of stone tools.
Mammals	Air breathing, vertebrate animals characterized primarily by mammary glands in females, which function to feed offspring. Other defining characteristics of mammals include three middle ear bones and hair.
Microblade	A small blade, generally less than 5 cm long and 1 mm thin.
Multicomponent	An archaeological site with more than one associated cultural affiliation.
Neoeskimo	Neo, meaning new, referring to archaeological material deposited by people assumed to be of Eskimo ancestry, typically associated with the time frame between the years 1300 to 1800/1950.
Palaeoeskimo	Palaeo, meaning old, referring to archaeological material deposited by people assumed to be of Eskimo ancestry, typically associated with the time frame between 5000 BP and 2500 BP.
Permafrost	Permanently frozen soil or rock and incorporated ice and organic material that remain at or below 0°C for a minimum of two years due to natural climatic factors. The occurrence of permafrost increases with latitude (i.e., in more northern areas permafrost is continuous, in more southern areas patches of permafrost alternate with unfrozen ground).
Prehistoric	The period before the arrival or contact with Europeans, also Pre-Contact.
Quarry	Location where lithic raw material is obtained.

Term	Description
Regional Study Area	Represents the area of study for the assessment of cumulative (combined) effects of the Project and other past, existing or planned developments.
Riparian	Terrain, vegetation or a position next to or associated with a stream, floodplain or standing waterbody.
Sedges	A grass-like plant with a triangular stem often growing in wet areas. Sedge wetland habitats are typically wet sedge meadows and other sedge associations of non-tussock plant species. Sedge species such as <i>Carex aquatilis</i> and <i>C. bigelowii</i> , and cotton grass ( <i>Eriophorum angustifolium</i> ) are the dominant vegetation types. Plant species occupy wet, low lying sites where standing water is present throughout much of the growing season.
Shovel test	A 50 cm by 50 cm subsurface test excavated to determine the presence or absence of buried cultural materials.
Spall	The small, usually long and thin flake removed from a burin.
Taltheilei Tool Tradition	The archeological name of the material culture of a late prehistoric western-area sub-Arctic people dated to the period of 750 BC to AD 1000. The Taltheilei Shale Tradition is named after the "Taltheilei Narrows" ( <i>place of open water</i> ) of Great Slave Lake. Taltheilei people were Proto-Athapascans.
Tent ring	A formation of rocks used to anchor tents and usually associated with summer encampments.
Terrain	The landscape or lay of the land. This term is considered to comprise specific aspects of the landscape, namely genetic material, material composition, landform (or surface expression), active and inactive processes that modify material and form, slope, aspect, and drainage conditions. Terrain analysis is the identification of the above land surface features, to a more or less defined depth and determining their areal extent. The identification of special features such as permafrost, erosion, and landforms indicating subsurface structures is included in such analyses.
Till	An unstratified, unconsolidated mass of boulders, pebbles, sand, and mud deposited by the movement or melting of a glacier.
Tradition	Archaeological assemblages that share a constellation of specific technological attributes that can be demonstrated to have persisted over a relatively long period of time.
Traditional Knowledge	The knowledge, innovations, and practices of indigenous people; refers to the matured long-standing traditions and practices of certain regional, indigenous, or local communities.
Treeline	An area of transition between the tundra and boreal forest to the south.
Undetermined	There is not enough evidence to determine site type or affiliation.
Vegetation	A term to describe all of the plants or plant life of an area.
Waterbody	An area of water such as a river, stream, lake or sea.
Watercourse	Riverine systems such as creeks, brooks, streams and rivers.
Watershed	The entire catchment area of runoff containing a single outlet.
Wetlands	Areas with ground slopes of less than 0.5% or depressions and typically poorly drained.
Whetstone	A sharpening stone used for knives and cutting tools.
Wildlife	A term to describe all undomesticated animals living in the wild.
Winter Road	Roads that are built over frozen lakes and tundra. Compacted snow and/or ice is used for embankment construction.

## **Appendix A Archaeological Sites in Regional Study Area**

## **Appendix B Archaeological Sites in Baseline Study Area**