

FINAL REPORT

HERITAGE RESOURCES IMPACT ASSESSMENT FORTUNE MINERALS LIMITED NICO COBALT-GOLD-BISMUTH-COPPER PROJECT ARCHAEOLOGIST'S PERMIT 2009-003

Prepared for

**Fortune Minerals Limited
London, Ontario**

Prepared by

**Brent Murphy
Golder Associates Ltd.
Calgary, Alberta**

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CREDITS

Permit Holder **Brent Murphy**

Report Author **Brent Murphy**

Pre-field Planning **Brent Murphy**
Robert Mckenzie (Elder, Tâîchô First Nation)

Field Investigators **Brent Murphy**
Adam Hossack (Golder Associates Ltd.)
Kenny Wedawin (Tâîchô First Nation)

Project Director **Gary Ash**

Senior Review **Rebecca Balcom**

EXECUTIVE SUMMARY

This report details the results of the Heritage Resources Impact Assessment (HRIA) completed under Northwest Territories Archaeologist Class 2 Permit #2009-003 issued to Brent Murphy of Golder Associates Ltd. This study was for Fortune Minerals Limited and included the assessment their NICO Cobalt-Gold-Bismuth-Copper Project in the Wek'eezhii Settlement Area approximately 50 km northeast of Whatì and 10 km northeast of Hislop Lake. The purpose of the study was to examine extensions to their mine footprint and all-weather access road that were not previously examined. Previous studies that have been completed on behalf of Fortune Minerals Limited for their NICO Project include an HRIA for their bulk sampling program for an underground gold mine operation (NWT Permit 2003-942) and proposed access road (NWT Permit 2004-963).

Procedures employed for this Project are considered standard for projects of this nature in the region and entailed pre-field studies, on-ground reconnaissance, site documentation and assessment, reporting, and recommendation formulation. Pre field planning included a meeting with Tâìchô Elder Robert McKenzie from Behchokö to obtain guidance regarding the nature and significance of the sites in the area. As per requirements set forth by the Tâìchô First Nation, Kenny Wedawin from Gamètì assisted in the field work and provided advice about the cultural significance of sites and help identify areas of cultural concern.

During the field program 225 shovel tests were excavated and 2 previously recorded heritage resources sites, KiPo 4 and KjPo44, were revisited. KiPo 4 is a trapper's dogsled and/or snowmobile trail was formally recorded as an archaeological site on the proposed access road corridor and KjPo 44 is portage on the Marian River that is adjacent to the Marian River crossing for the proposed road. In addition several historic and cultural use sites were recorded during the study but were not considered heritage resource sites. These included mine claim posts, 2 hunting camps and a possible trail.

Based on the results of the HRIA no further work is recommended for the NICO Project as examined. Any proposed developments located beyond the footprint examined should be reviewed for heritage resource potential and assessed as required.

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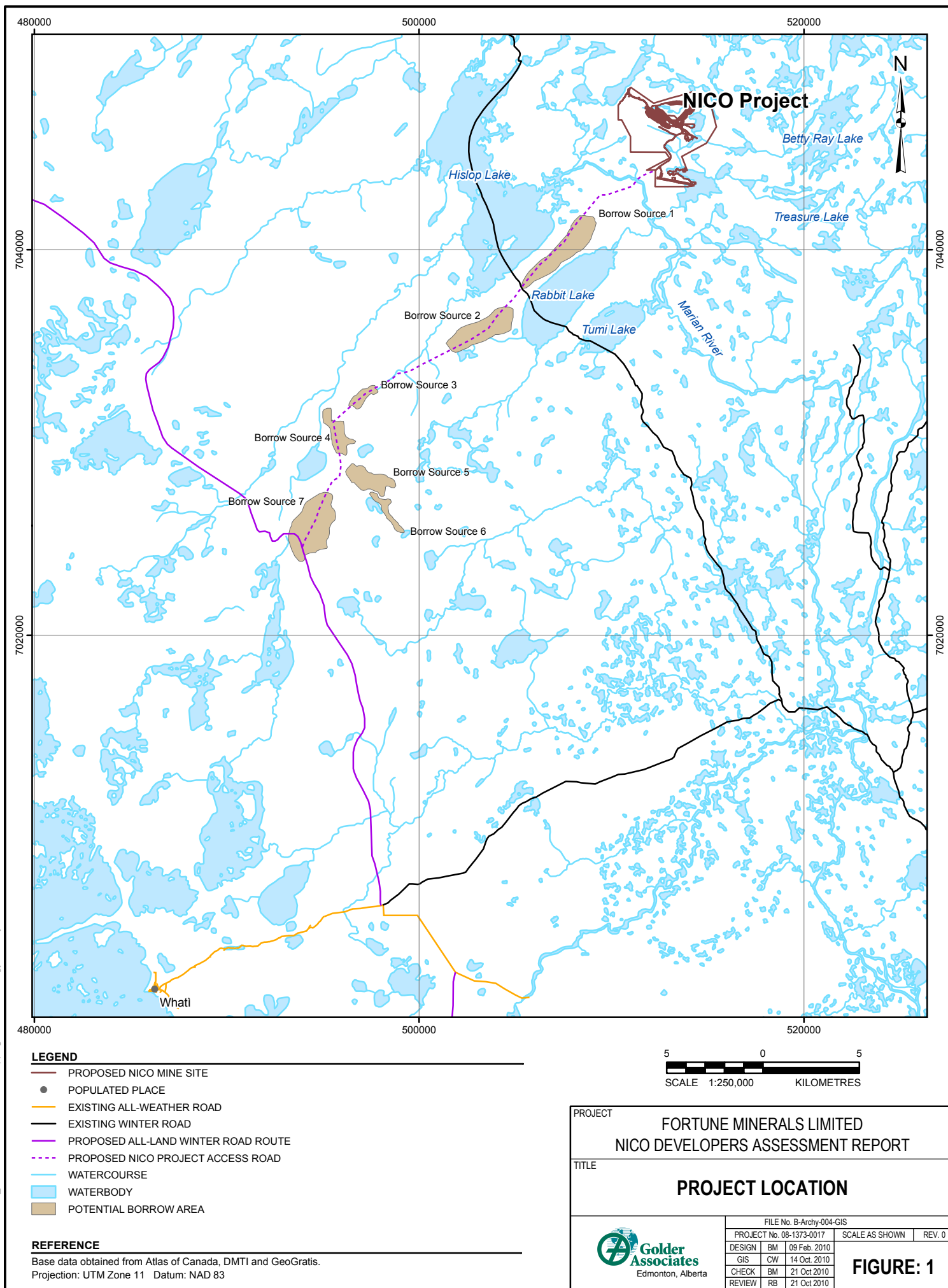
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1. INTRODUCTION

In August of 2009 Golder Associates Ltd. (Golder) conducted a Heritage Resources Impact Assessment (HRIA) on behalf of Fortune Minerals Limited (Fortune) for their NICO Cobalt-Gold-Bismuth-Copper Project (NICO Project). The NICO Project is located in the Wek'eezhii Settlement Area approximately 50 km northeast of Whatì and 10 km northeast of Hislop Lake (Figure 1). The current HRIA was completed under Northwest Territories Archaeologist Class 2 Permit #2009-003 issued to Brent Murphy of Golder.

The purpose of the study was to examine extensions to the mine footprint and all-weather access road that were not previously examined. Previous studies that have been completed on behalf of Fortune for their NICO Project include an HRIA for their bulk sampling program for an underground gold mine operation (Ronaghan 2004) and proposed access road (Paquin 2005).

This report details the nature of the studies conducted, presents the results, and makes recommendations relating to heritage concerns in respect to the proposed NICO Project.




PROJECT		FORTUNE MINERALS LIMITED NICO DEVELOPERS ASSESSMENT REPORT	
TITLE		PROJECT LOCATION	
 Golder Associates Edmonton, Alberta		FILE No. B-Archy-004-GIS	
		PROJECT No. 08-1373-0017	
		DESIGN	BM 09 Feb. 2010
		GIS	CW 14 Oct. 2010
CHECK	BM 21 Oct. 2010		
REVIEW	RB 21 Oct. 2010		
		SCALE AS SHOWN	REV. 0

FIGURE: 1

2. PROJECT LOCATION, DESCRIPTION AND POTENTIAL IMPACTS

2.1 Project Location and Environmental Background

The NICO Project is located in the Marian basin north of Great Slave Lake on a major bedrock upland structure and traverses transitional and low-lying terrain supporting numerous muskegs and ponds. The mine site is located about 10 km east of Hislop Lake and the proposed access road will provide access to the mine from a proposed Territorial all-weather road approximately 30 km to the south (Figure 1). The proposed mine will include, among other things, an open pit and underground mine, mine rock and tailings co-disposal management area, plant site, camp landfill, and an airstrip. The proposed access road includes 7 borrow areas that were examined during the present study. The Project lies along the western edge of the Great Slave Upland High Boreal Ecoregion, part of the larger Taiga Shield High Boreal Ecoregion. This Ecoregion is part of the tundra and boreal forest transition zone, with the northern boundary coinciding with the tree line.

2.1.1 Landforms and Soils

The region consists of broadly rolling terrain with a mosaic of uplands and associated wetlands. Precambrian granitoid, intrusive and metamorphic crystalline bedrock are the dominant landforms with discontinuous hummocky and ridged morainal deposits (Department of Environment and Natural Resources (DENR) 2010). These bedrock outcrops form broad sloping uplands, plateaus, and lowlands. Numerous lakes and wetlands occupy glacially carved depressions in the bedrock. Peatlands, muskegs and bogs cover the lowlands, which are commonly waterlogged or wet for prolonged periods.

Permafrost ranges from continuous in the east to extensive discontinuous in the west half of the Ecoregion, with low to moderate ice content and sparse ice wedges. Bare rock outcrops are common. The dominant soils in the Ecoregion are Brunisols with Regosols and Gleysols near streams and lakes (DENR 2010).

2.1.2 Climate

The Subarctic climate has relatively short summers with prolonged hours of daylight and cool temperatures, and long cold winters. Mean annual temperature ranges from -3 to -6°C, with a mean summer temperature of 15.5°C, and a mean winter temperature of -27°C. The mean annual precipitation ranges from 280 to 360 mm (DENR 2010).

2.1.3 Vegetation

In the Great Slave Upland High Boreal Ecoregion, lakes, wetlands and open forests combine with shrublands and meadows. Being part of the tundra/boreal forest transition, the limits of tree growth are reached along the northern edge of the Ecoregion. The predominant vegetation consists of open, somewhat stunted black spruce and tamarack or birch, with secondary quantities of white spruce and a ground cover of dwarf birch, willow, shrubs, cottongrass, lichen, and moss (DENR 2010). Tree growth becomes denser and more productive in sheltered areas or locations containing deeper soils. Poorly drained sites usually support sedge, cottongrass, and sphagnum moss. In tundra areas, it is common to find low shrubs, often consisting of dwarf birch and willow. Most upland, bedrock regions have a ground cover of lichens. At the time of the study forest fires had passed through much of the study area.

2.1.4 Wildlife

The woodland caribou is a boreal subspecies and can be found in this Ecoregion at the eastern limits of its range in the Northwest Territories (NWT). Barrenground caribou are found primarily on the tundra in spring and summer, migrating south into the trees in winter. Within the Project area, the barrenground caribou belong to the Bathurst caribou herd, the largest of the 5 major herds in the NWT, with a total range of approximately 250,000 km² (Department of Renewable Resources 1988). The large open forest area found southeast of Great Bear Lake to southeast of Great Slave Lake is prime barrenground caribou winter range.

In the NWT, moose are found in all forested areas south of the tree line (Treseder and Graf 1985), and occur in the proposed Project area. The wolf and wolverine are residents of both tundra and boreal forest, and are expected to occur throughout the year in the region. Grizzly bears have been reported in the past from Snare Lake (Searing and Alliston 1979) and black bears occur anywhere within the forested areas of the Northwest Territories.

A wide range of other small fur bearers are expected to be present; both beaver dams and muskrat push-ups were noted at water crossings and waterbodies during the fieldwork for the Project.

The Ecoregion is home to approximately 150 species of birds, the majority of which are seasonal migrants. Whistling swans stage during spring and fall on the La Martre and Marian Rivers (Searing and Alliston 1979). A number of raptors follow the migration north into the transition zone, including the bald eagle and the northern harrier. Other raptors, such as peregrine falcons and rough-legged hawks, utilize the tundra as well, ranging beyond the tree line. Most bird species winter far south of the Project property. A few species, including the rock and willow ptarmigans, will leave the tundra and overwinter within the transitional ecoregion.

2.1.5 Fish

The lakes in the Project study area form part of the Marian River Drainage. The Marian River is an important migration and spawning river for walleye and other species. Within the general Project area recent fish studies recovered fish in several lakes and ponds in and around the Project (Golder 1998). Species identified from these studies on Lou, Nico, Burke, Chalco, and Peanut lakes included walleye, northern pike, cisco, lake whitefish, and white sucker.

2.2 Project Area Description

The NICO Project is located approximately 170 air miles northwest of Yellowknife, Northwest Territories, Canada. It is situated at approximately 63°:33' N. latitude, and 116°:40' W. longitude. The mine site is located on a large bedrock upland structure southeast of Lou Lake (Plate 1), the proposed access road will commence from the mine site south for approximately 30 km south through open rocky areas, low lying bogs thickly vegetated with spruce, tamarack and willow, and relatively open mixed-wood forest (Plate 2).



Plate 1 View northeast of mine site showing existing roads and facilities.

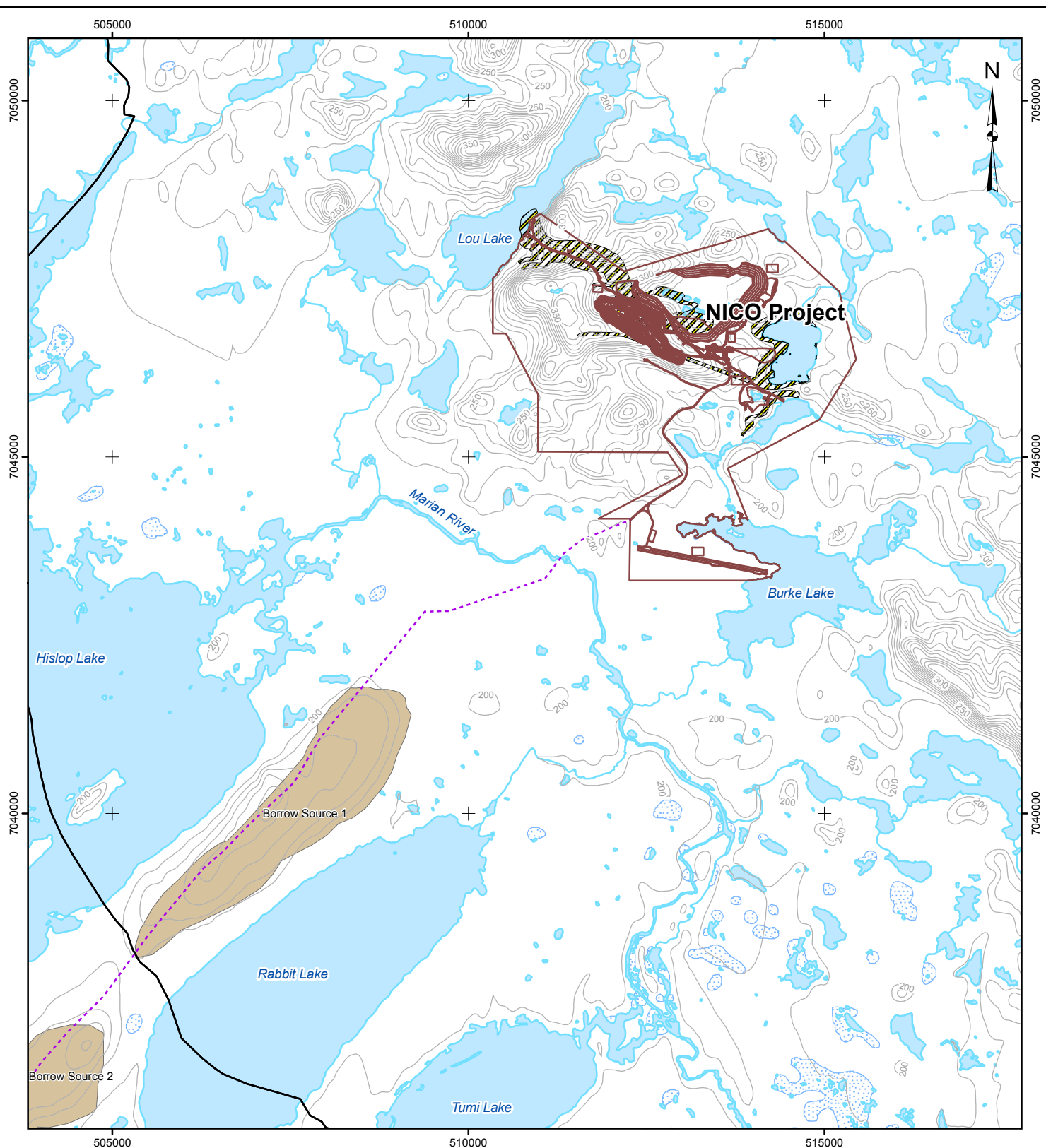
The current study included extensions to the mine footprint and potential borrow sources associated with the NICO access road. Previous HRIAs that have been completed for the mine site in 2003 (Ronaghan 2004) prior to a bulk sampling program (Figure 2) and for the proposed NICO access road right of way in 2004 (Paquin 2005) (Figures 2 to 4). The

study areas for the 2003 and 2004 HRIA have been overlaid on the current mine footprint on Figure 2 to 4.



Plate 2 View south of winter road within Borrow Source 3 showing typical vegetation.

The current investigation was concentrated on the southern portion of the proposed mine site footprint that was not examined in the 2003 study including a proposed airstrip (Figure 2; Plate 3) and across the higher points of land within the footprint (Plate 4). For the proposed NICO access road the current study concentrated on the 7 borrow sources (Figures 2 through 4; Plate 5) that were not examined during the 2004 study (Paquin 2005).




LEGEND

- PROPOSED NICO MINE SITE
- CONTOUR (10 METRE INTERVAL)
- EXISTING WINTER ROAD
- - - PROPOSED NICO PROJECT ACCESS ROAD
- WATERCOURSE
- WATERBODY
- WETLAND
- 2003 INVESTIGATION AREA
- POTENTIAL BORROW AREA

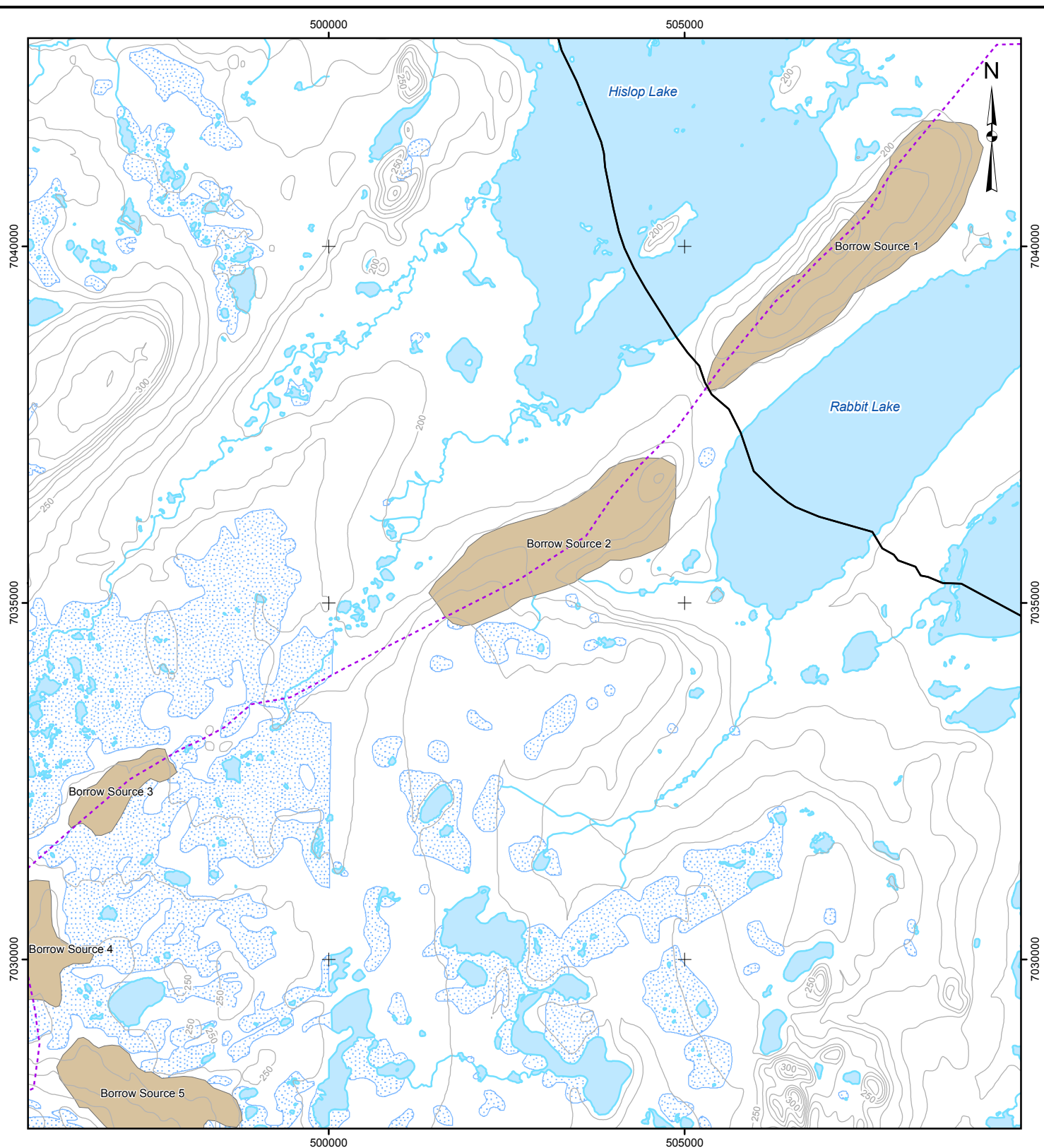
REFERENCE

Base data obtained from GeoGratis.
Projection: UTM Zone 11 Datum: NAD 83



PROJECT		FORTUNE MINERALS LIMITED NICO DEVELOPERS ASSESSMENT REPORT				
TITLE		PROJECT LOCATION, MINE FOOTPRINT, ROAD ALIGNMENT AND PROPOSED BORROW SOURCES				
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		DESIGN	BM	1 Sep. 2010		
		GIS	CW	14 Oct. 2010		
		CHECK	BM	21 Oct. 2010		
		REVIEW	RB	21 Oct. 2010		
					FIGURE: 2	

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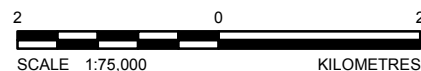


LEGEND

- CONTOUR (10 METRE INTERVAL)
- EXISTING WINTER ROAD
- PROPOSED NICO PROJECT ACCESS ROAD
- WATERCOURSE
- WATERBODY
- WETLAND
- POTENTIAL BORROW AREA

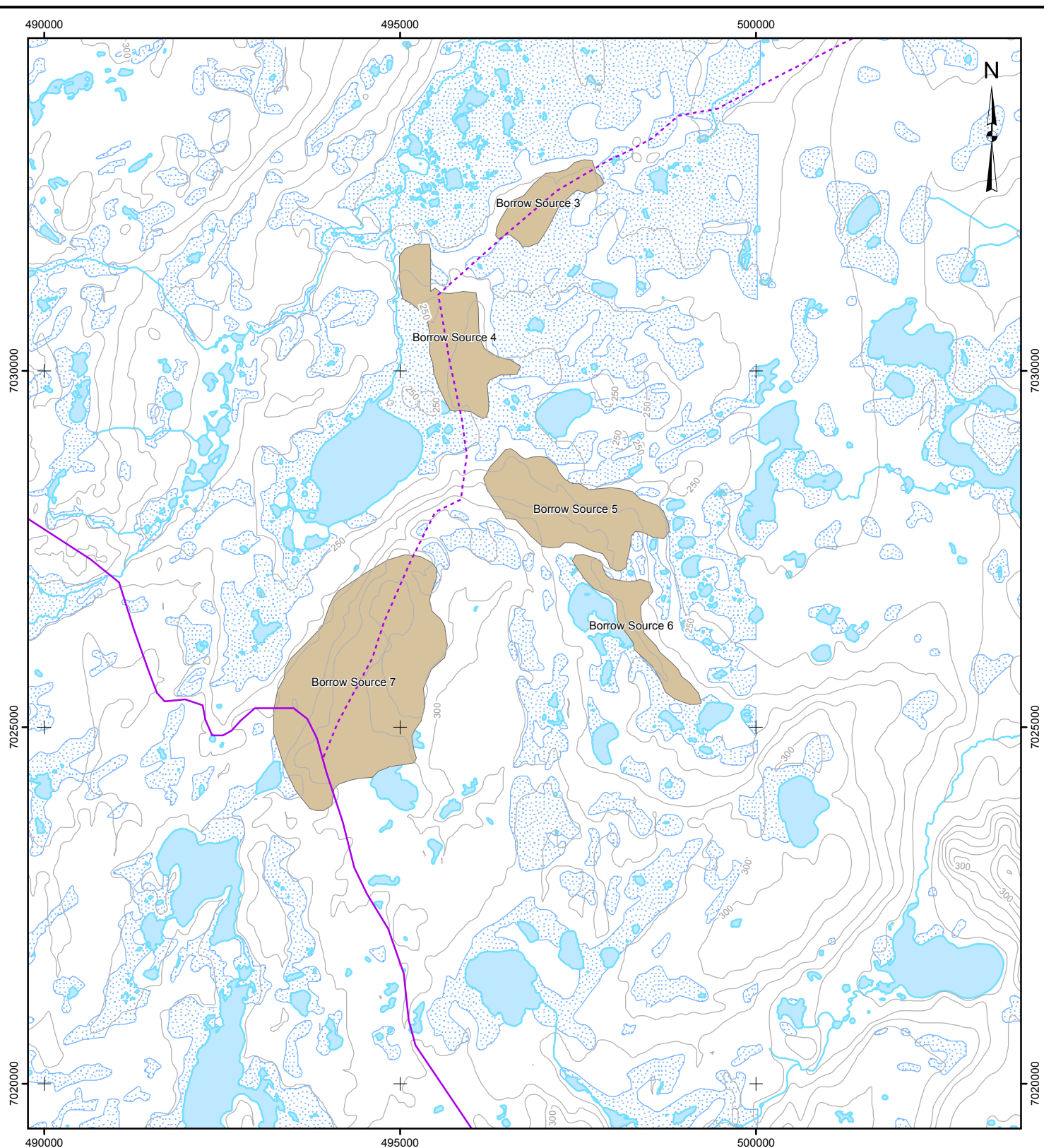
REFERENCE

Base data obtained from GeoGratis.
Projection: UTM Zone 11 Datum: NAD 83



PROJECT		FORTUNE MINERALS LIMITED NICO DEVELOPERS ASSESSMENT REPORT		
TITLE		PROJECT LOCATION, ROAD ALIGNMENT AND PROPOSED BORROW SOURCES		
		FILE No. B-Archy-006-GIS		
		PROJECT No. 08-1373-0017	SCALE AS SHOWN	REV. 0
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GIS	CW	14 Oct. 2010		
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REVIEW	RB	21 Oct. 2010		

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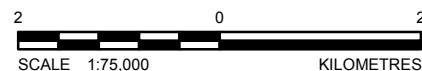


LEGEND

- CONTOUR (10 METRE INTERVAL)
- PROPOSED ALL-LAND WINTER ROAD ROUTE
- PROPOSED NICO PROJECT ACCESS ROAD
- WATERCOURSE
- WATERBODY
- WETLAND
- POTENTIAL BORROW AREA

REFERENCE

Base data obtained from GeoGratis.
Projection: UTM Zone 11 Datum: NAD 83




PROJECT		FORTUNE MINERALS LIMITED NICO DEVELOPERS ASSESSMENT REPORT			
TITLE		PROJECT LOCATION, ROAD ALIGNMENT AND PROPOSED BORROW SOURCES			
 Golder Associates Edmonton, Alberta		FILE No. B-Archy-007-GIS			
		PROJECT No. 08-1373-0017		SCALE AS SHOWN	REV. 0
		DESIGN	BM	1 Sep. 2010	
		GIS	CW	14 Oct. 2010	
		CHECK	BM	21 Oct. 2010	
		REVIEW	RB	21 Oct. 2010	
					FIGURE: 4



Plate 3 View northwest of Burke Lake with proposed airstrip in the foreground and Project site in the background.



Plate 4 View northwest across the highest point of land within the mine footprint.



Plate 5 View northwest of the north end of Borrow Source 6 with Borrow Source 5 in the background showing poorly drained lands.

2.3 Heritage Resources Defined

Heritage resource sites are non-renewable resources that may be located at or near the ground surface or may be deeply buried. The primary classifications of heritage resource sites include palaeontological and archaeological sites. Palaeontological sites include those sites bearing evidence of multicellular invertebrate, and vertebrate faunal remains, as well as plant materials that have been fossilized or otherwise preserved. Archaeological sites include sites or works of archaeological, ethnological, or historical importance, interest or significance, or a place where an archaeological specimen is found. Archaeological sites are often categorized as either prehistoric or historic. Prehistoric or precontact archaeological sites are those sites which contain features,

artifacts or ecofacts reflecting the use of a given land base by people prior to European influences.

Features are non-portable articles that indicate a human modification of the local environment. In prehistoric sites in the Northwest Territories these most often include items such as hearths, tent rings, and stone cairns. Artifacts are portable items that have been modified by people at some time in the past. These include such items as projectile points, stone flaking debris, cut and modified bone, and ceramics. Ecofacts are naturally occurring specimens that can aid in interpreting an archaeological site by enabling the reconstruction of the environment around the time of occupation. Historic archaeological sites include the features, artifacts and ecofacts relating to the past few hundred years. These sites are typically identified by the presence of buildings or structural remains, but may include any site that has evidence of historic use of the landscape.

2.4 Potential Impacts

Alteration of the landscape can result in the damage or complete destruction of all or portions of archaeological sites. These alterations often involve the displacement of artifacts resulting in the loss of valuable contextual information or may involve the destruction of the artifacts and features themselves resulting in complete information loss. Losses are permanent and irreversible.

Primary impacts include those disturbances resulting immediately from the construction of projects such as the NICO Project. The primary impact zones for the proposed Project include areas within and immediately surrounding the proposed mine footprint, airstrip, and NICO access road. Individual sites are likely to be affected to varying degrees if they are located within the development zone. Typical primary impacts include vegetation clearing, topsoil removal, heavy machinery, blasting bedrock, and reclamation activities. Primary impacts for the proposed Project are expected to be high as the construction of the mine, access road, and air field include removal of vegetation and topsoil, blasting of bedrock, and building of bridges. Artifact context is fundamental to interpretation of

archaeological sites. Vegetation clearance, soil removal and bedrock blasting alters the spatial patterning of artifacts. By disturbing the context in which artifacts and features are recovered, interpretations of archaeological sites and past lifeways are negatively affected.

Secondary impacts are indirect impacts that occur after the construction is complete. The operation of the Project is expected to have limited effects on historical resources as there are no activities are anticipated that will be outside of the approved footprint.

Tertiary impacts are the results of changes in land use patterns induced by the program. This area has a long history of use by local people, and use of the area is expected to neither increase nor decrease as a result of the Project. Intentional and unintentional impacts to heritage resources can result from increased visitation to specific areas within the region. However, the potential for this type of tertiary impact is anticipated to be low.

Primary, secondary, and tertiary impacts are possible with any development. The approach proposed herein is designed to mitigate any potential impacts to heritage resources that could result from the NICO Project.

3. CULTURAL CONTEXT AND PREVIOUS ARCHAEOLOGICAL RESEARCH

3.1 Cultural Context

The Project is located on the traditional lands of the Tâîchô First Nation. The nearest permanent settlements are Wekweetì (Snare Lakes), Gamètì (Rae Lakes), Whatì (Lac la Martre), and Behchokö (Rae Edzo) and have a combined population of approximately 2900. Rae and Edzo have permanent roads connecting these communities to other parts of the North Slave region. A winter road provides limited access amongst all 4 communities for a few months of the year.

The Tâîchô and other Dene groups in the region, such as the Yellowknives, and Chipweyan, employed traditional land use patterns that focused on the seasonal movements of the barrenground caribou as well as on the widely dispersed resources of the Boreal Forest (Helm 1981). Other harvested big game animals include woodland caribou, moose, and less commonly, elk, deer, muskoxen, and wood bison. Small fur bearing animals were taken on a regular basis, with hare being an important winter food resource when big game was scarce. Bow and arrow, spears, deadfall, snares, clubs and, more recently, rifles have been used to hunt a variety of big and small game (Rogers and Smith 1981).

Aboriginal people used nets, spears or hook and line to harvest fish, another important food resource that was also seasonally abundant during spawning runs. On a seasonal basis, waterfowl and their eggs provided a significant component of the diet. Waterfowl were taken using bow and arrows tipped with blunt points, or by being driven into nets (Rogers and Smith 1981). Aside from the seasonal collection of berries, vegetal foods did not appear to represent a large component of Subarctic Dene diets. However, plants were used in the construction of living structures, canoes, snowshoes, sleds, weaponry, and a variety of domestic items.

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 huts or lean-tos. 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 and toboggans (Rogers and Smith 1981).

With the arrival of fur trade posts in the region in the late 1700's, conflict developed between the Mackenzie River Dene, which include the Tâîchô, and the more southerly based Yellowknives, who had better access to trade goods (Gillespie 1981). Resolution of this conflict was eventually achieved in the latter part of the 19th century. Subsequent amalgamation and intermarriage has reduced the former cultural distinctions between these groups.

With the establishment of Fort Rae in 1825, the Tâîchô were provided a focal point for their trading activities, while the older more southerly posts continued to serve the Yellowknives and other Chipweyan (Gillespie 1981). In 1900, an extension of Treaty 8 incorporated the Slave of the Hay River and Great Slave Lake regions, the Tâîchô, the Chipweyan, and the Yellowknives of Great Slave Lake. Regional bands of the Tâîchô are identified according to the focus of their seasonal rounds of exploitation, which by the 1960s, tended to centre on the western portion of their traditional territory (Helm 1981). The nearest settlement to the Project area is the Tâîchô community Whatì.

Métis canoemen and packers began moving into the Subarctic region in response to the fur trade in the late 18th century, and possibly due to social and economic upheaval on the Canadian prairies in the mid-18th century (Slobodin 1981, North Slave Métis Alliance 2001). These Métis were, typically, descendents of French or French Canadian men and Ojibwa or Cree women, with a minority of Scottish and Iroquoian descent. Throughout the fur trading period, the Subarctic Métis participated in a very wide variety of occupations and dominated the transportation industry that was the lifeline of fur trade expansion into the north and west (Slobodin 1981). In fact, this diversity and

specialization was a distinguishing characteristic in comparison to local Dene groups (North Slave Métis Alliance 2001).

The Subarctic Métis are noted for their long-distance communication networks (Slobodin 1981), which may be regarded as a criterion of Métis ethnicity. In fact, it has been suggested that the Métis use of traplines was more intensive than their Dene counterparts (North Slave Métis Alliance 2001). And, during the fur trade expansion into the Great Slave-Mackenzie district, many of the French-Cree Métis took Dene wives. This had the effect of establishing social and economic alliances with local families, which would provide both personal and commercial benefits for Métis men when hunting, trapping, fishing, or trading (North Slave Métis Alliance 2001). It secured an important position for the Métis as intermediaries and interpreters for the fur trade companies, and allowed them to influence the needs and wants of the various parties involved in the fur trade economy.

With their ties to the fur trade posts and less nomadic lifestyle, Métis families were significantly larger than Dene families (North Slave Métis Alliance 2001). While the Métis men spent long periods of time trapping, trading and tripping during the winter and summer, the women and children remained primarily attached to the posts, fishing, and harvesting local resources (North Slave Métis Alliance 2001). This resulted in a relatively well defined land use pattern around the posts and throughout a region in comparison with the Dene groups.

The Marian River was an important travel route connecting the communities on the north shore of Great Slave Lake to a series of lakes and the barren grounds to the north. Consequently, it is possible that the area could contain sites of historical and spiritual significance to the Tâîchô and Métis elders. These could include portage sites adjacent to rapids on the Marian River, historic fishing camps along the river and lake shorelines, marked or unmarked graves and burial sites, and other sites of spiritual significance.

3.2 Previous Archaeological Research

Archaeological research in the western Northwest Territories began in the 1950s with reconnaissance undertaken by R.S. MacNeish in the Upper Mackenzie basin and Great Slave Lake area (MacNeish 1951). This work was later extended to the Middle Mackenzie basin and Great Bear Lake area (MacNeish 1953, 1955). Several researchers have expanded upon and modified the cultural sequence derived from MacNeish's early research. Such work includes that conducted by Noble (1971) in a series of surveys in the Great Slave Lake area; by Cinq-Mars (1973) and Clark (1975, 1977) in the western Great Bear Lake and Mackenzie River basin areas; and, by McGhee (1970) in the Coppermine River area (see also Cinq-Mars and Martijn 1981).

Several impact assessment investigations have been undertaken in the region in the last decade. These include Bussey's (1994) examination of the proposed BHP diamond mine development near Lac de Gras; Fedirchuk (1995) and Fedirchuk McCullough and Associates' (1997) investigation of the proposed Diavik diamond project area near Lac de Gras; Wayman and Andrew's (1994) excavations for the Snare lakes airport project; and, Ronaghan's (1997) examination of the proposed Damoti Lake Mine.

Three archaeological projects are of particular relevance to this assessment. In 1992, Tom Andrews of the Prince of Wales Northern Heritage Centre (PWNHC) conducted the Marian River Heritage Resource Inventory. In addition, 2 HRIAs were previously conducted for the present NICO Project (Paquin 2005; Ronaghan 2004). These are discussed in more detail below.

Syntheses of the prehistory of the region are available in the works of Gordon (1975), Noble (1977), and Wright (1981). The following summarizes the cultural sequence currently accepted for the area. The earliest recognized occupation of the Northwest Territories appears to represent a wide-ranging archaeological cultural entity known as the Northern Plano Tradition which may date as early as 7,000 to 8,000 years ago. Sites of this period tend to be associated with major caribou water crossings or fisheries in the

southern Keewatin District (Harp 1961), and with eskers in areas further west (Noble 1981). Northern Plano occupations are characterized by the use of lanceolate Agate Basin-like spear points or notched Acasta specimens, and with the extensive use of quartzite as source material.

A similar occupation pattern is maintained through the subsequent Shield Archaic Period (Wright 1981), which dates between 6,500 and 1,700 years ago and contains both lanceolate and notched point styles. The Northern Plano Tradition and early Shield Archaic occupations correspond with a climatic period characterized by warmer and drier conditions than are present today.

Around 3,500 years ago the climate is thought to have achieved the cooler, wetter conditions typical of today. Associated with this change is the appearance of a new cultural tradition known variously as Pre-Dorset, the Arctic Small Tool Tradition or the Canadian Tundra Tradition (Noble 1981). It dates between 3,300 and 2,600 years ago and is believed to represent a distinctive caribou adapted Palaeo-Eskimo culture. Occupations by this cultural group seem to focus on the use of sheltered points and protected bays on lakes, on eskers, and on islands, and are widespread throughout the barrenland and transitional forest zones stretching from Great Slave/Great Bear Lake eastward toward Hudson Bay. This adaptation employed smaller, thinner, well fashioned tools than previous groups. The tool assemblage includes lenticular and oval bifaces, small triangular and side notched points, burins and, most distinctively, the use of micro-core and micro-blade technology.

Around 2,500 years ago the final stages of the Precontact Period witnesses the development and spread of the Taltheilei Shale Tradition which is believed to be ancestral to the Athabaskan speaking peoples that inhabit the region today (Noble 1981). During this period, considerable use was made of the siliceous shale originating along the eastern end of Great Slave Lake and elsewhere throughout the region. Lanceolate and small corner and side notched points are included in Taltheilei occupations but the biface, burin and microblade based tools common in the earlier assemblages are completely

absent (Gordon 1977). Use of the vein quartz exposed in bedrock throughout the region, and common in archaeological assemblages may relate to these later occupations. However, until archaeologists recover diagnostic specimens, it will remain unknown if persistent use of vein quartz can be associated with a particular time period.

4. PROCEDURES

Procedures employed in the current HRIA were those considered standard for projects of this nature in the region and entailed pre-field studies, in-field ground reconnaissance, site documentation and assessment, reporting and recommendation formulation.

4.1 Objectives

HRIAs for projects of this nature are conducted as required by the Government of the Northwest Territories according to requirements set out in the *Northwest Territories Archaeological Sites Regulations* and the *Northwest Territories Archaeologists Permits* issued by the Prince of Wales Northern Heritage Centre. HRIAs are conducted in advance of development to ensure that any heritage resources present are identified and properly managed. The primary objectives of this study were to:

- review previous archaeological site records and studies conducted within the region to provide a basis for designing a field investigation program and cultural context for any heritage resources that might be identified;
- review topographic and physical environment data, including maps and airphoto/satellite imagery, to identify landforms that have moderate to high potential to contain heritage resources for which HRIA is warranted;
- during in-field studies, identify and evaluate archaeological resources within the Project area;
- assess the heritage significance of any observed sites;
- assess potential developmental impacts to the sites; and
- recommend viable measures for managing potential adverse impacts.

This report provides a detailed description of the program adopted to achieve these objectives as well as its results.

4.2 Pre-Field Studies

Prior to conducting field work, a search of the national heritage resources site records maintained by the Archaeological Survey at the Canada Canadian Museum of Civilization was conducted to determine if previously recorded archaeological sites are known from the vicinity of the proposed development. The staff of PWNHC in Yellowknife, Northwest Territories facilitated this search. Efforts to obtain specific reports relating to the assessment and interpretation of the sites identified in these records follows. Finally, a review of general environmental, archaeological and ethnographic literature for the region was undertaken to provide a context for interpretation of the regional cultural resources.

Some of this information was incorporated into the permit application for review by the Prince of Wales Northern Heritage Centre. A permit to conduct the HRIA was issued by the PWNHC to Brent Murphy of Golder.

4.3 In-Field Studies

All of the proposed impact areas within the NICO Project were examined using a combination of aerial reconnaissance, pedestrian traverses, visual examination, and judgmental shovel tests. Pedestrian traverses and visual inspections were used to identify surface evidence of heritage resources such as historic buildings, depressions and other artifacts. All subsurface exposures present within the area, including natural exposures, were examined to determine the potential for buried cultural components. Existing disturbances such as winter roads were also examined if it appeared that they might aid in the identification of buried cultural components within the development area. In areas where there were no existing exposures and/or where dense vegetation was present, judgmental shovel tests were excavated to determine the potential for buried heritage resources.

4.4 Reporting

Reporting consisted of the preparation and submission of this final report for the proposed project. This document was submitted in June of 2010 to the PWNHC, which summarizes the results of the HRIA that was conducted under NWT Permit 2009-003, issued to Brent Murphy of Golder.

5. RESULTS

5.1 Pre-Field Studies

A total of 48 archaeological and historical sites have been identified within the general study area for the Project (within 30 km) and only 2 are located within the Project footprint (Table 1). Only one of the sites was recorded during the HRIA for the Project's access road (Paquin 2005) and the remainder were recorded by Tom Andrews of the PWNHC during a single archaeological research project completed in 1992 under Northwest Territories Class 2 Archaeologists Permit 92-730 (PWNHC 2009). This study provided a cultural heritage inventory of segments of the Marian River drainage, and the sites he identified represent the first recorded within this basin. It is evident that this study included a considerable amount of consultation with local aboriginal people since many of the people directly responsible for the sites recorded can be identified. However, no report relating to this study has been archived for public use. Therefore, information relating to the character, distribution and significance of these sites has been gleaned strictly from the site inventory data provided by the Archaeological Survey of Canada (PWNHC 2009).

Table 1 Heritage Resource Sites Adjacent to the NICO Project

Borden No.	Type	Class	Features	Location
KiPo 1	burial	indigenous historic	grave	grassy bank of Marian River northeast of Tumi Lake
KiPo 2	trading establishment	indigenous historic	cabin (foundation); tipi ring	south bank of Marian River northeast of Tumi Lake
KiPo 3	portage	indigenous historic	survey monument	Marian River southeast of Tumi Lake
KiPo 4	trail	indigenous historic	trapping trail	Between Rabbit and Hislop lakes
KjPo 2	campsite	prehistoric/indigenous historic	tipi ring, scatter (lithic)	Marian River. at confluence with Bea Lake
KjPo 3	campsite	prehistoric/indigenous historic	scatter (lithic), recent campsite	small island in north quadrant of Bea Lake

Table 1 Heritage Resource Sites adjacent to the NICO Project (continued)

Borden No.	Type	Class	Features	Location
KjPo 4	campsite	prehistoric	scatter (lithic)	bedrock point, N side of Bea Lake
KjPo 5	campsite (prospecting)	historic euro-Canadian	scatter (artifact)	bedrock point, N side of Bea Lake
KjPo 6	campsite	indigenous historic	tipi ring	bedrock point, N side of Bea Lake
KjPo 7	campsite	prehistoric	scatter (lithic)	bedrock point, NE side of Bea Lake
KjPo 8	campsite trapping	indigenous historic	culturally modified tree	bedrock point, E side of Bea Lake
KjPo 9	campsite	prehistoric	hearth, scatter (lithic)	small island near E shore of Bea Lake
KjPo 10	canoe, cache	indigenous historic	canoes	sheltered bay, E shore of Bea Lake
KjPo 11	campsite	indigenous historic	tent frame, doghouse, midden	bedrock point, S side of Bea Lake
KjPo 12	sled, cache	indigenous historic	dog sled	small island in south quadrant of Bea Lake
KjPo 13	campsite	prehistoric/indigenous historic	scatter (lithic), culturally modified tree	small island in south quadrant of Bea Lake
KjPo 14	campsite	prehistoric/indigenous historic	tipi ring, scatter (lithic)	bedrock point, SW corner of Bea Lake
KjPo 15	campsite	prehistoric/indigenous historic	cache, scatter (refuse), scatter (lithic)	bedrock point, SW corner of Bea Lake
KjPo 16	campsite	prehistoric/indigenous historic	scatter (lithic)	bedrock point, SW corner of Bea Lake
KjPo 17	find (isolated)	prehistoric	scatter (lithic)	bedrock point, SW corner of Bea Lake
KjPo 18	campsite	prehistoric	scatter (lithic), stone feature (alignment)	small island in south quadrant of Bea Lake
KjPo 19	campsite	prehistoric/indigenous historic	hearth, scatter (lithic), culturally modified tree	bedrock point, on Bea Lake near outlet
KjPo 20	campsite	indigenous historic	culturally modified tree, scatter (lithic)	bedrock point, on Bea Lake near outlet
KjPo 21	campsite	indigenous historic	cache, canoe	west bank of Marian River S of Bea Lake
KjPo 22	culturally modified tree	indigenous historic	culturally modified tree	near rapids on Marian River S of Bea Lake

Table 1 Heritage Resource Sites adjacent to the NICO Project (continued)

Borden No.	Type	Class	Features	Location
KjPo 23	portage	prehistoric/indigenous historic	trail	near rapids on Marian River S of Bea Lake
KjPo 24	portage	indigenous historic	trail	near rapids on Marian River S of Bea Lake
KjPo 25	portage, station (fishing)	indigenous historic	trail, cache	near rapids on Marian R. S of Bea Lake
KjPo 26	portage, station (fishing)	indigenous historic	trail, cache	near rapids on Marian River S of Bea Lake
KjPo 27	burial	indigenous historic	grave	grassy point on Marian River N of Hislop Lake
KjPo 28	village	indigenous historic	cabin, chimney	flood plain, confluence of Marian River and Hislop Lake
KjPo 29	campsite	prehistoric /indigenous historic	hearth, scatter (lithic)	bedrock point NE shore of Hislop Lake
KjPo 30	campsite	prehistoric /indigenous historic	tipi, scatter (lithic)	bedrock point NE shore of Hislop Lake
KjPo 31	campsite	prehistoric /indigenous historic	scatter (lithic), culturally modified tree	bedrock point NE shore of Hislop Lake
KjPo 32	campsite	indigenous historic	hearth, culturally modified tree, pole	bedrock point NE shore of Hislop Lake
KjPo 33	campsite	Prehistoric	hearth, scatter (lithic)	bedrock point NE shore of Hislop Lake
KjPo 34	campsite	Prehistoric	hearth, scatter (lithic)	small island near NE shore of Hislop Lake
KjPo 35	campsite	Prehistoric	hearth, scatter (lithic)	bedrock point E shore of Hislop Lake
KjPo 36	campsite	Prehistoric	hearth, scatter (lithic)	bedrock point E shore of Hislop Lake
KjPo 37	campsite	prehistoric /indigenous historic	hearth, scatter (lithic)	bedrock point E shore of Hislop Lake
KjPo 38	campsite	indigenous historic	tipi ring, tipi poles, scatter (lithic), scatter (artifact)	bedrock point E shore of Hislop Lake
KjPo 39	campsite	indigenous historic	culturally modified tree, scatter (artifact)	bedrock point back from E shore of Hislop Lake
KjPo 40	burial	indigenous historic	cemetery	gassy bank, E shore of Hislop Lake
KjPo 41	quarry	prehistoric /indigenous historic	scatter (lithic)	small island near E shore of Hislop Lake

Table 1 Heritage Resource Sites adjacent to the NICO Project (continued)

Borden No.	Type	Class	Features	Location
KjPo 42	burial	indigenous historic	grave	small island near E shore of Hislop Lake
KjPo 43	campsite	indigenous historic	cabin (foundation)	small island near E shore of Hislop Lake
KjPo 44	portage	indigenous historic	trail	near rapids on Marian River E of Hislop Lake
KjPo 45	survey marker	historic euro-Canadian	survey monument 1925	on bedrock ridge, small island at S end of Hislop Lake

E = east, N = north, NE = northeast, S = south, SW = southwest

The 47 sites recorded by Andrews exhibit a wide range of variation, reflecting precontact and historic indigenous traditional use of the area as well as limited evidence of Euro-Canadian use patterns (PWNHC 2009). Prehistoric sites include 8 campsites that consist principally of scatters of stone artifacts and features indicative of domestic activities such as hearths, and a single isolated find locale.

Several sites contain evidence of prehistoric use as well as use by indigenous people in historic times (PWNHC 2009). These consist of 11 sites that were recorded as campsites, a stone quarry and a portage. The campsites all contained scattered precontact stone artifacts and hearths and more recent historic refuse, the remains of tipis and culturally modified trees were also recorded at several of the campsites. The quarry is thought to have been used to obtain quartz for use in stone tool manufacture and to obtain strikers for making fires during historic times and the portage site was used extensively throughout the early part of the 20th century and is thought to be much older. These latter sites suggest a considerable degree of continuity of land use patterns from prehistoric times through to the modern traditional use patterns of the local aboriginal peoples of the area.

The sites ascribed to use by indigenous peoples in historic times include a wide range of use types (PWNHC 2009). Nine are described as campsites and contain remains such as

tipi rings and poles, a dog sled, culturally modified (axe cut) trees, a (log) fish cache, and recent refuse. One site was classified as a trapping campsite because of the presence of a marten trap-set. One village consisting of 7 log cabins and related structures built sometime after 1900 was recorded. Andrews also recorded a trading establishment, constructed by Francis Yambi, ca. 1910, to facilitate trade with the Tâîchô people of the area. The site currently consists of a cabin foundation and tipi ring. One culturally modified birch tree, showing evidence of bark removal for canoe repair during a specific journey in 1932 has been included in the inventory. Five portages over rapids, consisting of well used trails and 2 portages with associated evidence of fishing have been recorded and included in the inventory. One canoe cache and one sled cache have been included in the inventory as well and 4 known burial sites, including 3 graves and a cemetery have been identified and recorded. Finally a trapping trail was recorded during the HRIA for the Project access road between Rabbit and Hislop lakes (Paquin 2005).

All of the sites relating to prehistoric and indigenous historic activities have been ascribed to Athapaskan speaking inhabitants of the region, specifically the Tâîchô. Two sites relating to Euro-Canadian activities in this area were also recorded during Andrew's inventory. These include a survey markers placed during J. Russell's 1925 survey of the Marian and Camsell Rivers and a prospecting campsite containing refuse relating to mineral exploration.

The Project is in potential conflict with 2 previously recorded sites, KjPo 44 and KiPo 4. KjPo 44 is a portage site on the Marian River and KiPo 4 is a trappers trail between Hislop and Rabbit lakes which were revisited and recorded, respectively, during the HRIA for the NICO Project's access road (Paquin 2005). An HRIA that was undertaken prior to Fortune bulk sampling program at the NICO Project site but did not result in any sites being recorded (Ronaghan 2004).

Although Andrews' 1992 heritage inventory work has focused on major river system travel corridors and the larger lakes in the area, where a higher concentration of heritage resources can be expected, some of the landform associations present in this sample may be used to

infer potential site locations within the proposed NICO Project. Most of the sites that Andrews identified occur on bedrock points overlooking lakeshores, on small islands within lakes, and at the confluence of lakes and the Marian River. Portages are invariably situated near rapids that would be dangerous for traverse by canoe. Occasionally sites are located in sheltered bays on lakes or on lower grassy banks.

Consequently it might be expected that areas adjacent to water courses and lakes would have the highest potential for heritage resources occurrence, especially on prominent raised landforms that overlook them. Thus, precontact and historic site distributions in the region suggest that several of the landforms within the current HRIA study area have moderate heritage resource potential. While it was known that upland areas away from water bodies likely have limited heritage resource potential because of the difficulties accessing them and relative resource scarcity, landforms overlooking lakes and waterbodies and landforms that provided prominent look-out locations were selected for field examination. In addition, the crew was mindful to examine bedrock exposures, which may contain quartz veins or other suitable material for stone tool manufacture.

5.2 Field Investigations

5.2.1 Archaeology

The field component of the Project HRIA took place from August 25th to 29th, 2009. Preliminary map and air photo/satellite imagery analysis served as an orientation to the project area landforms and their heritage potential. Subsequently, landforms considered to have heritage resources potential based on the preliminary analysis were examined for heritage resources. A helicopter reconnaissance of the entire Project area and discussions on field conditions with Fortune's staff assisted in refining the investigations.

Areas and landforms examined included the following:

- bedrock ridges and outcrops within the proposed mine footprint;

- proposed airstrip and area between the airstrip and mine footprint;
- revised road alignment at the north end where it enters the mine site footprint
- the KjPo 44 site area on the Marian River;
- the KiPo 4 site area between Hislop and Rabbit Lakes; and
- proposed Borrow Sources 1, 2, 3, and 7.

These areas were examined either because of the potential for disturbance related to initiation of the Project or because they were considered to have potential for containing heritage resource sites. Prehistoric and historic site distributions in the region suggest that several of the landforms within the Project area have moderate to high heritage resource potential. High potential lands were thought to include the crossing of the Marian River (which had been previously examined for the NICO Project) and areas of moderate potential included bedrock points overlooking lakeshores and bays on lakes or on lower grassy banks. Special attention was paid to lakeshores and rocky prominences that overlook them as well as to bays and areas where streams enter or exit these lakes. No major islands, another high potential landform, were present within the study area. However bedrock uplands that overlook lake basins were examined as areas of moderate potential for travel routes and game overlooks. In addition, attention was paid to bedrock exposures in the event that quartz veins or other suitable material for stone tool manufacture were present.

Potential project developments that were omitted from the on-ground examination program include Borrow Sources 4, 5 and 6 (Figure 4) as these areas are poorly drained containing muskeg and black spruce bog and were considered to have low heritage resource potential.

During the current study 225 shovel tests were excavated and no new heritage resources sites were recorded. However, previously recorded sites KiPo 4 and KjPo 44 were revisited and are discussed in more detail below.

5.2.2 Traditional Knowledge

The current study included the participation of a Tâîchô Elder and youth field assistant. Pre field planning included a meeting with Tâîchô Elder Robert McKenzie in Behchokö, to obtain guidance regarding the nature and significance of sites in the area. Mr. McKenzie stated that he thought that people used to harvest furs in the NICO Project area but no longer do so. He said that there were a lot of sites, both archaeological and traditional use, along Hislop Lake. In particular, using a map of the region which was provided, he pointed out Treehill Point which is located at the mouth of the Marian River draining Hislop Lake. Mr. McKenzie thought that the NICO Project was out of the way for people traveling between communities and was not used often. Kenny Wedawin from Gamètì assisted during the field program and he provided advice on the cultural significance of the landscape traversed during the investigations. Mr. Wedawin also indicated that utilization of the NICO Project area was limited with traditional activities being concentrated on the larger lakes and the Marian River.

Similar information was collected from field assistants during the previous HRIAs that were done for the NICO Project. During the 2004 HRIA for the road, Leon Nasken and Edward Williah of the Tâîchô First Nation and Marcel Lafferty of the North Slave Metis Alliance indicated that the utilization of the proposed NICO Project access road corridor study was limited with traditional practitioners focusing their efforts on the larger lakes and the Marian River (Paquin 2005:27-28). Paquin reported that according to his assistants traditional harvesters were unlikely to use the landforms back from these water bodies in any substantial manner, although trappers were known to use the previously cut winter road corridors on snowmobiles due to the ease of accessing this transportation route.

Ronaghan (2003) recorded similar information from John Mantla (Tâîchô First Nation) during the 2003 Nico Mine HRIA. He indicated that hunters and trappers in recent times would only use the Project area sporadically. The most frequent use in the region

centered on the Marian River, as it was a travel route to the barrenlands for caribou hunting. Current traditional users would only travel inland on isolated hunting trips.

5.2.3 Archaeological Site: KjPo 44 Revisit

KjPo 44 is a portage trail located on the south bank of the Marian River at a set of rapids, approximately 4 km downstream of Hislop Lake. Tom Andrews recorded this site in 1992 under NWT Permit 92-730, identifying it by the Tâîchô place name *Hote Niwà* (PWNHC 2009). This well-worn trail crosses approximately 450 m of bedrock and low-lying spruce terrain and ranges from 1 m wide at the entrance to 3 m wide in places (Plate 6).



Plate 6 View west of portage trail, KjPo 44.

During the current study the site was revisited and evidence of recent use was identified along the trail. This included a recent hearth (Plate 7), plastic fork, a pair of sunglasses, and numerous pieces of contemporary refuse (plastic food wrappers and tin cans). While

revisiting the site Kenny Wedawin indicated that he had used the portage in the recent past with some friends on a school trip.



Plate 7 Photo of recent hearth at KJPo 44.

During the 2004 HRIA at least 23 negative shovel tests were excavated within the proposed road right of way and it was determined that the bridge crossing and access road were not in conflict with any sites that may be associated with the portage entrance. It was recommended that as long as the access road and bridge will not impede current and future use of the portage and that the facilities will be constructed within the corridor investigated, that Fortune be provided with regulatory approval to proceed with developments of the road and bridge crossing at this location (Paquin 2005:33). Current plans have the bridge crossing within the corridor that was investigated.

5.2.4 Archaeological Site: KiPo 4 Revisit

KiPo 4 is a trail site consisting of a 2 m wide cutline through forested areas and an associated surface path through open or muskeg areas that was recorded by Paquin during the HRIA for the proposed NICO Project access road (Paquin 2005). The path was revisited during the current study during the examination of Borrow Source 1 (Figure 2). The path runs between Rabbit and Hislop Lakes in a northwest orientation and crosses birch and alder forest as well as black spruce bog and swamp (Plates 8 and 9). During the survey approximately 1200 m of the trail was examined from Rabbit Lake in response to the proposed borrow source footprint (Plate 10).

Cultural material observed along the trail included an enamel cup and bowl, 2 tin cans and a short piece of leather with some bells (Plate 11). Shovel tests were excavated around the location of the enamel cup and bowl and areas around where the tin cans were observed. There were also several recently made blaze marks on spruce trees approximately 1.5 m above the ground surface.

Paquin reported that when the trail was recorded one of his assistants, Marcel Lafferty (North Slave Métis Alliance) indicated that this is likely a trapper's snowmobile or dogsled trail used in winter to access the large marsh for furbearing animals and that it may also be used to access Rabbit Lake from Hislop Lake, an overland distance of approximately 2 km (Paquin 2005:33).



Plate 8 View northwest of trail, KiPo 4, about 500 m from Rabbit Lake with 'blazed tree' in the foreground.



Plate 9 View northwest of trail, KiPo 4, where it crosses a swamp close to the access road alignment.



Plate 10 View southeast of trail, KiPo 4, with Rabbit Lake in the background.



Plate 11 Kenny Wedawin holding leather strap with bells attached that was observed on the trail, KiPo 4.

At this time the exact locations for the borrow material needed for the access road are not known. KiPo 4 is located within the proposed borrow source and could potentially be impacted during road construction activities. The material culture that was observed along the trail, presence of chainsaw cut stumps and tree blazes indicate that the trail is rather recent in age and of low significance in terms of heritage resources. Therefore, no further work is recommended at KiPo 4 and it is further recommended that Fortune be granted regulatory approval to proceed with the NICO Project.

5.2.5 Historic and Cultural Use Locations

Several cultural use areas were identified during the study but not considered an archaeological resource under the current provisions of the Northwest Territories Archaeological Sites Regulations (GNWT 2001). These included a mine claim post, 2 hunting camps and a possible trail. The mine claim post was recorded on the highest point of land within the proposed NICO Project mine footprint (Plate 12). The claim post had 2 metal plates attached that said “Post 4 Claim no 74531” and “Post 2 Claim no 74527”. Both Ronaghan (2003) and Paquin also recorded mining claim posts (one each) during the 2003 and 2004 HRIAs.

The first of the 2 hunting sites was recorded within Borrow Source 3 and consisted of axe cut stumps, stacked wood and some tinfoil, pop cans, food cans, a glass jar, 2 fuel cans, and a boot (Plate 13). The second is made up of the remains of a lean-to (Plate 14), a wood pile and a fire pit spread out on either side of a cut line in Borrow Source 2. Numerous refuse around the site included a plastic jerry can, tinfoil “Freddychef” food packaging, plastic spoons, remains of a sweat shirt, and several oil cans.



Plate 12 Photo of the mine claim post with two metal plates.



Plate 13 Photo of the remains of a boot at one of the modern camp site located Borrow Source 3.



Plate 14 Remains of a lean to at a modern camp site in Borrow Source 2.

The trail was thought to be a portage trail between Burke Lake and Peanut and Nico lakes in the southeast portion of the mine footprint. Staff of Fortune told the archaeology crew that there was a portage trail along the drainage between Burke Lake and the small lakes to the north that was used to accessing the lakes for fishing. The crew examined the area and did not observe any evidence of a well used trail; however, there was what was considered to be an animal trail along the drainage. This was fully examined (Plate 15). There were some axe cut stumps along the side of the drainage but no other material culture was evident.



Plate 15 View north along possible portage trail.

In summary, several historic and cultural use sites were recorded during the study but were not considered heritage resources sites. These included a mine claim post (plus the 2 recorded previously), 2 hunting camps, and a possible trail. These sites are considered to be of limited heritage resource value and no further work is recommended.

6. SUMMARY AND RECOMMENDATIONS

On behalf of Fortune Minerals Limited, Golder conducted an HRIA of the NICO Project mine footprint and borrow sources that have been identified for the access road in the Wek'eezhii Settlement Area of the Northwest Territories approximately 50 km northeast of Whatì. The assessment was conducted under NWT Archaeologist Permit 2009-003 issued to Brent Murphy of Golder. The field program was conducted in August of 2009 and included revisiting 2 previously recorded heritage resource sites (KiPo 4 and KjPo 44).

The purpose of the study was to examine extensions to their mine footprint and all-weather access road that were not previously examined. Previous studies that have been completed on behalf of Fortune Minerals Limited for their NICO Project include an HRIA for their bulk sampling program for an underground gold mine operation (NWT Permit 2003-942) and proposed access road (NWT Permit 2004-963). Pre field planning included a meeting with Tâîchô Elder Robert McKenzie from Behchokö, to provide guidance regarding the nature and significance of the sites in the area. As per the requirement set forth by the Tâîchô First Nation, Kenny Wedawin from Gamètì assisted in the field work, provided advice about the cultural significance of sites and helped identify areas of cultural concern.

During the field program 225 shovel tests were excavated and 2 previously recorded heritage resources sites were revisited. KiPo 4 is a trapper's dogsled and/or snowmobile trail was formally recorded as an archaeological site on the proposed access road corridor. KjPo 44 is portage on the Marian River that is adjacent to the Marian River crossing for the proposed road. In addition several historic and cultural use sites were recorded during the study but were not considered heritage resources sites. These included mine claim posts, 2 hunting camps, and a possible trail. Historic and cultural use sites were recorded during the study but were not considered heritage resources sites.

Based on the results of the HRIA no further work is recommended for the NICO Project as examined. Any proposed developments located beyond the footprint examined must be reviewed for heritage resource potential and assessed as required.

7. CLOSURE

We trust the above meets your present requirements. If you have any questions or require additional details, please contact the undersigned.

GOLDER ASSOCIATES LTD.

Report prepared by:

Report reviewed by:

Brent Murphy, M.A., RPA.
Senior Archaeologist

Rebecca Balcom, M.A.
Principal, Cultural Sciences Director

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APPENDIX I
SITE FORMS

KjPo 44 Portage Site Update

BN= KjPo-44

NAM= Hote Niwax

OWN= n/a

RN= 92-76a by Tom Andrews 1992

PN= NWT 2009-003

PRO= Fortune Minerals Ltd. NICO Cobalt-Gold-Bismuth-Copper Project Heritage Resources
Impact Assessment

LOC= Marian basin north of Great Slave Lake in the Wek'eezhii Settlement Area 50 km northeast
of Whati on the Marian River

GEO= Great Slave Upland High Boreal Ecoregion

TER=n/a

DST=n/a

MR=85 N/10 Bea Lake

JUR= Federal Government

LAT=63 31' 10

LNG=-116 46' 24

DET= handheld GPS unit (Garmin 76). NAD 83 Zone 11V

UTM= Easting 511263 Northing 7043490.

DET= handheld GPS unit (Garmin 76). NAD 83 Zone 11V

AIR= n/a

EL(ASL)= 198 m or 650 ft

DET (ASL)= estimation from topographic map

EL(LOC)=n/a

DET(LOC)=n/a

REF=n/a

SIZ= 450 m x 15 m trending roughly northwest - southeast

CON=Good – still in use

TYC=prehistoric; indigenous historic; indigenous contemporary

TY=portage

FE=trail; contemporary hearths

CU=Tlicho; Athabaskan

CRE=n/a

PER=at least the 20th and 21st centuries if not earlier

DAT=n/a

RES=Brent Murphy, updated 2009; Todd A. Paquin updated 2004; Tom Andrews originally
recorded 1992

OD=2009/08/27

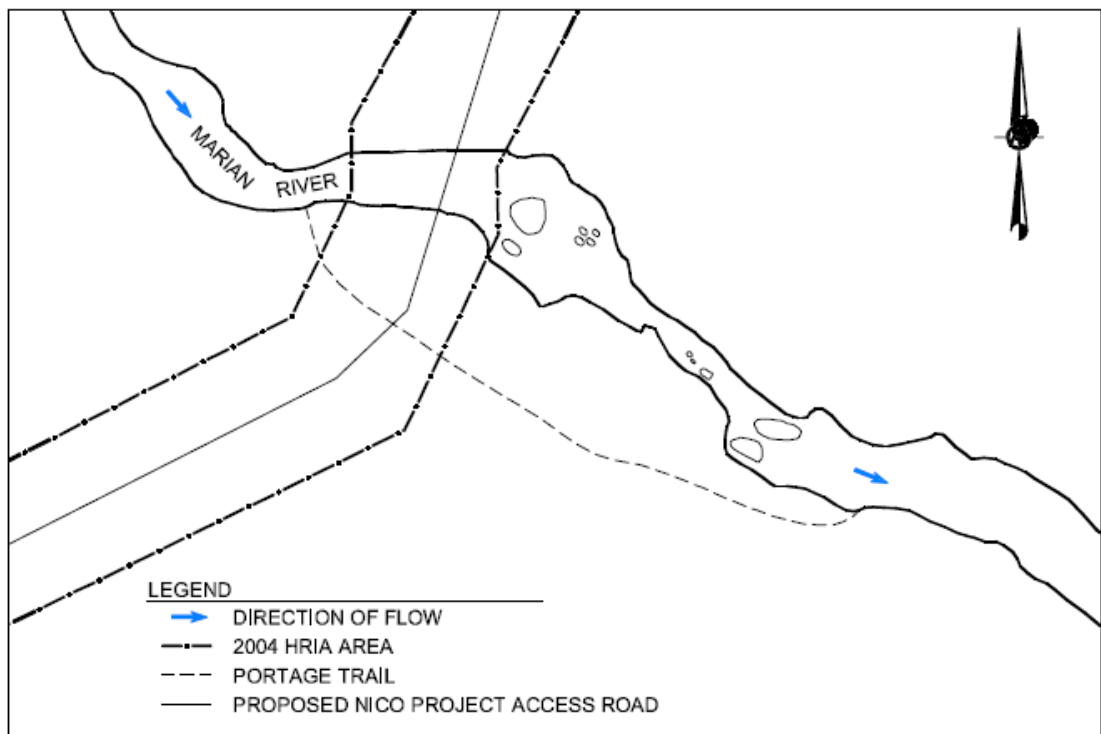
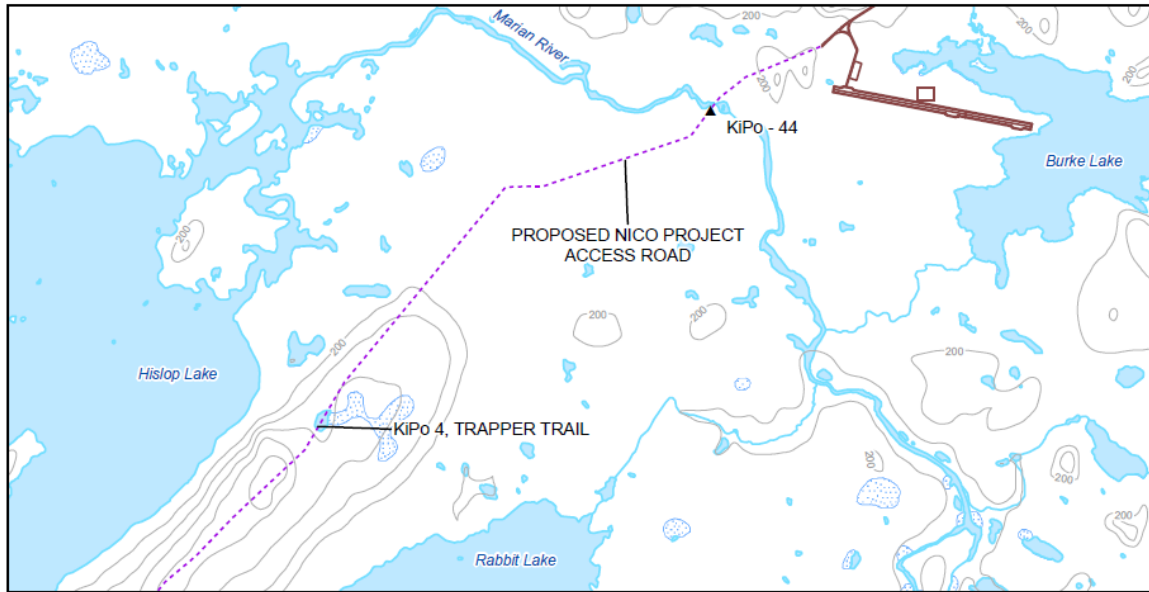
COL=no cultural materials collected

PRE=

UPRE=

RE= A birchbark canoe portage used extensively in historic times. The portage trail is well worn
and runs over fairly level ground. The length of the portage trail was recorded in 2004 by hand-
held GPS, marking the upstream and downstream entrances. Proposed Fortune Minerals bridge
crossing to be situated within 100 m corridor assessed in 2004 and not to impede portaging
activities in the future.

SUPPL=



100 0 100
SCALE APPROX. METRES

SKETCH KJPo44

KiPo 4 Trapper Trail Site Update

BN=KiPo-4

NAM=Trapper Trail

OWN= n/a

RN= n/a

PN= NWT 2009-003

PRO= Fortune Minerals Ltd. NICO Cobalt-Gold-Bismuth-Copper Project Heritage Resources Impact Assessment

LOC= broad ridge landform between Rabbit and Hislop lakes.

GEO= Great Slave Upland High Boreal Ecoregion

TER= n/a

DST= n/a

MR= 85 N/7 Tumi Lake

JUR= Federal Government (NWT)

LAT=63 29' 40

LNG=-116 50' 46

DET= handheld GPS unit (Garmin 76 model); NAD 83

UTM= East 507649 North 7040699

DET= handheld GPS unit (Garmin 76 model); NAD 83 Zone 11V

AIR= n/a

EL(ASL)= 221 m ASL or 725 ft ASL

DET (ASL)= estimated from map

EL(LOC)= n/a

DET(LOC)= n/a

REF= n/a

SIZ= minimum of 1,200 m long trending west-northwest and east-southeast and 1.5 to 3 m wide.

CON= good condition ; trail currently used by aboriginal trappers/harvesters

TYC= indigenous historic & indigenous contemporary

TY= trapping trail; likely dogsled and snowmobile

FE= trail

CU= Tlicho/Athapaskan

CRE=

PER= 20th and 21st century

DAT= N/A

RES= Brent Murphy, updated 2009; Todd A. Paquin originally recorded 2004

OD= 2010/08/28

COL= n/a

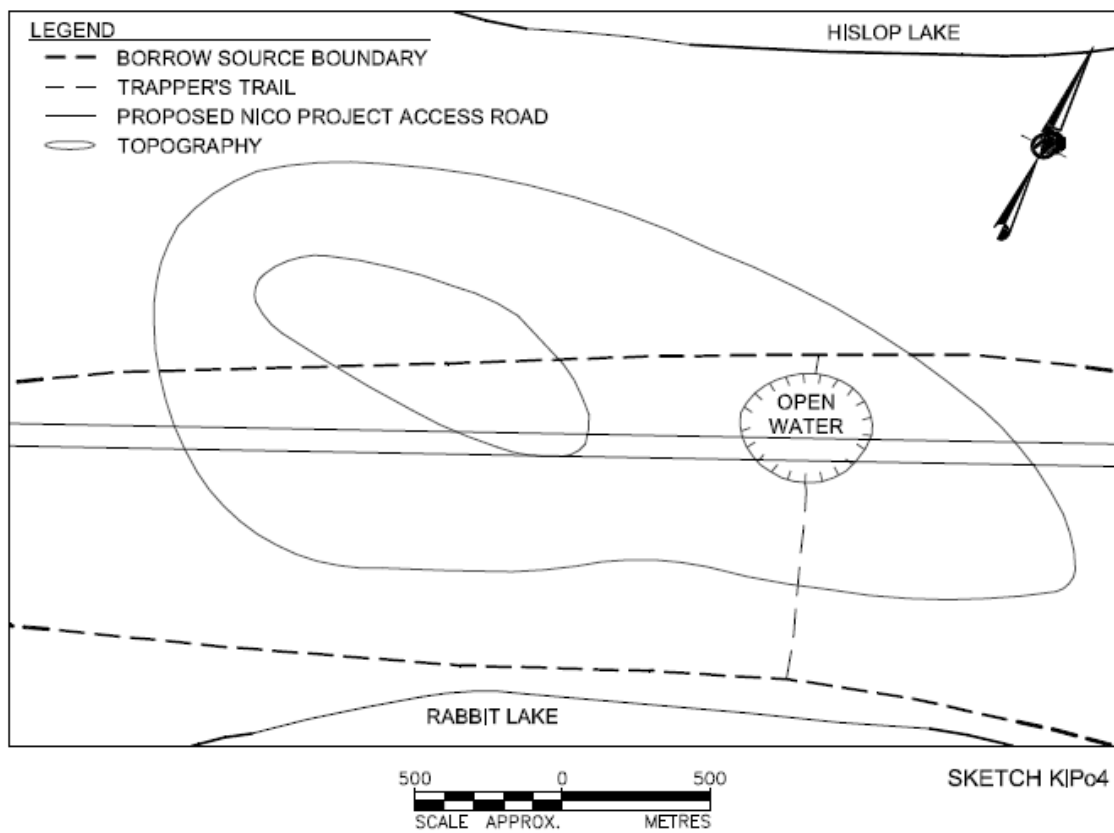
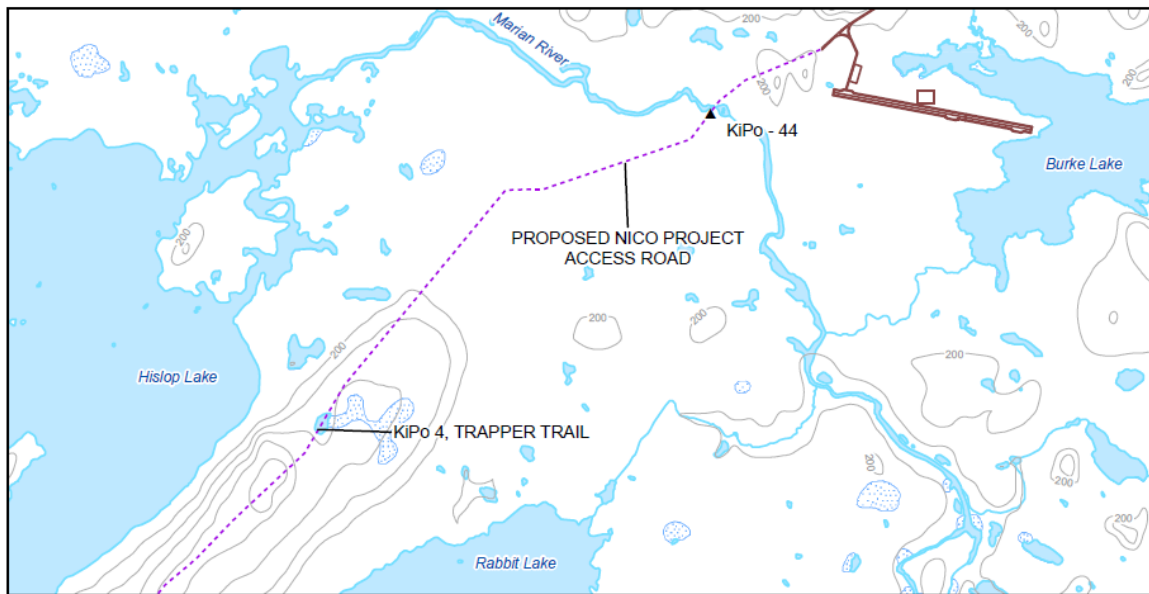
PRE=

UPRE=

RE= portions of the trail have been cut by axe and/or chainsaw through coniferous forest. Trail traverses muskeg and swamp as well as dry land, suggesting use in winter/frozen ground conditions. Cultural material observed along the trail included an enamel cup and bowl, a tin can, recently made tree blazes and a piece of leather with several small bells attached.

SUPPL= during the revisit the trail was examined for approximately 1, 200 m within the proposed borrow source footprint. Waypoint along the trail from east to west are (Nad 83 11V) are included in the table below.

Easting	Northing	Comment
508218	7039859	East end of study area
508124	7040141	Tree blaze
508074	7040259	Enamel cup and bowl (off trail)
507787	7040555	Leather strap with bells
507630	7040706	Tree blaze
507609	7040713	West end of study area



APPENDIX II

FIELD NOTES

"Outdoor writing products for outdoor writing people."



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"Rite in the Rain" - A unique All-Weather Writing paper created to shed water and enhance the written image. It is widely used throughout the world for recording critical field data in all kinds of weather.

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Fortune Minerals Ltd

Nico



"Rite in the Rain"

ALL-WEATHER
JOURNAL

No. 393

AWT Permit 09-003

~~09-1773-001-6000~~
09-1373-1004-7000

Permit 09-003 NWT

Aug 25/09

Started at 10am helping load trucks from the Golden office to the Air Ind. Flight Plane docks. Continued to do this until we took off at 12:20.

Arrived on site w/ the Fortune mine tools. Camp around 13:30. Unloaded the plane and waited for the plane to come back after picking up the rest of the gear by 5pm. Also waited while the helicopter went back to Yellowknife to pick up food. We ate by 6pm or so. Staying at the camp (new camp which is a new Stratton place) but there is only one electric line from a generator so the lights we do have Internet

Page 1 of 14

Kenny Webber

Permit 09-003 NWT

Aug 26/09

Breakfast at 7:00 - by 8 we were getting ready to go out. Weather was drizzle, rain + low ceiling. We were delayed by the weather for ~~about 1~~ until 9:30. Got on the ground by 9:50 at the good bridge and headed south along the cut quad trail.

wp1 - quad trail

wp2 - quad trail + photos of trail + crew.

wp3 - quad trail

wp4 → photos south north of proposed road on the road right of way.

Cut road - stacked + burned (in subsequent forest fire) Cut moose across - mostly in, charred. May be one of the helicopter landing spots. Have some photos on the north west corner of 1300 the lake.

wp5 - looking for portage trail - some pictures were we ended up on the west side of the dam. (7 photos)

Page 2 of 14

~~Page 2 of 14~~

Permit 09-003 NWIT

Permit 09-003 NWIT

Aug 26/09

Wpt 6+7 Ape cut strips along parking trail - not much of a trail. Lots of photos.

Wpt 8 - End of trail at Beaver Dam - trail disappears. Really isn't much of a trail to begin with - really just a change between the lakes.

Wpt 10 - Flashed sign and plots of cut line - bunch of trees.

Wpt. Camp can - small fire with smoking conifers + stump. One conifer is square - fire? and can can. Comparison the cut line in the bunch of trees.

Wpt 11 - Photos along cut line along proposed runway - very east.

Wpt 12 - Photo cut from eastern end of the proposed runway.

Wpt 13 - 20 short trees at the east end of the runway.

Cut finished around 3:50 at the highway
Page 4 of 14

Atkinson, R.

Point 04-003 out

Dent 09-03 NW T

Aug 26/09

pick up part and work to be picked up.

finished the proposed runway - only rounded

St. Oye wt stops only modern composite.

Pickled up at 4:30.

10

So then most baroque - #7

WPT 11V0495295

702772

Dropped a near Fortune Forks and working a way north

way into
sept-14 photos of older winter road with snow
c + drops of paint.

Food brass made in but didn't been used in A

few years. material culture included aluminum cans, plastic oil containers, plastic glass straws and dishes.

wp15 - end of the in the borrow source
photo south showing large wet area
that was crossed.

No sign of any trapping activity along the water and that was even odd!

Aug 27/09

Permit 09007201

upt 16 γ photos NG + SW showing transition from sparse to tamarak thumps.

met 17 bedrock outcrop photos - stopped here for breakfast. Wood has low potential
mainly black spruce / tamarack swamp. Not doing alot
of shrub tests as the birds are poorly channelled.

Day is sunny supposed to be a high of
20 - there is breeze from the ~~south~~ north.
Crew is pretty wet from the underground.

* 1:30 \Rightarrow ordered in a mesh on the north

End of storm surge - how landing and
Henry fell through to his waist with one
leg unloading out of the helicopter.
Benjamin August 7:10 at

lots of photos of 2 barrow swans at the
S. W. end of the Pond - East of Fortine Forks
there is no where to land on its all Transak Swamp.
Hopefully, the Portowill show location + direction of
Page 7 July 4 photos.

Permit 09-0031wt

Aug 22/09

Procedures

Compiling site w/pt 19

110 0497614

703293

248

A series of core extracts ($n=6$) plus stacked
wood with exerts. Also some tin foil, cons, pop con
and glass jar + oil/bat.

sept 20 - scrubbing - photo of scrubbing

wpf 22 - photos south + run through the winter roads.

11/10/44 - proteoglycans - areas have been completely buried in about five seconds. Maybe because of heart size but the proteoglycan appears to extend further to the west than seaward



h f a x c u

"Lift in the Rain"

NWT Permit 09-003

Aug 27/09

There was lots of contemporary material culture - cans, plastic bags, plastic bottles, sunglasses.

Aug 28/09

Aug 28 - bottom source south of Marion River pickup at Rabbit Lake

PW Aug 28 am 11v 050 5725

7037394

21891

Nice cool morning - black flyiest mosquitoes are really gone.

Wpt 24 - drop off point.

Problemming with w ground water that was skated 20 shad fish - series of gail edgers.

Wpt 25 - should test on gravel - caner with Henry in the background

Wpt 26 - complete - possible - old cup + bowl maybe evidence of a hearth but hard to tell because everything is burnt

Just 22 m north of the trail - 3 photos. Aug 28/09
Page 9 of 14

Permit 09-003 NWT

Aug 28/09
11.10.04

Wpt 27 - two wpt on the trail - 160 m trail old 200 m wide, really well established. There is a campsite wpt 26. No signs of trapping off the side of the trail

Some axe cut stumps but mostly charred / saw

Wpt 28 - to beared tree - on the trail 140 m off the ground 80 m long + 24 m wide at the widest part.

Wpt 29 - trail comes to swamp - obviously no winter trail - probably dry. The 2004 report showed the trail along the proposed road and the NWT Assistant mentioned that it may have been used to access the Swamp.

Wpt 31 - off the side of swamp - cannot find any trace of the trail. Area is more open and maybe a trail was not needed. Took a couple of photos.

Page 10 of 14

"Act in the Rain"

Aug 28/09

Point 07-003 NWPT

Wpt 32, 33 + 34

Trail on the west side of camp where photos of the den + action - no other evidence (no tracks) was found.

Wpt 36 - stopped for lunch in sparse musketry place.

Wpt 38 - Photo + 10 shrub-like in action on ground

Finished the burrow search around 2pm and went to the start of the road to walk towards the River crossing (northward).

Wpt 39 - photo north of proposed road on bank outside camp.

After supper Adam and I went up to the mine site with the truck to see the land around the mine. Wpt 40 is D Spot on the road that we can probably take on our way back to the camp in the morning (get the road).

Dec 11 11 44

Point 09-003 NWPT

Aug 29/09

Nice day 16 at 8:30am - sunny not a bit of wind

Flower burrow same to the south (4m from the north) to take photos - really wet + low potential.

Landed on the south end of the 2nd burrow some further north have a spot about 1.5 km from the south end. North end of the burrow is really wet - all the high areas are musketry.

PV Aug 29 AM

11V 6502757

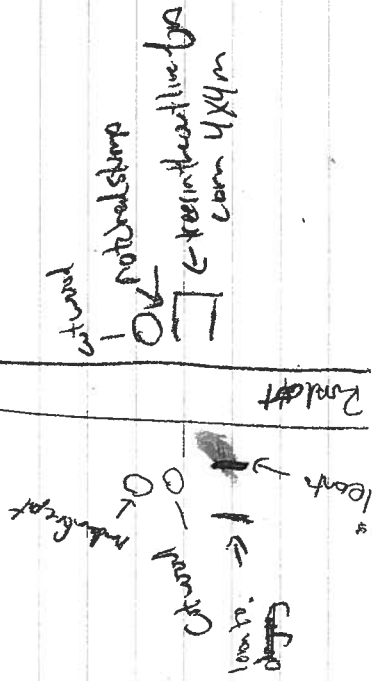
7035 396

Site - medium campsite - 15m road on left to - 1.5m above ground, buried cut firewood, on both sides of the winter road. One plastic container in 2 tin foil 'faddy' cut 'faddy' containers, picked a steel pipe + apple juice can. Took 5mm approx with wpts of the site prop.

Dec 17 11 44

Aug 29/69

Font 09-003 Nwt



up 41 to 44 - corner of site
 up 45 - first appears to become recent
 with lots of tubal, plate glasses.
 there is also an old jersey (plate), sweat shirt,
 elastic on (n=2)

leanto - poles - one end is 1.5 m above ground and is nailed into the tree. the other end is attached w/ string and is 70 cm above the ground. - the two posts are 8 m apart - not far apart.

Part 09-03 nwt

04/29/09

west 46 - ship south on new road along
Across swamp. Where the new road
diverted from the old one.

Wpt 47 - prob looking with oblique segment
after 5 sts.

Wet 44.3 photos - west, East + south from
highest point on hill are looking camp.

up 45 - down store Post 4

Claim No

745 31

Part 2

class:

£2547

Wet so - photos from top of hill overlooking
Low Lake - photos of camp + the forest.