

Appendix 8

- **Ulu Mine Project Archaeological Impact Assessment: Phase I, Quaternary**
Consultants Limited, July 1996.

ULU MINE PROJECT ARCHAEOLOGICAL IMPACT ASSESSMENT: PHASE I

Prepared for

ECHO BAY MINES LTD.

**Quaternary
Consultants
Limited
July, 1996**

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EXECUTIVE SUMMARY

The preliminary heritage resource impact assessment consisted of the investigation of the mine site location, with specific focus upon locations for the proposed components: mine shaft, permanent camp, ore storage facility, and access road from the airstrip and Camp 3. In addition, during the June/July field program, the area north of the Hood River was examined in preparation for determining potential routes for the haul road to Lupin.

Intensive investigations examined the entire area surrounding the preferred locations for the components at the mine site. No archaeological sites were located within the Ulu mine site. The only feature is a recently constructed stone structure on the northeast tip of the northern bedrock ridge. This structure was built by a team of geo-physicists and is known as "The Stone Igloo".

Two archaeological sites were located during the field investigations of areas which may be traversed by the winter haul road. Both are on the banks of the Hood River, adjacent to the upper rapids. MeNu-1 is a small site on the middle terrace on the north side of the Hood River, east of the upper rapids, consisting of two minor lithic chipping stations. MeNu-2 is a large site containing three tent rings and numerous quartz flake concentrations. It is recommended that these sites be avoided during construction of the winter haul road. If engineering requirements necessitate a steel span crossing of the Hood River in this locality, MeNu-2 can be avoided and MeNu-1 can be mitigated.

Quaternary Consultants Ltd. can recommend that development of the mine site components proceed. Further investigation of the south bank of the Hood River is required when the potential haul route locations are determined.

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1.0 INTRODUCTION

Echo Bay Mines Ltd. is initiating the development of a mine north of the Hood River at 66° 54'N and 110° 58'W. Accordingly, Echo Bay commissioned an archaeological impact assessment of areas which may be impacted by the mine development and an associated winter haul road to Lupin. Quaternary Consultants Ltd. of Winnipeg, Manitoba was contracted to undertake this assessment under the terms of NWT Archaeologists Permit #96-831 (Appendix A).

The scope of the project consists of the development of facilities at the Ulu mine site and construction of land linkages between lake ice components of the winter haul road from Ulu to Lupin. Due to logistical timeframes, the project will be undertaken in two phases.

Phase I consisted of archaeological investigation of the mine site location and the attendant components. Within the 20 hectare area of the mine site, it is projected to develop the mine shaft, the permanent camp, and an ore storage facility, as well as internal roads. The mine site will be linked to the airstrip and Camp 3 by a road (approximately four kilometres). Sands and gravels for construction will be obtained from a borrow location on the east side of the esker, lying northwest of Camp 3 which is situated at the northwest end of Reno Lake (Figure 1). In addition, some investigation of potential haul road routes north of the Hood River were undertaken during the first phase (June 28 to July 2, 1996), including an investigation of the entire north side of the Hood River between the upper and lower rapids (Figure 2).

Phase II will examine areas of potential impact along route options for the haul road between Lupin and the Hood River. As the road will be predominately routed over ice, the land linkages are a small portion of the entire route. Impact potential can occur at the land/ice interfaces as well as aggregate extraction areas. This will be assessed in August, 1996.

2.0 METHODOLOGY

2.1 Field Methodology

The initial investigation began with low-level helicopter flights across the Ulu development area. This was followed by foot survey throughout the impact zones. In areas where the siting of facilities was constrained by topography and/or resource locations, i.e., the mine site and road linking the mine to Camp 3, the foot survey consisted of parallel traverses. Land topography regulated the distance between traverses, as well as the linearity of the traverse. In most instances, the parallel traverses were fifteen to twenty metres apart. Often, traverses took place in triangular sectors of the area due to the configurations of the bedrock ridges. Shovel testing had been anticipated in locations of soil aggradation. No such locations were encountered.

Where impact zones had not been delineated, i.e., potential haul road routes from the Hood River to the Ulu mine site, foot survey was conducted according to topography. Within each investigation sector (Figure 2), heights-of-land were investigated and used as vantage points to scan the surrounding area for cultural features. Locations which provided good views of possible game trails and those with campsite potential were intensively investigated, again by parallel foot traverses.

When the foot survey encountered isolated knolls, the investigation pattern consisted of walking spiral traverses around the knoll to the summit. In the case of linear heights-of-land, the traverses consisted of a switchback zigzag pattern up and down each side of the ridge.

The primary goal was the identification and demarcation of heritage resources. When archaeological sites were encountered, they were surveyed and extensively flagged for avoidance. As most components have a degree of flexibility for their placement, avoidance is deemed to be the optimum form of mitigation. Echo Bay Mines Ltd. concurred with this strategy, noting that no component within the mine site complex has an absolutely predetermined location. The shaft location is the most constrained, but even that could be relocated slightly to avoid heritage resources if any were to be encountered at the preferred location.

Mitigative excavation will be considered only in cases where avoidance is not feasible and only after consultations between Echo Bay Mines Ltd., the consulting archaeologist, and the Arctic Archaeologist, Prince of Wales Northern Heritage Centre. Curation of artifacts from archaeological sites will be minimal during both phases, restricted to diagnostic specimens and/or organic artifacts which would require immediate conservation to mitigate deterioration.

2.2 Laboratory Methodology

All archaeological sites within Canada are designated by a uniform system based upon latitude and longitude (Borden 1954). A four-letter identifier indicates an area of 10 minutes latitude by 20 minutes longitude (north of 62°) or an area of 10 minutes latitude by 10 minutes longitude (south of 62°). Within this block, sites are numbered sequentially in the order of their discovery. Site discoveries (location, type of site, features, cultural identity) are recorded with the Archaeological Survey of Canada and that agency assigns the sequence number.

Curated artifacts are brought to Quaternary Consultants laboratory facilities, where they are cleaned and sorted by material class. All artifacts are identified by the lab personnel to the limit obtainable by available reference works and staff expertise. Material of the same type within the same collection unit and level are combined under a single catalogue number.

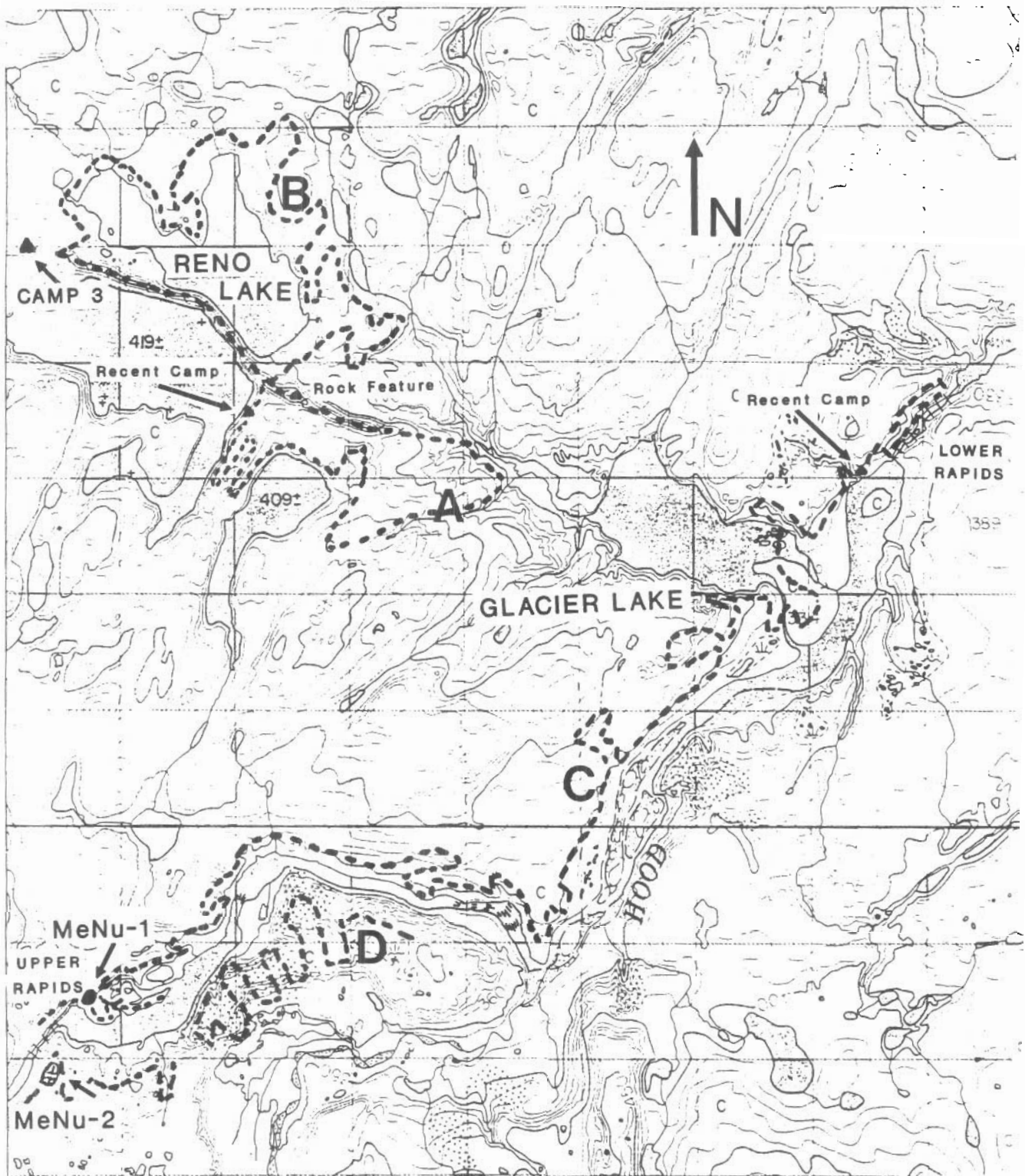


Figure 2: Potential Haul Road Route Investigations (Scale 1:50,000)

The catalogue number consists of the Borden designation for the site and a sequential number for permanent identification. All pertinent data associated with the artifact is entered into the computer cataloguing system. The cataloguing system is based upon the Canadian Heritage Inventory Network (CHIN) system (Manitoba Museum of Man and Nature 1986; Kroker and Goundry 1993:Appendix B). The computer cataloguing program is derived from **DBASE3®** and generates individual artifact catalogue cards.

Processed artifacts are prepared for storage by inserting the specimens and the catalogue card into standard plastic storage bags, then stapling the bags closed. At the end of the project, all recovered artifacts (Appendix B) will be delivered to the Prince of Wales Northern Heritage Centre.

3.0 OBSERVATIONS

Some impact had occurred prior to the onset of the archaeological investigations:

- the establishment of Camp 3 at the northwest end of Reno Lake (Plate 1);
- the construction of the airstrip (Plate 2) and the road connecting it with Camp 3;
- the construction of the road between the airstrip and the mine site which is in progress (Plate 3);
- a four-metre wide road to the northern end of the esker for the establishment of the powder magazine; and
- excavations for aggregate on the east side of the esker north of Camp 3 (Plate 4).

3.1 Ulu Mine Site Location

As each of the components at the mine facility had a placement which was preferred but not absolutely mandated, the entire area was examined in case archaeological discoveries would result in the relocation of individual components.

The Ulu mine location is on a glacially modified bedrock outcrop (Plate 5) bounded by a linear lake (West Lake) on the west (Plate 6), a small semi-circular lake (East Lake) on the southeast, Ulu Lake on the northeast, and a drainage system to the north. The terrain is rugged, consisting of exposed bedrock, usually modified by frost action into blocky, angular boulders, relocated bedrock boulders, and occasional glacial erratics (Plate 7). A small area overlooking West Lake is a swale of soggy sedge tundra (Plate 8), as are large portions of the shores of the lakes. Throughout the area, excluding the exposed bedrock, colonizing vegetation is present consisting of *Dryas integrifolia* (dryas), *Saxifraga oppositifolia* (purple saxifrage), *Saxifraga tricuspidata* (three-toothed saxifrage), *Betula glandulosa* (dwarf birch), *Salix* spp. (willow), *Empetrum nigrum* (crowberry), *Arctostaphylos uva-ursi* (bearberry or kinnikinnick), *Arctostaphylos rubra* (alpine or red bearberry), *Ledum decumbens* (Labrador tea), *Epilobium* (fireweed), *Draba* spp. (mustard family), *Eriophorum* (cotton grass), and various species of sedge (*Carex* spp.) and grasses (Gramineae) (Johnson 1987). A male and female caribou were observed at the site. However, there are minimal food resources for larger concentrations of animals.



Plate 1: Camp 3



Plate 2: Airstrip



Plate 3: Construction of Road to Mine Site



Plate 4: Borrow Excavations on East Side of Esker



Plate 5: Ulu Mine Site Locality



Plate 6: West Lake



Plate 7: General Terrain at Mine Site



Plate 8: Sedge Tundra near West Lake

No archaeological resources were located at the mine location. Considerable evidence of geological investigation is present—survey stakes, drilling locations, and flagging tape. The most esoteric discovery is a recently-built stone structure (Plate 9), measuring 3.1 metres by 2.1 metres and standing 1.1 metres high (Figure 3). This structure is built of more-or-less tabular rocks and has a narrow opening to the northeast. Associated debris consists of black electrical tape and yellow plastic-coated electrical instrument wire. The structure was built by a field team of geo-physicists and is colloquially known as 'The Stone Igloo' or 'The Physicists Fort'.

The route of the road under construction between the mine location and the airstrip was traversed. The route extends south around the base of West Lake, northwest up the ridge, southwest down the ridge to a stream crossing and west up the next ridge to the airstrip (Figure 1). The terrain was rugged with boulder ridges crossing the route at angles. No evidence of cultural activity prior to mineral exploration is present.

The road between the airstrip and Camp 3 had been built using aggregate extracted from the east side of the esker northwest of Camp 3. In addition a narrow road had been bulldozed to the northern end of the esker for the powder magazine. The edges of the borrow location were examined as were the peripheries of all access roads on the esker. The unmodified western portion of the esker was investigated. No evidence of archaeological resources is present.

3.2 Potential Haul Road Routes

Several potential routes are under consideration for the winter haul road. While on site for the archaeological impact assessment of the mine location, foot survey was undertaken in several areas (Figure 2).

3.2.1 Survey A

Survey A examined the esker lying southeast of Camp 3, as well as a sector lying to the west of the esker. The esker has a sharp spine (Plate 10) and rises approximately 25 metres above the level of the lakes on either side. A slightly higher knoll occurs at the southeast end of the lakes and has a rock feature at the summit (Plate 11). The rock feature probably originated as a concentration of large cobbles adjacent to a large boulder exposed at the ridge of the esker by erosion. Ground squirrels have placed burrows under the rock and their presence has resulted in lush growth of grass in the immediate vicinity. At some point in the recent past, additional cobbles have been haphazardly piled on the original concentration, producing a roughly circular, low mound. Many of the upper cobbles have lichen on the underside, with the upper surfaces totally bare. The mound is not high enough to be observed unless one is within ten metres, or flying directly overhead at a low altitude. As with the stone structure at the mine site, this feature has probably been constructed by field exploration crews.



Plate 9: Recent Stone Structure

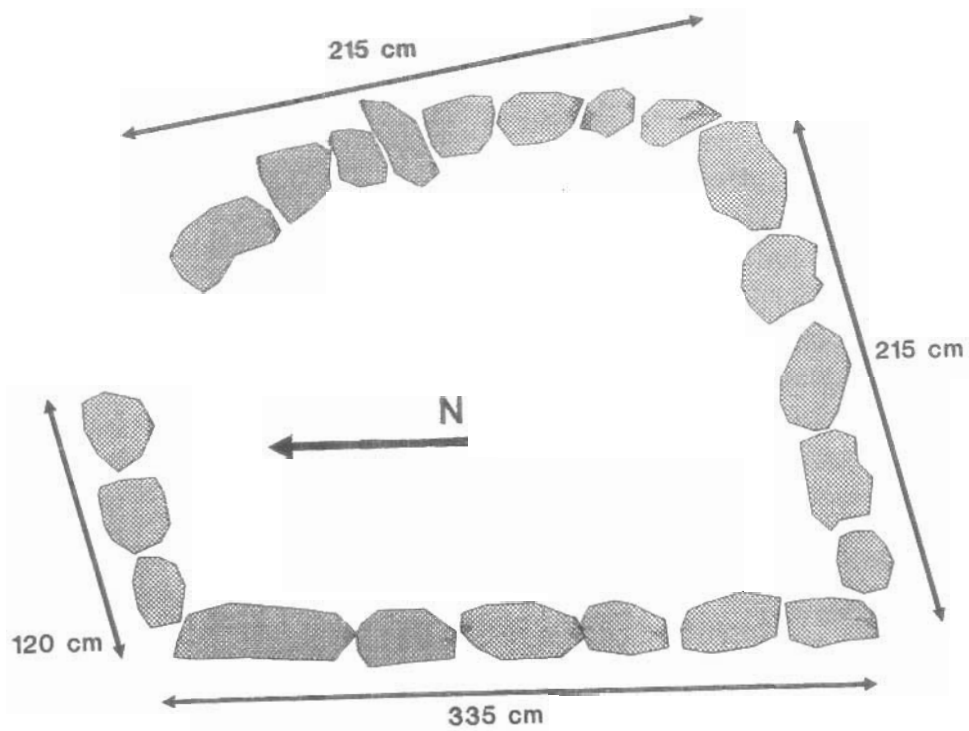


Figure 3: Planview of Recent Stone Structure

The survey continued eastward to a stream valley which fed into 'Glacier Lake' (Plate 12). This lake apparently is spring-fed throughout the year, resulting in continual accretion of ice—such that it does not totally melt in any given summer. Turning westward, the investigation extended to the height-of-land south of the small lake south of Reno Lake. The survey continued northward, roughly paralleling the esker and investigating the adjacent lake shores. Slight vegetational impact showed the route of the winter road between the esker and the small lake and a concentration of recent debris was observed on the lake shore immediately south-southwest of the esker. This debris consisted of tin cans, bottles, broken equipment parts, and milled wood fragments. This location is marked on Figure 2.

3.2.2 Survey B

Survey B investigated the area east of Reno Lake, as this is another possible route for the winter haul road. The northeast end of the lake grades into a low, marshy sedge bog, with the approach to the central height-of-land cut by frost-altered bedrock outcrops (Plate 13). The central plateau is relatively flat between knolls and has a well established grass/sedge vegetational community. The investigations continued to the confluence of streams at the start of the main valley leading into 'Glacier Lake'. These valleys are deeply eroded through unconsolidated silts, sands, and gravels. The southern end of this survey route turned west to arrive at the esker at the southeast end of Reno Lake. No evidence of cultural activity was observed.

3.2.3 Survey C

As the location of the crossing of the Hood River has not been determined, it was decided to investigate the entire north side between the upper and lower rapids (Figure 2). The entire distance was overflown by helicopter, prior to the initiation of foot survey at the upper rapids. During the overflights, no landforms stood out as very high potential locations for cultural activities. No cultural features such as tent rings were observed. The north edge of the valley is considerably displaced from the river channel, up to a kilometre in places. A fairly well defined middle terrace, at an elevation of 350 metres above sea level, was chosen as the survey focus, with excursions to the river channel to investigate noteworthy landforms.

The survey of the north side of the Hood River (Survey C) was concentrated on the middle terrace, with occasional forays to the upper plateau or the river bank where features such as fast water or headlands contained some degree of potential for cultural evidence. Most of the area was vegetated with sedge, grass, dwarf birch, decumbent willows, and numerous species of herbs. Promontories and headlands tended to be remnants of till deposition and were more sparsely vegetated, allowing visual inspection of the soil.

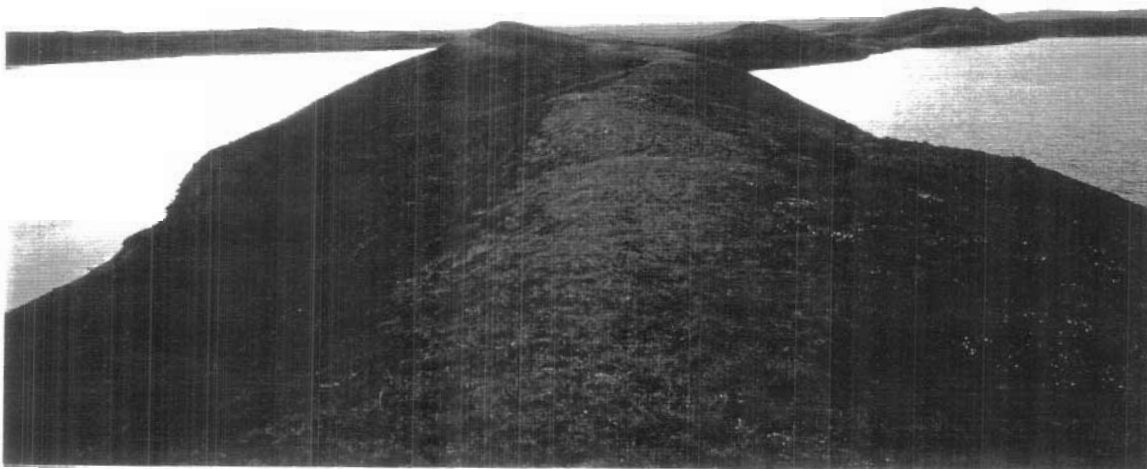


Plate 10: Esker at Reno Lake



Plate 11: Rock Feature on Esker



Plate 12: Glacier Lake



Plate 13: Bedrock Outcrops East of Reno Lake

A small archaeological site was located on the middle terrace northeast of the upper rapids on the Hood River at 66° 47' 47"N/110° 59' 02"W. This site, MeNu-1, occurs among large glacially-transported bedrock boulders at the edge of the terrace, overlooking the river. The site consists of two small clusters of quartz flakes, the residue from tool manufacture. The first locus covers an area of 15 square metres, centred around and between two large flat-topped boulders (Plate 14). Seven widely spaced quartz flakes were observed, as well as some tabular shale flakes and a possible quartz utilized flake, which appeared to have slight wear (or ventification ?) on the edge showing traces of hackle marks. All artifacts were left *in situ*. The second locus consisted of a more concentrated scatter of quartz flakes 74 metres north of Locus 1. The flakes surrounded a flat gabbro cobble embedded in the sandy gravel which may have served as an anvil (Plate 15). Both loci would have resulted from a hunter stationed on the edge of the terrace chipping a stone tool while he watched for game. The flakes would derive from quartz pebbles which can be found in the till deposits.

No further evidence of any cultural activity was encountered during the foot survey until reaching the last stream channel entering the Hood River just upstream from the lower rapids. A recent campsite location (or at least the garbage pile resulting from the campsite) was observed on the eastern slope near the channel mouth (Figure 2). The debris consisted of rusted (and possibly burned) tin cans and bottles. Some of the cans still have legible labels—Sunkist and Squirrel Peanut Butter. Others, such as sardine and condensed milk tins, are identifiable by shape.

The foot survey terminated at the lower rapids with investigation of the bank adjacent to the river as well as the upper plateau. The bank is a saturated sedge tundra due to melt runoff from the *zaboi* on the valley wall. The slope to the upper plateau is steep and not easily traversable. For portage purposes, the south bank of the river would be preferable.

3.2.4 Survey D

The final component of the Phase I field investigations was a foot survey of the south side of the Hood River, beginning at the upper rapids and extending nearly to the confluence of the river from the south (Figure 2). Generally the area is characterized by a flat upper plateau composed of unconsolidated sands and gravels, steep slopes to the river valley, and extensive erosional stream valleys (Plate 16).

An extensive archaeological site was located on the upper plateau overlooking the upper rapids. The site is designated as MeNu-2 and occurs at 66° 47' 28"N/110° 59' 26"W. The elevation is 390 metres above sea level, approximately 30 metres above the rapids. The large site covers an area at least 75 metres by 75 metres. Portions of the site are vegetatively covered with dwarf birch, dryas, and grass, precluding visual inspection of the surface. Due to the large number of cultural identifiers observed in non-vegetated areas, no shovel-testing was undertaken.



Plate 14: MeNu-1: Locus 1 Chipping Station



Plate 15: MeNu-1: Locus 2 Chipping Station

The site contains three distinct tent rings and numerous concentrations of quartz flakes (Figure 4). Most of the features are on the north edge of the plateau, overlooking the rapids, or the east side of the plateau, overlooking the Hood River Valley. The interior portion of the site was the most heavily vegetated and, therefore, additional flake concentrations probably are present but were not readily observable during the brief field survey of the site.

The three tent rings were similar in appearance, roughly oval with a length of approximately 2.5 metres. Tent Ring #1 occurs on the edge of the plateau, forty-two metres west of the arbitrary site datum at the eastern end of the plateau. A shallow gulley (approximately 100 cm wide and 25 cm deep) occurs on the south side of the tent ring. This gulley extends across the tip of the plateau. The measurements of the tent ring are 260 cm by 195 cm, with an orientation NW/SE. The cobbles making up the ring are generally oblong and average 20 to 30 cm in length (Plate 17). The cobbles are partially embedded in the soil and the exposed surfaces are heavily lichen-encrusted.

Tent Ring #2 is also on the edge of the plateau, seven metres further west. This ring appears to have been partially cannibalized, as only the eastern half of the oval is present (Plate 18). The dimensions are 220 cm long and $160 \pm$ cm wide, with an outlier cluster of cobbles at the north end. As with Tent Ring #1, the cobbles are embedded and lichen-encrusted.

Tent Ring #3 is located on the south side of the shallow gulley, approximately 8 metres west of Tent Ring #2. This tent ring has the same NW/SE orientation as the other two features and is more circular—230 cm by 200 cm (Plate 19). The cobbles are embedded and the southeast corner is obscured by birch.

No artifacts were readily observable in the vicinity of the tent rings, due to the almost total ground cover. Quartz flake concentrations (Plate 20), as well as isolated flakes, were observed in the numerous blowouts and bare areas, especially at the periphery of the plateau (Figure 4). As the focus of the survey was the identification and demarcation of archaeological sites, only a single artifact was curated from this site. MeNu-2/1 is a mid-blade section of a projectile point made of white quartzite (Plate 21). The artifact measures 25.3 mm long, 7.2 mm thick, and 24.0 mm wide (at maximum width). The artifact has been bifacially flaked, with expanding, medial, lamellar flake scars on the body. The specimen, lacking the hafting component, is not readily identifiable to a specific cultural tradition. The flaking on the midsection resembles that on a projectile point illustrated by Gordon from Migod (1976:Plate 22a). He has identified this as Middle Thaltheilei with dates of 100 B.C. to A.D. 500. The degree of lichen encrustation on the tent rings, assuming the projectile point and the rings are contemporaneous, suggests considerable time depth. The site is very tentatively identified as Middle to Late Thaltheilei, circa A.D. 100 to 1000.

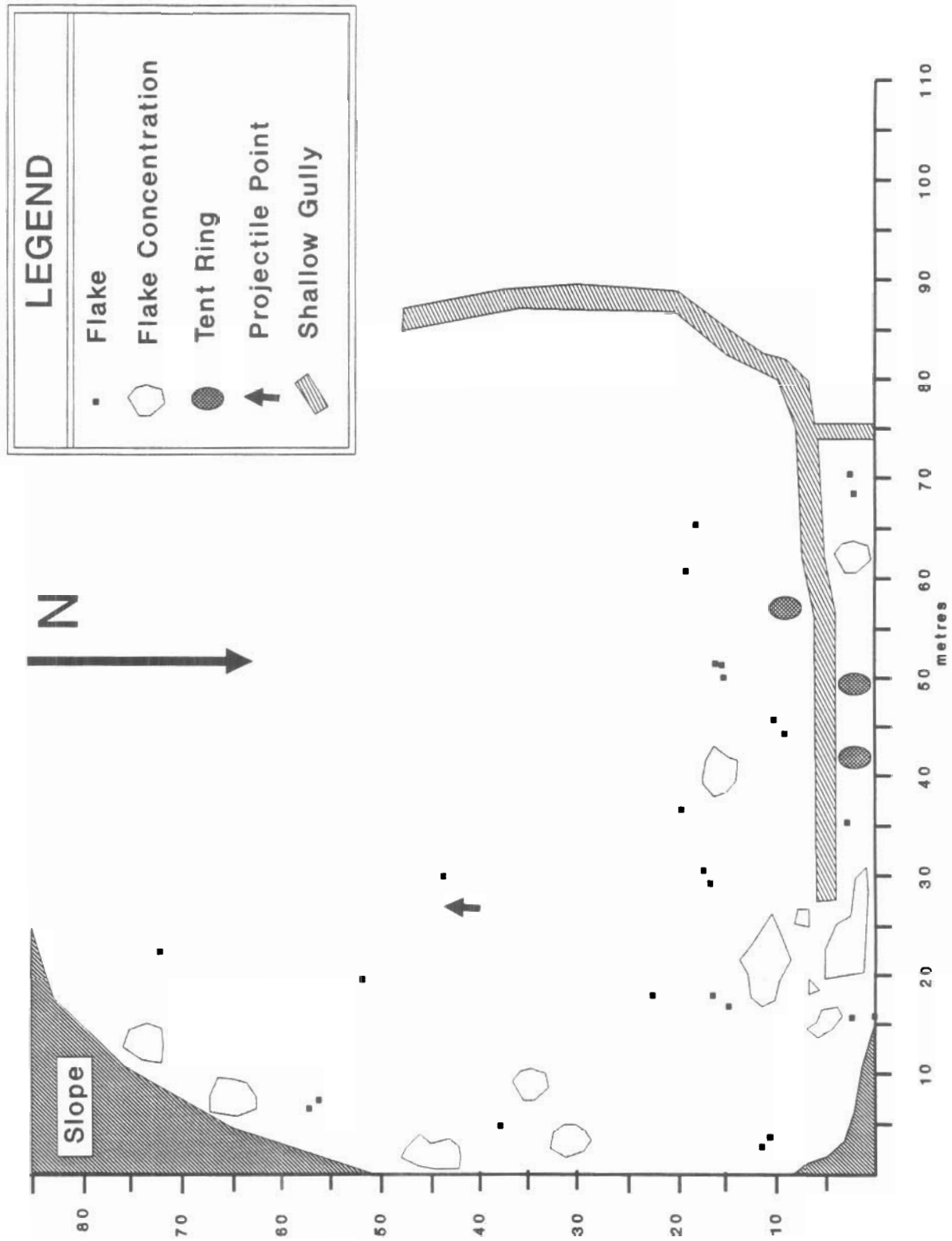


Figure 4: Map of MeNu-2



Plate 16: South Side of the Hood River

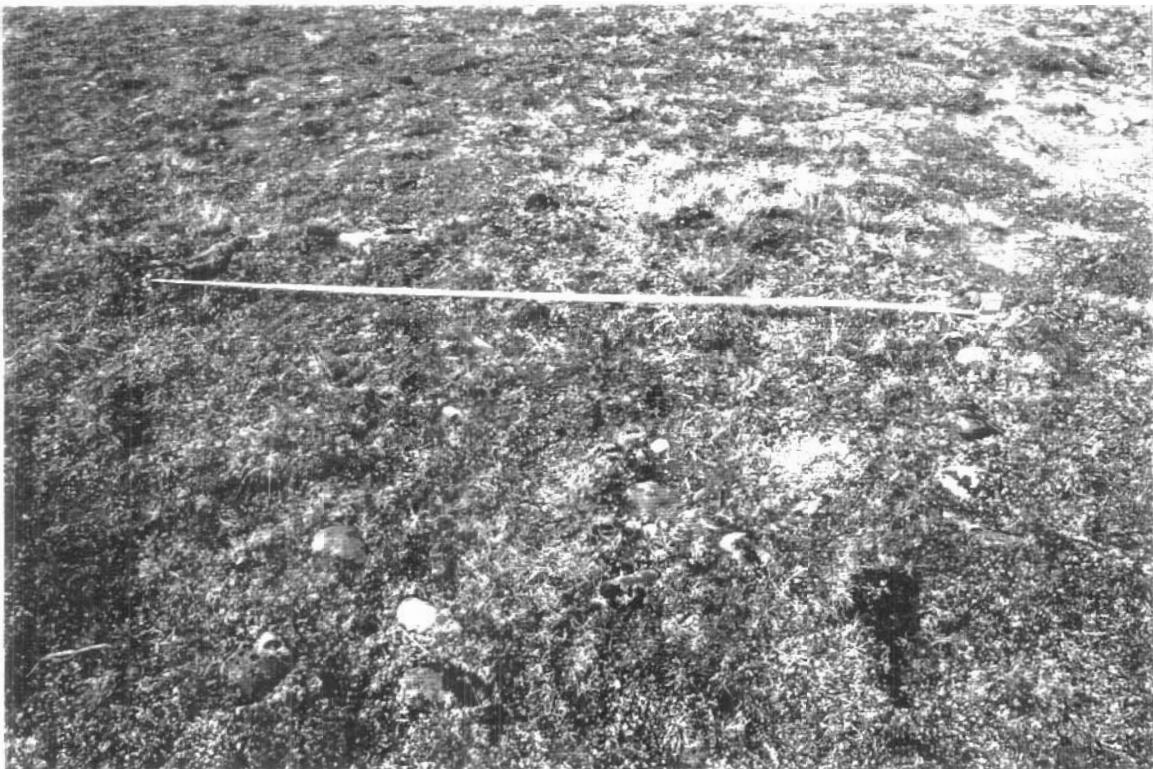


Plate 17: MeNu-2: Tent Ring #1

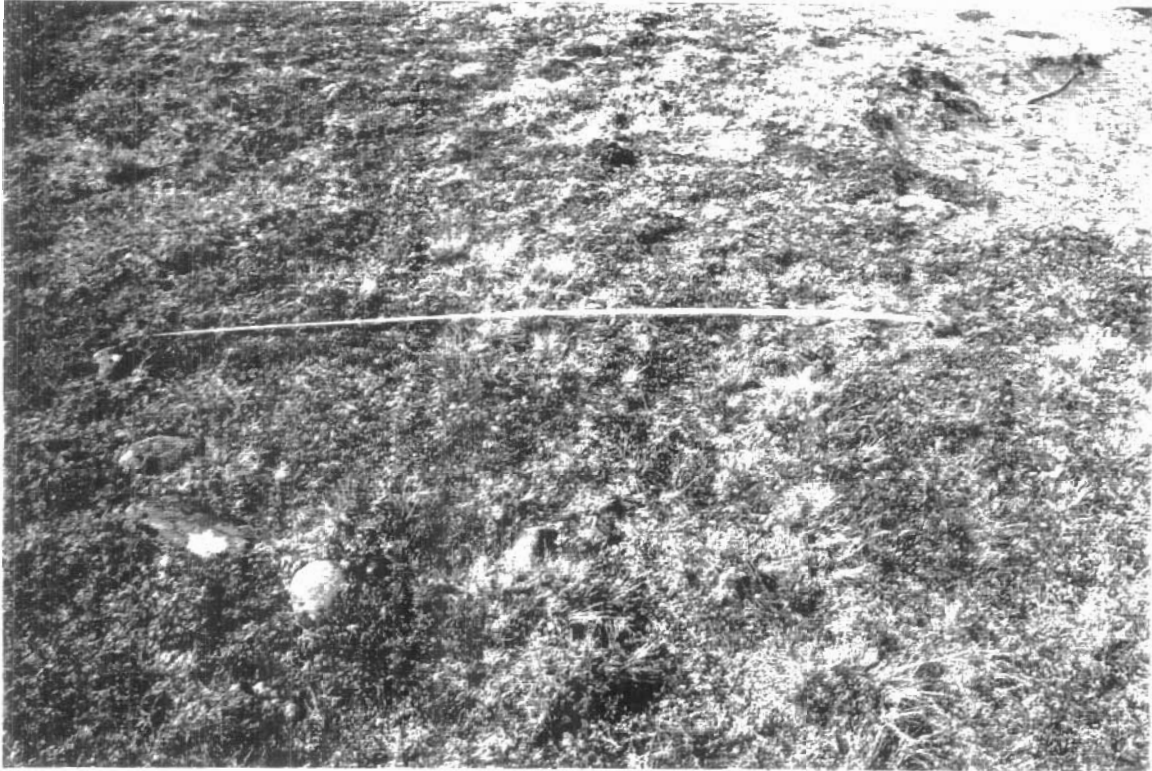


Plate 18: MeNu-2: Tent Ring #2



Plate 19: MeNu-2: Tent Ring #3

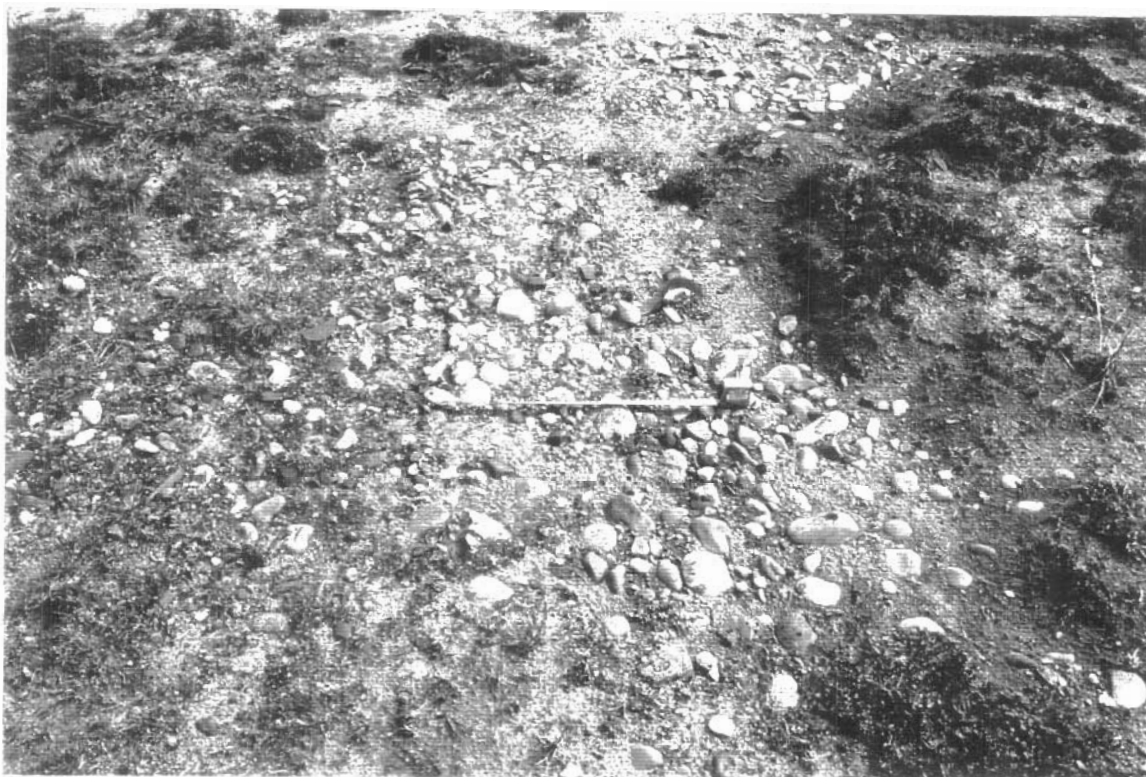


Plate 20: Concentration of Quartz Flakes at MeNu-2

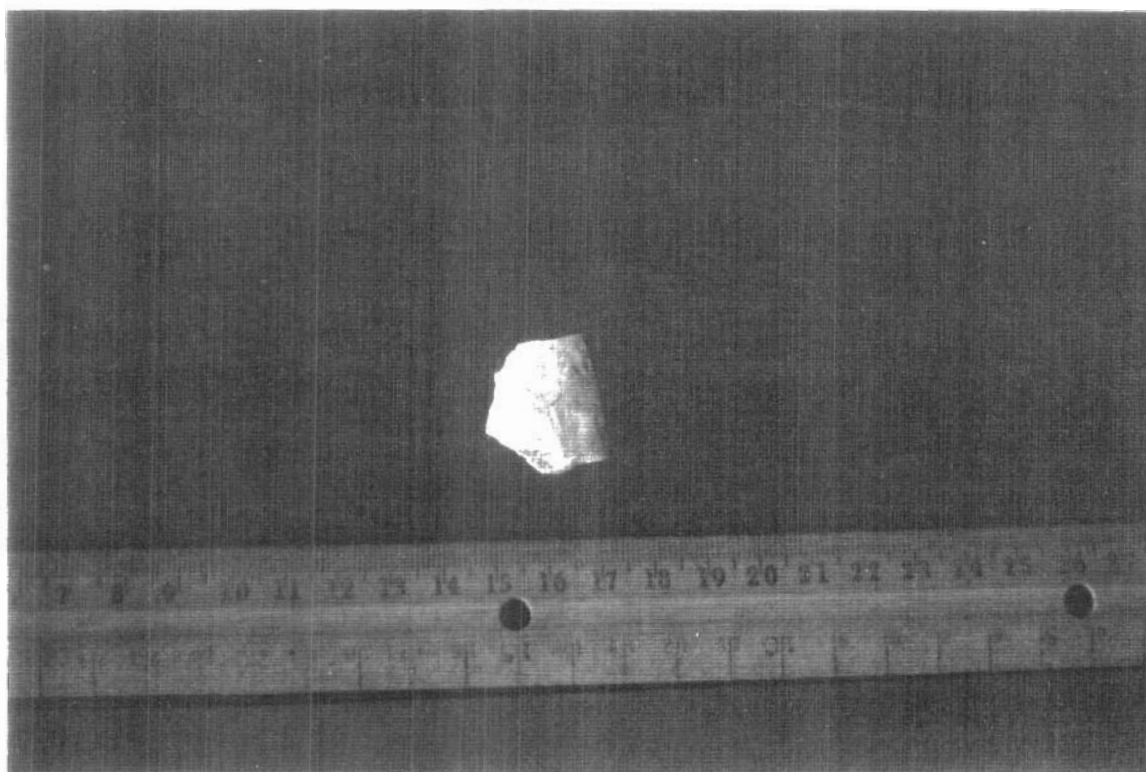


Plate 21: Projectile Point Fragment from MeNu-2

4.0 RECOMMENDATIONS

As a result of the intensive foot survey of the Ulu Mine locality and the absence of any archaeological evidence, Quaternary Consultants Ltd. **can recommend that development of the mine site, collateral facilities, and permanent campsite can proceed.**

Investigations of the esker to the west of Reno Lake and the uplands to the east of Reno Lake provided no evidence of archaeological sites within these two potential haul route corridors past Reno Lake. Quaternary Consultants Ltd. **can recommend that either route can be used without impact upon heritage resources.**

Investigations at the Hood River resulted in the discovery of a minor archaeological site on the north side on the middle terrace, immediately east of the upper rapids. If, for engineering reasons, this location is to be used for the Hood River crossing of the winter haul road, mitigation would be a viable option. The small size of the site means that mitigative recovery of archaeological data would be relatively quick. A much larger and culturally more significant site was recorded on the upper plateau on the south side of the river overlooking the upper rapids. Mitigative time and costs would be extensive. Therefore, Quaternary Consultants Ltd. **recommends that this location be avoided during construction of the winter haul road.** If this location is chosen for a steel span crossing of the Hood River, it could occur at the middle terrace level, below the site on the upper plateau. However, care would need to be exercised to avoid destabilizing the slope which would result in the archaeological site slumping downhill due to erosion.

The survey of the south side of the Hood River was terminated due to logistical considerations before the entire distance between the rapids had been examined. Quaternary Consultants Ltd. **recommends that further investigation of the south side of the Hood River occur, after route options have been determined.**

5.0 BIBLIOGRAPHY

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1976 Migod - 8,000 Years of Barrenland Prehistory. National Museum of Man, Archaeological Survey of Canada, *Mercury Series, Paper No. 56*.

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1993 *Archaeological Monitoring and Mitigation of the Assiniboine Riverfront Quay*. The Forks Renewal Corporation, Winnipeg.

Manitoba Museum of Man and Nature

1986 *Guides and Manuals for Processing Archaeological Materials*. E.L. Syms (Ed.), Winnipeg.

APPENDIX A
NWT ARCHAEOLOGISTS PERMIT

**NORTHWEST TERRITORIES ARCHAEOLOGISTS PERMIT**

#96-831

Under the authority of the *Northwest Territories Act* and the *Archaeological Sites Regulations*, authorization is granted

To: Sid Kroker

Affiliation: Quaternary Consultants Ltd., Winnipeg, Manitoba

Representing: Echo Bay Mines Ltd.

Name of project: **Ulu Mine Site Project**

For the purpose of: Survey, including assessment and mitigation, of the archaeological resources on the Ulu Gold Property, north of the Hood River and west of Bathurst Inlet at approximate coordinates 66°52'30" North, 111°00'10" West. The work includes but is not limited to survey and mitigation of the following areas: the mine site and permanent camp; the ore storage facility; aggregate borrow locations; the access road between the mine site and Reno Lake (Camp 3); selected locations along the road route from Lupin to Camp 3, in particular the long esker north of Kathawachaga Lake and Lupin's laydown area; the Hood River crossing for a distance of a kilometre on either side of the crossing; the esker north of the Hood River crossing which is part of the proposed road route. Mitigation measures are to be proposed and approved by the Prince of Wales Northern Heritage Centre.

The artifact repository is to be decided by the Inuit Heritage Trust as per Article 33.7.6 of the Nunavut Final Agreement.

The permittee shall abide by the attached Permit Requirements. This Permit is valid from 21 June 1996 to 31 December 1996. This Permit is issued in the City of Yellowknife, Northwest Territories on

July 16, 1996

Distribution of documentation and/or submission of artifacts: The permittee shall distribute the listed materials to the agencies identified below according to this schedule.

Repositories

Prince of Wales
Northern Heritage
Centre

Canadian Museum
of
Civilization

Other

Required by 31 December			
1. Report	x	x	Inuit Heritage Trust
2. Site forms and maps		x	
3. Field notes	x		Inuit Heritage Trust
4. Artifacts or artifact catalogue and loan arrangements	x		
Required by 31 September			
5. One-page non-technical summary and 2 photos	x		

Commissioner of the Northwest Territories

Addresses for submissions

Prince of Wales Northern Heritage Centre
Box 1320
Yellowknife NT X1A 2L9

Inuit Heritage Trust
Box 2080
Iqaluit NT X0A 0H0

Sahtu Secretariat Incorporated
Box 155
Deline NT X0E 0G0

Attachments: Archaeologists Permit Requirements

Canadian Museum of Civilization
Box 3100, Station B
Hull PQ J8X 4H2

Inuvialuit Land Administration
Box 290
Tuktoyaktuk NT X0E 1C0

Dogrib Treaty 11 Council
Box 24
Rae/Edzo NT X0E 0Y0

Environmental Impact Screening Committee
Box 2120
Inuvik NT X0E 0T0

Gwich'in Tribal Council
Box 1509
Inuvik NT X0E 0T0

Yellowknives Dene First Nation
Box 2514
Yellowknife NT X1A 2P8

4292/0294

APPENDIX B
CATALOGUE OF ARTIFACTS

SITE: MeNu-2 (Upper Rapids)
LOCATION: 66° 47' 28"N/110° 59' 26"W

Artifact #	NAME	MATERIAL	LOCATION	DATE
MeNu-2/1	Projectile Point	Quartzite	43S/25W	19960702