

2007 MACTUNG PROJECT ARCHAEOLOGICAL INVESTIGATIONS

Northwest Territories Archaeological Permit 2007-005
Yukon Archaeological Sites Regulations Permit 07-02ASR

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1. INTRODUCTION

In 2007, Points West Heritage Consulting Ltd. (Points West) was contracted by EBA Engineering Consultants Ltd., on behalf of North American Tungsten Corporation Ltd., to undertake an archaeological assessment of the MacTung Mine Project located in Yukon near the Yukon/Northwest Territories border northwest of Macmillan Pass. The primary objective of the August 2007 work was to follow-up on the recommendations of a 2006 preliminary assessment (Bussey 2006). Specifically to re-assess (including subsurface testing) a few localized landforms considered to have moderate or higher potential for the presence of archaeological material, and assess a previously recorded site KhTg-1 in the Dale Creek valley.

The assessment was directed by Brian Apland of Points West working under authority of Class 2 permits from both Yukon (Permit #07-02ASR) and the Northwest Territories (Permit #2007-005). Brian was assisted by Bob Powell of Points West and Gordon Etzel of the Ross River Dene Council.

No new archaeological sites were encountered during the 2007 study. The assessment of previously recorded site KhTg-1 recovered only two surface artifacts but found no evidence of buried cultural deposits. In light of the lack of subsurface deposits, scarce artifact distribution and lack of diagnostics, the site is not considered to be of great archaeological significance with regard to its potential to yield sufficient information for improved understanding of its place in the cultural history of the region.

The proposed mine facilities will be located in a high west facing alpine valley on the Yukon side of the border that, as a result of this study, is considered to have very low archaeological potential. While the mine site is currently accessed through the Northwest Territories from the Canol Road, a new access approach within the Yukon, from the vicinity of the Macmillan Pass airstrip and via the upper Hess River valley is being considered. This new access along with some features in the western portions of a proposed borrow area will require further archaeological assessment.

Following this introduction, brief descriptions of the project and study area are provided in Section 2. Most of this information is brought forward from the report on the 2006 assessment (Bussey 2006). For a summary of archaeological legislation and types of archaeological investigations required in Yukon and the NWT, the reader is referred to the Bussey (2006) report. Section 3 discusses the field methodology employed and Section 4 presents the results of the investigations. Section 5 provides the main conclusions of the study.

2. PROJECT DESCRIPTION AND STUDY AREA BACKGROUND

The MacTung mine property is located in the Selwyn Mountains of Yukon near the Yukon/NWT border about 8 km northwest of Macmillan Pass (Figure 1). Macmillan Pass is situated along the historic Canol Road in the east-central portion of Yukon approximately 400 km (250 miles) from Ross River and 370 km (230 miles) from the NWT community of Norman Wells.

2.1. *Project Description*

The MacTung ore deposit is situated on steep, unstable slopes near the summit of Mount Allen in Yukon, and has been extensively explored since the early 1970's (Figure 2).

Since the 2006 archaeological assessment, there have been a number of changes in the development plans. These include the following facilities: Waste Rock Pile #2; the proposed Borrow Site (replacing much of the earlier Lower Tailings Dam and Pond); the Ravine Dam and Tailings Pond #2; and the Saddle Dam as well as an access road to the Saddle Dam. An access road network was constructed subsequent to the 2006 study.

The primary areas of interest for the archaeological assessment within the Yukon were a series of small landforms below proposed Waste Rock Pile #1; the Alternate Mill Site (previously referred to as Mill Site #3); and a well defined ridge and knoll west of the Saddle Dam (previously referred to as the east edge of the Upper Tailings Pond).

In the NWT the primary areas of focus were a previously recorded archaeological site KhTg-1, a ridge feature on the north side of Dale Creek and a hill feature crossed by the existing access road across the valley. Points West was also asked by the client to assess three other aspects: a possible new access road alignment option on the north side of Dale Creek valley; the existing access road from Dale Creek to the Canol Road; and the east and west ends of the airstrip at Mile 222 camp on the Canol Road.

Insert Figure 1. (Location of Study Area)

Insert Figure 2. Local Study Area

2.2. *Biophysical Summary*

EBA has been contracted to conduct the necessary environmental studies for the MacTung Project. In 2005, a wildlife baseline study was completed with further work being conducted in 2006, and 2007. Moose, woodland caribou, Dall's sheep, and grizzly bear are the primary large mammal species in this area (EBA 2006). It should be acknowledged that the study area for wildlife is broader than that examined for archaeological resources, since animals are mobile and move seasonally while archaeological sites are location specific.

In 2005, moose were sighted in riparian willow, scrub birch and open spruce communities in river and tributary valleys (EBA 2006). Woodland caribou were sighted by the archaeology team in 2007 in the Dale Creek Valley and on the higher ridges at the NWT/Yukon border near the Mill Site. Within the study area, caribou move from the valleys to higher elevations in spring, reside in alpine/sub alpine areas between June and October, and then return to lower elevations for the winter, and are reported to frequent a mineral lick in the upper Hess River Valley (EBA 2006:3).

Although no Dall's sheep were noted in 2005, they are known to occupy the Mackenzie Mountains and have been sighted during previous studies in this region. Grizzly bears occupy much of Yukon and the NWT, including the Mackenzie Mountains, and are considered common (EBA 2006). A young grizzly bear was sighted around the exploration camp in the spring of 2007. Bears utilize alpine areas intensively in June and July, then shift to sub alpine areas in August, but may alternate between the two zones until the end of September (EBA 2006). Winter denning in the alpine is typical, but can also occur in sub alpine and forest environments (EBA 2006).

The other wildlife species located during the EBA surveys include the Common Raven, Ptarmigan, wolf, red fox and beaver. Raven, of course, have a broad range of habitats. Ptarmigan tend to prefer valleys with edible buds and twigs. Beaver were noted in the area of the Main Dam in 2006 and a new beaver lodge was found in one of the ponds in the Dale Creek Valley in 2007. Wolves and fox are found in a variety of environments. Other species that might occur in the region include Peregrine Falcon, wolverine and Short-eared owl (EBA 2006). Ground squirrels and marmots were encountered by the archaeological crews during the 2007 ground reconnaissance and a black wolf was seen from the air in 2006.

It is unlikely fish of significance to past peoples are plentiful in the study area, but Bull Trout have been observed in the upper Tschu River (Hanks et. al. 1993:226) and Dale Creek (Jastrebski pers. comm. 2007). Grayling and Dolly Varden are present in the upper Hess River and Dolly Varden were also noted in the creek tributary of the Hess draining from the Mine site area Jasterbske pers comm.. 2007).

The region is characterized by the rugged terrain of the Mackenzie Mountains that include the Selwyn Mountains which form part of the continental divide. Considered a northern extension of the Rocky Mountains, the region includes some very high peaks. Climatic conditions and vegetation vary with elevation in these alpine and sub alpine open woodland zones. Barren talus slopes are also evident. The region was glaciated during the last ice advance and numerous glacial features have been identified. Permafrost is discontinuous (Environment Canada 2000). The headwaters of the Hess River are evident on the Yukon side of the border and the headwaters of the Keele River are present in the NWT.

Although the majority of the MacTung Project is situated in an alpine environment (dominated by grasses, lichen, moss and small shrubs) or on rock-scrub slopes, extensive stands of shrub communities are evident in the borrow area located in Yukon and the lower Dale Creek valley.. Shrub birch and willow appear to be dominant and are dense (EBA 2006).

2.3. Cultural Summary

Ethnographically, the areas around Macmillan Pass were utilized by the Upper Pelly Indians (Yukon), associated with the Kaska, and the Mountain Indians (NWT). This area would have only been used periodically by either group. The Mountain Indians originally inhabited the eastern slopes of the Mackenzie Mountains east to the west side of the Mackenzie River. Most of the Upper Pelly groups were massacred by the Mountain Indians around 1886, likely prompted by competition for furs. By the 1900s, the Mountain Indians were hunting, trapping and fishing in the upper Hess, North and South Macmillan and Ross rivers. They utilized a number of trails to access Yukon posts for trade, one of which later became the Canol Road (Greer 1982).

The reader is referred to Denniston (1966), Gillespie (1981), Greer (1982), Honigmann (1964, 1981) and McClelland and Denniston (1981) for more detailed information on the Upper Pelly and Mountain Indians. As Greer (1982) indicates, there is little information on the Upper Pelly and virtually nothing is known about the hunting and fishing practices that may have been carried out in the Macmillan Pass areas.

Construction of the Canol Road (for Canadian Oil) and pipeline resulted in an influx of people and money. It was undertaken by the United States army during World War II as a response to the Japanese attack on Pearl Harbour in December 1941. The objective was to ensure a supply of oil from Norman Wells for the Pacific forces. The Canol Road runs from Norman Wells to Whitehorse via Ross River. The project was initiated in 1942 and abandoned in 1945. Most of the pipe was salvaged, but all other equipment, including graders, trucks and camp structures were left behind (Hanks et al. 1993). The Canol Road was responsible for opening up the area to increased use and continues to provide access. Current activities in the Macmillan Pass area include hunting, both individual and with guide outfitters, mineral exploration and recreation.

2.4. Archaeological Background

Very few archaeological investigations have been conducted in the Macmillan Pass region of the Mackenzie Mountains. Prior to the 2006 preliminary work done by Points West, four previous archaeological studies were conducted in the general vicinity, including one in the NWT portion of the MacTung project area. Concurrent with the 2007 Points West investigations, a project was undertaken in the area by Tom Andrews of the Prince of Wales Northern Heritage Centre.

2.4.1. Previous Yukon Studies

In 1981, two studies were conducted as one project. Ruth Gotthardt directed the North Canol Road impact assessment and Sheila Greer conducted a regional archaeological inventory of the Yukon Macmillan Pass area (Greer 1982). The former study area consisted of a corridor along the existing road between Ross River and Macmillan Pass, representing the northern portion of the Yukon section of the Canol Road. The objective of this study was to identify sites threatened or impacted by the existing road. The regional study area consisted of an 11,000 square kilometre area that included Macmillan Pass. This project

was initiated because of a need for resource data for planning and assessment purposes (Greer 1982). Greer's (1982) final report covers both projects and provides a good summary of the geological, glacial, paleoenvironmental, biophysical and archaeological characteristics of the general region.

Fifty-five archaeological sites were recorded by Greer and Gotthardt: one historic and 54 prehistoric, some of which also included historic material. Two-thirds of these sites were small or very small with sparse archaeological material. Nearly half of the sites were associated with lakes, including all but one of the large sites, although this distribution may be a result of emphasis being placed on such water bodies. The larger sites are suggested to represent family hunting and fishing base camps. Most archaeological deposits were encountered beneath a layer of White River Ash (dated to 1250 years Before Present [BP]). Greer suggested that not enough work was undertaken in the high plateau and mountain top areas and recommended further work (Greer 1982).

The nearest Yukon sites to the MacTung project area are KgTg-1 and KgTg-2 on the upper portion of the South Macmillan River, with the closest approximately 15 km distant. KgTg-1 is located on a knoll on the side of the narrow valley bottom. The site is small in area, but testing yielded a lanceolate point base and 262 medium and small flakes and fragments. Four lithic materials are represented: black and various grey cherts and/or grey silicified sedimentary materials. The site is interpreted as a possible small hunting camp and/or a lookout and chipping station (Greer 1982:42).

Further south is KgTg-2 on the edge of a terrace overlooking the river. Another small site, it predates the White River ash fall. A total of 29 pieces of lithic were recovered, including large, medium and small sized flakes, a possible exhausted core and blocky pieces of core shatter. Only one material type is represented, a pale green chert. This site is interpreted as a possible hunting camp and/or lookout and chipping station (Greer 1982:42). These are the types of sites that predictably would most likely occur within the MacTung project area.

2.4.2. Previous Northwest Territories Studies

The Canol Road was the subject of an archaeological and historic assessment in the NWT in 1989 when a preliminary architectural and archaeological survey of the road was conducted from Norman Wells to the Yukon border (Hanks et. al. 1993). Six sites associated with the US Army were examined as were 47 indigenous pre-European contact, contact and post-contact sites. Evidence of the former consists of a base camp, pump stations, road maintenance camps and emergency shelters. Evidence of the latter includes hunting stands, camps, trails, quarries and sheep fences.

The nearest recorded archaeological site in the NWT, KhTf-1, is approximately 2.5km east of the airstrip at Mile 222 camp on the Canol Road. It is a traditional site consisting of broken Athapaskan-type snow shoes representing recent Dene use of the region. The site is located on an esker-like feature on the south side of the TsiChu River. Hanks (et. al. 1993) indicates potential in the vicinity for additional archaeological sites.

Hanks (et.al. 1993:5) noted that the Canol Road has been designated a National Historic Site and the NWT has designated it a "Heritage Trail" (Canol Trail). They suggested that the remaining road bed and camps, in concert with the accompanying aboriginal heritage and beautiful mountain terrain was worth protecting and promoting.

Protection and promotion of the recreational and educational values of the Canol Trail is a key component of the Sahtu Dene and Metis Comprehensive Land Claim Agreement signed on September 6, 1993 (DIAND 1993) and signed into legislation the following year in the NWT. The agreement calls for the establishment of a territorial park, to be referred to as the “Doi T’oh Territorial Park and Canol Heritage Trail”. To facilitate creation of this new Territorial Park a Park Reserve has been established over a linear corridor of land described in the Management Plan recently released by the Government of the NWT as starting at Mile 222 and running east to the MacKenzie River and 1 km either side of the median of the Canol Trail (GNWT 2007: Appendix #2).

The formal process of establishing the territorial park has recently begun with a formal request for transfer of the land from Federal Government jurisdiction to the Government of the NWT (Yuill pers. comm. 2007).

In 2005, Tom Andrews of the Prince of Wales Northern Heritage Centre in Yellowknife conducted a study to locate potential ice patch sites, locations where the retreat of glaciers has exposed archaeological material (Andrews pers. comm. 2006). Two such sites were discovered in the eastern Mackenzie Mountains, but are well removed (over 20 km) from the MacTung project area. However, potential for ice patch sites does exist in the vicinity. A final report is not yet available, but site records indicate that KfTe-1 yielded a spirally-fractured caribou bone and has high potential for additional material, while KhTe-1 consisted of a scatter of 13 wood fragments and a single piece of cut caribou antler (NWT Cultural Places Program 2006).

In 2007, Tom Andrews initiated a new 3 year archaeological project focused on high elevation ice patches. Working in partnership with the Tulita Dene Band and the University of Calgary, the new study area is located south of the Canol Trail along the Yukon/NWT border. Five new archaeological sites were discovered and several organic artifacts were recovered during the 2007 field season (Andrews pers. comm. 2007).

2.4.3. Previous MacTung Project Studies

In 1983, Stan Van Dyke conducted an archaeological inventory of the MacTung Project, which included investigations on both sides of the Yukon/NWT border. The development areas examined in 1983 included a mine portal, milling site, new and improved access roads, a water supply line and pump stations, an airfield, a tailings pond and lines, and a camp. The ore body located beneath Mount Allen is in Yukon, but the proposed facilities required for mining and processing at the time were in the NWT. Areas found to be disturbed at the time the 2006 archaeological investigations included the camp (not the same as currently in use), the existing access road, a number of tote roads, several dugouts and similar features. The 1983 investigations involved foot traverses of the proposed road, the perimeter of the tailings pond, the area of the milling plant and the site of the proposed pumping station on nearby Cirque Lake. Areas that were not defined on the ground were subjected to a more generalized assessment (Van Dyke 1984).

Ground reconnaissance included examining exposures and shovel testing on landforms that were characterized by archaeological potential, but lacked natural exposures. Unfortunately, that report does not detail the locations that were tested. One archaeological site was recorded. It is located on a knoll-like feature on the north side of the proposed tailings pond in the Dale Creek valley. Three artifacts were collected from the exposed

area of the site. Van Dyke (1984) described the lithic material of one artifact as a fine grained black rock similar to basalt, and the other two as possibly a greywacke, both types available locally. The lithic material of the two items collected in 2007 was also fine grained and was identified as a type of hornfels (Gebru pers. comm. 2007). As hornfels is a non-descript, fine grained rock exhibiting a concoidal fracturing characteristic, it is likely the three items collected by Van Dyke are also of this material type (McGhee pers. comm. 2007).

Van Dyke (1984) identified a second possible archaeological site on a “tongue like ridge feature which extends into the western margin of Cirque Lake”. As this was outside of his project area, it was judged not to be of concern. In his study, he indicated that the proposed extension and upgrading of the airfield and the Canol Road between Mile 222 and the proposed access road could impact potentially significant historic resources (Van Dyke 1984:12). Van Dyke further determined that should prehistoric sites exist, they would be small, non-residential sites, would be few in number and would be associated with well defined terrain features. The recorded site, KhTg-1, was judged to be of limited value other than to indicate sites are present in the region and further work was not recommended although Van Dyke (1984:14) also stated that KhTg-1 was not examined in any detail suggesting it had not been shovel tested.

In August 2006, Points West conducted a preliminary archaeological assessment of the MacTung project. While no new archaeological sites were encountered, it was recommended that further assessment, including subsurface testing be undertaken on selected landforms considered to have moderate or higher potential for the presence of archaeological sites. It was also recommended that archaeological site KhTg-1 be further assessed through subsurface testing to add to Van Dyke’s earlier assessment.

3. METHODOLOGY – 2007 ARCHAEOLOGICAL INVESTIGATIONS

3.1. *Archaeological Ground Reconnaissance*

Ground reconnaissance involved foot traverses generally less than 5 m apart on narrow ridges and from 5 m to 10 m apart on wider benches or ridges. In areas where vegetation was relatively heavy, shovel tests were excavated at intervals ranging from 10 m to 20 m. Shovel tests were approximately 50 cm by 50 cm and excavated in 5 cm to 10 cm levels to bedrock or sterile gravels. All shovel test locations were recorded using a handheld Garmin GPS 12XL, subsurface deposits were recorded, and photographs were taken of representative shovel tests at each locality.

3.2. *Archaeological Site Assessment*

Site assessment at KhTg-1 involved a detailed surface reconnaissance of the knoll location of the site. Van Dyke (1984) reported the three artifacts he collected all came from the western margin of the knoll. During the surface reconnaissance, a single stone core was found, also on the western portion of the knoll. Following the reconnaissance an arbitrary datum was established using an 8” galvanized spike in preparation for subsurface testing. Subsurface testing was initially proposed to involve up to five 1 m² excavation units or an equivalent number of 50 cm² units. The intent of this approach was to begin with 50 cm² units and expand to 1 m² if cultural material was encountered in any quantity.

As the stone core was located in the general vicinity of the three objects collected by Van Dyke and that locality was considered to be the primary lithic scatter area. The test units were therefore positioned judgmentally around the core to determine if there were any subsurface cultural deposits.

Excavation was by trowel in 5 cm levels with all materials screened through 6 mm (¼ inch) mesh. The first four pits were excavated to a depth of 20 cm below surface. The fifth was terminated at 10 cm below surface once it was clear that the subsurface deposits were identical to those in the first four units and that no cultural material was evident. All test pits were photographed and subsurface deposits recorded. Only one artifact, a stone flake, was found and along with the core, was recorded, collected, labeled and submitted to the Prince of Wales Northern Heritage Centre in Yellowknife.

4. RESULTS OF ARCHAEOLOGICAL ASSESSMENT

All landforms considered to have sufficient potential to justify ground reconnaissance were inspected. For a discussion of archaeological potential determination, the reader is referred to the report on the 2006 investigations (Bussey 2006:10-11). Some areas with low potential were examined in the process of accessing the more sensitive landforms. The following discusses the areas examined and the results of the archaeological investigations. It should be noted that investigations were primarily limited to proposed development areas although if well defined landforms were located immediately adjacent, they were also examined.

4.1. Areas Examined During Ground Reconnaissance

4.1.1. Yukon

Areas walked within Yukon include (Figure 3):

- a series of ridges and knolls located between the waste rock pile and tailings area behind the Main Dam;
- two well defined gravel features (bench and knoll) west of the Saddle Dam;
- the Alternate Mill site;
- the north rim of the creek near the southeast corner of the Borrow Site;
- all breaks in slope and small ridges crossed by the newly constructed access roads; (Note: these are too small to show effectively at the scale shown in Figure 3)
- portions of the ridge on the north side of the valley at the western end of the newly constructed access road.

4.1.2. Northwest Territories

Areas in the NWT that were examined include (Figure 4):

- the western and central portions of a possible new access road alignment option along the north side of Dale Creek valley;
- the rocky saddle on the NWT/Yukon border;
- the western portion of the hill located in the Dale Creek valley and crossed by the existing access road;
- a bench along a portion of the northern slope of the Dale Creek valley below the proposed new access road;
- three knolls along the north side of Dale Creek;

- two localities along the existing access road between Dale Creek and the Canol Road (outside of area shown on Figure 4)
- landforms located within 250 m of either end of the existing airstrip at Mile 222 camp on the Canol Road (outside of area shown on Figure 4).

4.2. *Results of Archaeological Ground Reconnaissance*

4.2.1 Yukon

No archaeological sites were discovered during the ground reconnaissance of the development area within the Yukon. An access road had been constructed down the Yukon side of the border from the exploration camp earlier during the summer. While this was a surprise to the archaeology team it allowed access to all parts of the development area (Photo 1). This road cut through several of the small knolls and ridges being considered for assessment. A visual inspection of the road edges at the breaks in slope revealed no evidence of archaeological material in these exposures.

The Borrow Site area shown on Figure 3 was not in the proposed plans available at the time of the 2007 field visit. Although much of that area is steep terrain and considered to have low potential, there are some discrete features along the streams in the western portion of the area which have some potential and should be examined for archaeological sites in future.

All knolls and ridges between Waste Rock Pile #1 and the tailings pond behind the Main Dam were walked. Two shovel tests were placed 20 m apart along the north rim of the creek at the southeast end of the Borrow site (Figure 3 – A; Photo 2). The soil profile of both pits showed a dark loamy soil with small rocks in the upper 18 cm with rocks increasing in number and size below that.

Five shovel tests were excavated along the east (highest) end of a fairly broad L-shaped ridge feature between Waste Rock Pile #1 and Ravine Dam. Three tests were placed in close proximity on the northern most high point of the ridge (Figure 3-B) where vegetation and soil development was greatest (i.e. 10 cm of moss over 8 cm to 10 cm of fractured bedrock shale). Two additional shovel tests were excavated along the ridge at 20 m and 40 m south-southeast of the previous three. In both cases, fractured shale bedrock appeared immediately below the surface moss.

Two shovel tests were excavated on small knolls below the Main Dam (Figure 3-C, D) and both exhibited heavily fractured shale immediately below the moss. Examination of the subsurface profiles where the new access road had cut across knolls showed that fractured shale bedrock rising to the surface of moss cover was fairly consistent throughout the area (Photo 3).

Insert Figure 3

Insert Figure 4

Foot traverses with approximately 10 m spacing were made across the Alternate Mill Site. The surface of the site was found to be gently sloping and poorly drained. Surface exposure was fairly good which reduced the need for shovel tests at 5 m intervals as initially proposed. Five shovel tests were excavated at 20 m intervals along the south edge of the mill site locality starting at the southwest corner (Figure 3-E). Here again, the fragmented shale appears immediately below the surface moss (Photo 4).

Two well defined gravel features (a knoll and bench) on the west side of the Saddle Dam were also inspected. Both have commanding views to the west down the Yukon valley. Three shovel tests were excavated on the most northerly of the features (Figure 3-F; Photo 5). The sub-surface profiles consisted of 5-8 cm of moss/grass, 7-9 cm of light tan sandy silt overlying grey-brown gravels (Photo 6).

The last area examined in Yukon was a ridge feature at the west end of the newly constructed access road. The road runs across the steep south facing slope of Mt. Allen about 1.5 km northwest of the Main Dam (Figure 3). The majority of the road has no archaeological potential. At the time of the August 2007 study, the road terminated on a northeast – northwest trending ridge along a major stream (Photo 7). This ridge was accessed by helicopter as the road was washed out, and from the air looked fairly level. On the ground, the ridge had more of a slope than originally thought and was considered to be of low potential.

4.2.2. Northwest Territories

No new archaeological sites were discovered during ground reconnaissance in the Dale Creek valley. The alignment of the possible new access road option is mostly situated on steep side slope with little archaeological potential (Photo 8). The archaeology team deviated from the alignment to follow a small ridge feature of small remnant recessional moraine features along the east facing slope from the rocky saddle at the divide on the Yukon/NWT border. A rock overhang encountered near the saddle (Feature 4-G) was checked for possible prehistoric occupation, but no such evidence (i.e. charcoal staining) was observed on the rocks, or in a shovel test excavated at the mouth of the overhang (Photo 9). The subsurface profile of the shovel test revealed moss cover for 5 cm underlain by grey/brown silt/clay gravels.

Two shovel tests were placed 5 m apart on a small gravel bench (8 m by 4 m) (Figure 4-H). Subsurface profiles of both pits showed a moss/grass cover of approximately 2 cm underlain by dark loamy earth with pea gravel to approximately 15 cm depth below surface, then grading into heavier gravels.



Photo 1. View west showing new access road on north side of valley in Yukon



Photo 2. View northwest showing testing on the north rim of the creek.



Photo 3. Typical cross section of knolls and ridges in the development area.



Photo 4. Typical test pit on south edge of alternate mill site.



Photo 5. View southeast showing testing on the bench west of the Saddle Dam.



Photo 6. Test pit on bench west of the Saddle Dam.

As most of the possible access road alignment crossed sloping poorly drained terrain, which has seen considerable disturbance (i.e. bulldozer tracks and cuts), the foot traverses were at the east end of the possible road were diverted to a small open ridge feature closer to Dale Creek. This feature was recommended for additional assessment in the 2006 study and was walked intensively. Although shovel testing was initially proposed the ground surface was found to be sloping and exposures were numerous enough that shovel testing was not considered necessary.

Another area in the Dale Creek valley that had been recommended for assessment in 2006 was a hill feature crossed by the existing access road. Selected transects along the edge of that feature were walked and seven shovel tests were excavated (Figure 4-I,J,K) in areas where surface vegetation was heavy. No prehistoric archaeological material was encountered, but considerable evidence of modern day hunting activities was observed (Photos 10 and 11). The use of the Dale Creek valley for hunting today is a pattern that likely has a long tradition among the First Nations people of the area.

Points West was also asked to assess the existing access road from Dale Creek to the Canol Road as well as both ends of the existing airstrip at Mile 222 camp on the Canol Road. Stan Van Dyke had surveyed the road alignment between Dale Creek and the Canol Road in 1983 and found no evidence of prehistoric sites (Van Dyke 1984: 6).

The majority of the road alignment is on fairly steep terrain with no archaeological potential. This is further compounded by extensive surface disturbance on either side of the road for distances ranging from 8 m to more than 10 m. A stream crossing at GPS coordinates 9V 0458551E, 7018966N (NAD 83) had some potential as there were fairly well drained benches on either side of the creek. These were walked, and while surface exposure was fairly open, no evidence of archaeological material was observed.

Another area along the road which presents fair archaeological potential is a broad terraced area northeast of the junction of the MacTung access road and the Canol Road. This area is used extensively by a local guide outfitter and well worn horse trails follow the terrace edges. The terrace edges were walked for several hundreds of metres and no prehistoric archaeological material was observed. The terrace system south of the MacTung access road is extensive and does have archaeological potential. This potential, however, does not extend the road bed. Any future road improvements extending greater than 20 m from the current road bed in this area should have additional archaeological investigation.



Photo 7. View to North showing the ridge at west end of new access road Yukon.



Photo 8. View south showing slope followed by the possible access road alignment option.



Photo 9. View to north showing testing at mouth of rock Yukon/NWT border.



Photo 10. View west showing Dale Creek valley and recent hunting camp.



Photo 11. View to South showing testing on ridge above Dale Creek.

The last areas in the Northwest Territories that Points West assessed were both ends of the existing airstrip at Mile 222 on the Canol Road. The airstrip itself is 0.73 km long and is oriented east by northeast / west by south west. The eastern end of the strip (Photo. 12) is approximately 173 m from the edge of the Tsichu River and is open terrain with heavy lichen cover. No archaeological material was encountered during foot traverses of that area.

The west end of the airstrip abuts a fairly large wetland about 80 m wide with a well defined terrace on the west edge across from the airstrip (Photo 13). Three shovel tests were excavated at 20 m intervals along the terrace edge. No cultural material was observed and the subsurface profiles of all three pits were similar showing lichen/moss to 2 cm on top of a grayish layer of clay/silt (possibly volcanic ash) grading into grey clay.

Mile 222 camp still retains some historic buildings and artifacts of the Canol project, and figures prominently in the proposed Doi T'oh Territorial Park and Canol Heritage Trail as a location for interpretive signage and a primary control point for visitors to the park arriving via the north Canol Road from Ross River in the Yukon (GNWT 2007).

In addition to the historic features located at Mile 222 camp, a truck park associated with the Canol project was observed approximately 3 km west of the airstrip (Photo 14) and a single Canol era truck was observed at a creek crossing approximately 5 km west of the airstrip (Photo 15). Both these historic features are immediately adjacent to the road and thus vulnerable to negative impact from increased activity along the road.

4.3. Results of Site Assessment, KhTg-1

KhTg-1 is located on the western margin of a well defined gravel knoll on the north side of Dale Creek. Surface vegetation is moderate and dominated by dwarf willow and birch 50 cm to 1 m high. Ground cover below the birch is patchy moss, grasses and lichen. Only a single stone core was discovered during the ground reconnaissance of the knoll and a single stone flake was found in the surface gravels of a test pit 28 cm to the west of the core.

No subsurface cultural deposits were encountered in the five shovel tests and the profile of subsurface deposits was consistent in all shovel tests, revealing grey/brown sandy silt with heavy pea gravel and stones increasing in size and number with depth (Photos 16 and 17).

The stone core exhibits several flake scars on four sides and measures 63 mm x 50 mm x 45 mm. The flake is fairly large and thick measuring 42 mm x 30 mm x 10.5 mm. There are several smaller flake scars on the dorsal surface. Both items are of a dark grey hornfels (Geburu pers. comm. 2007, Photo 18). These appear to be consistent with the three artifacts collected by Van Dyke in 1983 and now housed at the Canadian Museum of Civilization (McGhee, pers. comm. 2007).

Insert Figure 5



Photo 12. East end of airstrip showing Tsichu River and Canol Road crossing airstrip.



Photo 13. West end of airstrip.



Photo 14. View to east showing Truck park west of Mile 222 camp (in background).



Photo 15. View to north showing Canol era truck at stream crossing west of Mile 222 camp.



Photo 16 View to north showing test excavation on KhTg-1 being prepared.



Photo 17 View to north of typical test pit at KhTg-1.



Photo 18 Core and flake collected from KhTg-1 in 2007.

5. CONCLUSIONS AND RECOMMENDATIONS

The 2007 archaeological investigations of the MacTung Project have found that there is little to no archaeological potential in the majority of the proposed mine facilities in the upper alpine valley area within Yukon. No archaeological sites were discovered and there are no previously recorded sites in this area. As a result, conflict with archaeological sites is not expected with the development as proposed in August 2007.

Similarly, no further archaeological investigations are considered necessary in the NWT for the project as proposed in August 2007. There is low archaeological potential along the possible project access road option within the NWT. Archaeological site KhTg-1 is not considered to be of great archaeological significance, however, its location is no longer within any mine related development areas and it is not threatened. Further, Points West has recently been advised mine access from the NWT is no longer being considered. If in future, mine related developments are considered within the Northwest Territories, particularly upgrades to the existing access road, Canol Road or airstrip further work may be required in specific areas. These include the junction of the MacTung access road and Canol Road, historic features along the Canol Road such as the Truck Park and truck at the stream crossing as well as Mile 222 Camp at the airstrip.

A new access road to the mine site is proposed from the Canol Road in Yukon in the vicinity of the Macmillan Pass airstrip via the upper Hess River valley. This proposed alignment has not been assessed for archaeological potential. It is therefore recommended that the new proposed access road be the subject of further archaeological investigations. In addition, there appear to be some well defined ridges along the streams in the western portion of the proposed Borrow Site which should also be investigated.

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