

**AN ARCHAEOLOGICAL IMPACT ASSESSMENT FOR  
THE PROPOSED WILLIAMS CREEK COPPER OXIDE PROJECT,  
WILLIAMS CREEK VALLEY, NEAR CARMACKS,  
YUKON TERRITORY**

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23021-132 Ave, Maple Ridge B.C.**

**January 31, 1993**

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**January 31, 1993**

In fulfillment of Yukon Tourism, Heritage Branch Permit No. 92-15ASR.

## **ACKNOWLEDGEMENTS**

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Ms. Ruth Gotthardt and Mr. Jeff Hunston of the Yukon Tourism, Heritage Branch deserve thanks for their prompt processing of our permit application, site forms and for providing information regarding previous archaeology and local contacts.

We alone are responsible for any errors and/or short-comings in this report. We would also like to stress that the opinions and recommendations presented herein are ours, and they may, or may not, reflect those held by Western Copper Holdings Limited, Yukon Tourism, Heritage Branch, or the Little Salmon and Carmacks First Nations Band.

## SYNOPSIS

In August, 1992, Western Copper Holdings Ltd., retained Antiquus Archaeological Consultants Ltd., to conduct an Archaeological Impact Assessment of the Williams Creek Valley, Yukon Territory. Fieldwork was conducted between August 11 and 14, 1992, by Mr. Mike Rousseau and Mr. Peter Merchant.

Two historic archaeological sites were identified and recorded in the lower portion of the Williams Creek system.

**Site 115-I/07/001** is located about 1.25 km southwest of the confluence of Williams Creek and the Yukon River at the confluence of Williams Creek and one of its major tributaries. It consists of a partially collapsed log cabin, a partially collapsed log barn, and a substantial quantity of associated domestic and mining-related refuse and artifacts. The nature of the cabin and barn construction and the associated refuse suggests that it was occupied primarily during the 1930s and 1940s. A mine adit was identified on the north side of the creek about 400 m west of this historic area along a well-defined trail.

**Site 115-I/07/005** is located along the bank of the Yukon River about 1.25 km southeast of its confluence with Williams Creek. It lies along what Wilfred Charlie called the old "Dawson Trail". It consists of the collapsed remains of a large historic log cabin. It is connected to 115-I/07/001 by a horse trail which strongly suggests that the two sites are related. It seems that this site represents a supply and ore transfer station for the mine which was facilitated by river transport.

Both of these sites are in danger of adverse impacts due to land altering activities associated with the proposed construction of a water pipeline and possible access roads. Although these sites are considered to be of only minimal significance we believe that impacts to them can be avoided without extensive cost or inconvenience. We recommend that both sites be avoided by all land-altering activity, particularly access road construction. If this is not possible then a systematic data recovery program should be carried out for these sites. Such a study should include detailed architectural sketching, mapping and artifact collection within portions of the site(s) likely to be impacted. This ideally should be conducted by a qualified archaeologist with experience in recording historical sites.

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# **AN ARCHAEOLOGICAL IMPACT ASSESSMENT FOR THE PROPOSED WILLIAMS CREEK COPPER OXIDE PROJECT, WILLIAMS CREEK VALLEY, NEAR CARMACKS, YUKON TERRITORY**

## **1.0 INTRODUCTION AND BACKGROUND**

Between August 11 and 14, 1992, Antiquus Archaeological Consultants Ltd., conducted an archaeological impact assessment of The Williams Creek Copper Oxide Project, Yukon Territory. This investigation was carried out on behalf of Western Copper Holdings Ltd., 900-850 West Hastings Street, Vancouver, V6C 1E1. Ms. Ruth Gotthardt of the Heritage Branch, Yukon Tourism, oversaw this study on behalf of the Yukon Government. The investigations were conducted by archaeologists Mike K. Rousseau (M.A.) and Peter S. Merchant (B.A.) under Yukon Tourism, Heritage Branch Permit No. 92-15ASR.

The primary objectives of this study were to identify all archaeological (historic and prehistoric) concerns located within the proposed project impact area, to assess the relative significance of these sites, and to determine the nature and assess the intensity, magnitude, and severity of potential adverse impacts which may occur as a result of the proposed land-altering development.

## **1.1 Natural Setting**

The Williams Creek drainage area is located about 38 km north-west of Carmacks, on the west side of the Yukon River (Figures 1 to 4). The valley runs east-west terminating in the Yukon river. The main valley is U-shaped with steeper relief on the south face. Few floor-side junctures and suitable habitable glacial terraces occur. The lower portion of the Williams Creek Valley is a low delta, with extensive marshy areas and numerous low rock outcrops.

The drainage area is located on the northeast flank of the unglaciated Dawson Range which is part of the Klondike Plateau -- an uplifted erosion surface dissected by narrow valleys. The topography is low with local relief of approximately 300 metres and a maximum elevation of 915 metres above sea level. The area is unglaciated with the exception of weak valley glaciation resulting in small lateral moraines and kame terraces. Overburden is generally less than 1 metre in thickness and consists of moss and organic material overlying 5 to 20 centimetres of white felsic volcanic ash with 10 centimetres of organics.

Dominant flora consists of dwarf willow and alder on south-facing slopes and in the moist valley bottom. White spruce and poplar occupy the dryer well drained soils of the hillside. Water and timber suitable for historic mining activities are available locally (Archer Cathro 1991).

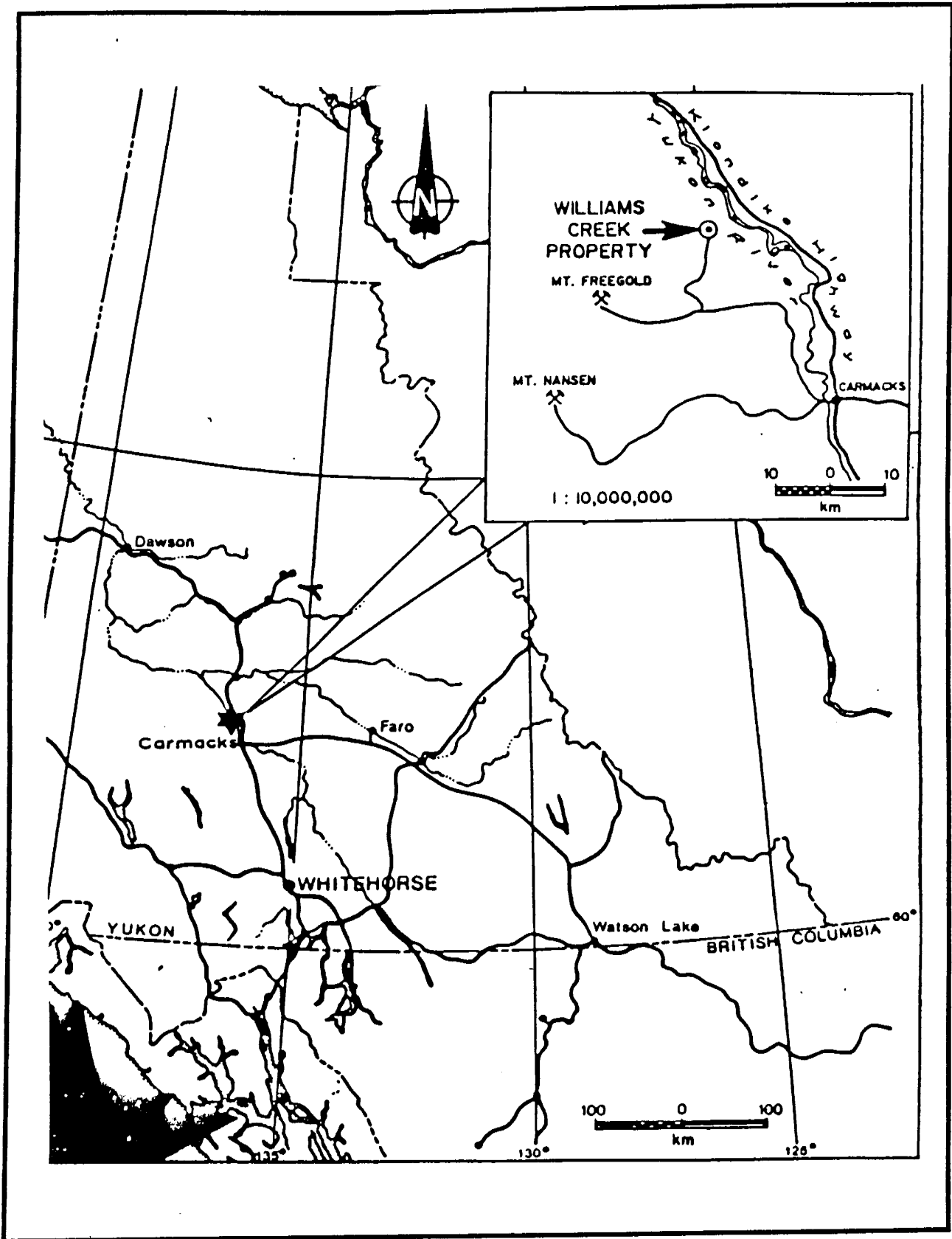
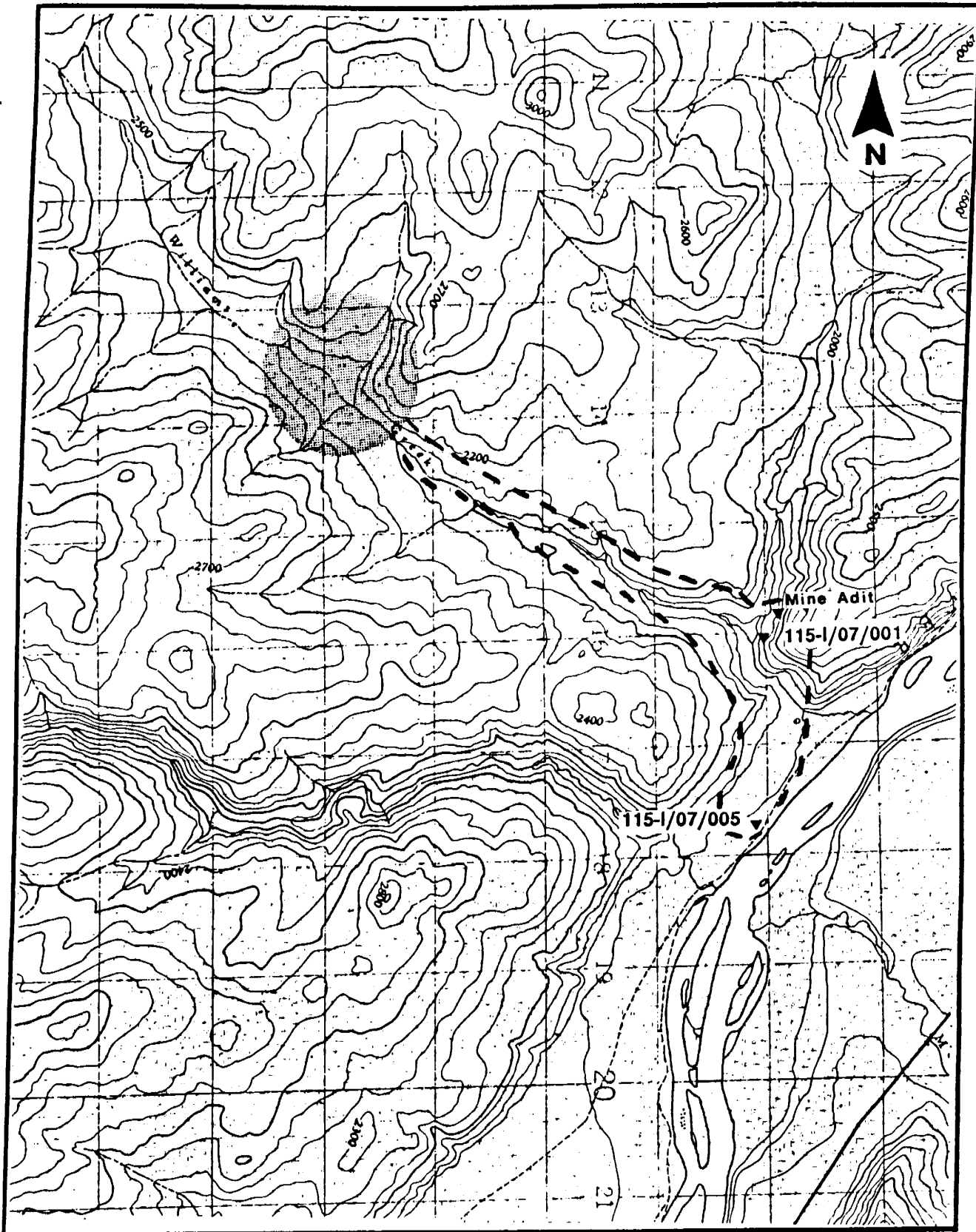


FIGURE 1. Location of the Williams Creek Copper Oxide Project, Northwest of Carmacks.



**FIGURE 2.** 1:50,000 scale Map of the Williams Creek Copper Oxide Project area. The proposed mine development area (shading) and water pipeline route (area within dotted lines) were examined during this study.





**FIGURE 3.** A view of the Williams Creek Valley, looking southwest from Williams Creek delta.



**FIGURE 4.** A view of the Williams Creek delta and Yukon River, looking east.

## **1.2 Cultural Setting**

### **1.2.1 Traditional Native Land Use Practices**

This section of the report attempts to reconstruct traditional Native land use practices in the Williams Creek Valley, that is, subsistence and settlement patterns as they existed before Euro-Canadians arrived in the Yukon in the early 19th century. Discussion focusses on those aspects of the ethnographic record that can most effectively predict the location of prehistoric Native sites. Criteria commonly used by Natives to select a good place for a camp or village were: (1) the presence of a dry, level camping ground, (2) the availability of trees for fuel, shelter, and construction, (3) proximity to fresh drinking water, (4) the abundance, variety, and accessibility of local food resources, and (5) access to trade and transportation routes.

Information contained in this section is primarily based on previously documented historic, ethnohistoric and ethnolinguistic research. Unstructured interviews were also conducted with Johnny Sam and Wilfred Charlie from the Carmacks Band to acquire some information about Native use of the Williams Creek Valley. This section is not intended to provide a comprehensive ethnohistory of the area. Little information is provided here on Native mythology, art, music, ritual, or religion. No attempt is made to predict the location of places with social, religious, or other cultural significance to living communities, but that have left no physical evidence of their use and are therefore, not classified as archaeological sites.

The Williams Creek Valley is within the traditional territory of the Northern Tutchone. Natives from this ethnolinguistic group spoke a dialect of Tutchone, one of many Athapaskan languages (McClellan 1981a:493). This group was composed of neighbouring bands linked to each other by marriage, kinship, and frequent association, but although they shared the same language, culture, and history, they did not function as a social or political unit. Each band was comprised of closely related families who usually wintered with, or near, each other. The bands were social communities with common interests, but they were not political units. Land was recognized as part of a band's territory as long as members of the band were using the resources on that land. Since band membership was very fluid, the band's territorial boundaries were flexible. (McClellan 1981a:493).

The Williams Creek Valley is currently being used by the Carmacks Band, the closest living community of Northern Tutchone. Since Carmacks was an important Native community as early as 1850, the Williams Creek Valley was probably used by Natives from Carmacks even before Euro-Canadian contact. The Northern Tutchone are part of the Subarctic Cordillera cultural division (McClellan and Denniston 1981) a classification that includes most of the Native groups in the Yukon, eastern Alaska, and northern B.C. Most groups in this division speak Athapaskan, live in similar environments, and have similar subsistence and settlement patterns.

Early historic accounts of the Tutchone are rare. Exceptions include Campbell's (1958) journal entries on Natives near Fort Selkirk in the mid-1800's, Schwatka's (1885:82-4) plotting of camps and villages in 1883, and Glave's (1892) brief account of the Southern Tutchone. Moreover, few ethnographic accounts of the Northern Tutchone are available. McClellan (1981a) has provided the best general ethnographic summary of the common cultural practices of the Northern and Southern Tutchone and has expanded on some aspects of these cultures in her numerous other reports (1948-75, 1950, 1964, 1970, 1975a, 1975b, 1981b, 1985 ).

Other general ethnographic accounts of the Tutchone are provided by Cruikshank (1974, 1975a, 1975b), Denniston (1966), Tanner (1966), and Johnson and Raup (1964). Linguistic studies were carried out by Ritter (1976) and Ritter, McGinty, and Edwards (1977). Unpublished theses and dissertations, including Arcand's (1966) work around Carmacks, have focussed primarily on socioeconomic practices in the 20th century (Le Gros 1981; McDonnell 1975).

#### 1.2.1.1 Seasonal Round of Subsistence Activities

Northern Tutchone families spent much of the winter indoors subsisting on dried foods. During the warmer weather, families travelled throughout their band's territory dispersing and regrouping to make the most efficient use of the available resources. The following discussion outlines the general pattern of aggregation and dispersal that these families followed throughout the year.

The minimal family group had at least two adults of each sex and commonly consisted of adult siblings or parents, daughter and son-in-law (McClellan 1981a:500). These small mobile families exploited hundreds of square miles each year and were prepared to make major adjustments to their movement in response to changes in the distribution of key resources (McClellan 1981a:493). Each family group spend much of the year travelling and camping on their own, but would join with other families in their band on a regular basis at important hunting and fishing camps. The Tutchone were divided into two clans or moieties, were exogamous (i.e. chose marriage partners from outside their moieties) and practiced matrilineal descent (i.e. inherited possessions and rights through the mother). No formal political organization existed and leaders were chosen on the basis of their personality and skills as a hunter and trader (McClellan 1981a:500).

Summer travel was generally overland on foot, but log rafts, canoes, dug-outs, and skin boats were occasionally used for short trips and to cross waterbodies. Winter travel was facilitated by snowshoes. Goods were also packed and dragged on skins or transported by dogs with packs and possibly, sleds (McClellan 1981a:498).

At the beginning of November, families began to gather at their wintering places, usually a sheltered fishing site on lake or on a tributary of a major river (McClellan 1981a:497). Fish caught near the camp were used to augment a winter diet consisting of mostly dried foods (primarily salmon, moose and caribou). Upland meat caches were periodically visited to supplement the food supplies.

Shelters were conical or rectangular with a tied pole frame. Rectangular structures took the form of a single or double lean-to with brush walls and a moss, bark or skin roof. The more temporary, conical forms were also typically brush covered, though some Northern Tutchone constructed a skin covered domed winter tent. Two or more families lived in each structure, each cooking their own meals but sharing a central fire. Other structures constructed at the camps included: meat or fish drying racks, racks for storing boats and toboggans, food storage caches, hide tanning and smoking frames, sweathouses, and menstrual huts (McClellan 1981a:498).

March and April were a critical period of the year when stored food may have become low or exhausted and hunting was poor. Families usually dispersed at this

time to find enough food to stay alive. Some gathered where the whitefish were spawning, while others trapped muskrat and beaver (McClellan 1981a:493) .

Birds were probably never a large part of the Native diet, but they provided a welcome alternative to fish and ungulates. Waterfowl (swans, geese and ducks) were sought in the spring and fall during their migrations through the area (J.Sam) and provided a key resource in late May when game was scarce and lean and stored foods exhausted. Ptarmigan and grouse were also abundant (McClellan 1981a:493) and could be caught at any time of the year when other resources were low.

As the weather warmed in May, 5 to 10 small family units would gather at locations in the valleys where whitefish, grayling, pike, and sucker were spawning (McClellan 1981a:496). For example, the Selkirk Band gathered at the mouth of Mica Creek every year to catch whitefish and grayling with nets and fish traps. These summer camps were typically located in open grassy places where breezes kept the mosquitoes down (McClellan 1981a:498). The women focussed on fishing, but the men also hunted and trapped nearby (especially for moose and beaver). Food plants were also gathered as they became available. Berries were the most important plant food, but roots, shoots and bark were also eaten, and certain barks and roots were collected as raw materials for nets, fish traps, fish lines, mats and baskets.

The dominant salmon run occurred every year between mid-July and early August when the King salmon (*Oncorhynchus tshawytscha*) spawned. Fish were caught in traps, weirs, dip and gill nets, and with spears, gaffs and hook and line. Good fishing spots were returned to year after year (McClellan 1981a:497). The salmon were split lengthwise and dried in the open on racks set over small fires (J. Sam) and stored in underground caches or on platform caches. Pike (1967) notes that fish drying racks could be seen at every likely spot along the Pelly River and that these sites commonly had rafts tied to the banks.

In mid-August following the salmon fishing, families dispersed into the uplands to hunt, fish, and gather plants. Much of this food was dried and stored in scattered caches for the winter. Since the Northern Tutchone salmon runs did not equal those seen on the Alsek drainage, they were as dependant on dried meat as fish. Moose and caribou were the main source of meat for the Native populations in the area. Mountain sheep and mountain goats were also important in the diet but only available in the uplands. Marmots, ground squirrels, and varying hare were the most important small game, while foxes, wolverines, marten, beaver and mink were also hunted for their furs, but rarely eaten (McClellan 1981a:493). The ungulates also provided other subsistence needs such as shelter, clothing, babiche, and bone and antler for tools. Ungulates were caught in both communal and individual hunts, though the techniques varied according to the intended game and group size (Cruikshank 1974). Hunting technology included the use of snares set singly along trails or in openings in brush fences, corrals, surrounds, deadfalls and pitfalls. Game were killed with spears, harpoons, and bow and arrow. Arrowheads, harpoons, and spears were made of stone, antler, bone or Native copper (McClellan 1981:476).

In late September, mostly families returned to the major river valleys to catch spawning dog salmon. Dog salmon (*Oncorhynchus keta*) were smaller and less abundant than the King salmon and the abundance rose and fell in four year cycles. After fishing, families would again scattered to hunt and trap before winter returned.

Commonly used fish and caribou hunting camps also served as trade centers and/or as locations for potlatching (Cruikshank 1974). Before Euro-Canadians moved into the area, the Tutchone typically received coastal and Euro-Canadian trade goods from the Tlingit, who travelled into Tutchone territory on trails located southwest of the study area (Cruikshank 1974). Consequently, most of the early Native trade and trails tended to be oriented at right angles to the Yukon, Pelly, and Ross Rivers, unlike the later Euro-Canadian trade that followed the major waterways. Trade to the north was controlled by the Han. These groups also tried to monopolize local sources of Native copper (McClellan 1981a:494). Carmacks was an important trade center as early as 1850 and was located on a Tlingit trade route (later called the Dalton Trail) (McClellan 1975a:503, 509)

#### 1.2.1.2 Traditional Native Use of the Williams Creek Valley

Moose is the most common ungulate now hunted in the Williams Creek Valley, but caribou are also present on occasion and were probably more common in the past before the large migratory herds of caribou in the region were reduced to the current small scattered populations (J. Sam). In the summer (May to October) these animals could have been hunted from fishing basecamps on the Yukon River, while in the winter they may have been hunted, as they are now, while trapping in the valley (J.Sam). Given current estimates of ungulate populations, individual hunts rather than communal hunts were probably the norm for the valley. Other wildlife that may have been hunted or trapped in the valley include: grizzly bear, black bear, marten, weasel, mink, otter, red fox, coyote, woodchuck, ground squirrel, wolf, beaver, muskrat, rabbit, pika, and porcupine (Rand 1945). Lynx and wolverine are two other important species trapped in the valley (J.Sam). A few waterfowl may also have been caught in the spring and fall at the small ponds. These traditional activities would have produced small scattered kill and/or butchering sites throughout the drainage, and a few small basecamps in the creek valley.

Salmon, whitefish, pike and graylings spawn in the Yukon River and summer fish camps were probably constructed along the shore of the river to catch these fish. Unfortunately archaeological remains from these sites may have been buried or destroyed by flooding and ice flows on the river. Any raised beachlines may afford better site preservation. Early trade and travel routes (predecessors to the historic routes) probably followed the Yukon River and crossed the mouth of Williams Creek. As a result, small transit camps may be expected in this area. All sites in the study area are expected to be small and on flat, well-drained locations.

#### 1.2.2 **History of Euro-Canadian Settlement**

The first Euro-Canadian to visit Tutchone territory was Robert Campbell. An employee of the Hudson's Bay Company, he was assigned the task of developing the fur trade and establishing posts in Northern Tutchone territory. In 1843 he travelled to the Pelly River from his newly established post on Frances Lake to establish Fort Pelly Banks. He continued down the Pelly River to its confluence with the Yukon River, but was turned back by tales of hostile Natives downstream (Campbell 1958). He returned however in 1848 to build Fort Selkirk at the confluence of the Pelly and Yukon River. Numerous Natives visited the fort during its construction including a groups of Chilkat Tlingit from Lynn Canal. These Tlingit commonly used this location for trading with the Tutchone and in 1852, Fort Selkirk was raided by Tlingit who resented the loss of their trade monopoly. The residents were permitted to leave unharmed but the following year the Fort was burned



(Campbell 1958). By 1886, another post was established in Northern Tutchone territory at the mouth of the Stewart River. Fort Selkirk was then reopened in 1893 (McClellan 1981a:503).

Gold was first discovered in the Yukon River watershed in 1863 (Hamilton 1964), but the first official miner to enter the area arrived in 1875. Relatively little mining activity occurred in Tutchone territory over the next 20 years, partly because the Tlingit prevented most miners from entering the area before the late 1890's. The first published account of Euro-Canadian travel along the Yukon River was made by Schwatka (1885, 1894) who made a reconnaissance for the U.S. Army in 1883. George Dawson and William Ogilvie, Canadian geologists, also explored the Pelly and Upper Yukon Rivers in the late 1880's, while men from the 1890 Frank Leslie's Illustrated Newspaper Alaska expedition went down the Yukon River from Chilkat Pass. Members of this expedition later returned to set up trading posts in Southern Tutchone territory (at Neskatahin in 1896 and Champagne in 1902). An old Tlingit route to Fort Selkirk was also developed into the "Dalton Trail" during the gold rush (McClellan 1981a:503).

The gold rush followed reports in August, 1896, of discoveries in Bonanza Creek (by George Carmacks), a tributary of the Klondike near Dawson City. In the next few years miners poured in, mainly by ship up the Lynn Canal to Dyea or Skagway and thence through the Chilkoot and White Passes and down 500 miles of the Yukon River to Dawson. Dawson rapidly acquired a population of 25,000. A brief spurt of development occurred at Fort Selkirk when the North West Mounted Police and Yukon Field Force were stationed there in response to the Klondike Gold Rush. By 1899 a telegraph line linked the Klondike to Yukon.

Most miners soon left the area but a second phase of mining occurred in the early 1900's with the introduction of larger dredges and flumes. Gold, copper, lead and silver were found and mined in Tutchone territory. The construction of the Alaska Highway in 1942 increased mining activity and brought a second large influx of Whites into the area (34,000 people, mostly men). Many soon left but others settled in Whitehorse and in other small settlements in Tutchone territory. Until the steamers ceased operation on the Yukon, Fort Selkirk was a service community with various trading stores, church services, and a restricted resident population. The original Whitehorse to Dawson City road and subsequent revisions by passed this community which was essentially abandoned in the 1950's in favour of Pelly Crossing.

### **1.2.3 Historic Change to the Native Economy**

The arrival of Euro-Canadians in the Yukon resulted in changes to the traditional Native subsistence and settlement pattern. Since the mid-1800's, the Tutchone "have repeatedly moved their "headquarters", realigning their bands in response to the activities of the" Euro-Canadians (McClellan 1981a:493). McClellan describes these changes in terms of three phases (1981b). During the first phase, few Euro-Canadians actually visited the area and their trade goods reached the Tutchone primarily through trade with other intermediary Native groups, such as the Tlingit and Han. The trapping of furbearers gained more importance after the establishment of a Hudson's Bay Company fur trading post at Fort Selkirk in 1848. To acquire the furs demanded by this new trade the Native population became more dispersed and new camps were created to facilitate the trade and maximize the returns from trapping. Technological changes included the use of guns, steel traps,

wire snares, twine fish nets, iron knives, and dog sleds. Alcohol and new diseases were also introduced into the area reducing Native populations. Inter-marriage with Euro-Canadians led to further acculturation.

In the second phase (beginning in the 1990's), Euro-Canadian gold miners, missionaries, administrators and settlers moved into the area in large numbers. The Tlingit lost their position as middlemen in the trade with the Euro-Canadians and transportation now focussed on the rivers. Natives were hired for these new activities forcing them to adopt a more sedentary lifestyle. Inter-marriage with Euro-Canadians and other Native groups increased. Missionaries became the new dictators of social and moral behaviour and Native children were forced to attend schools that went against traditional forms of childrearing and left the youth alienated from older family members. All Natives began to depend more heavily on moose hunting as these animals increased and the caribou herds dwindled (McClellan 1981a:496).

The third phase begins in 1942 with the construction of the Alaska Highway. The roads and airfields opened up the area to non-Native settlers who soon outnumbered the Native population. Many Natives lost jobs as older transportation systems were abandoned. Acculturation increased with the changing economy and technology. In 1950 the federal and territorial governments began to take over health, education, and welfare from the missionaries. Improved communication resulted in the Natives becoming more politically aware and active and strengthened their determination to maintain a culture rooted in traditional values.

#### 1.2.3.1 Historic Use of the Williams Creek Valley

In the 20th century, the Williams Creek Valley was used by Natives for winter trapping (J. Sam). Snowmobiles permitted the entire trap line to be checked in one day (12 hours) from a basecamp on the opposite shore of the Yukon River (J. Sam). Dogsleds would have allowed similar practices at an earlier date. The valley continued to be used as a hunting area for moose and caribou, but most hunting was done by single Native hunters in the winter while in the area for trapping (J. Sam). These activities would have produced small, scattered kill and/or butchering sites in the valley.

Fishing sites used to catch salmon, as well as, pike, sucker, whitefish, and graylings were constructed along the bank of the Yukon River where deep water with currents and eddies forced the fish close to shore (J.Sam). The river bank was also used as a travel corridor. The "Old Dawson Trail" from Whitehorse to Dawson City followed either the eastern or western bank of the river, while the "Old Telegraph Trail" built in 1899 between Whitehorse and Klondike crossed the mouth of Williams Creek (J. Sam; W. Charlie). Other trails constructed before and since (such as the Toboggan-Dog Race Trail) probably followed the same routes. Small transit and camp sites should be expected at the mouth of Williams Creek where these trails were located.

Euro-Canadian mining and prospecting activities at the lower end of the creek in the 1930's and 1940's should be represented by log structures and mine deposits. These cabins were also used by Natives while hunting and trapping in the area (W. Charlie).

## **2.0 PROPOSED DEVELOPMENT PROJECT**

The Williams Creek property is a large mining development located 38 km northwest of the town of Carmacks near the head waters of the Williams Creek within the Dawson Range (Figure 1). In the late 1960's, exploration for porphyry copper deposits in the Dawson Range lead to the discovery of the Casino porphyry deposit located 104 km northwest of Williams Creek. The Williams Creek property was staked at this time by G. Wing of Whitehorse to cover copper occurrences he found while prospecting prior to the Casino discovery. The Dawson Range Joint Venture optioned the property and conducted reconnaissance prospecting and geochemical sampling. Archer, Cathro & Associates Limited acted as Manager and earned the right to acquire abandoned properties. Thirteen mineralized zones have been located and explored by bulldozer trenching, 8 have been drill tested (Archer Cathro 1991).

Exploration of the area designated No. 1 Zone by bulldozer and diamond drill began in 1970. In 1971 further drilling, bulldozer trenching and road construction continued. In 1972 further drilling continued. In 1989 3 tonnes of surface oxide was collected by Western Copper Holdings and Thermal Exploration Co (Archer Cathro 1991). Development continues today

Specific land-altering activities relating directly to the development include:

- (1) construction of an open pit mine, leach pads and waste rock dumps at the southwestern end of Williams Creek Valley;
- (2) grading and levelling for the construction of access roads and accomodation throughout the project area;
- (3) development of a water pipeline from the Yukon River through Williams Creek Valley to the mine development;

## **3.0 IMPACT ASSESSMENT OBJECTIVES AND METHODS**

### **3.1 Objectives**

The main objectives of this archaeological impact assessment study were:

- (1) to review and present a summary account of documented archaeological, ethnographic and historical information pertaining to the proposed development area, and to obtain additional oral information from local informants;
- (2) to locate and record all archaeological sites within the proposed project area by conducting intensive systematic surface reconnaissance survey and judgemental shovel testing within areas displaying medium to high archaeological site potential (i.e., relatively flat terrain; banks of lakes, ponds, and streams; tops and edges of prominent ridges, knolls, and terraces; etc.); these areas were selected based on examination of detailed topographic maps, areal photographs as well as observation made during a helicopter "fly over" of the study area;
- (3) to record each identified site in detail, evaluate its overall heritage significance, and to conduct limited additional subsurface testing employing judgementally placed



shovel tests and evaluative tests in order to determine the nature, horizontal and vertical extent, and relative integrity of buried cultural deposits;

(4) to identify the nature, magnitude, extent, intensity, and duration of any adverse impacts which will potentially be imposed on identified heritage resources as a direct or indirect result of the proposed developments; and

(5) to present recommendations that will outline an effective management plan strategy for sites threatened by potential direct adverse impacts arising from the proposed developments.

All five of these objectives were met. The study was carried out in accordance with permit conditions defined by the Yukon Tourism, Heritage Branch.

### **3.2 Field Methods**

Fieldwork for this impact assessment study was conducted between August 11 and 14, 1992, by Mike Rousseau and Peter Merchant. An initial meeting on Tuesday morning (Aug 11) took place between Mr. Mike Rousseau, Mr. Peter Merchant and the chief and council of the Northern Tutchone First Nations Band in Carmacks and discussed the objectives of the impact assessment project.

A helicopter overview flight of the study area was conducted prior to ground survey to determine which areas had medium and high archaeological site potential so that we could examine them during the following judgemental ground reconnaissance survey (Figure 2). The areas contained within the proposed open pit mine, leach pads, waste rock dumps, and other minor related facilities were assessed to have either nil or low archaeological site potential. Nevertheless, we examined several of the more easily accessible locations deemed to have low site potential within the proposed mine facility impact areas, but no sites were identified.

The lower portions of the valley were deemed to have a greater site potential (Figures 3 and 4). This area is only accessible by foot and for the two days of this reconnaissance survey the guiding services and assistance/ expertise of Wilfred Charlie were retained. A judgemental shovel testing program was employed as a site discovery/ investigation technique in those areas lacking surficially evident cultural remains but suggesting high to moderate archaeological site potential (e.g., relatively flat or raised terraces or areas adjacent to extant and extinct river and stream channels). Shovel tests averaged 45 cm in diameter and were dug to sterile glacial deposits. All removed matrices were passed through 1/8" (3mm) mesh screen to ensure the recovery of relatively small artifacts and cultural debris.

Two historic archaeological sites were identified, 115-1/07/001 and 115-1/07/005, they were recorded and described on a Yukon Territory Archaeological Site Form according to guideline criteria. Detailed site maps were drawn using pace-and-compass method, and its exact location was plotted on a general plan map (Figures 5,6 and 7). All surficially evident cultural depressions features were described and measured. Photographs of all structures were taken using colour print film. The location of all identified features were clearly indicated in the field by fluorescent survey flagging tape tied to immediately associated vegetation.

### 3.3 Site Significance Evaluation Methodology

Each site was evaluated based on criteria outlined by the B.C. Ministry of Tourism, Archaeology Branch (1991). The purpose of a heritage resource significance evaluation is to provide an assessment of the importance of sites located during an inventory. The B.C. Archaeology Branch (1991:13,42,44) defines seven heritage significance evaluation categories for historic sites. These heritage significance categories include:

#### (1) Scientific Significance:

(a) Does the site contain evidence which may substantively enhance understanding of historic patterns of settlement and land use in a particular locality, region or larger area?

(b) Does the site contain evidence which can make important contributions to other scientific disciplines or industry?

#### (2) Historic Significance:

(a) Is the site associated with the early exploration, settlement, land use, or other aspect of the Yukon Territories cultural development?

(b) Is the site associated with the life or activities of a particular historic figure, group, organization, or institution that has made a significant contribution to, or impact on, the community, territory or nation?

(c) Is the site associated with a particular historic event whether cultural, economic, military, religious, social or political that has made a significant contribution to, or impact on, the community, territory or nation?

(d) Is the site associated with a traditional recurring event in the history of the community, territory or nation such as an annual celebration?

#### (3) Public Significance:

(a) Does the site have potential for public use in an interpretive, educational or recreational capacity?

- visibility and accessibility to the public
- ability of the site to be easily interpreted
- opportunities for protection against vandalism
- economic and engineering feasibility of reconstruction, restoration and maintenance
- representativeness and uniqueness of the site
- proximity to established recreation areas
- compatibility with surrounding zoning regulations or land use
- land ownership and administration
- local community attitude toward site preservation, development or destruction
- present use of the site

(b) Does the site receive visitation or use by tourists, local residents or school groups?

(4) Ethnic Significance:

- (a) Does the site presently have traditional, social or religious importance to a particular ethnic group or community?
- (b) Is the site representative of a particular ethnic group or community?

(5) Economic Significance

- (a) What value of user-benefits may be placed on the site?
  - visitors' willingness-to-pay
  - visitors' travel costs

(6) Integrity and Condition

- (a) Does the site occupy its original location?
- (b) Has the site undergone structural alterations? If so, to what degree has the site maintained its original structure?
- (c) Does the original site retain most of its original materials?
- (d) Has the site been disturbed by either natural or artificial means?

(7) Other

- (a) Is the site a commonly acknowledged landmark?
- (b) Does, or could, the site contribute to a sense of community or identity either alone or in conjunction with similar sites in the vicinity?
- (c) Is the site a good typical example of an early structure or device commonly used for a specific purpose throughout an area or period of time?
- (d) Is the site representative of a particular architectural style or pattern?

Values for each heritage significance evaluation category were measured and assigned using a simple five-part (low, medium-low, medium-high, and high) relative scale ranking scheme. An "overall" heritage significance value rating for a site was then judgementally determined by collectively considering, weighing, and then "averaging" the values previously assigned to each significance criteria category. Scientific significance and public significance categories are often relegated greater decisive "weight" compared to other significance evaluation categories when evaluating the "overall" heritage value of a site. This is because these two categories encompass a number of important considerations that are usually of greater interest and concern to both the public and academic community.

Sites (or portions thereof) determined to have "low-medium" overall heritage significance value rating often do not require further management attention or mitigation. However, sites with greater than "medium" overall significance value ratings are usually considered worthy of some sort of suitable protective and/or mitigative actions if they are in direct or indirect conflict with a proposed land-altering project.

### **3.4 Impact Identification and Assessment**

The purpose of the impact identification and assessment component of a heritage study is to determine, "...the net change between the integrity of an archaeological site with and without the proposed development" (Archaeology Branch 1991:14). Impacts are often described and assessed according to "level-of-effect" indicators, which entail a consideration of their magnitude, severity, duration, range, frequency, diversity, cumulative effect, and rate of change (Archaeology Branch 1991:14,46). These indicators are often reported in an objective manner, and are intended to provide a qualitative and quantitative assessment of specific land-altering activities associated with a development project.

Following the site significance evaluations, sites located within the project area have been examined in light of potential impacts to them as a consequence of proposed land-altering development within the project area. Anticipated land-altering activities associated with the proposed development varies considerably from location to location, however, many areas will be effected by removal of vegetation, grading, levelling, excavation and surface disturbance due to heavy machinery traffic. All of these activities may impose extensive, permanent, adverse impacts to archaeological sites within the project area.

## **4.0 INVENTORY RESULTS AND SITE DESCRIPTIONS**

Despite extensive shovel testing, foot traverse and surface inspection of potential impact areas associated with the proposed project no prehistoric archaeological sites were encountered during this study. Two historic archaeological sites were however identified in the lower Williams Creek drainage area (Figures 5 and 8 to 12). We have recorded and mapped these sites in detail. General descriptions and planimetric maps for each of the sites are provided below (Figures 6 and 7).

### **4.1 Site 115-I/07/001**

This is a medium-sized historic mining/habitation site consisting of a partially collapsed log cabin, partially collapsed log barn, and a substantial quantity of associated domestic and mining-related refuse and artifacts (Figures 8 to 10). The nature of the cabin and the associated refuse suggest that it was occupied primarily during the 1930s-1940s. A mine adit was identified on the north side of the creek about 400 m west of this historic site area along a well-defined trail. Wilfred Charlie recalled that Bill Lahan, Bill Tear, Fred Gouder, Frank Zimmer, and George Fairclough all had a hand at prospecting in this area, and they occupied this cabin site at various times.

The site occupies an area on the north side of Williams Creek at its junction with a major unnamed tributary (Figure 6). The area has numerous extinct shoreline terraces extending back 5-10 m towards the site. The majority of the site is intact. A total of two log structures, three depressions and three refuse piles were observed at the site. Refuse remains consisted of cans, bottles, dynamite boxes, a wheelbarrow, and a brandy barrel.

### **4.2 Site 115-I/07/005**

This site consists of the collapsed remains of another large historic log cabin located along the bank of the Yukon River about 1.25 km southeast of the confluence with Williams Creek (Figures 11 to 12).

The main log structure occupies an area approximately 17 m back from the river bank on the south side of what Wilfred Charlie called the old "Dawson Trail" (Figure 7). The remains of a collapsed outhouse lie 5 m south of the log cabin. The remains of a light wooden structure lie 15 m north of the log cabin on the bank of the river. This structure is probably associated with river transport due to its proximity to the river. Eight depressions were observed at the site, one of these lay inside the log cabin and was probably used as a cellar. Associated refuse consisted of large tin cans, fuel cans and Hudson Bay Company tobacco tins.

There is a horse trail leading from the above mentioned log cabin site (**115-I/07/005**) to the log cabin site/mine (**115-I/07/001**) which strongly suggests that the two sites are related. It seems that 005 represents a supply and ore transfer station for the mine which was facilitated by river transport.

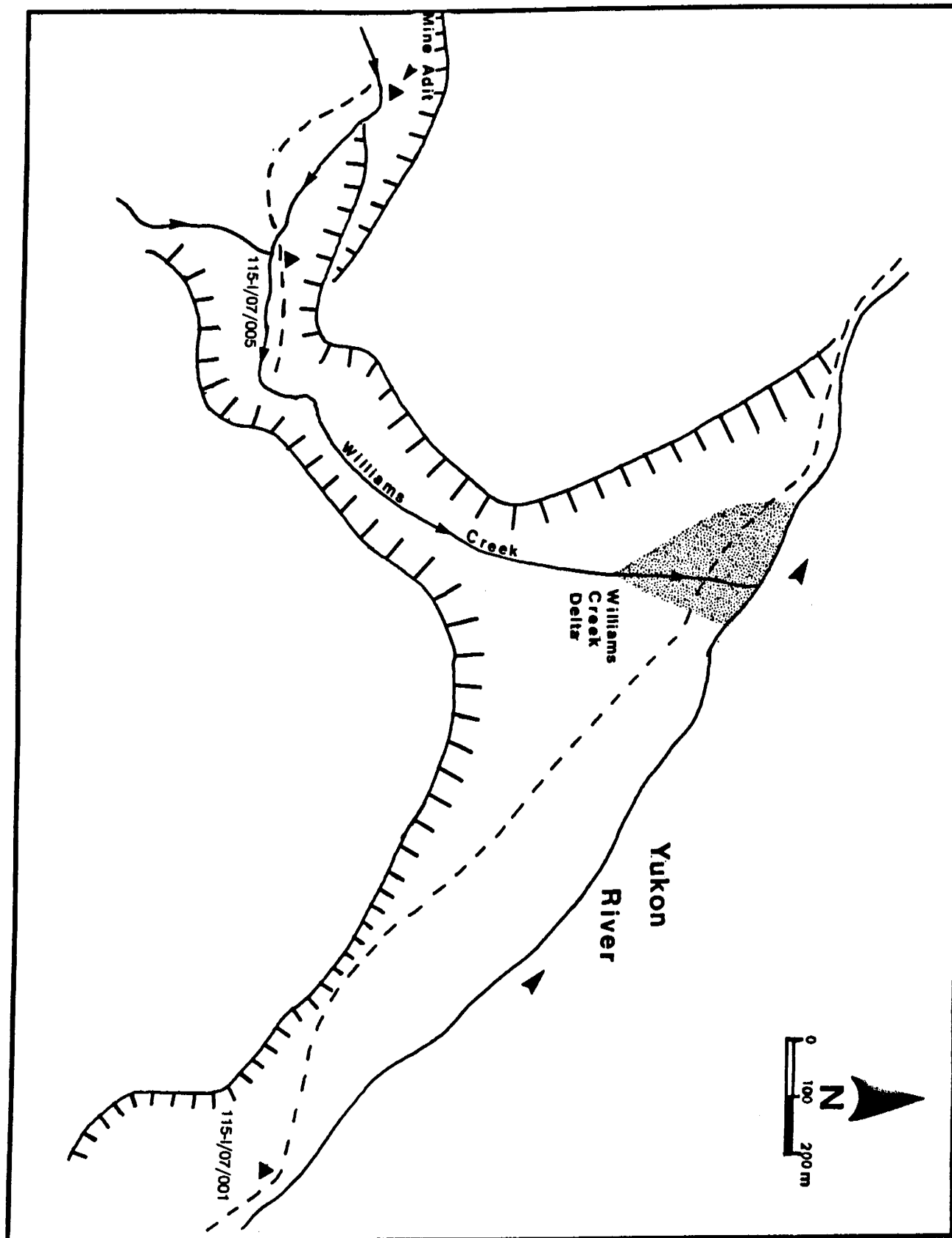


FIGURE 5. Map of the Williams Creek delta indicating the location of sites identified during this study.

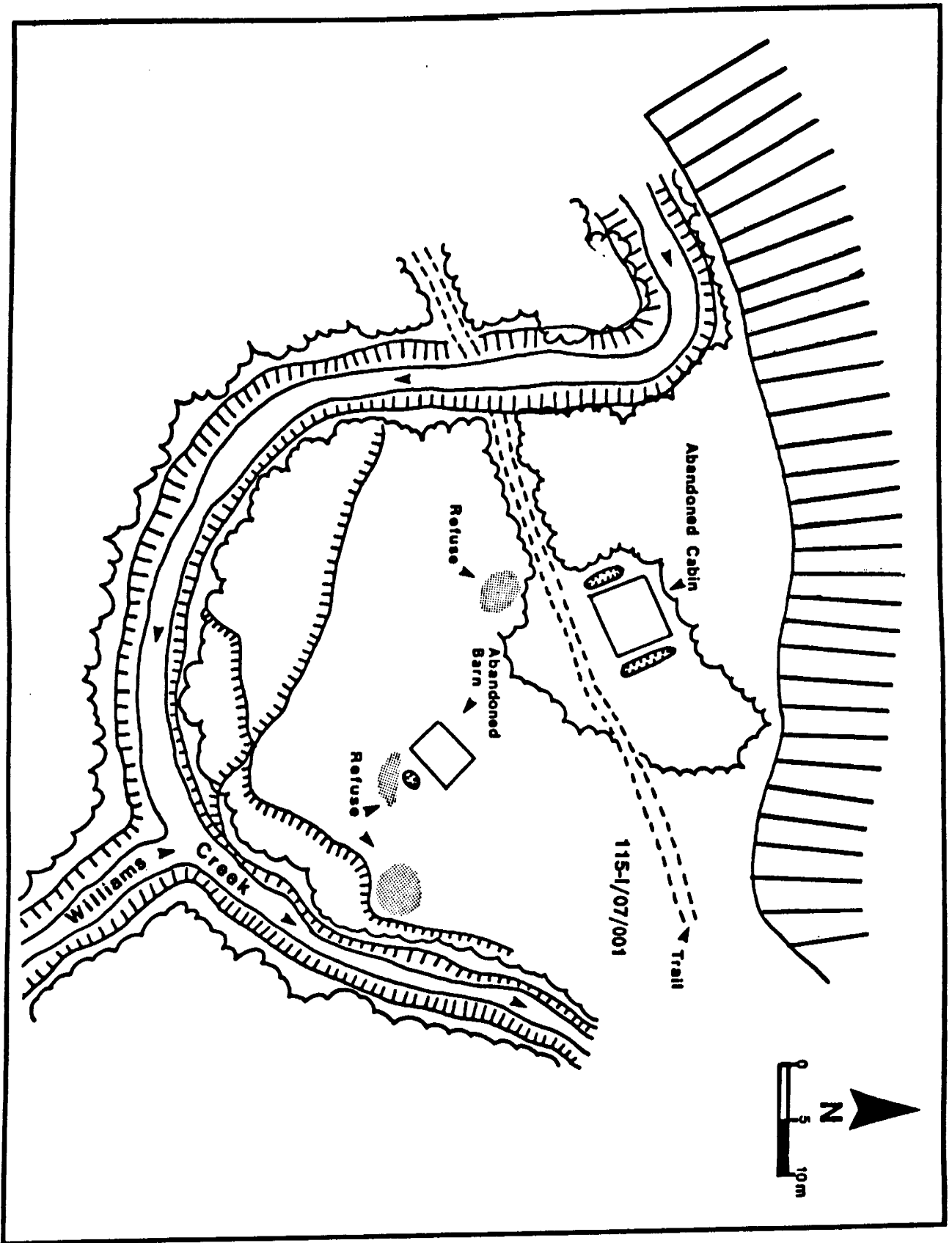


FIGURE 6. Map of site 115-1/07/001.

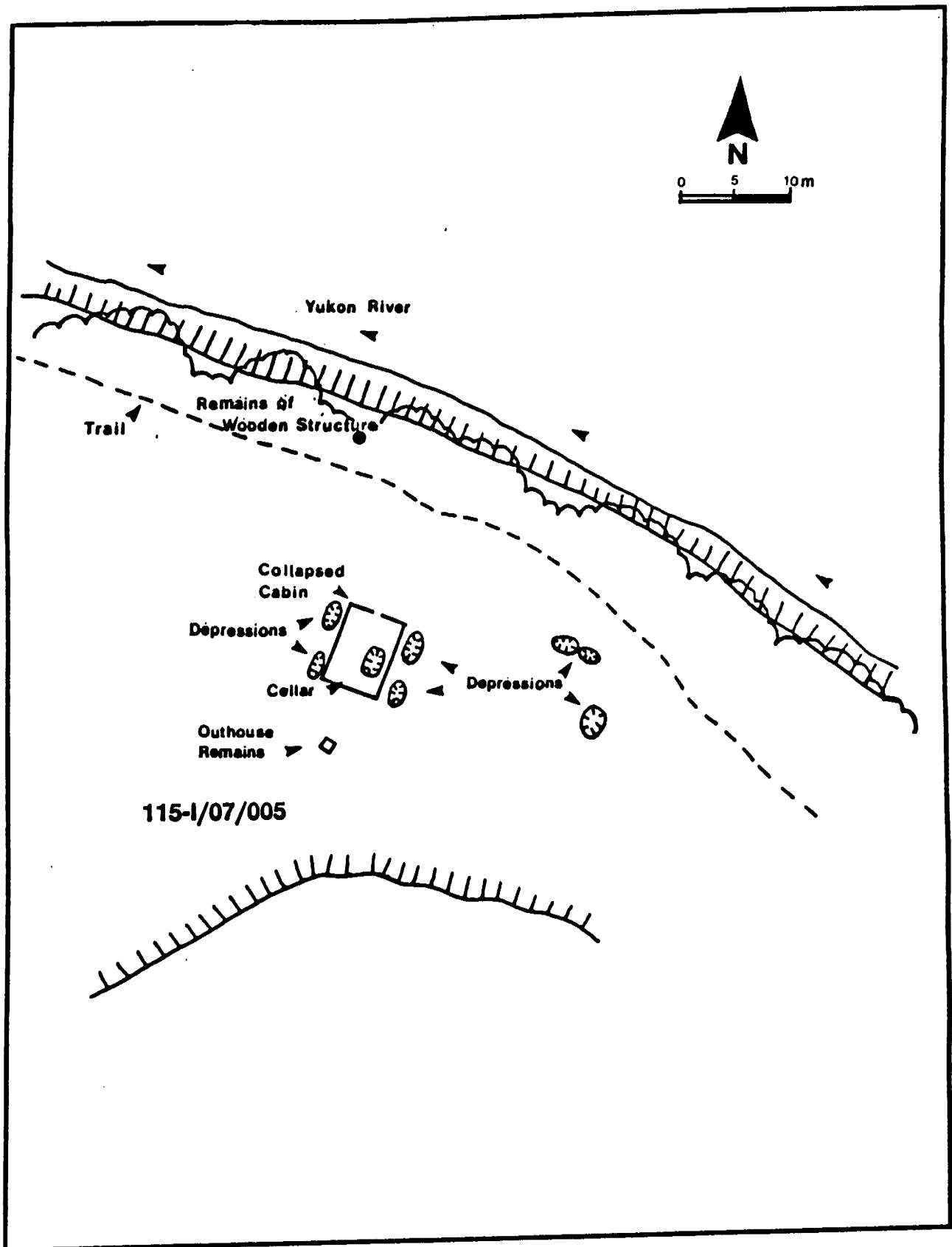
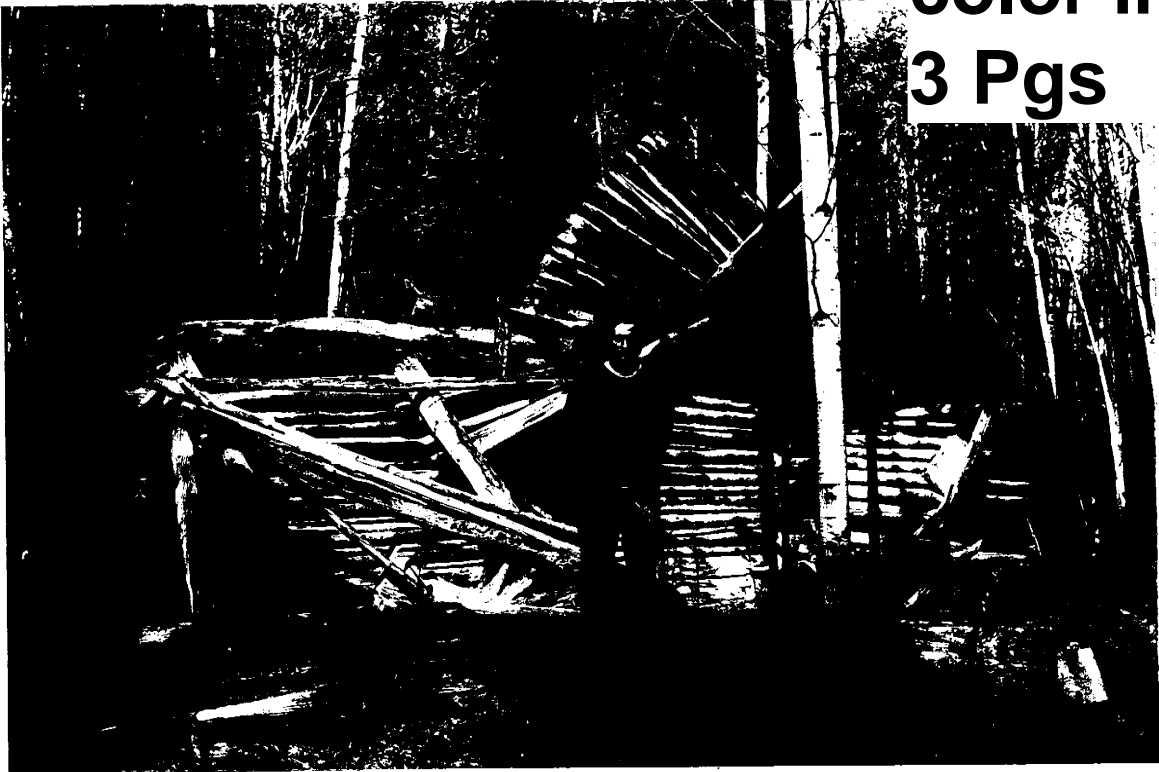
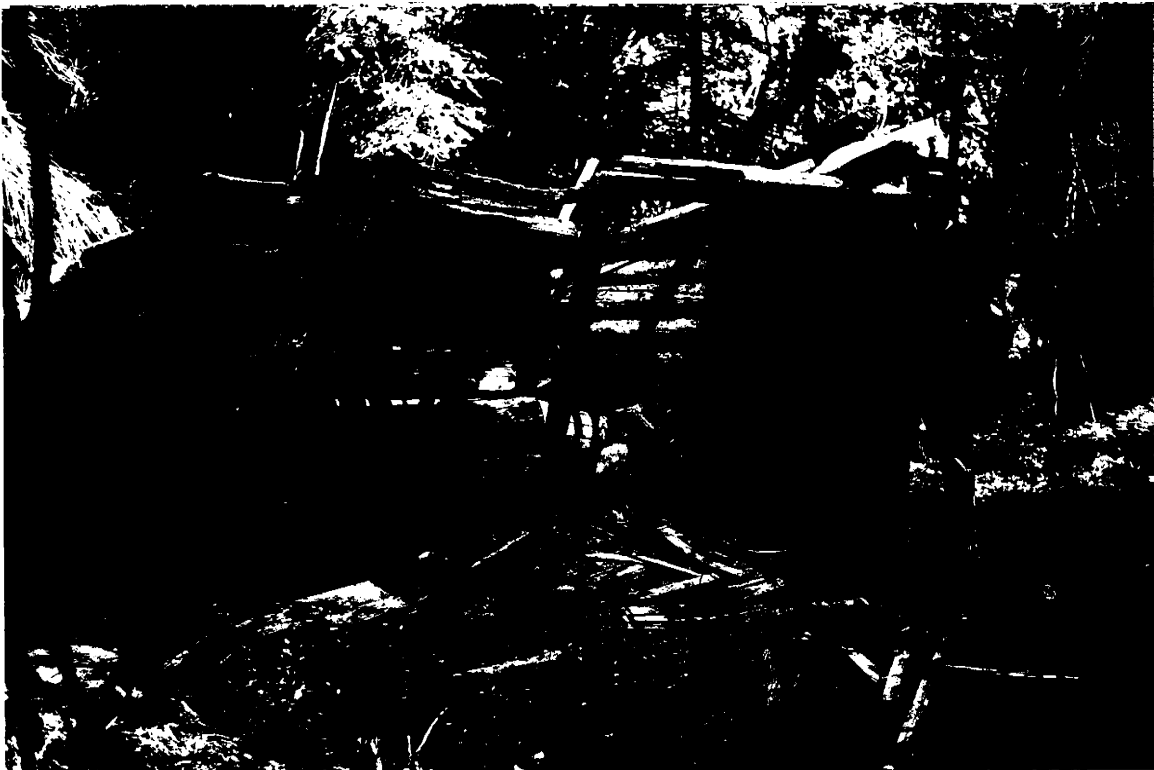


FIGURE 7. Map of site 115-1/07/005.





**FIGURE 8.** A view of log cabin structure at site 115-l/07/001, looking north.



**FIGURE 9.** A view of log "barn" at site 115-l/07/001, looking east.



**FIGURE 8.** A view of log cabin structure at site 115-l/07/001, looking north.



**FIGURE 9.** A view of log "barn" at site 115-l/07/001, looking east.





**FIGURE 10.** A view of mine adit associated with site 115-I/07/001.



**FIGURE 11.** A view of log cabin at site 115-I/07/005, looking west.





**FIGURE 12.** A view of log cabin at site 115-I/07/005, looking north.

## **5.0 SITE SIGNIFICANCE EVALUATIONS**

The methodology used for assessing the "overall" heritage resource significance value of a site is discussed in Section 3.3 The results of the assessments are presented below.

### **5.1 Site 115-I/07/001**

This large historic dwelling (Section 4.1; Figures 8-10) site is considered to have a "**medium-low**" heritage significance value rating. Its scientific significance value is assessed to be of medium value as it consists of two relatively intact dwellings that provide understanding of historic patterns of settlement and land use in the Williams Creek Valley, but makes little contribution to other scientific disciplines or industry.

The historic significance of the site is considered to be **low** since it isn't associated with early exploration, settlement, or land use. Neither is it associated with a particular historic figure, group, organization, or institution. It is also not associated with a particular historic event or recurring event.

Its public significance is rated **low**, since it is not readily accessible as an interpretive, educational or recreational capacity, it also receives no visitations by tourists, local residents or school groups.

Ethnic significance is also rated **low**, since it has no evident traditional, social or religious importance, nor is it representative of a particular ethnic group or community. Its economic significance is rated low, since no monetary benefits could be directly derived from the site.

The integrity and condition of the site is rated **medium**, since the site occupies its original location, has undergone no obvious structural alterations, but some original materials have been removed or have decayed and the site has been disturbed by natural means.

## **5.2 Site 115-I/07/005**

This site is assessed to have an overall "**medium-low**" heritage significance value rating (Section 4.2; Figures 11-12). Its scientific value is deemed to be medium because it contains evidence that enhances understanding of historic patterns of settlement and land use particularly in relation to the "Dawson Trail".

Historic significance is assessed to be **low** since it isn't associated with early exploration, settlement, or land use. Neither is it associated with a historic figure, group, organization, or institution. It is also not associated with a historic event or recurring event.

Its public significance is rated **low**, since it is not readily accessible as an interpretive, educational or recreational capacity. It also receives no visitations by tourists, local residents or school groups.

Ethnic significance is also rated **low**, since it has no evident traditional, social or religious importance, nor is it representative of a particular ethnic group or community.

Its economic significance is rated **low**, since no monetary benefits could be directly derived from the site.

The integrity of the site is rated as **medium**, since the site occupies its original location, has undergone no obvious structural alterations, but some original materials have been removed or have decayed and the site has been disturbed by natural means.

## **6.0 IMPACT IDENTIFICATION AND ASSESSMENT**

The methodology used to identify and define impacts is discussed in Section 3.4. This section presents the impact assessment results.

### **6.1 Site 115-I/07/001**

The remaining undisturbed portion of site **115-I/07/001** is in potential conflict with the proposed construction of a water pipeline from the Yukon River up Williams Creek Valley to the proposed mining development. Proposed land altering-activities associated with the construction of the proposed pipeline such as the removal of vegetation, removal of trees, construction of access roads, associated grading, and heavy equipment traffic as well construction of a pipeline R-O-W could result in direct and permanent adverse impacts to the southern portion of **115-I/07/001**.

### **6.2 Site 115-I/07/005**

The remaining undisturbed portions of **115-I/07/005**, and associated trails are in potential conflict with the proposed development of the above mentioned pipeline. Though direct impact is improbable, the construction of the necessary access roads, and associated removal of vegetation, removal of trees, grading and heavy equipment traffic could adversely impact directly upon this site.

## **7.0 MANAGEMENT RECOMMENDATIONS**

No archaeological sites (historic or prehistoric) were identified within the areas proposed for the open pit mine, leach pads and waste rock dumps. Consequently, we recommend that these developments be allowed to proceed as planned without further concern for archaeological resources.

Two historic archaeological sites were identified near the base of Williams Creek Valley. Both of these sites are in danger of adverse impacts due to land altering activities associated with the proposed construction of a water pipeline and possible access roads. Although these sites are considered to be of only minimal significance we believe that impacts to them can be avoided without extensive cost or inconvenience. We recommend that both sites be avoided by all land-altering activity, particularly access road construction. If this is not possible then a systematic data recovery program should be carried out for these sites. Such a study should include detailed architectural sketching, mapping and artifact collection within portions of the site(s) likely to be impacted. This ideally should be conducted by a qualified archaeologist with experience in recording historical sites.

Finally, the lower portion of the Williams Creek system, notably the Williams Creek delta and its confluence with the Yukon River, displays moderate prehistoric site potential. This area is very large and could not be adequately examined in its entirety during our August inspection. Consequently, we recommend that once a R.O.W has been decided upon for the proposed water pipeline and any associated access roads, these specific areas should be examined in detail by implementing an intensive systematic foot traverse and shovel testing program.

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