APPENDIX II-C

Socioeconomic Setting

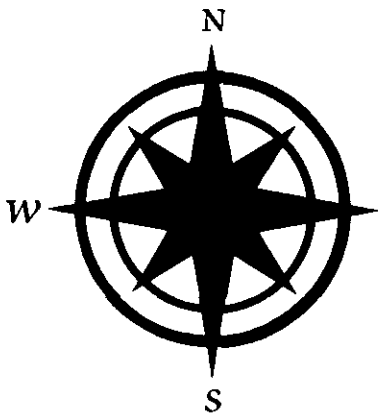
Appendix II - C1

FINAL REPORT ON ARCHAEOLOGICAL INVESTIGATIONS

FOR THE

BHP NWT DIAMONDS PROJECT

(Northwest Territories Archaeologists Permit #94-768)



POINTS WEST HERITAGE CONSULTING LTD.

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FINAL REPORT ON ARCHAEOLOGICAL INVESTIGATIONS

FOR THE

BHP NWT DIAMONDS PROJECT

(Northwest Territories Archaeologists Permit #94-768)

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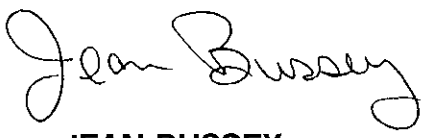

JEAN BUSSEY
October 14, 1994

MANAGEMENT SUMMARY

At the request of Rescan Environmental Services Ltd , on behalf of BHP Minerals Canada Ltd., Points West Heritage Consulting Ltd. conducted an archaeological inventory and impact assessment of the BHP NWT Diamonds project area. Work was directed by J. Bussey; Ian Franck served as field director during the inventory phase of the investigations and was assisted by Malcolm James and Lloyd Lamoulie. Work was conducted under Northwest Territories Archaeologists Permit 94-768.

The project area was divided into six survey areas. Five of these six survey areas yielded archaeological sites; the Lakes survey area did not yield archaeological sites and has low potential for such resources The 'all weather road' survey area yielded 27 archaeological sites, including seven isolated finds. Two of these twenty-seven sites appear to represented repeatedly used camping locations and were assigned high archaeological significance. Four of the recorded sites were suggestive of buried cultural deposits and/or contained a moderate yield and were assigned low-moderate significance The remaining twenty-one sites were lithic scatters that were characterized primarily by unworked flakes and/or sparse yields or were isolated finds. These sites were assigned low archaeological significance. If development of this all weather road proceeds, it is highly likely that the majority of these sites would be impacted, however, steps have been taken to ensure the two highly significant sites are avoided by use of an alternate route.

The Exeter Lake survey area yielded eleven sites, including four isolated finds One of these sites appears to represent a repeatedly visited camping location and was assigned high archaeological significance. The other sites were small and/or were characterized by a sparse yield and were assigned low archaeological significance No specific development has been identified in this survey area, but some exploration activity has occurred The south-central esker survey area yielded six sites, including two isolated finds. Two of these sites were assessed as having moderate archaeological significance, one represents a possible quarry/lithic workshop and has a moderately high yield, the other has potential for significant buried deposits and a moderately high yield. The other four sites were assessed as having low archaeological significance. No specific development has been identified in this survey area and no disturbances have occurred to date.

The winter road survey area yielded one isolated find consisting of an unworked flake It was left in situ and this site was assigned low archaeological significance The esker containing this site has been used in past years as a winter access road, no specific development has been identified for this area. The Falcon and Ray's Camp survey area yielded five archaeological sites, including two isolated finds All five sites were typified by a sparse and unvaried yield and were assigned low archaeological significance Disturbance has occurred at two of these sites as a result of exploration activity.

Sites assigned moderate or greater archaeological significance would require some form of systematic data recovery if they could not be avoided by proposed development Although it is preferable that all sites be avoided, those rated low or low-moderate do not have sufficient potential to contribute to our understanding of the archaeology of this area to justify further field investigation

ACKNOWLEDGEMENTS

This archaeological study would not have been possible without the assistance and support of a large number of people. Unfortunately, it is not possible to list everyone, but I would like to extend a general thank you to personnel at Rescan Environmental Services Ltd. and to numerous individuals at the BHP Yellowknife office and at Koala Camp Without their assistance, the project would not have run as smoothly as it did Tom Andrews, Margaret Bertulli, and Dr. Chuck Arnold of the Prince of Wales Northern Heritage Centre provided information and support and are gratefully acknowledged. Rose Scott of the Prince of Wales Northern Heritage Centre is thanked for her information on conservation and for the stabilization and shipping of the birch bark basket. A number of native people contributed to this study, but I would particularly like to thank the Dogrib elders selected to represent their communities: Joe Migwi of Rae-Edzo, Narcisse Bishop of Wah Ti, Harry Simpson of Rae Lakes, and Louie Wayne of Snare Lake. Thanks is also extended to Dora Migwi and Joseph Pe'a, who attended the meetings and study area tour arranged by BHP

The inventory phase of field work was ably directed by Ian Franck and I would like to extend my thanks to him and his field crew, Malcolm James and Lloyd Lamoulle Ian is also acknowledged for preparation of the site forms and final site maps and Malcolm for taking excellent photographs.

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1. INTRODUCTION

At the request of Rescan Environmental Services Ltd , on behalf of BHP Minerals Canada Ltd., Points West Heritage Consulting Ltd. conducted an archaeological inventory and impact assessment of the BHP NWT Diamonds project area This proposed diamond mine is located in the Northwest Territories approximately 300 km northeast of Yellowknife. Consultation and research was initiated in March and field investigations were undertaken between June 23 and July 4. Field work was under the direction of Jean Bussey (Principal Investigator) and involved Ian Franck (Field Director), Malcolm James (Field Assistant), and Lloyd Lamoulle (Field Assistant). Franck directed the inventory portion of the field investigations. Bussey was responsible for consultation, background research, site assessment, and report preparation Work was conducted under Northwest Territories Archaeologists Permit #94-768.

The project area as identified at the time an archaeologist's permit was applied for was later revised to include some additional areas. The original study was to include the proposed 'all weather' road, three proposed mine sites with their associated waste dumps, construction and work areas, and a tailings pond. Added to the archaeological study were an esker south of Koala Camp, a portion of the existing winter road, an additional mine site, and sections of eskers associated with three exploration camps. In this report, the study area has arbitrarily been divided into six survey areas to facilitate discussion.

The objectives of the proposed work were to· 1) locate archaeological sites within proposed development areas, 2) evaluate the archaeological sites located; 3) identify potential impacts to archaeological sites as a result of proposed development, and 4) provide viable mitigation recommendations in the event of unavoidable, adverse impact Archaeological sites were defined as any location containing physical evidence of past human use, including possible traditional use sites. These objectives were achieved through a combination of background research, aerial photograph and topographic map interpretation, a series of helicopter overflights, consultation, development plan review, and detailed ground reconnaissance consisting of surface examination and subsurface testing, where applicable

Following this introductory section, a brief summary of the proposed development project is presented in Section 2. A brief discussion of the biophysical and cultural characteristics of the study area is provided in Section 3; this section also contains a summary of previous archaeological investigations in this region. The details of consultation conducted are provided in Section 4, as is a discussion of the research

and field methodology. The results of field investigations are detailed in Section 5 Conclusions are provided in Section 6. A list of references is provided in Section 7 Data not detailed in the text of this report is provided in appendix form. Appendix 1 contains the tool and flake inventories (in table form). For copies of this report submitted to the Prince of Wales Northern Heritage Centre and to the Canadian Museum of Civilization, a second appendix has been added; it contains the completed site entry forms

This report forms the final submission for work conducted under NWT archaeologists permit #94-768. It includes the information provided in an earlier report, but is an expanded version of that submission.

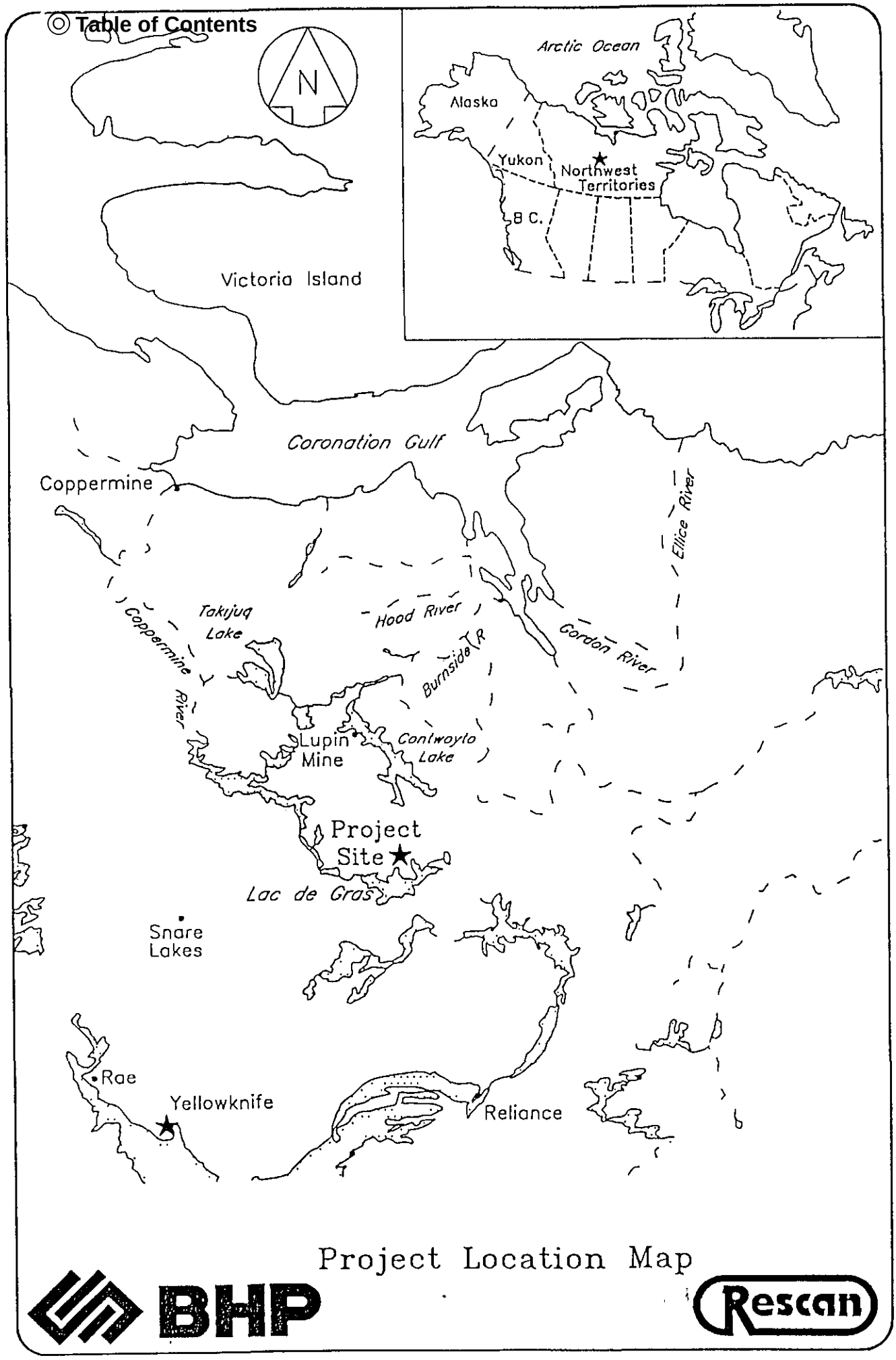
2. PROJECT DESCRIPTION

BHP Minerals Canada Ltd. is proposing to develop a diamond mine in the Northwest Territories. At this time, they are conducting exploration and bulk sampling and have commissioned a variety of environmental studies. Rescan Environmental Services Ltd. is conducting these environmental studies and requested that Points West Heritage Consulting Ltd undertake the archaeological portion of this assessment The BHP NWT Diamonds project area is located in the Northwest Territories approximately 300 km northeast of Yellowknife in the Coppermine River basin (see figure on page 4) The mineral claims associated with this proposed development are north of Lac de Gras (BHP 1994).

The initial diamond discovery was made in 1991 and since that time, exploration has identified additional diamond bearing kimberlite pipes. This has prompted BHP to undertake a larger scale bulk sampling program on the most promising of the kimberlite pipes As a result, some development had already occurred in this study area prior to the initiation of the archaeological investigations These include the main camp, referred to as Koala Camp, an airstrip that was expanded this summer, a winter access road, exploration drilling on four lakes, and approximately 10 km of all weather access road that links the camp and exploration areas.

When initially proposed, the archaeological investigation was to involve examination of a proposed 'all weather' road, three proposed mine sites with their associated waste dumps, construction and work areas, and a tailings pond Added to the archaeological study at the start of investigations were an esker south of Koala Camp for which no development has been identified, the land portion of an existing winter road, a fourth mine site, and sections of eskers associated with three exploration camps referred to as Norm's Camp, Ray's Camp, and Falcon Camp.

Both open pit and underground mining operations will be conducted In order for mining to proceed, it would be necessary to drain the associated lakes and to create a waste dump area, access roads, and work areas at each mine site. A permanent plant site would be required to process the materials that are currently handled in the bulk sampling facility at Koala Camp. The plant site will be located east of Long Lake which will be used as a tailings ponds A number of earthen dykes will ensure Long Lake waters do not overflow into adjacent areas; a spillway will be constructed at the south end of Long Lake (BHP 1994).



Project Location Map

BHP

Rescan

The BHP project area is situated in a remote location and is only accessible by road for approximately three months of each year during which time the Echo Bay Winter Road can be utilized. In the winter of 1994, BHP utilized a winter road that left the Echo Bay Winter Road on Lac de Gras Their proposed all weather road will provide access to the Echo Bay Winter Road, but will also permit movement within the project area throughout the year (BHP 1994).

Each of the development areas was subject to archaeological investigation Some areas, because of their low archaeological potential were only examined from the air Landforms with moderate or greater archaeological potential were subject to ground reconnaissance.

If the results of the BHP bulk sampling program are productive, construction of the plant and development of the first open pit mine are scheduled to begin in 1995. It is currently predicted that this operation would continue for approximately 20 years

3. STUDY AREA DESCRIPTION

The BHP NWT Diamonds project area is located approximately 300 km northeast of Yellowknife in the Northwest Territories. It is situated in the Precambian Shield at a latitude of 64° 40' N, just south of the Arctic Circle, and north of the tree line. A brief summary of the biophysical and cultural characteristics of the study area are provided in the following subsections, a discussion of previous archaeological research in the region is also provided

3.1. Biophysical Characteristics

The following information has been compiled primarily from the project description report submitted by BHP (1994) It is supplemented by field observations.

The BHP project area is located in the tundra region of the Central Sub-arctic. Situated in the boreal climate region, the Lac de Gras area is typified by cool summers (10° C) and extremely cold winters; January temperatures are often below -30° C Mean annual precipitation is less than 300 mm and half of this is commonly snow.

The proposed mine is located in the Slave province of the Archean Canadian Shield. The basic rocks consist of metasediments of the Yellowknife Group which are locally intruded by granitoid rocks Dominant mineralogy is quartz and feldspar, with minerals such as biotite and hornblende being less important. The age of these units ranges between 2 6 and 3.3 billion years.

The geomorphology is dominated by glacial-fluvial relics such as eskers and scoured bedrock. The hard, cold climate and relatively recent retreat of the last ice sheet has result in poor soil development. Eskers are raised glacial features that were created by fluvial deposition of sand and gravel deposits. The region was intensively glaciated which has resulted in extensive areas with exposed bedrock The area is typified by flat to gently rolling upland with deranged drainage patterns and numerous lakes. The elevation is approximately 415 to 500 m above sea level It is uncertain at this time whether the study area is typified by continuous or discontinuous permafrost

The low relief of the terrain has resulted in a diffuse drainage pattern and there are few well defined stream channels between the numerous ponds and lakes The high flows during the spring run-off tend to spread widely and move down weak gradients

The tree line is located approximately 80 km south of the study area Vegetation is characterized by typical tundra zone species that can survive the cold temperatures and low nutrient levels and is sparse and discontinuous Vegetation is typically low in stature and dominated by lichens, mosses, herbs, and low shrubs; most are perennial with low annual growth rates. Dwarf birch and willow are the larger shrubs, also present are red bearberry, dwarf willow, dwarf blueberry, cranberry, rhododendron, and mountain avens. Herbaceous plants such as lousewort, Arctic crocus, saxifrage, moss campion, and fleabane are also present Little aquatic vegetation is present and moist sites are dominated by sedge, cotton grass, and rushes.

The major large game animal present seasonally in the study area is caribou. The proposed mine site is located near the migration route of the Bathurst herd Their winter ranges are in the Taiga north of Great Slave Lake and their summer calving grounds on the tundra near Bathurst Inlet Spring migration is primarily in April and early May and fall migration in August and September Some may be present in the area throughout the summer. Grizzly bears are present throughout the year in the Lac de Gras area, but hibernate during winter. Seasonally, the area is also utilized by waterfowl and songbirds. Year-round occupants include ground squirrel, vole, lemming, snowy owl, wolf, arctic fox, and red fox Wolverine, ermine, and hare are other furbearers that are expected to occur in this area Eskers are important travel routes for animals and are a source of dens for wolves, foxes, and bears

The numerous lakes within the BHP study area contain a variety of fish species Lake trout, lake whitefish, Arctic grayling, and longnose suckers were captured during preliminary environmental studies. The lakes also likely provide an environment for migratory waterfowl

3.2. Cultural Background

According to Gillespie (1981) and Helm (1981), both the Dogrib and Yellowknife groups utilized the area that includes the BHP NWT Diamonds project area Their subsistence quests are similar as they are centred around the movements of the Barren Ground caribou

Gillespie (1981) notes that soon after the establishment of trading posts, the Yellowknife began to force their ascendency upon other groups including the Dogrib This may have caused these groups to avoid certain sectors of their traditional exploitative

ranges and may account for the overlap in use. In 1823, the Dogrib fought back and decimated an entire encampment of Yellowknife; this loss of 34 individuals constituted one-fifth of the Yellowknife population and precipitated the decline of this group (Gillespie 1981·286). After this time, the Yellowknife avoided areas they had frequented and restricted themselves to the east arm of Great Slave Lake and north to the Barrens.

Dogribs were also utilizing the east arm of Great Slaves Lake prior to 1900 and eventually, intermarriage and amalgamation between them and the Yellowknife occurred. The founding of Fort Rae in 1825, provided a focal point for Dogrib trading Independent traders later arrived and the fort was moved to another site on the North Arm of Great Slave Lake near the present community of Rae-Edzo (Gillespie 1981).

Regional bands of Dogrib are identified in relation to a locus of occupation or area of exploitation in which a substantial number of the group can be found during a significant part of the year (Helm 1981·295). Most of the focal points identified in the 1960's as regional band territory are in the western portion of the Dogrib traditional use area. However, Helm (1981) indicates that for caribou hunting, the Dogrib ranges extended to Point Lake and often as far as Contwoyto Lake The Snare Lake group is more centrally located and Snare Lake is the closest existing community to the proposed BHP mine

Subsistence among the Athapaskan speakers of the Shield Subarctic was based on big game hunting. The important food animals were the Barren Ground caribou, moose, and woodland caribou. Caribou were communally hunted during migrations with the assistance of chutes and pounds supplemented by snares, spears, and the bow and arrow. Caribou were also hunted individually Less commonly hunted big game animals include elk, deer, wood bison, musk-ox, and bear Smaller furbearers, including hare, were also hunted. Bow and arrow, spears, deadfalls, snares, and clubs were used to hunt a variety of large and small game (Rogers and Smith 1981)

Migratory waterfowl were seasonally exploited and spruce grouse and ptarmigan were snared or hunted with the bow and arrow Fish were exploited using nets, spears, or hook and line. Vegetal gathering was not a major activity, but berries were collected in season. In order to survive through the long winters, food had to be preserved and stored. Food was dried during the warmer seasons. Cold weather conditions assisted in preserving food at other times (Rogers and Smith 1981).

Overland travel in winter was facilitated by the use of snowshoes and toboggans. Summer travel tended to be along the rivers and creeks by canoe Throughout the year, camps had to shift in response to the availability and suitability of the subsistence resources This nomadic lifestyle necessitated the use of easily transported shelters. Temporary shelters or lean-tos were also utilized. Archaeological evidence of shelters includes the rings of stones used to hold down the shelter covers

3.3. Previous Archaeological Investigations

Archaeological research in the western portion of the Northwest Territories was initiated by R.S. MacNeish with surveys in the Upper Mackenzie drainage-Great Slave Lake area (1951) and the middle Mackenzie-Great Bear Lake area (1953, 1955) Based on this work, MacNeish formed a tentative cultural sequence which has since been modified. Nobel (1971) conducted a reconnaissance program in the Great Slave Lake area and adjacent vicinities which resulted in the elaboration of the regional cultural sequence and the identification of the Taltheilei tradition. Cinq-Mars (1973) and D W Clark (1975) investigated the western Great Bear Lake area and portions of the Mackenzie River McGhee (1970) excavated a series of sites in the Coppermine River area (Cinq-Mars and Martijn 1981).

No archaeological investigations were conducted previously in the immediate vicinity of the BHP project area. Within the upper Coppermine drainage, Metcalf and Kobelka (1978) conducted a survey to the west and discovered 74 sites. Site types represented on the 76D 1:250,000 map sheet (which includes the BHP study area) include lithic scatters, lithic scatters with tent rings, cairns, campsites, and a lookout/quarry site MacNeish (1951) also located two sites on this 1 250,000 map sheet - both are described as prehistoric campsites

Further west, Wayman and Andrews (1994) recently conducted excavations near the community of Snare Lake in advance of airport construction Over two seasons, one of seven hearths was excavated and the other six were tested or partially excavated Excavation has suggested that the hearths represent central features within a tipi-like structure. Activity areas within the structure were apparent. Faunal remains include lake trout, walleye, willow ptarmigan, snowshoe hare, marten, and caribou. Faunal analysis suggests occupation in the winter or early spring. Ethnicity of the site could not be determined, but historically this region was occupied by Yellowknife and today the modern Dogrib settlement of Snare Lake is nearby

Archaeological investigations conducted to date suggest occupation of the Northwest Territories extends to 7000 or 8000 years B P. (before present). The earliest cultural period is typified by lanceolate points and is commonly referred to as the Northern Plano tradition. Sites are commonly found on sand eskers and it blowouts. Quartzite is a commonly used lithic material. The period approximately 6500 to 3500 B.P. is identified as a descendant of the Plano, but is poorly represented in the archaeological record It has been referred to by a variety of names, including the Shield Archaic. Around 3500 B.P. a cooler climatic period is postulated and associated with this is the appearance of a Pre-Dorset or Arctic Small Tool Tradition. The tools are smaller, thinner, and well fashioned. They are primarily made of fine grained cherts Point characteristics include concave bases, triangular outlines, and side-notching. This is postulated to represent a distinctive caribou-adapted Paleo-Eskimo culture Sites are located on sand exposures in protected bays, on sheltered points, on eskers, and on islands Around 2500 B P , the Taltheilei tradition is first evidenced. This tradition is assigned to the Athapaskan occupation of the Northwest Territories. Tools are commonly made of a grey siliceous shale or quartzite; specimens of chert, basalt, and red slate have also been recovered The use of native copper has been associated with this period. The Taltheilei tradition is typified by a variety of point styles, including lanceolates and side and corner notched specimens. Both the Arctic Small Tool and Taltheilei Traditions are associated with barren land and forest environments and caribou hunting (Clark 1977, 1992, Gordon 1977, Noble 1977, 1981).

4. CONSULTATION AND METHODOLOGY

Prior to the initiation of field work, background research was conducted to provide familiarity with the study area. This portion of the study included general environmental research, in addition to archaeological, and was conducted through a library search. To supplement this background investigation, consultation was conducted The following subsections detail the consultation and describe the research and field methodology that was employed during the BHP study.

4.1. Consultation

In mid-March, Tom Andrews of the Prince of Wales Northern Heritage Centre was consulted while preparing a permit application. Mr Andrews summarized the requirements of such an application and provided some background information on archaeology and community contacts. He indicated the nearest community to the study area was Snare Lake and that the study area was in Dogrib territory. He recommended contacting the community of Rae Lakes as members of this band may also have used this territory. The permit application was prepared and submitted, approval to conduct this study was granted in early June.

On March 19, BHP organized a meeting with the Dogrib people to explain their project and to introduce their archaeological consultant, Jean Bussey. An invitation to attend was extended to all four Dogrib communities (Rae-Edzo, Lac La Marte [now called Wah Ti], Snare Lake, and Rae Lakes) and a time was chosen when representatives would be in the Yellowknife area. However, as the meeting was held at Rae-Edzo, it appeared that attendance was primarily limited to members of that community. A brief description of the proposed archaeological work was provided and a request for assistance or a liaison person was made. At the request of Grand Chief Joe Rabesca, it was indicated that further contact should be through John B. Zoe

Mr Zoe was not present at the meeting, but the next evening he was informally introduced to Ms. Bussey by the BHP NWT Diamonds project manager, Bruce Turner Mr Turner had indicated to Mr. Zoe that he would like to rename the lakes in the study area using Dogrib terms. He requested that Mr. Zoe determine known names and provide suitable names for the major lakes that were not already assigned Dogrib names In order to accomplish this task, and because work would be through Points West, it was necessary to apply for a Scientific Research Licence. Ms. Bussey consulted with Laura Seddon of the

Science Institute of the Northwest Territories and prepared the application, including providing a suitable letter of intent for elders that would be interviewed. The licence was granted on April 19. Unfortunately, Mr. Zoe was unable to find the time to undertake this research and consultation and the licence was cancelled, at the request of Ms. Bussey, in September

BHP organized two meetings on March 21 with the Yellowknifes. The morning meeting was at Dettah and was scheduled for 9.00 a.m One individual showed up around 10:00 and Chief Jonas Sangris and Chief Darrell Beaulieu arrived around 11 00 They indicated that they would ensure that more people were present at the afternoon meeting in Ndilo. The meeting was held in Ndilo that afternoon After a presentation by the band, BHP gave their presentation and introduced Ms. Bussey Darrell Beaulieu indicated that he would serve as Ms. Bussey's contact.

On March 30, BHP held an open house in Yellowknife and requested that Ms Bussey be present in order to discuss the proposed archaeological work A small photographic display was provided. This open house ran from 2·00 to 9·00 p m and was well attended. The morning of March 30 and most of March 31 was employed in research at the Prince of Wales Northern Heritage Centre On the former day, Margaret Bertulli was consulted and assisted in obtaining research material and site data from surrounding areas

As weather conditions necessitated that field work not begin until late June, it was determined that further consultation would take place around the end of that month. With that in mind, Jim Carlson of BHP, arranged for a community discussion in Rae Lakes and Snare Lake and for a selected (by the band) elder from each of the four communities to attend further meetings in Yellowknife Accordingly, on June 21, Jim Carlson, two interpreters, and Jean Bussey, met with an elder from Rae-Edzo, Joe Migwi, and flew to Wah Ti (previously known as Lac La Marte). At Wah Ti, the selected elder was not available and Narcisse Bishop was selected as a replacement. The new chief, Charlie Jeremick'ca introduced himself and requested a meeting with BHP The group then flew to Rae Lakes to attend a scheduled meeting In that meeting, Chief Henry Gon indicated that he approved of the plan to consult elders and asked that this meeting be an opportunity for them to have their say

Although the main objective of this meeting was to discuss archaeological concerns, a number of more general environmental concerns were identified and were fielded by Jim Carlson. Concerns that related to archaeology were primarily that of possible burials (no known burials were identified), the caribou migration, sources of shelter, and travel

routes It was noted that the eskers were an important travel route for animals and that it is easier to dig in esker deposits, thus burials could occur. These burials were described as being surrounded by crib work or possibly covered or ringed by stones It was also indicated that burials were plotted on traditional land use maps, but that these maps did not extend into the barren lands As the caribou migration is still important to the Dogrib people, they were particularly concerned that it might be disrupted When asked where the route was located, they indicated that it varied from year to year and was widespread rather than restricted. The elders also indicated that any area that contained a pocket of trees (most of this area is barren land), would be important as a source of shelter and fuel They indicated one such pocket of trees were evident southwest of the BHP project area at Courageous Lake and asked that it not be impacted. They also indicated that eskers were traditional landmarks of significance

Harry Simpson was the selected elder from the Rae Lakes community He joined the flight to Snare Lake where a second meeting was planned. When we arrived in Snare Lake, no one was aware of the meeting and after a brief discussion with Chief Joseph Judas, we picked up two elders, Louie Wayne and Joseph Pe'a, and headed back to Yellowknife. Louie Wayne was the selected elder from Snare Lake, but Joseph Pe'a indicated he wanted to attend the proposed meetings in Yellowknife and at the study area and he was invited to attend.

On the morning of June 22, Jim Carlson had arranged for a meeting of the Dogrib and Yellowknifes elders at Dettah When we arrived, no elders were available. After trying to reach the Chief, unsuccessfully, and keeping the Dogrib elders waiting for about an hour, we left Dettah and held a meeting at the BHP offices Essentially the same issues as were discussed at Rae Lakes were raised, with emphasis on archaeological related concerns placed on burials.

In the afternoon, Tom Andrews of the Prince of Wales Northern Heritage Centre was consulted. He described and showed examples of the lithic materials commonly encountered in the Northwest Territories and the identified the tool types that could occur He described the site which yielded native copper tools at Snare Lake and provided a copy of his report on the excavation He indicated that traditional use sites, not just archaeological sites, should be recorded And finally, he expressed some concern that development not directly associated with the proposed mine could be impacting heritage resources This concern was identified to BHP and resulted in the expansion of the study area to include the existing winter road, an esker south of the mine site, and the landforms associated with three

exploration camps.

Also in the afternoon of June 22, Rose Scott, the conservator at the Prince of Wales Northern Heritage Centre, was consulted. She provided Ian Franck and Jean Bussey with a brief explanation of the types of organic materials that might be encountered and the best method of stabilizing such items in the field. She also provided supplies that would enable stabilization of organic artifacts and indicated a willingness to conduct the lab stabilization if required.

On June 23, six Dogrib elders (the four selected elders, Joseph Pe'a, and Joe Migwi's wife, Dora Migwi) flew to the BHP study area. At the request of the elders, the plane circled the area at the northeast end of Courageous Lake were there is a pocket of trees. There were the remains of at least one structure evident and this location is reported to contain a number of burials As the BHP development is situated a considerable distance from this area, it was not visited on the ground. After a brief tour of the camp, two elders flew via helicopter to the south end of the main esker at Lac de Gras

While on the ground, Louie Wayne and Harry Simpson indicated that the type of soil in the esker made it easy to excavate graves. They also picked up a rock the approximate size of those used to ring burials They described the rings as being oval or an elongated oval and that the size of the ring depended on the size of the individual being buried. They reiterated that protection and improvement of burial sites is very important to the Dogrib. Louie Wayne stated that he used to use dog sled to cross Lac de Gras travelling northeast/southwest in the area south of the BHP development When asked where they would camp on such a trip, both Mr. Wayne and Mr. Simpson indicated that it would be in an area protected from the wind. At this time of year, that would be on the east side of the esker. Presumably, when it is warmer and the bugs are bad, the top of the esker or other more exposed areas would be preferable In returning to Koala Camp, the proposed route of the 'all weather road' was flown Upon reaching camp, two small lakes were circled When asked if such lakes would be used for camping or other activities, a definite negative was the response A second helicopter trip took Joe Migwi and Narcisse Bishop to the south end of the esker During that trip, a small lithic scatter was discovered on the top of the esker

After a brief discussion and lunch break, the elders elected to return to Yellowknife rather than viewing additional areas They did feel, however, that the trip was too rushed and would like an opportunity of visiting the area for an extended period at a later

date.

A final round of consultation, with Dr Chuck Arnold and Margaret Bertulli of the Prince of Wales Northern Heritage Centre, was undertaken after field investigations were completed. The number and types of sites found and those which were threatened by impact were described. Dr. Arnold recommended that two of the sites for which avoidance was recommended be flagged or fenced to ensure their protection. They essentially agreed with the assessment provided by Points West, but indicated they needed a written report to present to other agencies. A summary report was prepared and submitted on July 15, the details in that report are present in this, but have been expanded upon.

4.2. Research and Field Methodology

Research was conducted sporadically throughout the period of mid-March to late June. Emphasis was placed on reviewing reports and documents relating to archaeological sites and traditional use of the barren lands. As environmental studies are underway, the preliminary data provided by BHP formed the major research emphasis with regard to biophysical background information.

As stated in the introduction, the project area was divided into six arbitrary survey areas to facilitate discussion. The first survey area comprised the proposed 'all weather' road which runs from Lac de Gras to the vicinity of the main camp, Koala Camp The second survey area was the esker at the south end of Exeter Lake that was the site of the first exploration camp (Norm's Camp) The third survey area was the existing winter road. The fourth survey area involved an esker south of Koala Camp for which no specific development was identified The fifth survey area included the esker associated with two exploration camps near Falcon Lake (Falcon and Ray's Camps) and the sixth survey area was the lakes region associated with Koala Camp and the proposed location of various mines, waste dumps, access roads, and the tailings pond A brief description of each of these survey areas precedes the site discussions in section 5

The initial step in field investigation was to undertake a helicopter overflight of each survey area prior to beginning field reconnaissance Each of the six survey areas was flown at least once and all landforms with potential for archaeological sites were subsequently examined. Areas typified by low lying and poorly drained deposits are suggestive of low archaeological potential and were not generally subject to foot traverses unless they were on a travel route required to access an area with moderate or greater archaeological potential.

Once the crew was familiar with each of the survey areas, ground reconnaissance was initiated. Because of the presence of extensive exposure and the fact that the majority of the archaeological sites were deflating, ground reconnaissance primarily consisted of a series of foot traverses with intensive surface examination. In areas where there was vegetation, or where the possibility of soil development was noted, subsurface testing was also conducted. Because of the presence of excellent exposure, this testing was generally limited to one or two shovel tests

Shovel tests were judgementally located and were intended to assist in the determination of the general nature, horizontal and vertical extent, and integrity of the subsurface cultural deposits, or to determine if subsurface cultural deposits were evident These tests averaged 40 by 40 cm in size; depth was generally shallow, but extended to obviously sterile matrices All deposits were excavated in rough 10 cm levels and screened through 1/8 inch (3 mm) mesh.

All portions of the six survey areas that were suggestive of moderate or greater archaeological potential were subject to ground reconnaissance It should be noted that during the assessment of the proposed all weather road (and in other areas with restricted development areas), areas with archaeological potential that were within 50 m (or more) of an identified development were also examined Thus, investigations were not limited to the esker, but extended to elevated landforms adjacent to lakes or other topographic features with archaeological potential The general procedure during ground reconnaissance was for three persons, spaced at roughly 10-15 m intervals (depending on vegetation, surface visibility, and landform size), to systematically traverse each survey area, inspecting the ground and any natural and/or artificial exposures Areas judged to have moderate to high archaeological potential, such as level esker deposits adjacent to aquatic features, were visually examined several times Those areas assessed as having low archaeological potential were examined less intensively or not at all.

Formed tools and artifacts with diagnostic potential were collected as were all artifacts encountered during subsurface testing In addition, during the assessment phase of the field reconnaissance, examples of lithic materials not evident in the tool sample were collected. All cultural material recovered during the surface reconnaissance and shovel testing program was recorded by site, location/test unit number, and depth After analysis and completion of the final report, these artifacts will be deposited at the Canadian Museum of Civilization in Ottawa as requested in the permit

Sites discovered during the inventory were recorded in detail using the Archaeological Survey of Canada site entry forms. Detailed maps of the sites, produced by the pace and compass method, were drawn and have been included in this report Photographs were taken for future visual reference and relevant photographs are included in this submission. Temporary field numbers were assigned to each of these sites. They were prefaced by BHP 94 which refers to the project and the year In total, 34 new sites (BHP 94-1 to BHP 94-34) and 16 isolated finds (referred to on field maps as IF) were located. Only those isolated finds that contained tools were given a number. The Archaeological Survey of Canada has provided permanent Borden numbers for each of the locations containing archaeological specimens, including isolated finds. The permanent numbers have been used in this report; temporary numbers were used in the preliminary report (July 15, 1994).

Data collected for the site entry forms was used in the assessment of each site As many of the sites were small and were represented by a low yield of primarily debitage, further assessment of these sites was not deemed necessary. Larger sites, which were generally also those with some buried deposit potential, were revisited by Jean Bussey during the assessment phase. It was arbitrarily determined that all sites yielding over 50 artifacts would be would be revisited and assessed in more detail; this procedure was followed. In addition, sites that yielded unique artifacts (i.e , LeNs-3 - birch bark basket) were revisited as were a number of the smaller sites.

A single organic artifact was discovered, the remaining artifacts were made of various lithic materials. This birch bark basket was discovered at LeNs 3 As this organic artifact would have quickly deteriorated once removed from its environment, it was packaged and shipped to the Prince of Wales Northern Heritage Centre. Rose Scott stabilized the specimen and provided the brief description used in Table 1 (Appendix 1). She arranged for it to be transported directly to the Canadian Museum of Civilization. The lithic artifacts collected by Points West will be submitted to the museum upon completion of analysis.

At one location on the proposed all weather road, a series of three variously shaped and sized 'rock piles' were encountered At the time, it was not known if these were natural or cultural features Testing in the largest rock pile indicated these features were a natural result of the esker deposits eroding

5. INVENTORY RESULTS

The results of fieldwork conducted for the archaeological inventory and impact assessment of the BHP NWT Diamonds Project are provided in this section The information is presented by arbitrary survey area and each subsection discussion is preceded by a brief description of the survey area. Survey areas have also been identified in map form. Included in each of the following subsections are site descriptions, an impact potential statement, and a preliminary assessment of site significance. The location of recorded archaeological sites, including isolated finds (locations with a single artifact), are identified on the relevant map.

The terms debitage, detritus, flakes, lithics, and unworked flakes have been used interchangeably in the following discussion and refer to the waste flakes that are discarded in the process of making stone tools. These specimens show no evidence of further modification. If further modification is evident, it is referred to as retouch, or the specimen is identified as a specific type of tool using standard archaeological, descriptive terminology. Flakes, modified flakes, and tools are all considered to be artifacts Diagnostic artifacts are those that are suggestive of a specific time period

5.1. The All Weather Road Survey Area

This survey area consists of a narrow corridor that extends from Pointe de Misere on Lac de Gras, north and west to the vicinity of Panda Lake near Koala Camp The western portion of this route is not identified in map form in this report as no archaeological sites were discovered and because the road leaves the esker to traverse a primarily poorly drained taiga environment with low archaeological potential. Portions of this taiga environment were traversed and all portions were flown, landforms with some archaeological potential were examined on the ground. For mapping purposes, the remainder of this survey area has been divided into two sections: south and north. It should be noted that the road location identified on the two maps is approximate and, for this reason, any landforms in the vicinity that were suggestive of moderate to high potential for archaeological sites were included in the ground reconnaissance. In addition, the corridor examined is often larger than the area required for road construction and for these reasons, it is often difficult to identify definitively whether or not impact to a specific archaeological site would occur - some sites within the corridor may not be impacted However, if impact was possible, it was identified as such in the following discussions.

The large esker upon which the majority of the proposed all weather road is

situated is comprised of varying amounts of generally eroding deposits. In places, the esker rises as high as 60 m above the surrounding topography which is typified by a large number of variously sized lakes. Others portions of the esker have been entirely eroded, leaving low lying areas dominated by taiga vegetation or lakes. These gaps range in size and can be 100 m or greater in length. The width of the esker varies from as narrow as 3 m, to well over 100 m. Generally, the esker deposits are comprised of a loose sand with varying amounts of small and medium-size gravels and rock, overlying a homogeneous yellowish-brown fluvial sand. Small patches of the esker have developed a peaty soil and even fewer areas contain pockets of aeolian deposits. Deflation has occurred in extensive areas and has resulted in the exposure of archaeological sites and may have buried other such resources. Deflation may have resulted in the mixing of archaeological components and, as no diagnostic artifacts were encountered, it is not possible to identify time periods although the majority of artifacts are presumed to represent prehistoric use of the study area as they are represented by lithic artifacts Two possible exceptions are LeNs-14 (birch bark basket) and LdNs-8 (stone tent rings).

In several areas, the proposed road leaves the esker As it was possible that esker deposits might be used for road construction, both the esker and the proposed route were subject to ground reconnaissance Also examined were two trunk roads that lead to future possible development areas; no archaeological resources were located on these two routes. Finally, in two localized areas, two possible route alternates were identified In both cases, significant archaeological sites were found on one of these two alternates These locations are identified in the following discussion

A total of 27 sites were located within or near the proposed road corridor (Figures 1 and 2) Seven of these sites are defined as isolated finds, localities yielding a single artifact. In the field, isolated finds containing a tool or tool fragment were assigned field numbers (ie. if#1). If these tools were found at localities that were within or near the proposed road corridor, they were collected Isolated finds consisting of a single, unworked flake were not collected Isolated finds are judged to have low archaeological significance Although these site were not consistently numbered in the field, they were assigned numbers in the lab and have been assigned, by the Archaeological Survey of Canada, a Borden number. All twenty-seven sites are discussed in the following subsection The temporary number used in the field is provided in brackets after the permanent Borden number in the title only The sites in this survey area are discussed from south to north. Note that site maps were not drafted for isolated finds, but they are identified on the 1.50,000 survey area maps. Site maps are provided for all other recorded sites.

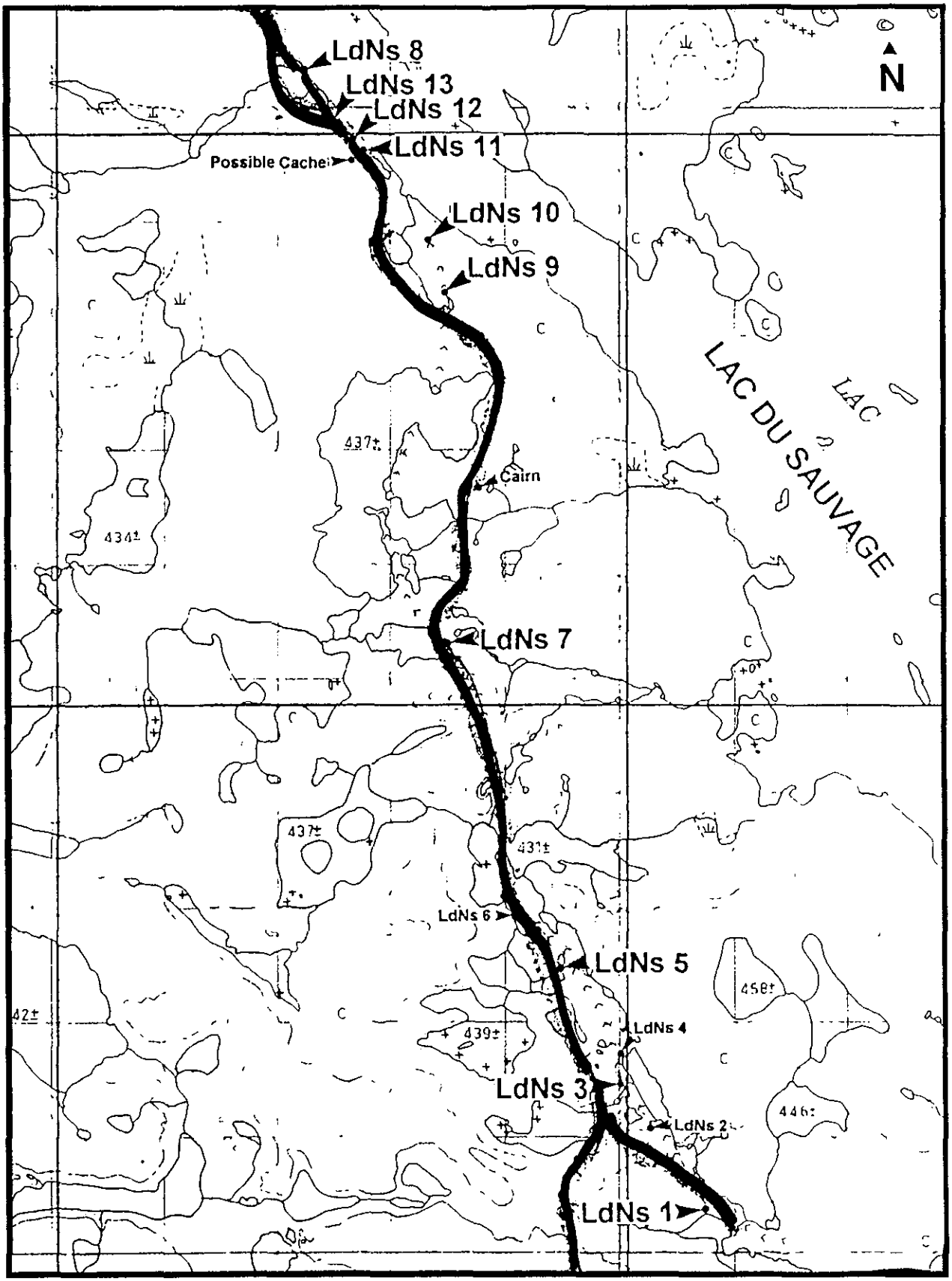


Figure 1. The southern portion of the 'all weather road' survey area showing the location of recorded archaeological sites (1:50,000 map sheet 76D/9)

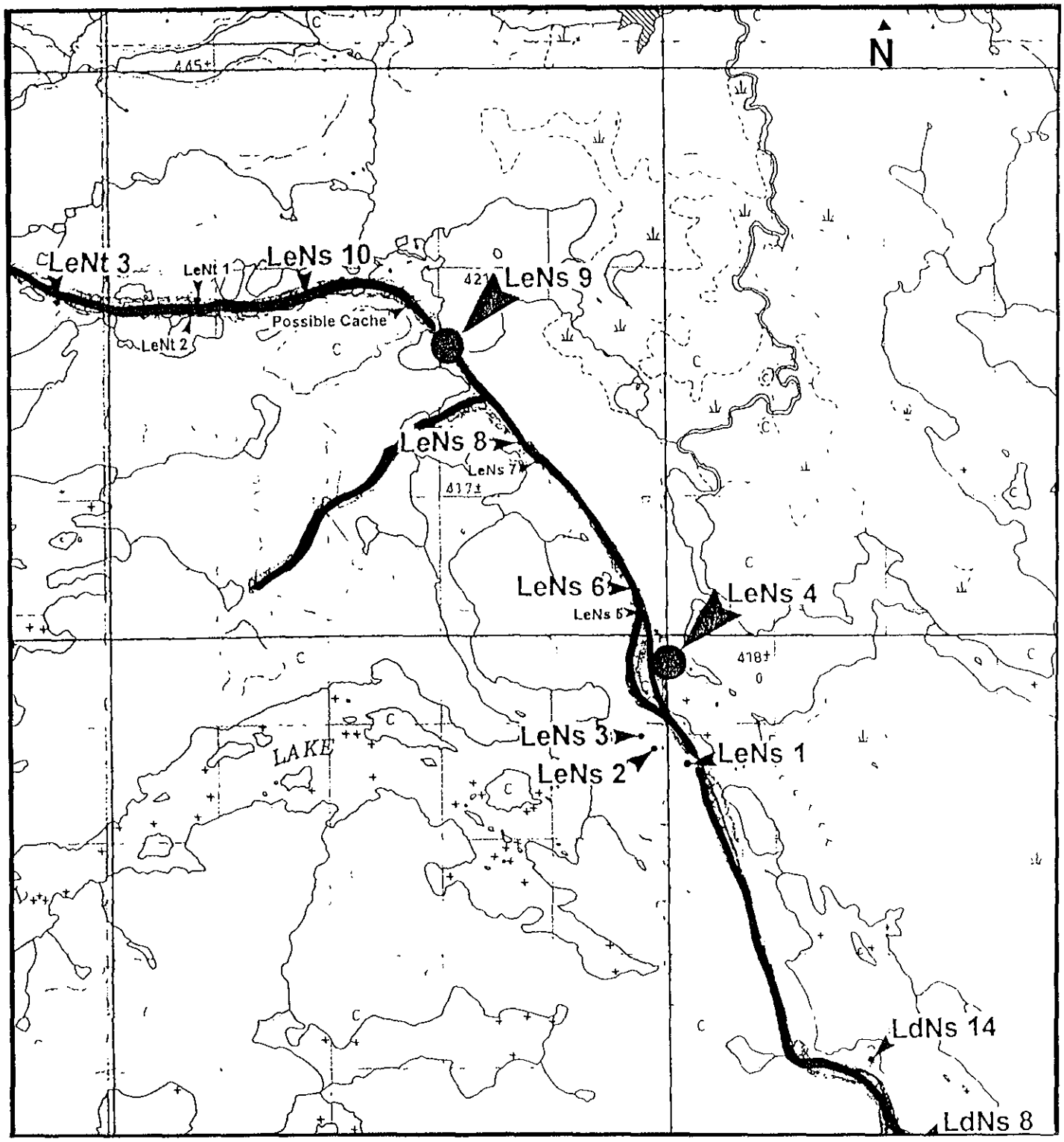


Figure 2. The northern portion of the 'all weather road' survey area showing the location of recorded archaeological sites (1 50,000 map sheet 76D/9)

In addition to the twenty-seven sites, a locality with a possible 'signal' rock was identified during ground reconnaissance This possible signal rock consists of a single rock placed upon a larger rock. Although this could occur naturally, the fact that this was visible from a considerable distance suggests it had a purpose, perhaps as a trail marker It has thus been identified as a cairn and plotted on Figure 1. It is located approximately 1.5 km north of LdNs-7 and 2.5 km west of Lac du Sauvage and could be impacted by road construction.

5.1.1. LdNs-1 (BHP 94-1)

LdNs-1, a very small (5 m N-S X 7 m E-W) lithic scatter (Figure 3), is located approximately 2 km north of Pointe de Misere on Lac de Gras (Figure 1). It is situated at the base (southwest side) of a large esker adjacent to, and approximately 4 m above, a small lake that is connected to Lac de Gras. It consists of 4 greyish-black shale and three white quartz flakes (unworked) One shovel test was excavated and indicated that no subsurface cultural materials were present. Shallow soil development was noted, but sterile fluvial deposits were encountered between 5-10 cm b.s. (below surface) The site area is typified by widespread deflation No diagnostic artifacts were found and no collections were made This site is near the impact zone of the proposed all weather road and could be impacted The small size of this site and the limited yield and variety of the observed artifacts suggest that LdNs-1 has low archaeological significance.

5.1.2. LdNs-2 (isolated find)

This isolated find is located north of LdNs-1. It contained a single artifact located on a well drained landform adjacent to a medium-sized, unnamed lake The artifact is a 5 5 cm long fragment of grey shale with evidence of continuous unifacial retouch along one lateral edge As it was not a diagnostic tool and it was not threatened by development, the tool was left in situ. Low significance is assigned to this isolated find

5.1.3. LdNs-3 (BHP 94-2)

LdNs-3, a medium-sized (40 m N-S by 25 m E-W) site (Figure 4), is typified by a thinly distributed scatter of surface lithics. It is located approximately 100 m west of the main esker and east of the proposed road (Figure 1). The site is situated on a lower lying esker remnant in a slight hollow located above a small, unnamed lake (Photo 1) It consists of approximately eight greyish-black shale flakes, including one with retouch One shovel test

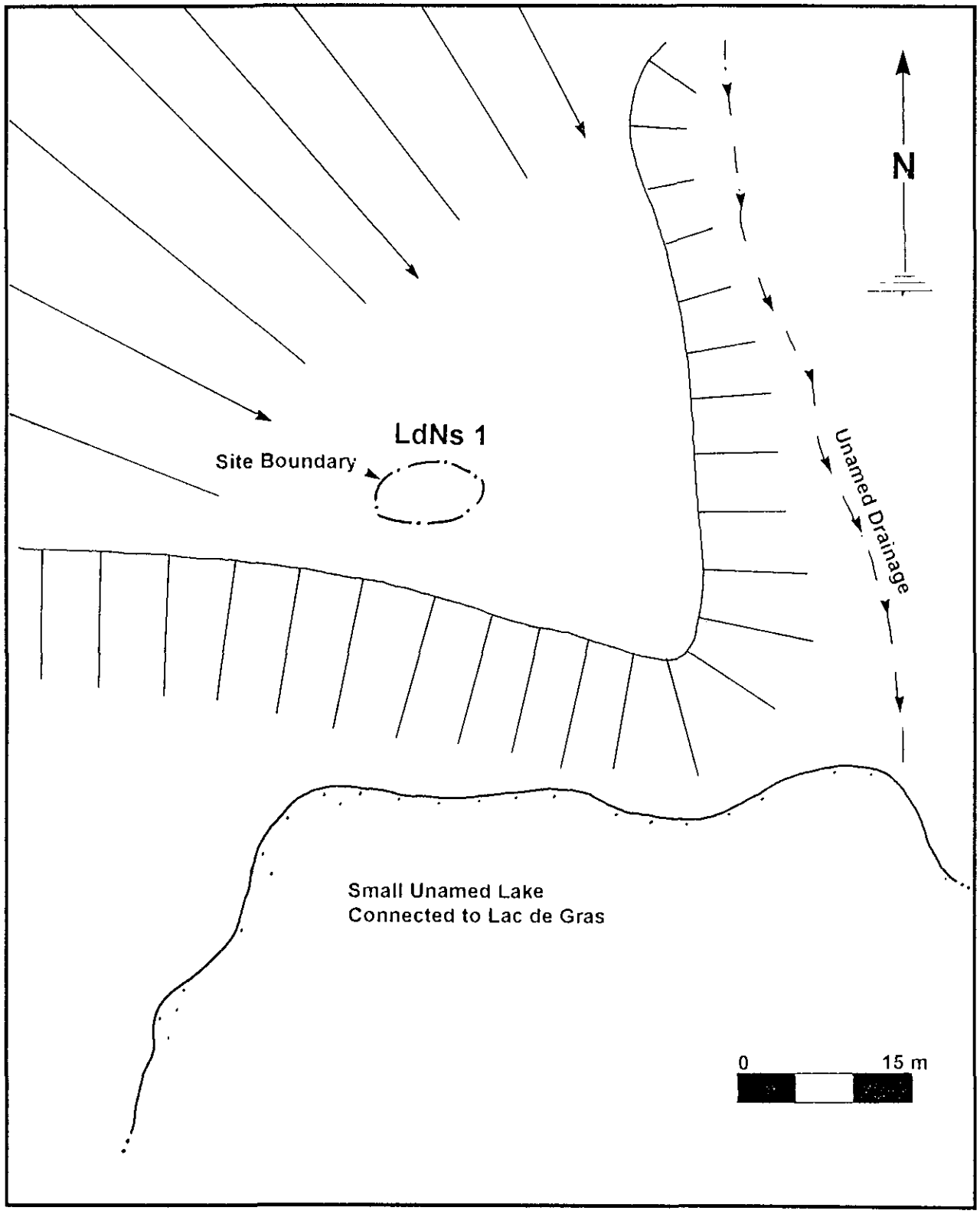


Figure 3. Site Map - LdNs-1.

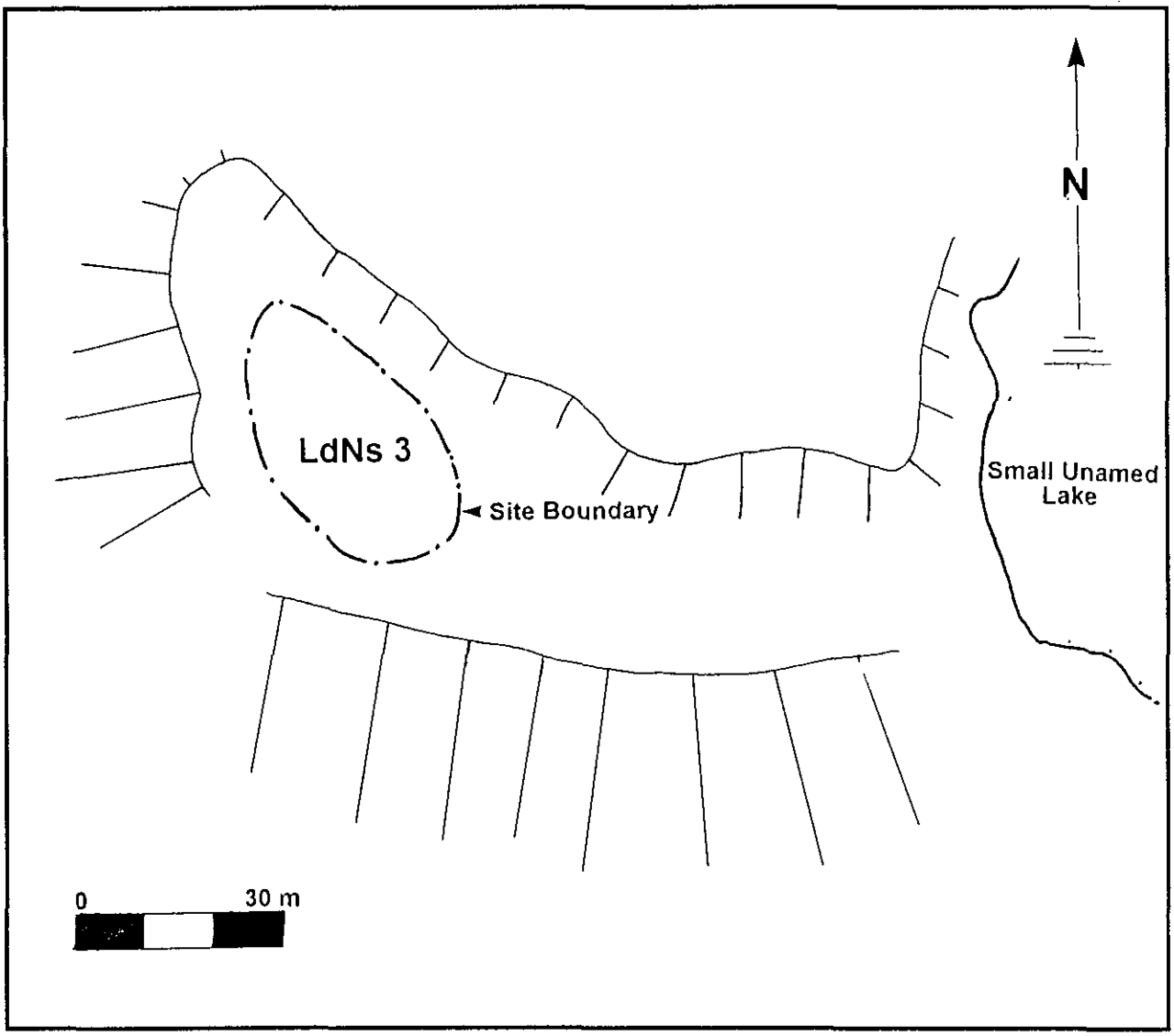


Figure 4. Site Map - LdNs-3

Photo 1 Overview of LdNs-3 (view southeast)

Photo 2 Overview of LdNs-7 (view west)

was excavated with negative results. Sterile fluvial deposits were encountered within the first five centimeters indicating no significant soil development. Much of the site is exposed and is actively deflating. No diagnostic artifacts were recovered and no collections were made. Although this site is not within the proposed road corridor, it is possible that these esker deposits could be used as borrow during construction The limited yield and variety of the observed artifacts suggest that LdNs-3 has low archaeological significance.

5.1.4. LdNs-4 (isolated find)

This locality contained a large (12.0 cm by 6 cm) formed biface made of a fine-grained basalt or chert-like material (Table 1, Appendix 1). Presumed to have served as a knife, it is characterized by complete and extensive bifacial retouch It is rectangular in outline. The knife was found on a well-worn game trail at the north end of the same lake that yielded LdNs-2. It is not associated with any other cultural material, subsurface testing was conducted. It is believed to represent a tool lost while using this trail. This artifact was collected because it is located on a portion of esker that may be used as borrow during construction of the proposed road. Low significance was assigned to this isolated find, because the tool was collected, this site has essentially been mitigated.

5.1.5. LdNs-5 (BHP 94-3)

LdNs-5, a small (25 m N-S by 10 m E-W) lithic scatter (Figure 5), is located approximately 4 km west of Lac du Sauvage, on the west side of the large esker (Figure 1). It is situated within a small basin that is approximately 10 m above two small, unnamed lakes. The site is characterized by a moderately dense scatter of approximately 40 pieces of greyish-black shale detritus (unworked) As the site is deflated and is located on sterile fluvial deposits with very little vegetation cover, subsurface testing was not conducted No diagnostic artifacts were recovered and no collections were made. The site is immediately adjacent to the proposed all weather road and would likely be impacted if construction was to proceed The limited yield and variety of the observed artifacts suggest that LdNs-5 has low archaeological significance.

5.1.6. LdNs-6 (isolated find)

This locality contained a large spall/chopping tool made of an unidentified metamorphic rock (Table 1, Appendix 1) This artifact was found approximately 500 m northwest of LdNs-5 near a small unnamed lake (Figure 1). The chopping tool displays

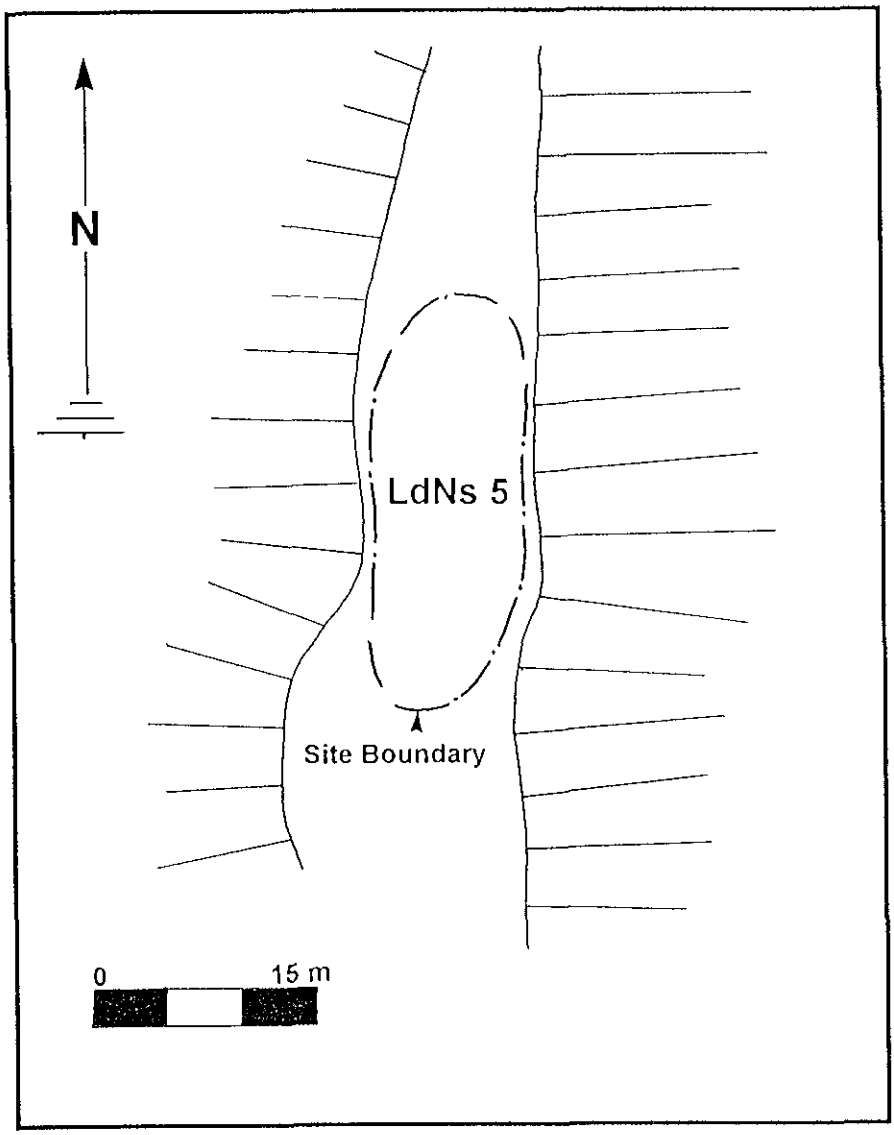


Figure 5 Site Map - LdNs-5

broad unifacial retouch along one margin Tools similar to this have been found in sites associated with the processing of fish This artifact was collected because it is located within the proposed road corridor Low significance was assigned to this isolated find, as the artifact was collected, this site has essentially been mitigated

5.1.7. LdNs-7 (BHP 94-4)

LdNs-7, a medium-sized (35 m N-S X 22 m E-W) site (Figure 6), is located approximately 2.5 km west of Lac du Sauvage and is situated on the esker (Figure 1) This site is located approximately 15 m above a medium-sized, unnamed lake (Photo 2) It consists of around 50 to 100 unworked flakes of white and grey quartz, a lesser quantity of greyish-black shale was also noted One shovel test was excavated and produced a single unworked shale flake at approximately 3 cm b s , this specimen and a sample of four unworked shale flakes from the surface were collected (Table 2, Appendix 1) The majority of the site has been deflated and no evidence of soil development was encountered and therefore it is predicted that no significant buried cultural deposits are present An unformed biface fragment of greyish-white quartz was collected from the surface (Table 1, Appendix 1). The site is within the proposed road corridor and would likely be impacted if construction was to proceed The limited yield and variety of the observed artifacts suggest that LdNs-7 has low archaeological significance

5.1.8. LdNs-8 (BHP 94-5)

LdNs-8 is located on a relatively narrow and low (approximately 2-4 m above the lake) esker remnant situated between the northwest arm of Lac du Sauvage and a small, unnamed lake (Figure 1) This medium-sized (35 m N-S X 30 m E-W) site (Figure 7) represents a temporary habitation site as evidenced by four stone tent rings (Photos 3 and 4) A single shovel test was excavated within tent ring #2 with negative results, approximately 5 cm of loose deposits with rock overlaid obviously sterile rocky material Examination of available exposures also yielded negative results. A single hearth was recorded between ring # 2 and ring #3 Three of these tent rings are well defined and one is less obvious Ring #1 was 3.5 m by 4 m, ring #2 was 3 m by 2 5 m, ring #3 was 4 m by 3 m, and ring #4 was 2 m by 2 5 m Ring #3 contained an interior semi-circle of rocks connected to the main circle, it was roughly 2 m in diameter. This site is located on the eastern of two alternate road routes It would be impacted if this alternate was utilized, but could be avoided by using the other option. As LdNs-8 represents a habitation site containing features, it is judged to have high archaeological significance

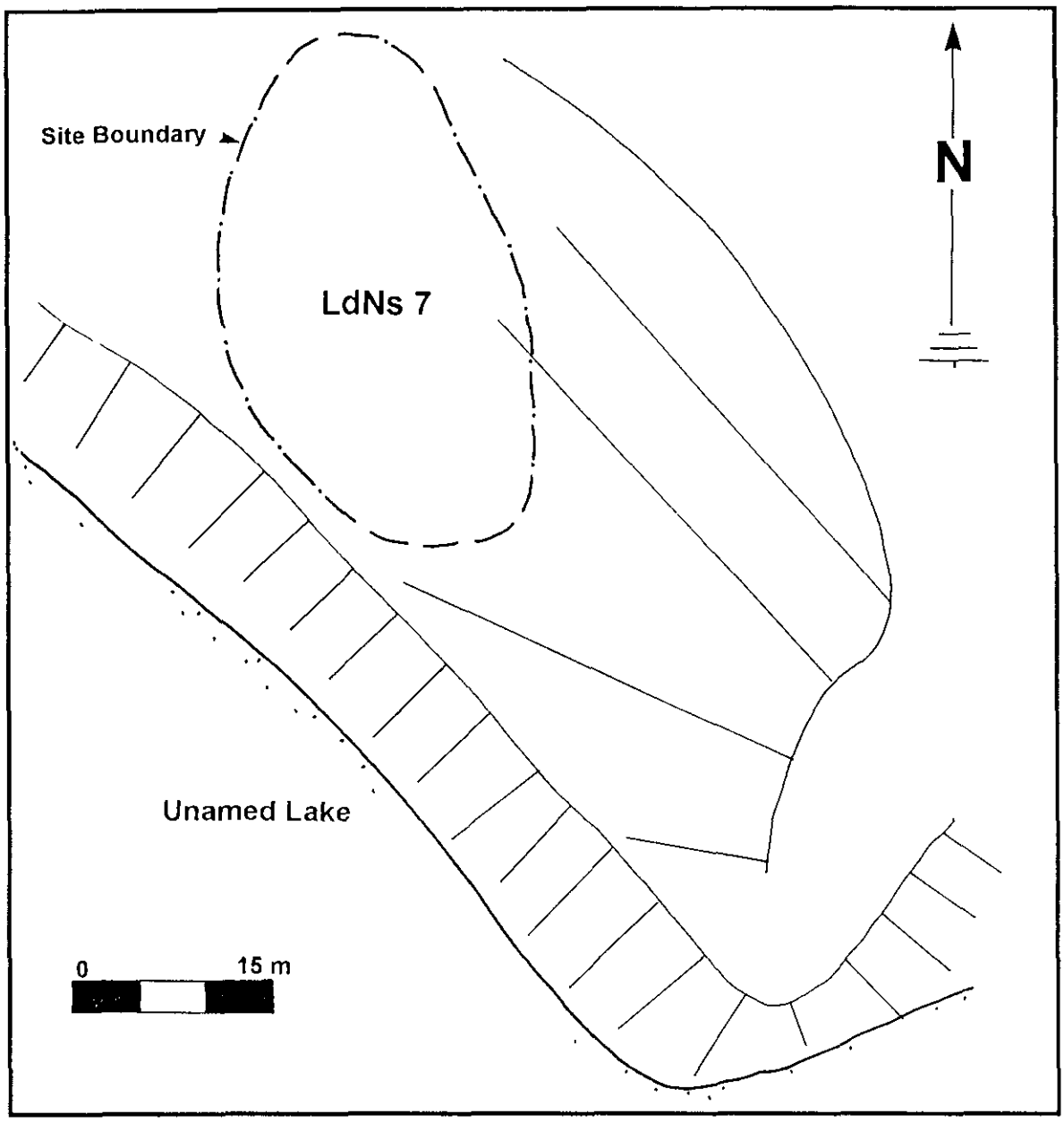


Figure 6 Site Map - LdNs-7.

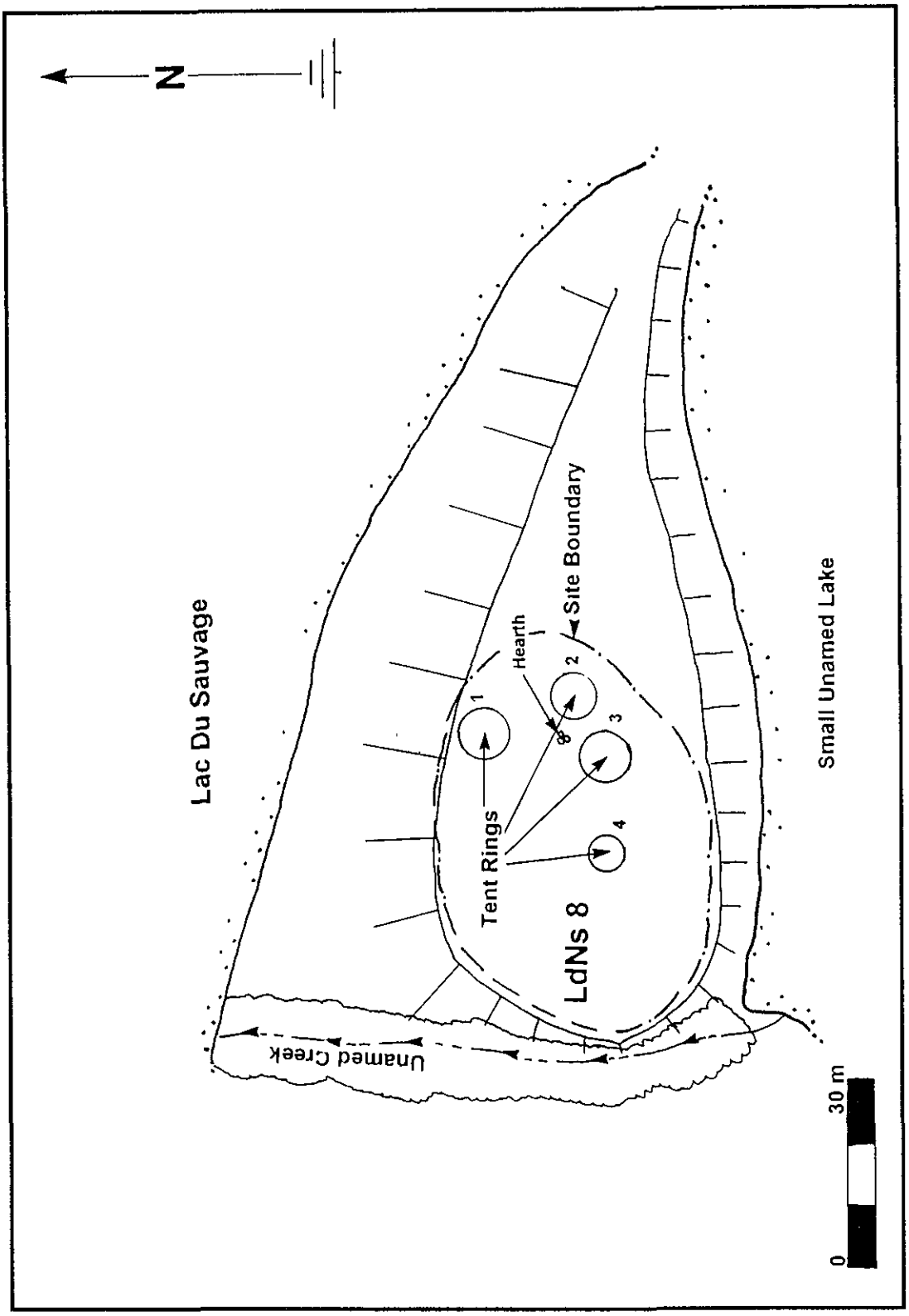


Figure 7. Site Map - LdNs-8.

Photo 3 Aerial view of low esker containing LdNs-8

Photo 4. One of the four stone rings at LdNs-8 (view east)

5.1.9. LdNs-9 (BHP 94-6)

LdNs-9, a very small (3 m N-S X 4 m E-W) lithic scatter (Figure 8), is located approximately 1 km west of the northwest arm of Lac du Sauvage (Figure 1) It is situated on a broad section of the large esker. This site consists of a few pieces of unworked white quartz detritus and likely represents a single lithic reduction event. Excellent exposure permitted an intensive inspection of the site surface and the lack of soil development negated the need for subsurface testing. No diagnostic artifacts were observed and no collections were made. This site is located on a portion of the esker that may be bypassed by the proposed road route, but it could be impacted by minor route revisions or by borrowing. The small size of this site and the limited yield and variety of the observed artifacts suggest that LdNs-9 has low archaeological significance.

5.1.10. LdNs-10 (BHP 94-7)

LdNs-10, a small (7 m N-S X 18 m E-W) lithic scatter (Figure 9), is located approximately 250 m west of the northwest arm of Lac du Sauvage. It is situated on a high portion (approximately 35 m above the lake) of the large esker (Figure 1, Photo 5). A small lake is located approximately 200 m to the west A 360 degree view of surrounding landforms is offered by this location and it could have served as a strategic viewpoint during the prehistoric occupation. The site consists of a scatter of approximately 50 to 100 white and grey quartz flakes (unworked) An unformed biface fragment of grey quartz was collected (Table 1, Appendix 1) The site is well removed from the proposed road corridor, but could be impacted by borrowing during construction The small size of this site and the limited variety of the observed artifacts suggest that LdNs-10 has low archaeological significance

5.1.11. LdNs-11 (BHP 94-8)

LdNs-11, a medium-sized (20 N-S X 40 m E-W) lithic scatter (Figure 10), is located approximately 20 m west of the northwest arm of Lac du Sauvage (Figure 1) The site is situated within a low saddle between two higher portions of the esker and is approximately 10 m above the lake. It is possible that this saddle represents a portion of the esker that has been more rapidly eroded. LdNs-11 is located on the landform currently being used by the Geological Survey of Canada as a campsite and contains three modern stone tent rings and associated refuse. A thin scatter of white quartz flakes was noted within several large, deflated exposures Three shovel tests were placed at the base of a higher

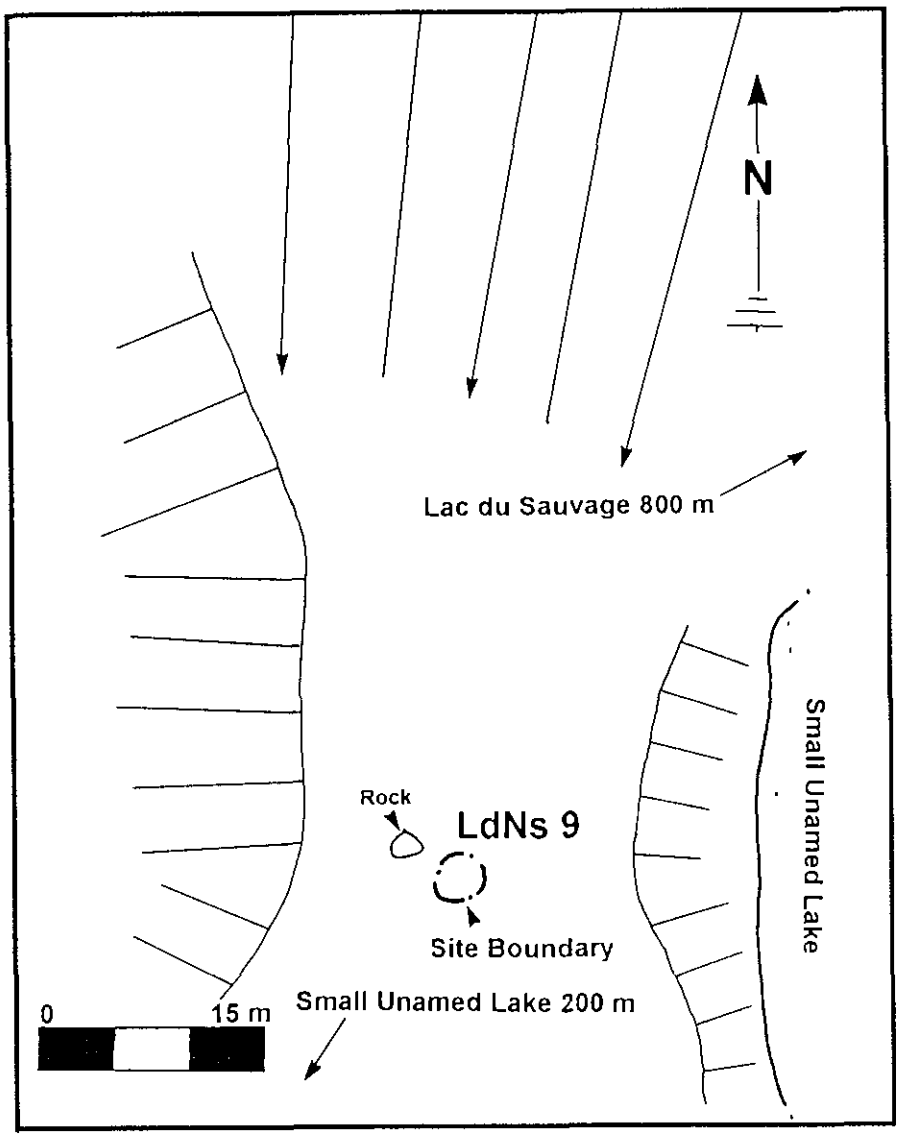


Figure 8 Site Map - LdNs-9

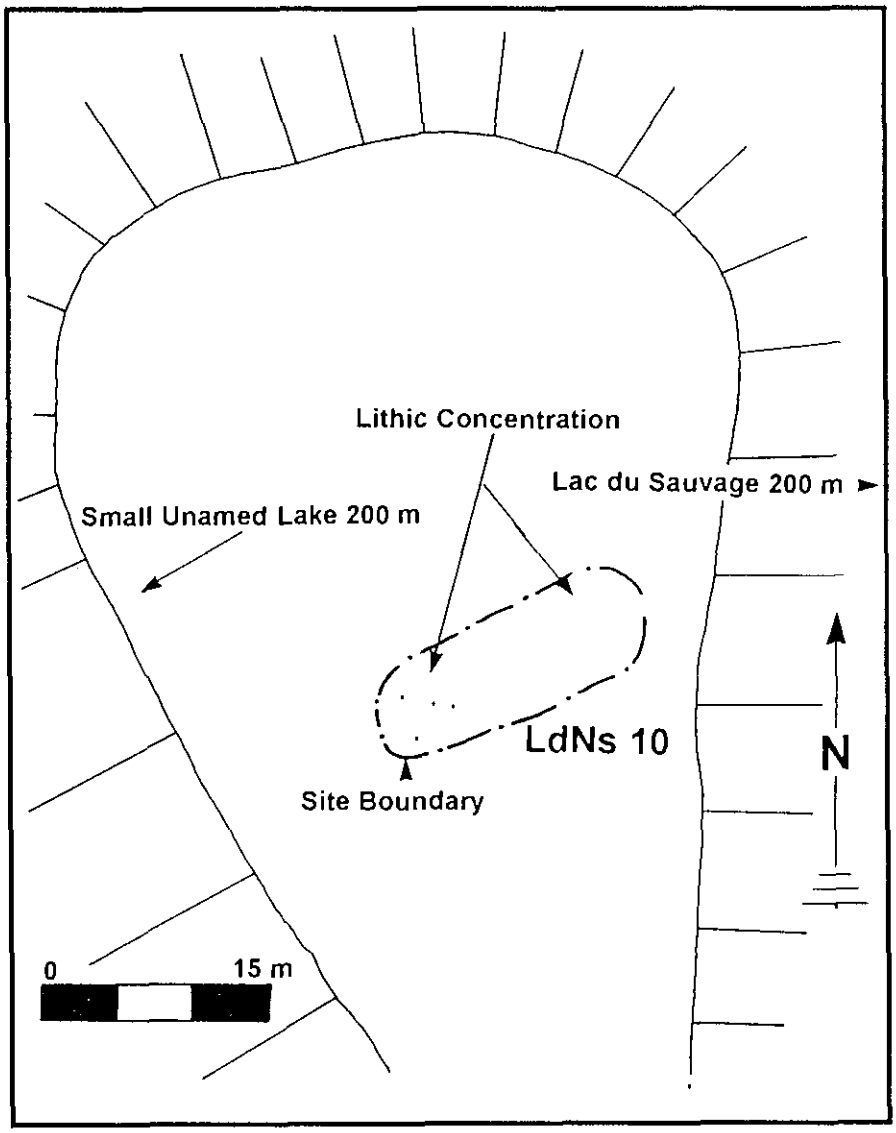


Figure 9 Site Map - LdNs-10.

Photo 5 Overview of LdNs-10 (view south)

Photo 6 Overview of LdNs-12 (view northwest)

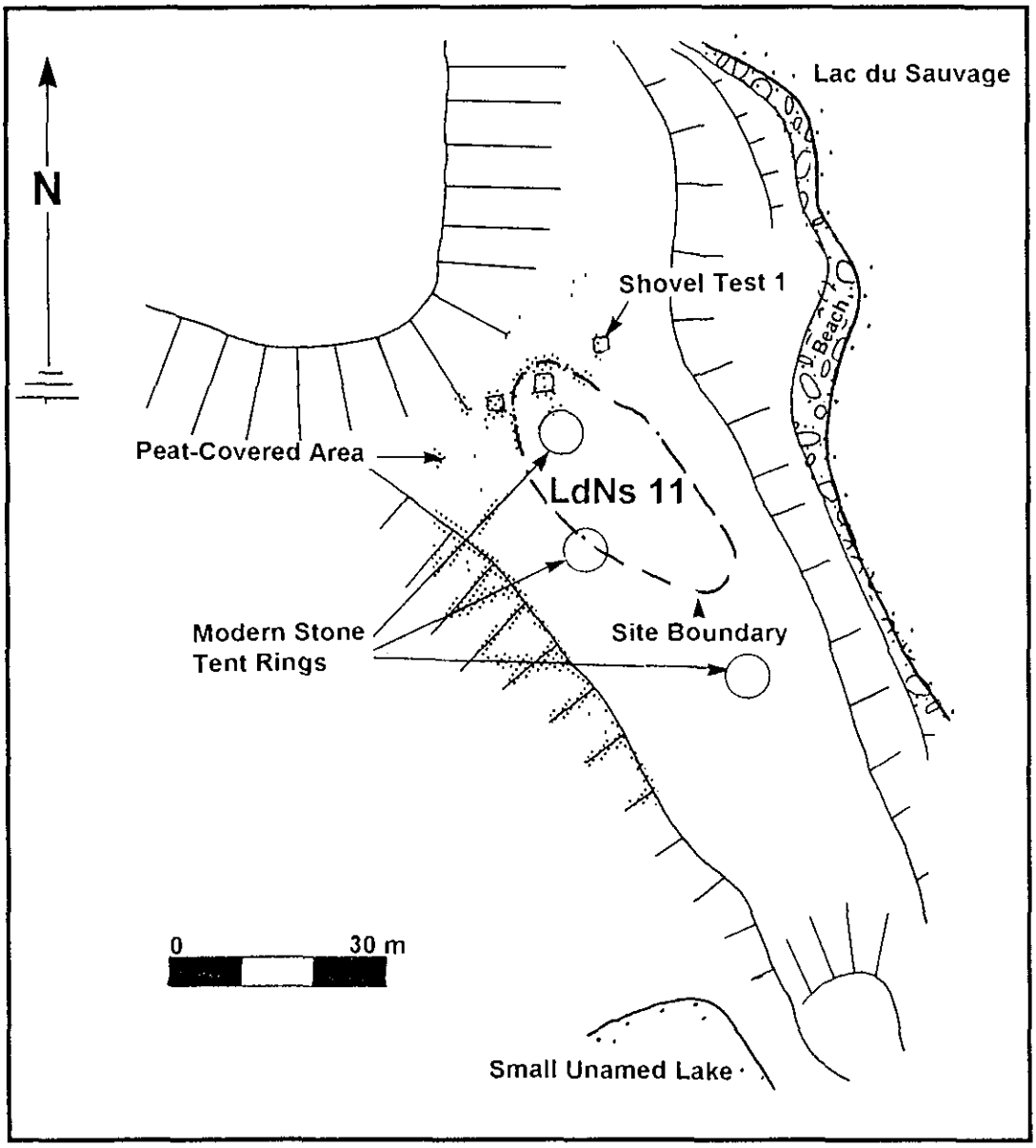


Figure 10. Site Map - LdNs-11.

esker to the north where a considerable amount of peat-like soil is evident Shovel Test 1 yielded an unformed uniface fragment of grey quartz at 27 cm b.s. (Table 1, Appendix 1) The peat deposits appear to be sterile. The other two tests did not produce any further cultural material and although there is some potential for additional buried deposits, it is not judged to be highly likely that significant or frequent artifacts will be discovered. This site is located within the proposed road corridor and would likely be impacted if construction was to proceed. Although there is some potential for buried deposits, it is limited, and the small yield and lack of variety in the observed artifacts suggest that LdNs-11 has low to low-moderate archaeological significance.

Approximately 150 m southwest of BHP 94-8, a small outcrop of exposed bedrock was observed and investigated. Although the small sheltered crevasse within this bedrock outcrop may as served as a cache or temporary shelter, no definitive evidence of such use was encountered An anomalous rock located above this 'cache' may have served as a 'signal' rock. This location is identified as a possible cache on Figure 1 As no cultural evidence was found, no site assessment was undertaken. This area will not likely be impacted by either road construction or borrowing activities.

5.1.12. LdNs-12 (BHP 94-9)

LdNs-12, a medium-sized (50 m N-S x 25 m E-W) lithic scatter (Figure 11), is located to the north of LdNs-11 on a higher section of the esker (Photo 6) and is approximately 25 m above the northwest arm of Lac du Sauvage (Figure 1) Surface exposure at the site was excellent because of deflation; no soil development was evident Around 15 to 20 white quartz waste flakes were noted as well as a smaller number of greyish-black shale flakes (unworked) A single piece of possibly ground shale was discovered. One shovel test was excavated with negative results. Sterile deposits, consisting of yellowish-brown sand with abundant medium-sized gravels, were encountered immediately beneath the vegetation. One clear quartz biface fragment was collected (Table 1, Appendix 1); it is not a diagnostic artifact. This site is located within the impact zone of the proposed road corridor The limited variety and yield of the observed artifacts suggest that LdNs-12 has low archaeological significance.

5.1.13. LdNs-13 (BHP 94-10)

LdNs-13, a small (18 m N-S x 15 m E-W) lithic scatter (Figure 12), is located approximately 150 m west of the northwest arm of Lac du Sauvage (Figure 1). It is situated

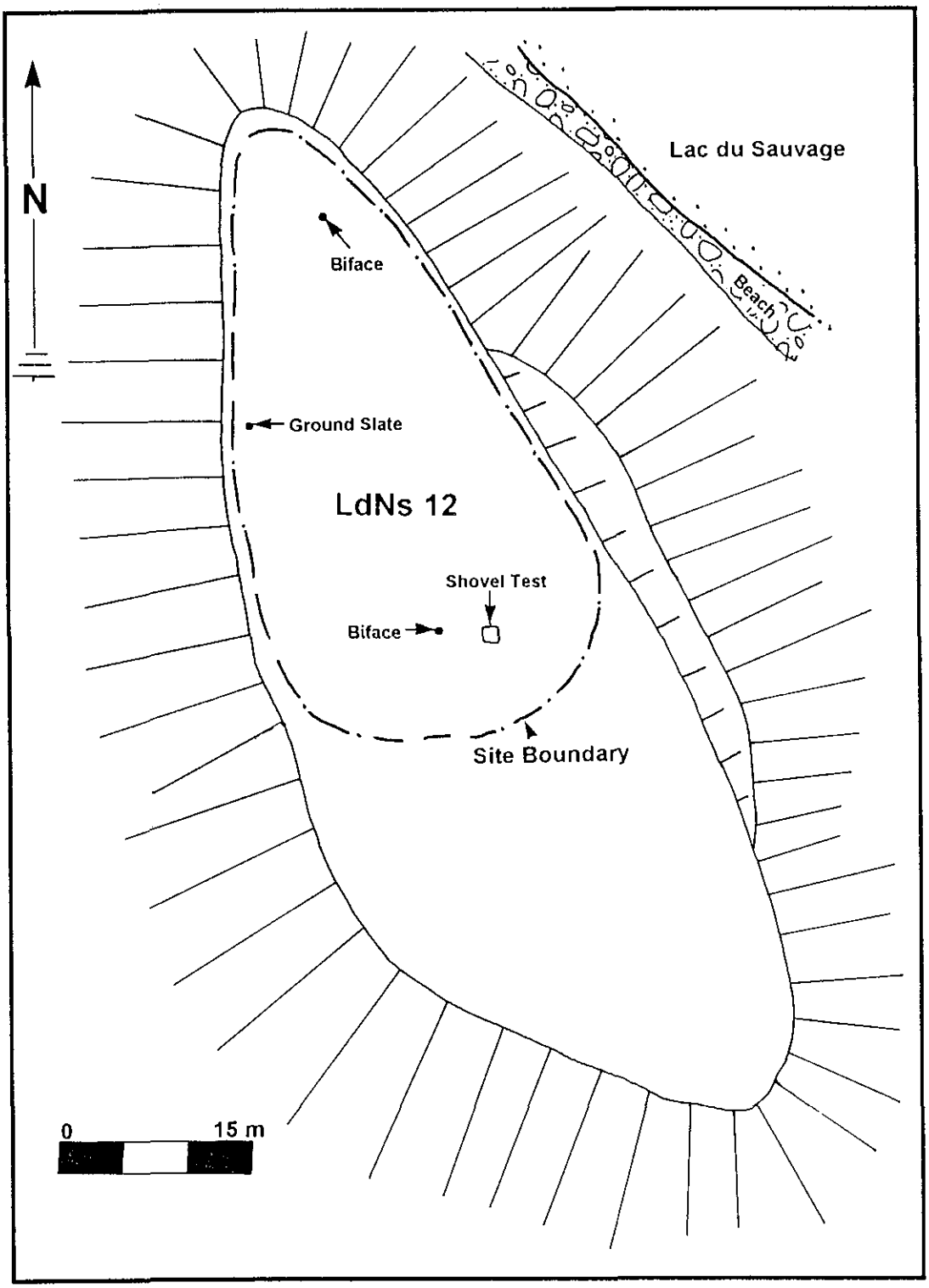


Figure 11 Site Map - LdNs-12.

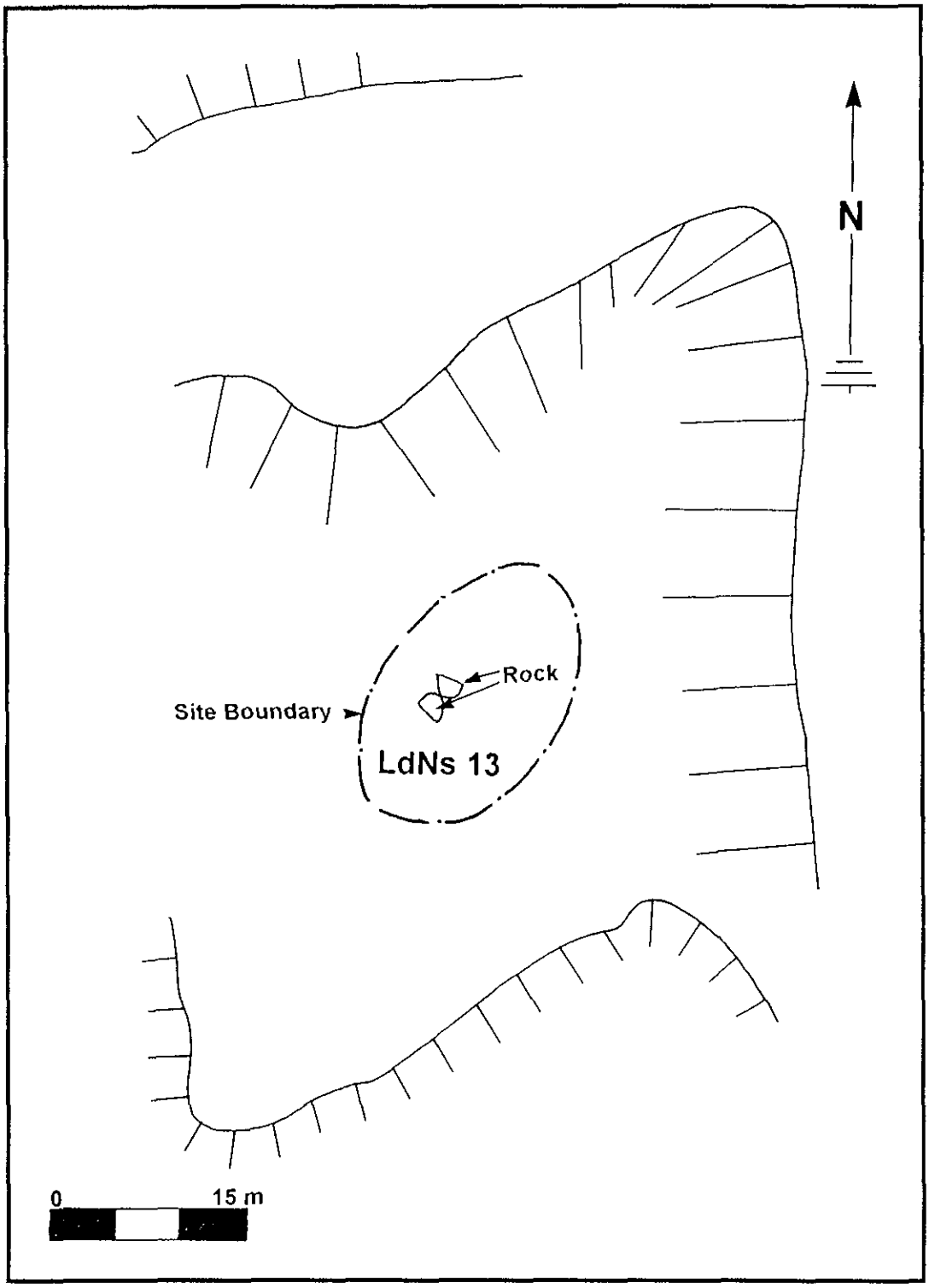


Figure 12. Site Map - LdNs-13.

on a high portion of the large esker and is approximately 30 m above the lake. The site consists of a thin scatter of around 10 white quartz flakes and also contains a few flakes of a tan coloured granitic material Some retouched flakes were observed, but no artifacts were collected. Good exposure, as a result of deflation on this portion of the esker, allowed a detailed examination of the surface and negated the need for subsurface testing. This site is within the impact zone of the proposed road corridor. The small size of this site and the limited yield and variety of the observed artifacts suggest that LdNs-13 has low archaeological significance

5.1.14. LdNs-14 (BHP 94-11)

LdNs-14, a small (10 m N-S X 7 m E-W) lithic scatter (Figure 13), is located on a high (35 m) esker above Lac du Sauvage (Figure 2). The site consists of a moderate scatter of about 50 to 75 white quartz flakes and also contained a few flakes of grey quartz, greyish-black shale, and a granitic material (unworked) Although most of the site is deflating and offers excellent surface exposure, a restricted area with soil development was noted and tested. The single shovel test yielded negative results, but did confirm that approximately 25 cm of developed soil does exist above the culturally sterile glacial deposit of the esker No artifacts were collected. LdNs-14 is outside of the proposed road corridor, but could be impacted by borrowing activities or minor route relocation The small size of this site and the limited yield of observed artifacts suggest low archaeological significance, but the presence of soil development and the potential for limited buried cultural material suggest that low-moderate archaeological significance should be assigned to LdNs-14

5.1.15. LeNs-1 (BHP 94-12)

LeNs-1, a medium-sized (80 m N-S X 30 m E-W) lithic scatter (Figure 14), is situated on an isolated esker remnant (Photo 7) that is located approximately 200 m west of a medium-sized, unnamed lake north of Lac du Sauvage (Figure 2) Between 80 and 100 pieces of lithic detritus were observed at the site. The flakes were predominantly white quartz, but a smaller quantity of grey quartz, black-veined grey quartz, greyish-black shale, and various granitic materials were also evident Two grey quartz artifacts were collected, one unformed uniface fragment and one formed uniface fragment (Table 1, Appendix 1). This esker remnant is typified by deflated sands and gravels and it was not necessary to conduct subsurface testing. LeNs-1 is located very near the proposed road route and could be impacted by construction or borrowing. Although the site was typified by a moderate yield, the lack of variety in the observed artifacts suggest that LeNs-1 has low-moderate

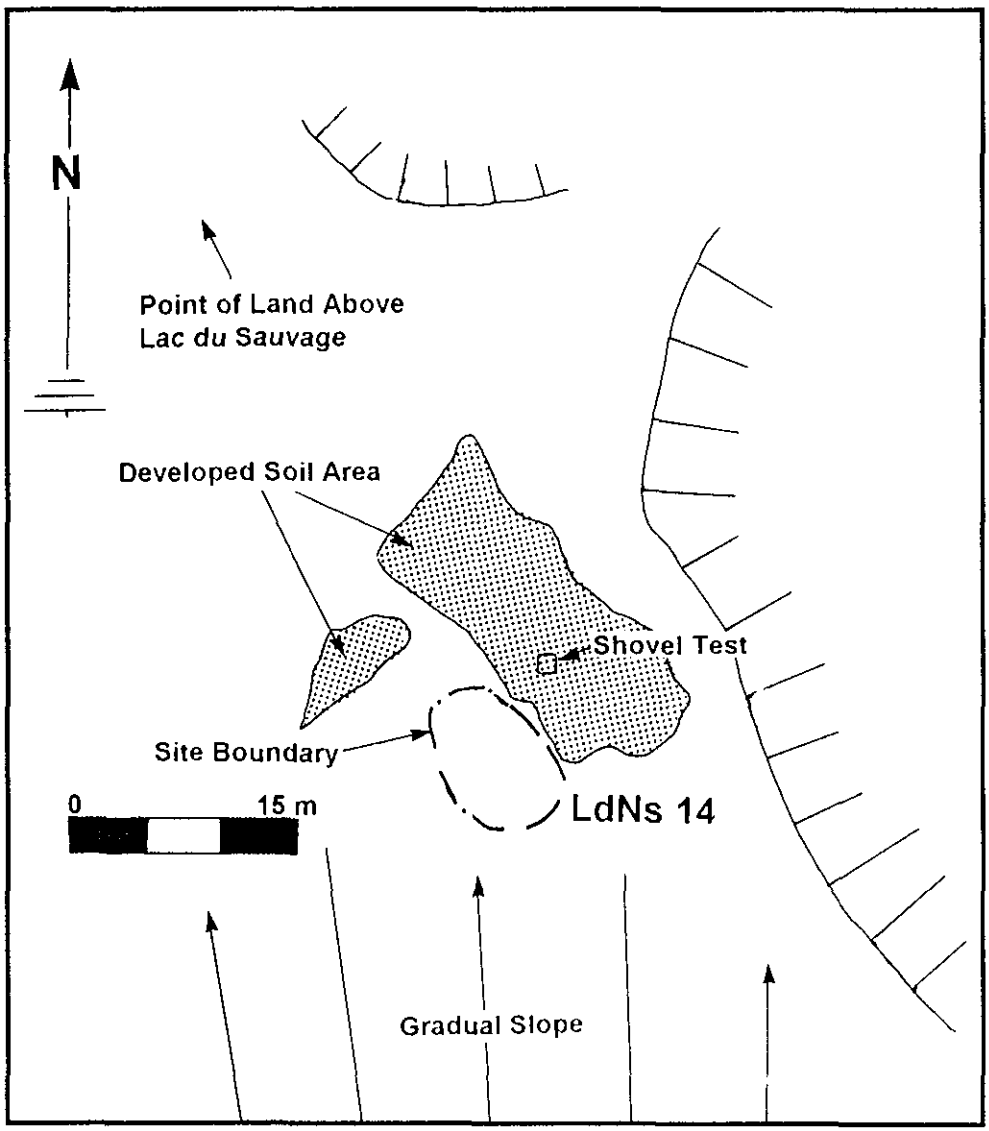


Figure 13 Site Map - LdNs-14

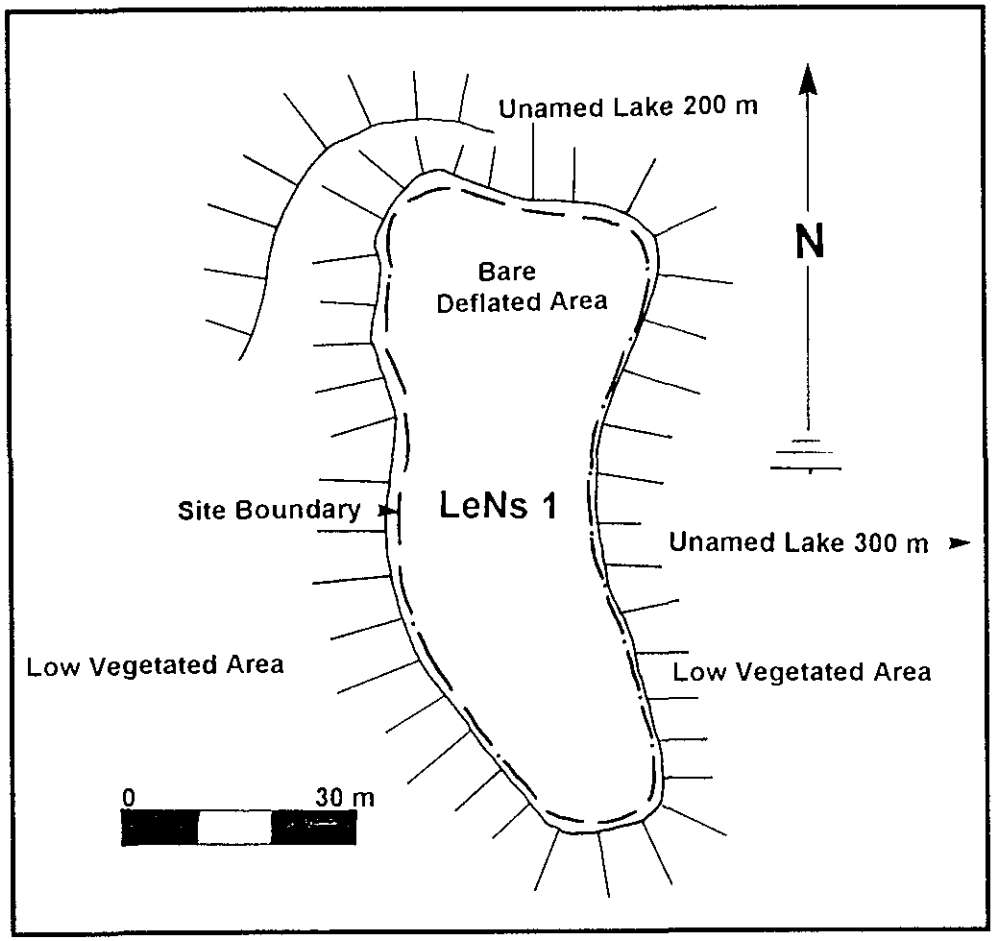


Figure 14 Site Map - LeNs-1

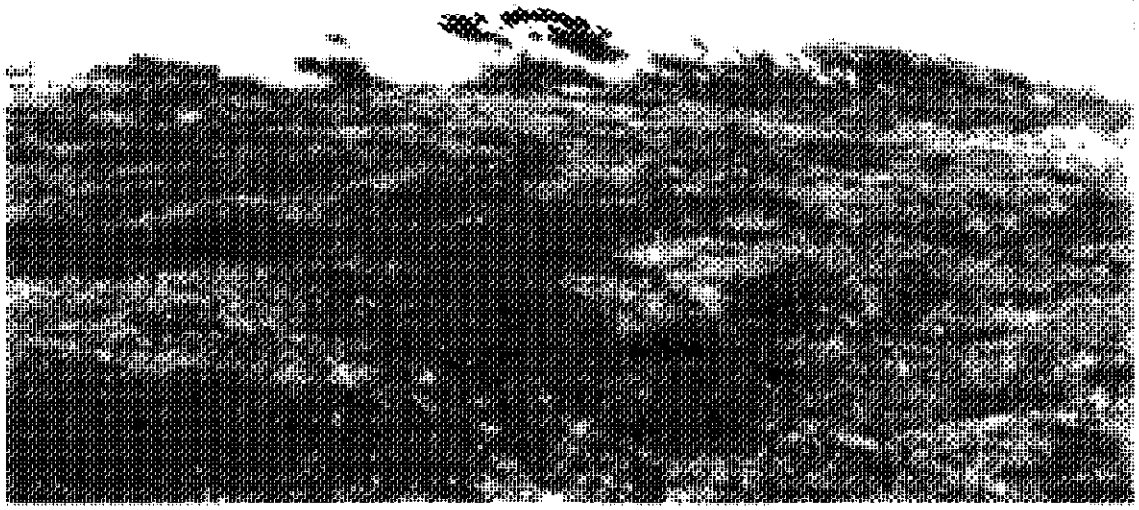


Photo 7. Overview of LeNs-1 (view northeast)

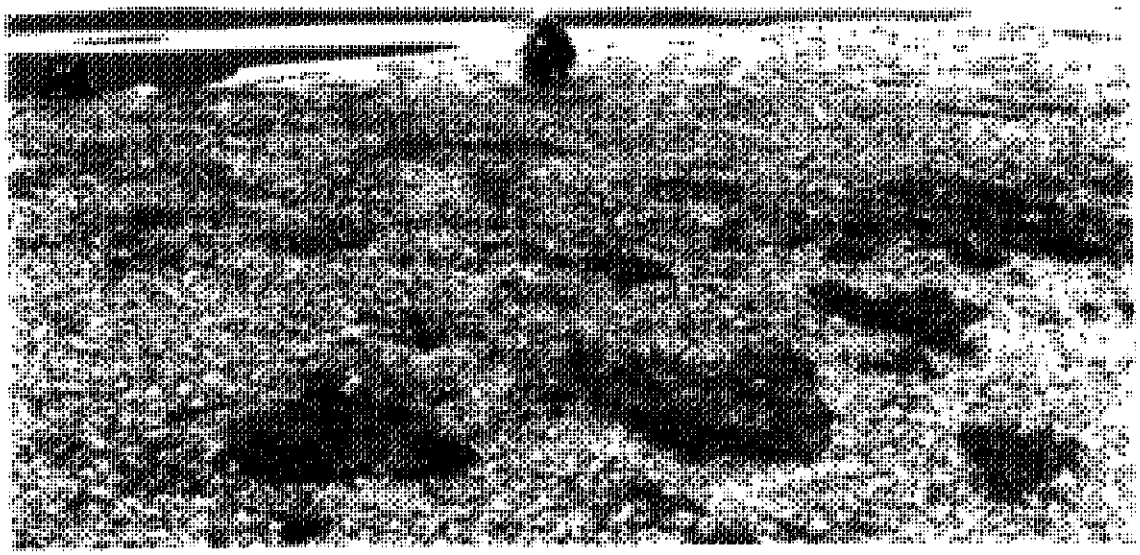


Photo 8. Overview of the central aspect of LeNt-3 (view east)

archaeological significance.

5.1.16. LeNs-2 (BHP 94-13)

LeNs-2, a medium-sized (40 m N-S x 23 m E-W) lithic scatter (Figure 15), is located approximately 500 m northwest of LeNs-1 and around 250 m west of a medium-sized, unnamed lake (Figure 2) The site is situated on a deflated esker bordered on the west by a large shield outcrop. This site consists of around 20 unworked flakes of white and grey quartz, a few flakes of grey shale were also noted. Extensive exposure indicated that no soil development was evident and thus no subsurface testing was required. No artifacts were collected. This site is located west of the proposed road route and it is unlikely that it would be impacted by construction. The limited yield and variety of the observed artifacts suggest that LeNs-2 has low archaeological significance

5.1.17. LeNs-3 (BHP 94-14)

LeNs-3 is located approximately 150 m north of LdNs-2 (Figure 2) It consists of an isolated find located within a natural crevasse (Photo 9) in a bedrock outcrop (Photo 10). The isolated find was a nearly complete birch bark basket (Table 1, Appendix 1) that was partially buried under a pile of rocks. No other artifacts were found in the series of crevasses and shelters produced by this bedrock outcrop However, the area could have served as a cache or as a shelter during unexpected bad weather. This site is near the proposed road corridor, but it is unlikely that impact would occur. As the basket was collected and no other cultural material was discovered, LeNs-3 is judged to have low archaeological significance

5.1.18. LeNs-4 (BHP 94-15)

LeNs-4, a very large (400 m N-S by 750 m E-W) site (Figure 16), is located along an unnamed lake to the west of Duchess Lake (Figure 2) It is situated on a high landform (approximately 30 m above the lake) and along a peninsular-like esker remnant that extends into the unnamed lake (Figure 2; Photo 11) The majority of the site consists of a thin scatter of lithics, but several specific clusters contain moderate to dense concentrations of debitage. The predominant materials found at the site were white and grey quartz, but lesser quantities of greyish-black shale, rhyolite, black-veined grey quartz, white chert, and various granitic materials were also noted. A considerable amount of the quartz raw material was eroding out of the crest of the esker in several locations. Most of the site lies upon

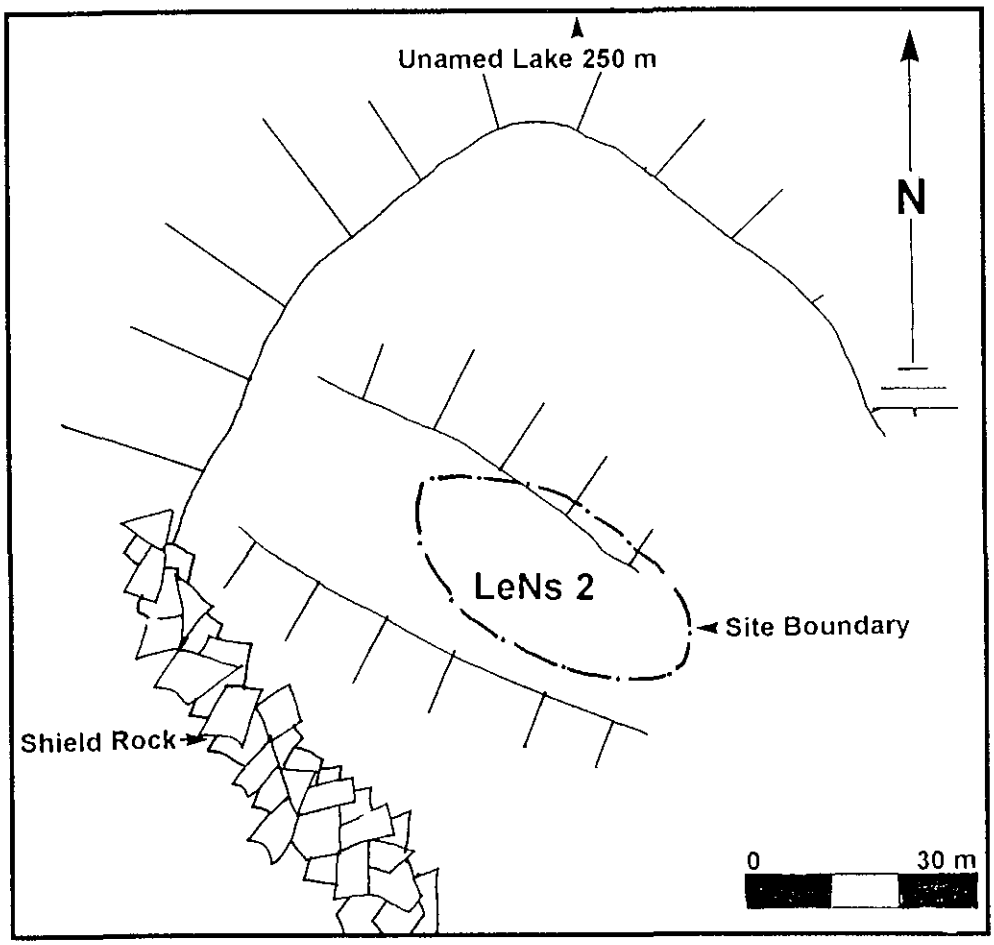


Figure 15. Site Map - LeNs-2

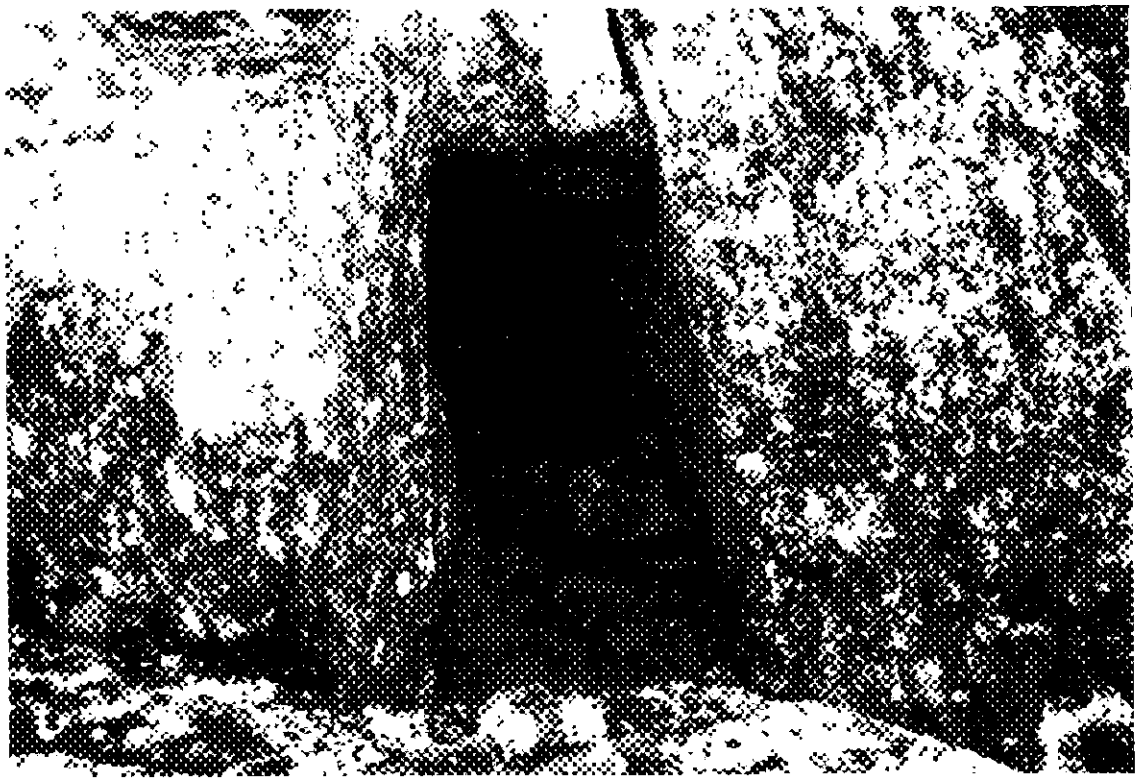


Photo 9 Close-up of crevasse that yielded the birch bark basket at LeNs-3

Photo 10. View of shield rock outcrop at LeNs-3 (view northwest)

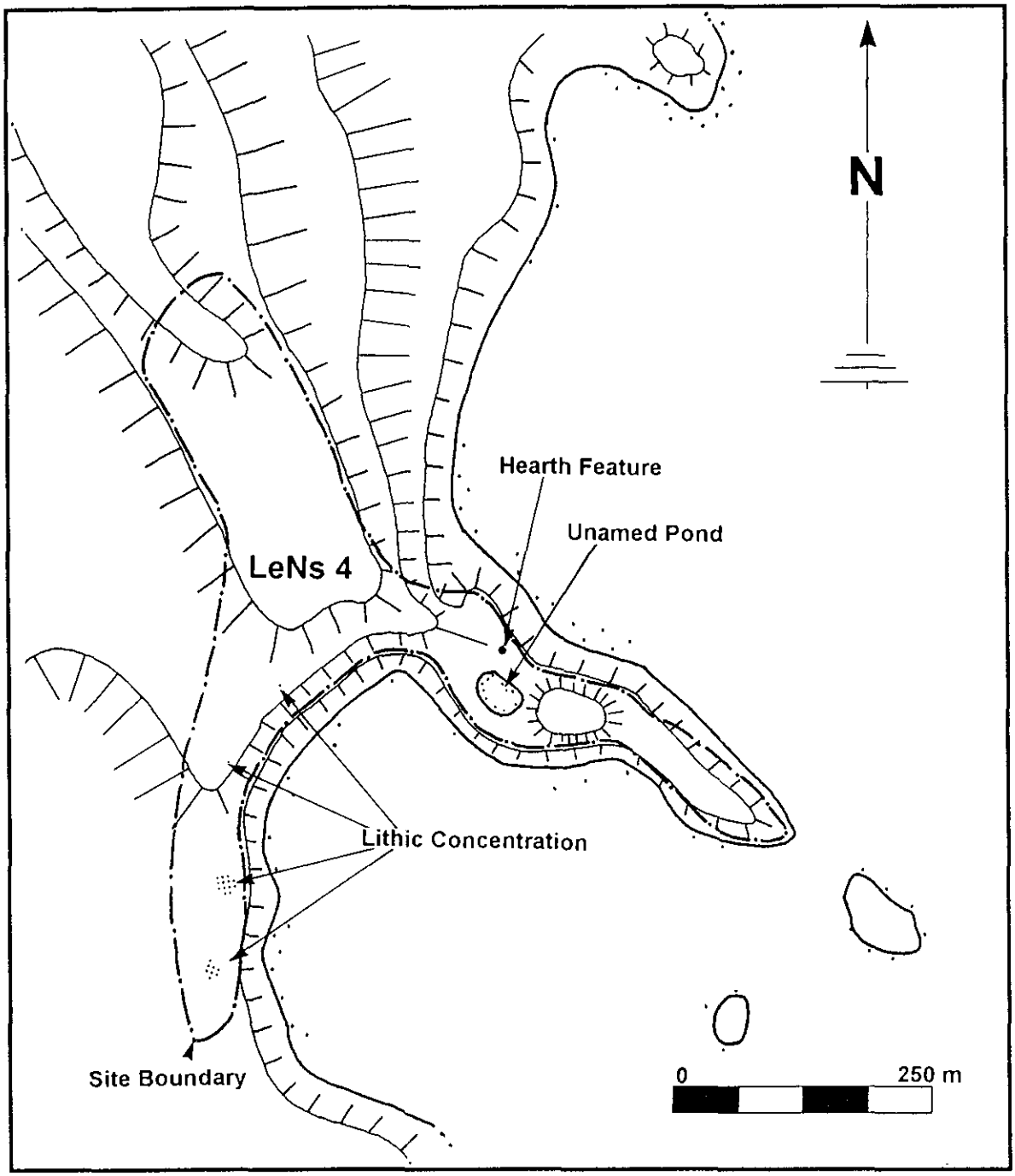


Figure 16 Site Map - LeNs-4

Photo 11. Lakeshore and peninsula that form LeNs-4 (view northeast)

Photo 12 Overview of the south end of LeNs-9 (view south)

deflated lake terrace and esker deposits, but a few areas appear to have soil development and thus have potential for buried cultural deposits.

A single, partially buried hearth was found on the esker that extends into the lake. This hearth was uncovered and photographed. The removed matrix was screened through 1/8 inch (3 mm) mesh. The only cultural material noted was a dense concentration of fire altered rock within the hearth. This hearth was in a low-lying, but well drained area between the esker and a high knoll.

A large, partially formed biface of grey quartz, a small formed biface of white chert, and a fragment of an unformed uniface made of grey banded chert, were recovered from LeNs-4 (Table 1, Appendix 1). The quantity and variety of the lithic material, in conjunction with the large size of this site, suggest that LeNs-4 has high archaeological significance. It appears to have served as a camp site that was likely revisited numerous times. This site is located on the more easterly of two possible route alternates for the proposed road. It can be avoided by using the more westerly route.

5.1.19. LeNs 5 (isolated find)

This locality contained a white chert stemmed biface fragment that likely served as a projectile point (Table 1, Appendix 1). This artifact was recovered from approximately 80 m south of LeNs-6 (Figure 2). The projectile point displays continuous, extensive bifacial retouch Much of the artifact is covered with black lichen This artifact was collected because it is located within the proposed road corridor. Low significance has been assigned to LeNs-5; as the single artifact was collected, the site has essentially been mitigated

5.1.20. LeNs-6 (BHP 94-16)

LeNs-6, a medium-sized (42 m N-S X 35 m E-W) lithic scatter (Figure 17), is located approximately 500 m north of the northernmost cluster at LeNs-4 (Figure 2). It should be noted that several isolated flakes were noted between sites LeNs-4 and LeNs-6, as well as a single white chert biface fragment (Isolated Find # 4 - LeNs-5), but the scatter at LeNs-6 represents the first concentration of lithics LeNs-6 is situated approximately 600 m west of a lake on a relatively level portion of a broad section of esker It consists of around 100 unworked flakes of white and grey quartz. This site appears to represent a lithic reduction locality Lithic raw material (grey and white quartz) is readily available near and within the site. No artifacts were collected from the site. As the site is located on deflated

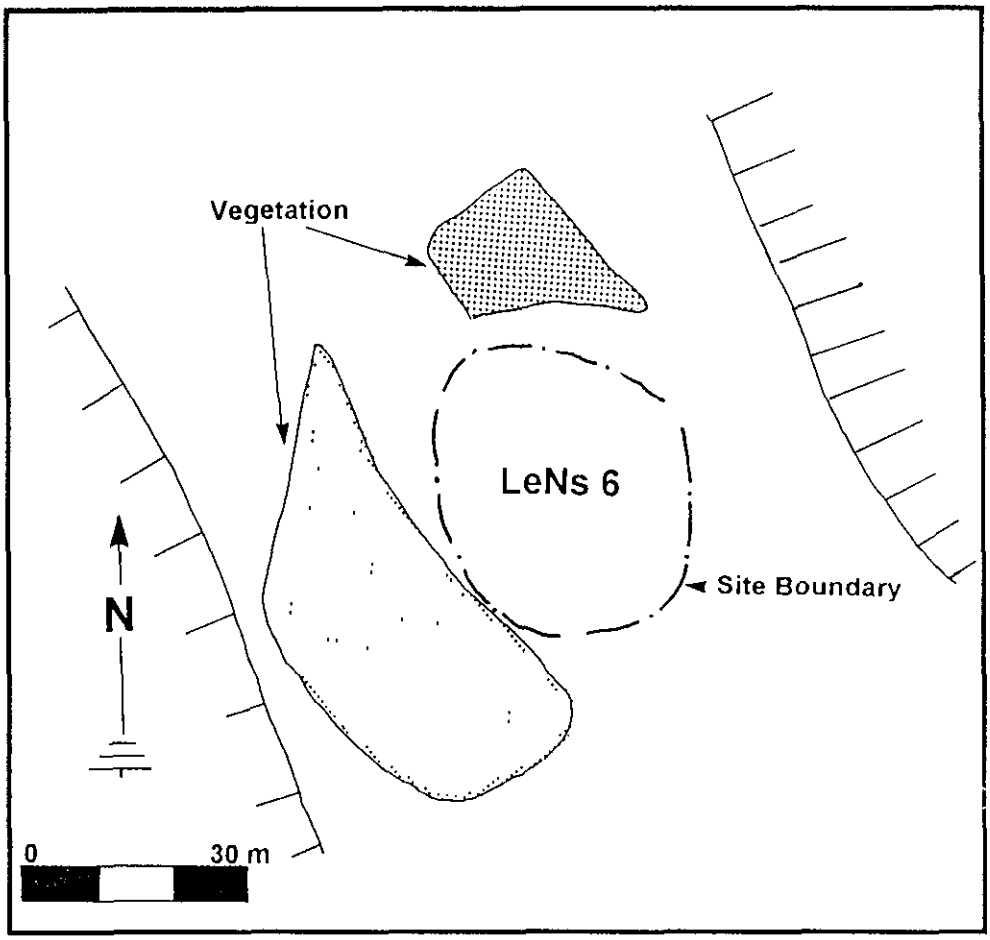


Figure 17. Site Map - LeNs-6

esker deposits, it was not necessary to conduct any subsurface testing. This site is within the impact zone of the proposed road corridor. The lack of modified flakes and the limited variety of the observed artifacts suggest that LeNs-6 has low archaeological significance

5.1.21. LeNs-7 (isolated find)

This locality contained a single, unworked flake The site is located on the esker between LeNs-6 and LeNs-8 (Figure 2). The artifact was left in situ and the site has been assigned low significance. LeNs-7 is within the proposed road corridor and could be impacted if construction was to proceed

5.1.22. LeNs-8 (BHP 94-17)

LeNs-8, a small (15 m N-S x 12 m E-W) lithic scatter (Figure 18), is located approximately 1.6 km northwest of LeNs-6 It is situated upon deflated esker deposits and is about 100 m east and 15 m above Paul Lake (Figure 2). It consists of a thin scatter of 5 unworked white quartz flakes and likely represents a single lithic reduction event. No buried cultural deposits were predicted as no soil development was evident, no subsurface testing was conducted. No artifacts were collected. This site is within the proposed road corridor and could be impacted. The small size of this site and the limited yield and variety of the observed artifacts suggest that LeNs-8 has low archaeological significance

5.1.23. LeNs-9 (BHP 94-18)

LeNs-9, a very large site (1 km N-S), is situated on a relatively narrow, but continuous section of esker (Figure 19; Photo 12) the majority of which is located between two unnamed lakes. The site is located approximately 1 km northwest of LeNs-8, and extends for around 1 km to the northwest. At the northern end of this site, the esker turns west (Figure 2) The esker averages approximately 15 m in width throughout the length of LeNs-9, but is considerably wider (approximately 60 m) at its northern end The elevation of the esker also varies and is as much as 30 m above the adjacent lakes in some portions Because of extensive deflation along this section of the esker, it was possible to intensively examine the surface of this large site. Few areas with vegetation or potential for soil development were encountered. The amount of exposure negated the need for subsurface testing. The site consists of a very light scatter of lithics throughout its length with clusters of 50 or more flakes in specific locales. These clusters are identified on the site map (Figure 18). A variety of lithic materials were noted including white quartz, grey quartz, black-

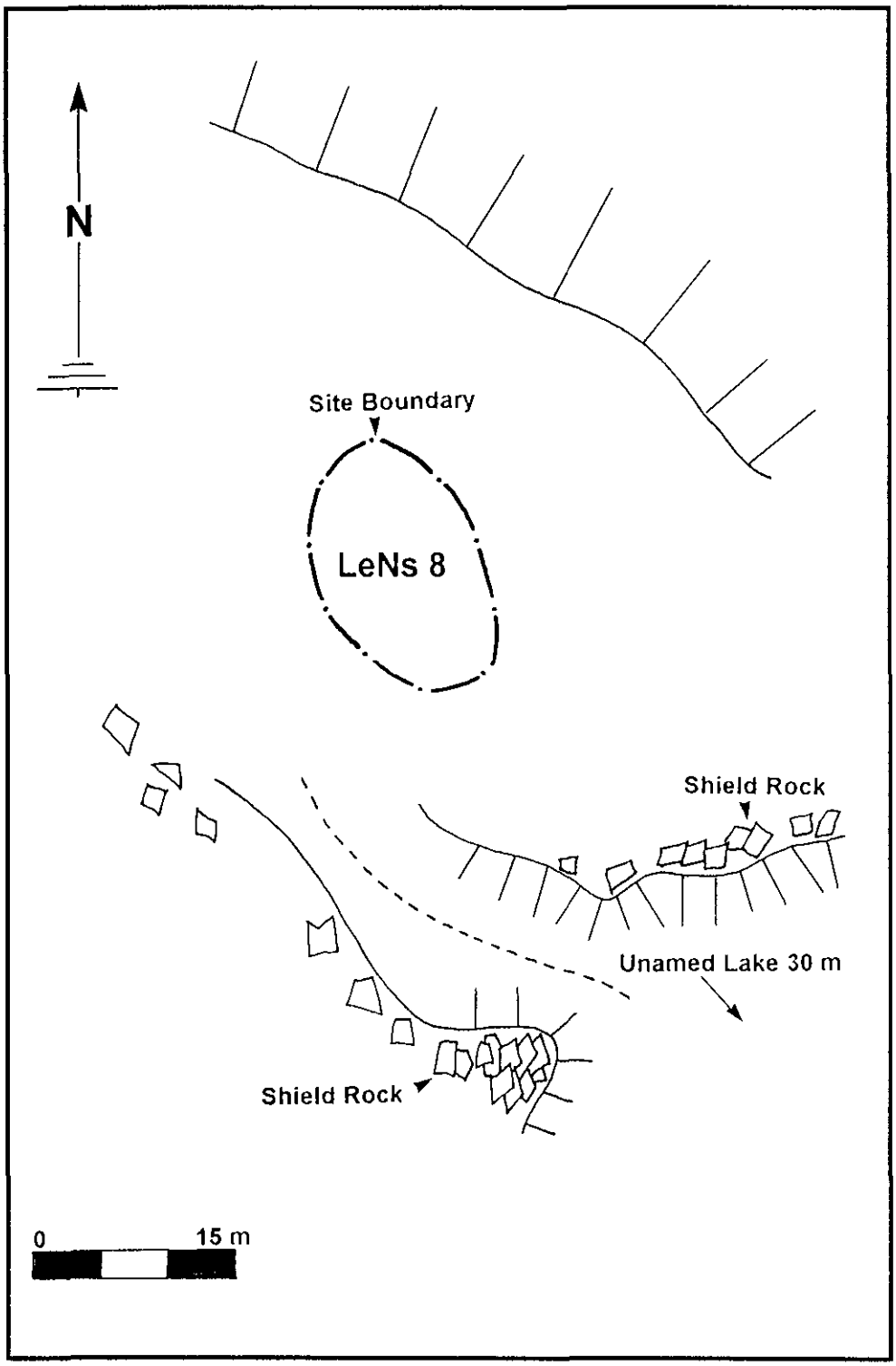


Figure 18. Site Map - LeNs-8.

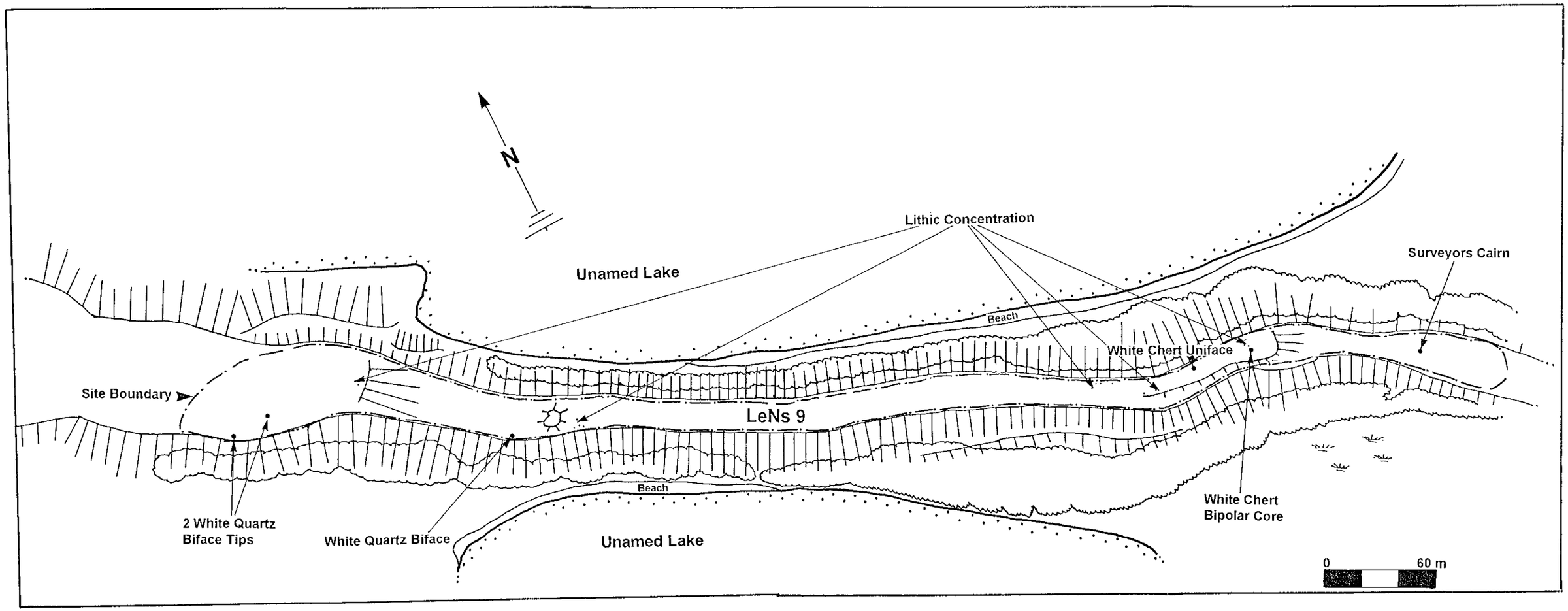


Figure 19 Site Map - LeNs-9.

banded grey quartz, transparent and translucent quartz, white chert, greyish-black shale, and granitic materials.

The large size and relatively rich, although localized, yield from this site prompted a very thorough surface examination and the collection of tools. Artifacts collected included: a moderately large formed biface fragment of greyish-white quartz; a large formed biface fragment of grey quartz; a medium-sized formed biface fragment of greyish-black shale; a medium-sized biface preform of greyish-white quartz; a medium-sized formed biface fragment of white quartz; and one unformed uniface fragment of coarse grained white chert (Table 1, Appendix 1). The full length of this site is within the proposed road corridor and, because of the two lakes, avoidance is not possible without major route revision. Although the site is large and rich, systematic surface examination, the collection of tools, and the lack of potential for buried deposits (extensive exposure) has resulted in only debitage (and limited potential for tools) remaining at this site. For this reason, LeNs-9 is judged to have low-moderate archaeological significance.

At the northern end of the site a possible cache location was identified within a large bedrock outcrop (Figure 2). The possible cache is a sheltered area It is judged to be a possible cache (or temporary shelter) primarily because several rocks, which appear to have been intentionally placed on top of a large rock, may represent a 'signal' flagging this location. Although this locality is near or within the proposed road corridor, it is unlikely that the bedrock outcrop will be impacted as the esker is sufficiently wide for road construction. As no cultural material was definitively identified, this location has not been assigned archaeological significance.

5.1.24. LeNs-10 (BHP 94-19)

LeNs-10, a medium-sized (100 m N-S by 45 m E-W) lithic scatter (Figure 20), is located approximately 1 km west of the northern end of LeNs-9 It is situated on a elevated portion of the esker and is approximately 40 m above a small, unnamed lake (Figure 2). The site consists of a very thin scatter of approximately 10 to 15 unworked flakes of white quartz. There is no soil development and no potential for buried cultural material as a result of deflation No subsurface testing was conducted. No diagnostic artifacts were observed and no collections were made. The site is within the proposed road corridor and would likely be impacted if construction was to proceed. Although the site is spread over a considerable area, the low yield and lack of variety in the observed artifacts suggest that low archaeological significance is represented at LeNs-10

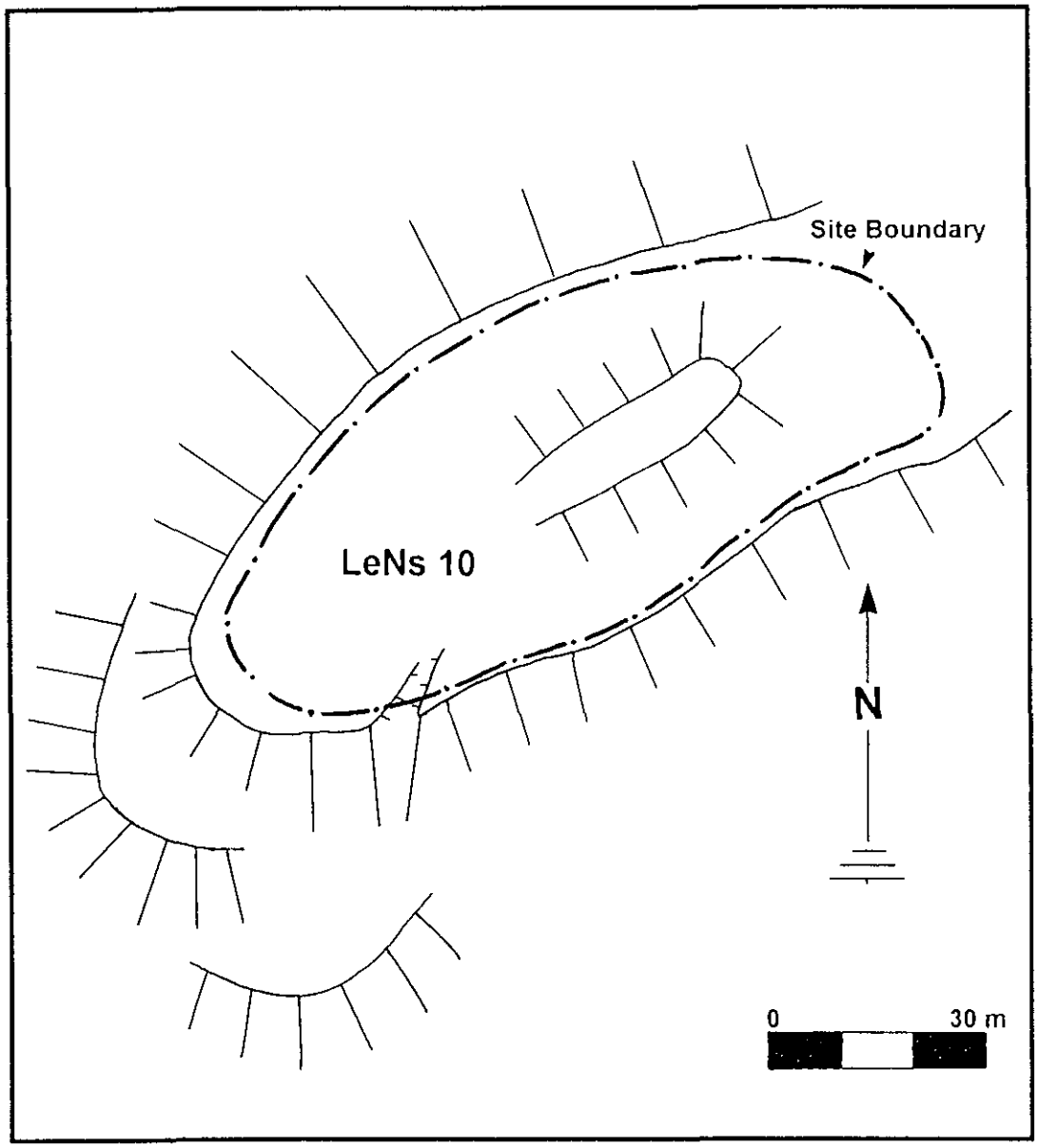


Figure 20 Site Map - LeNs-10

5.1.25. LeNt-1 (isolated find)

This locality yielded a single, unworked flake. The site is located on an east-west trending portion of the esker in an area where it is very high and broad This isolated find and the one at LeNt-2 (see below), are located approximately halfway between two larger sites, LeNs-10 and LeNt-3 (Figure 2) LeNt-1 is within the impact zone of the proposed road corridor. The artifact was not collected LeNt-1 has been assigned low archaeological significance.

5.1.26. LeNt-2 (isolated find)

This locality yielded a single, unworked flake The site is located on an east-west trending portion of the esker in an area where it is very high and broad As stated above, this isolated find is located approximately halfway between two larger sites, LeNs-10 and LeNt-3 (Figure 2). LeNt-2 is within the impact zone of the proposed road corridor The artifact was not collected. LeNt-2 has been assigned low archaeological significance

5.1.27. LeNt-3 (BHP 94-20)

LeNt-3, a small (25 m N-S X 25 m E-W) lithic scatter (Figure 21), is located north of a large, unnamed lake (Figure 2). It is situated on a very high, broad portion of the esker (Photo 8) and is approximately 50 to 60 m above the lake The site consists of approximately 50 unworked white and grey quartz flakes in one small locality, with a second cluster of 5 white quartz flakes located about 100 m to the southwest This site provides an excellent viewpoint and could have served as a strategic locale The site is typified by extensive, if not complete, exposure as a result of deflation and no soil development was evident. No subsurface testing was required or conducted No artifacts were collected The site is within the proposed road corridor and could be impacted by construction although the width of the esker could also permit avoidance The small size of this site and the limited yield and variety of the observed artifacts suggest that LeNt-3 has low archaeological significance

5.2. Exeter Lake Survey Area

The Exeter Lake survey area is located approximately 10 km northwest of the main BHP camp, referred to as Koala Camp This is the location of the original exploration camp known as Norm's Camp (Figure 22). Development includes a small camp, an airstrip,

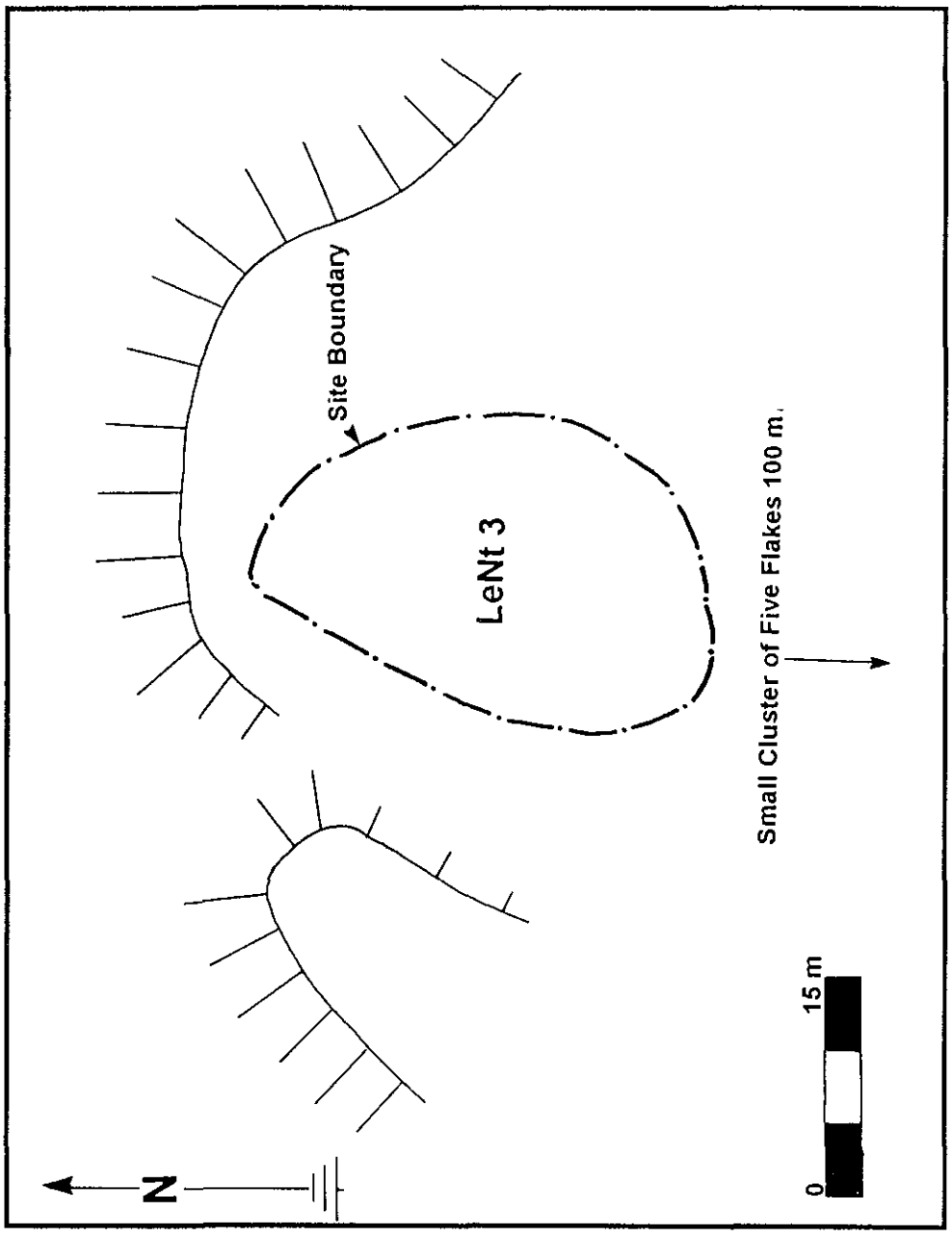


Figure 21. Site Map - LeNt-3.

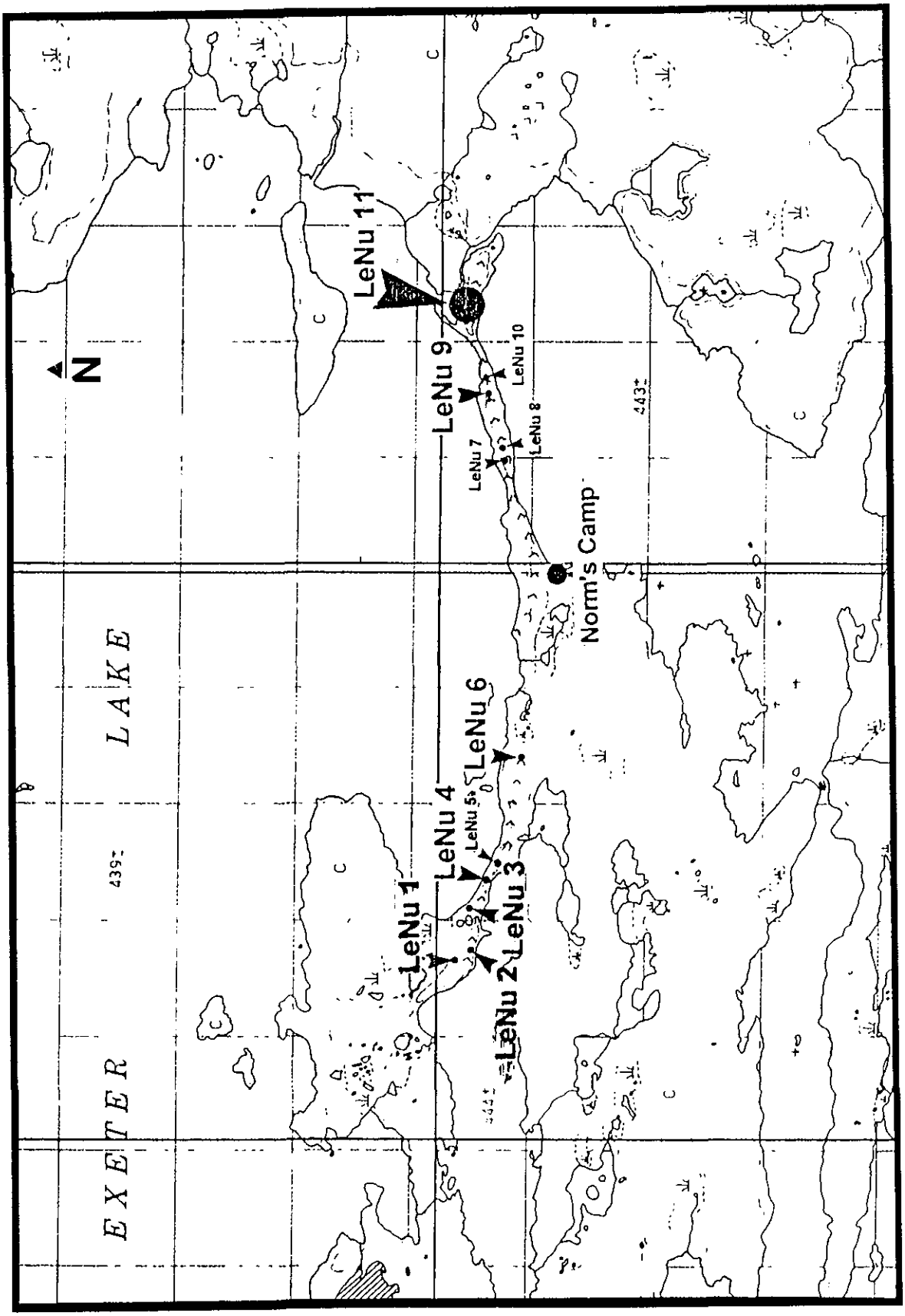


Figure 22. The Exeter Lake survey area showing the location of Norm's Camp and recorded archaeological sites (1:50,000 map sheet 76D/15).

and informally used roads. During the archaeological assessment, an esker and associated landforms were examined; this esker is evident at the south end of Exeter Lake and extends east and west of Norm's camp. This camp has been abandoned and no new development was identified at the time the archaeological field investigation was conducted.

This large, broad esker is located at the southeastern end of Exeter Lake and is approximately 6 km long. The western half of this esker separates the main body of the lake from a secondary lake to the south; examination did not extend east of the creek between these two lakes, but there is potential elsewhere in this vicinity Norm's Camp is located below (south) of the esker at about its mid-point. Eleven sites have been identified in this survey area; four were isolated finds.

5.2.1. LeNu-1 (BHP 94-21)

LeNu-1, a small (20 m N-S X 33 m E-W) lithic scatter (Figure 23), is located on the edge of a large, relatively flat section of esker (Figure 22; Photo 13). A medium-sized, unnamed lake lies approximately 8 m below the esker The site consists of a scatter of approximately 20 to 30 white quartz flakes The site is largely deflated which provided excellent surface exposure and negated the need for subsurface testing Several of the lithics had been retouched, but no artifacts were collected. No proposed development has been identified in this area. The small size of this site and the limited yield and variety in the observed artifacts suggest that LeNu-1 has low archaeological significance.

5.2.2. LeNu-2 (BHP 94-22)

LeNu-2, a small (10 m N-S X 40 m E-W) lithic scatter (Figure 24), is situated on a broad section of esker and is about 150 m southeast of LeNu-1 (Figure 22) The site is approximately 15 m above a medium-sized, unnamed lake. The site consists of approximately 20 white quartz flakes. This site is being deflated and excellent exposure is evident No soil development was evident and no subsurface testing was conducted Some retouched white quartz flakes were noted at the site, but no artifacts were collected No proposed development has been identified in this area The small size of this site and the limited yield and variety in the observed artifacts suggest that LeNu-2 has low archaeological significance

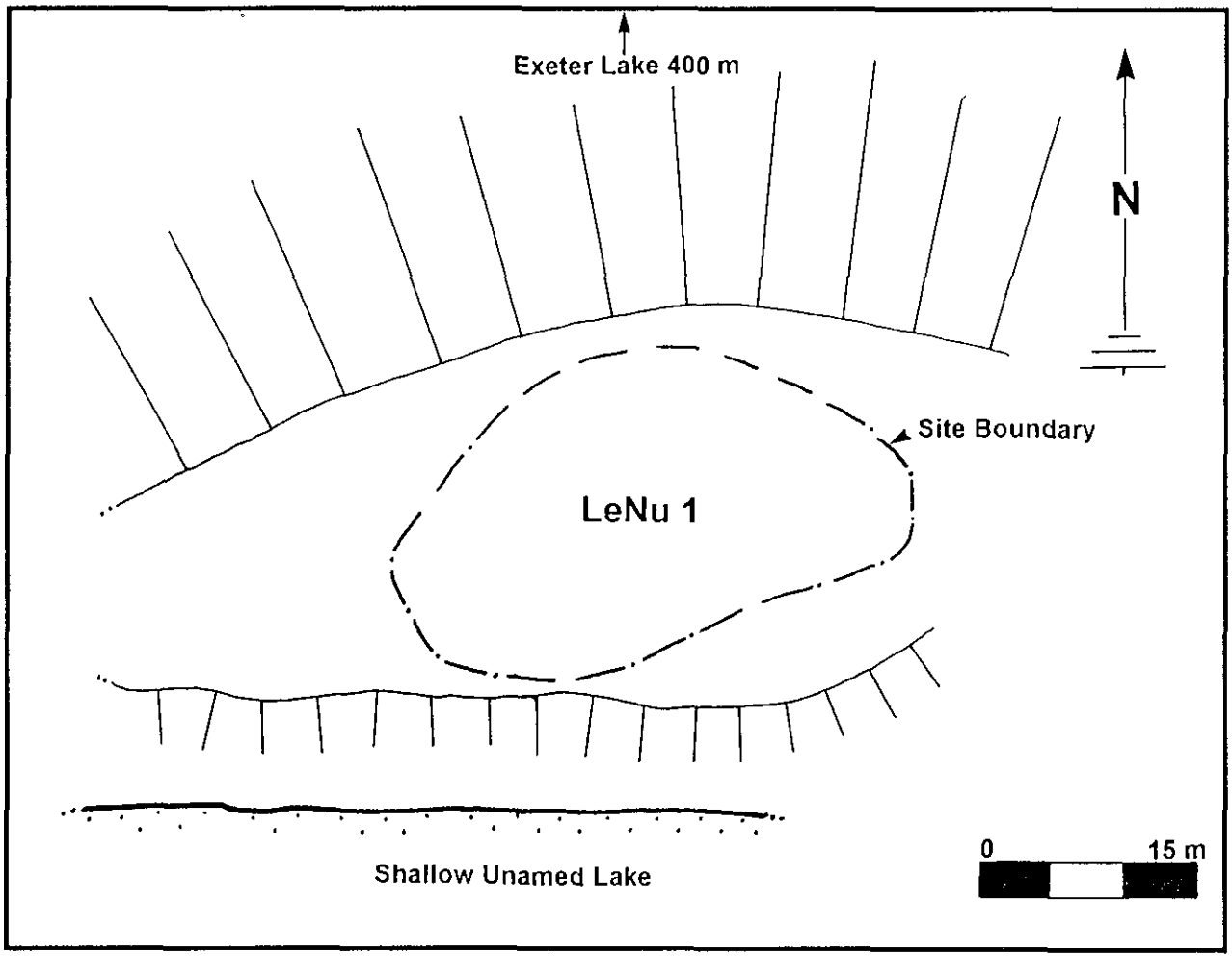


Figure 23 Site Map - LeNu-1

Photo 13 Overview of LeNu-1 (view east)

Photo 14 Overview of LeNu-9 (view west)

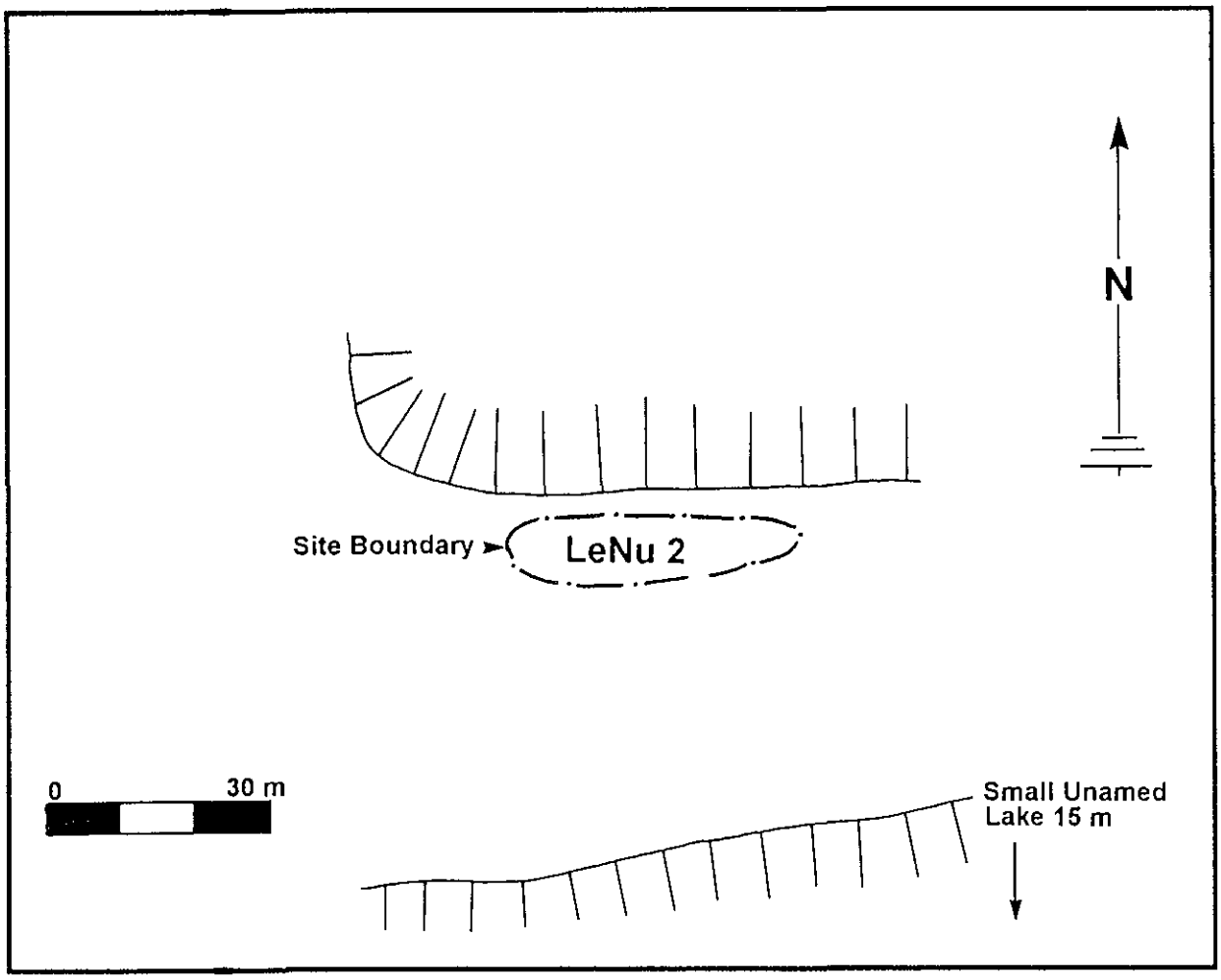


Figure 24 Site Map - LeNu-2

5.2.3. LeNu-3 (BHP 94-23)

LeNu-3, a small (8 m N-S X 20 m E-W) lithic scatter (Figure 25), is located on the esker adjacent to Exeter Lake (Figure 22) It is situated on a high (approximately 40 m above the lake) portion of this esker The site consists of a cluster of five unworked white quartz flakes. Due to deflation, surface exposure was excellent; there is little potential for soil development or buried cultural material and no subsurface testing was conducted. No artifacts were collected from this site No proposed development has been identified in this area. The small size of this site and the very limited yield of the observed artifacts suggest that LeNu-3 has low archaeological significance

5.2.4. LeNu-4 (BHP 94-24)

LeNu-4, a small (12 m N-S X 50 E-W) lithic scatter (Figure 26), is situated upon a high, relatively narrow portion of esker located 40 m south of Exeter Lake and 20 m north of an unnamed, medium-sized lake (Figure 22) The esker at this point is approximately 30 to 40 m above Exeter Lake. The site consists of between 15 and 20 white quartz flakes and one specimen of rose coloured quartz Most of the site is actively deflating which negated the need for subsurface testing. A small number of the flakes appeared to have retouch on their margins A sample of the rose coloured quartz evident at this site was collected (Table 2, Appendix 1). No proposed development has been identified in this area The small size of this site and the limited yield and variety of the observed artifacts suggest that LeNu-4 has low archaeological significance

5.2.5. LeNu-5 (isolated find)

This locality contained a single, unworked flake The artifact was found on the esker a short distance east of LeNu-4 (Figure 22). The flake was not collected. No development has been identified in this vicinity LeNu-5 has been assigned low archaeological significance

5.2.6. LeNu-6 (BHP 94-25)

LeNu-6 consists of two small scatters of lithics covering an area approximately 8 m in diameter each, but separated by approximately 80 m (Figure 27) Each cluster contains between 15 and 20 unworked flakes of white quartz. The site is located approximately 150 m south of Exeter Lake on a very broad portion of the esker near where

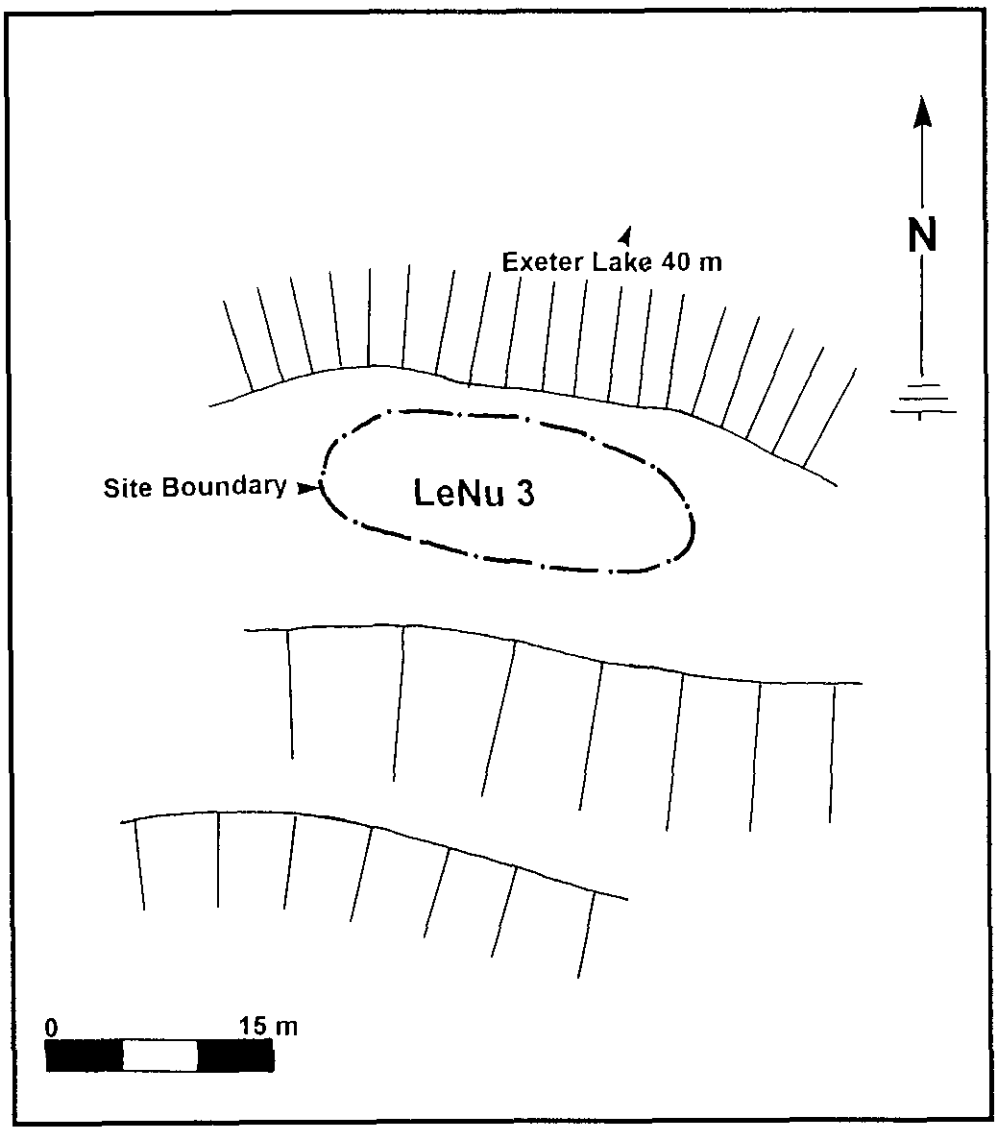


Figure 25. Site Map - LeNu-3.

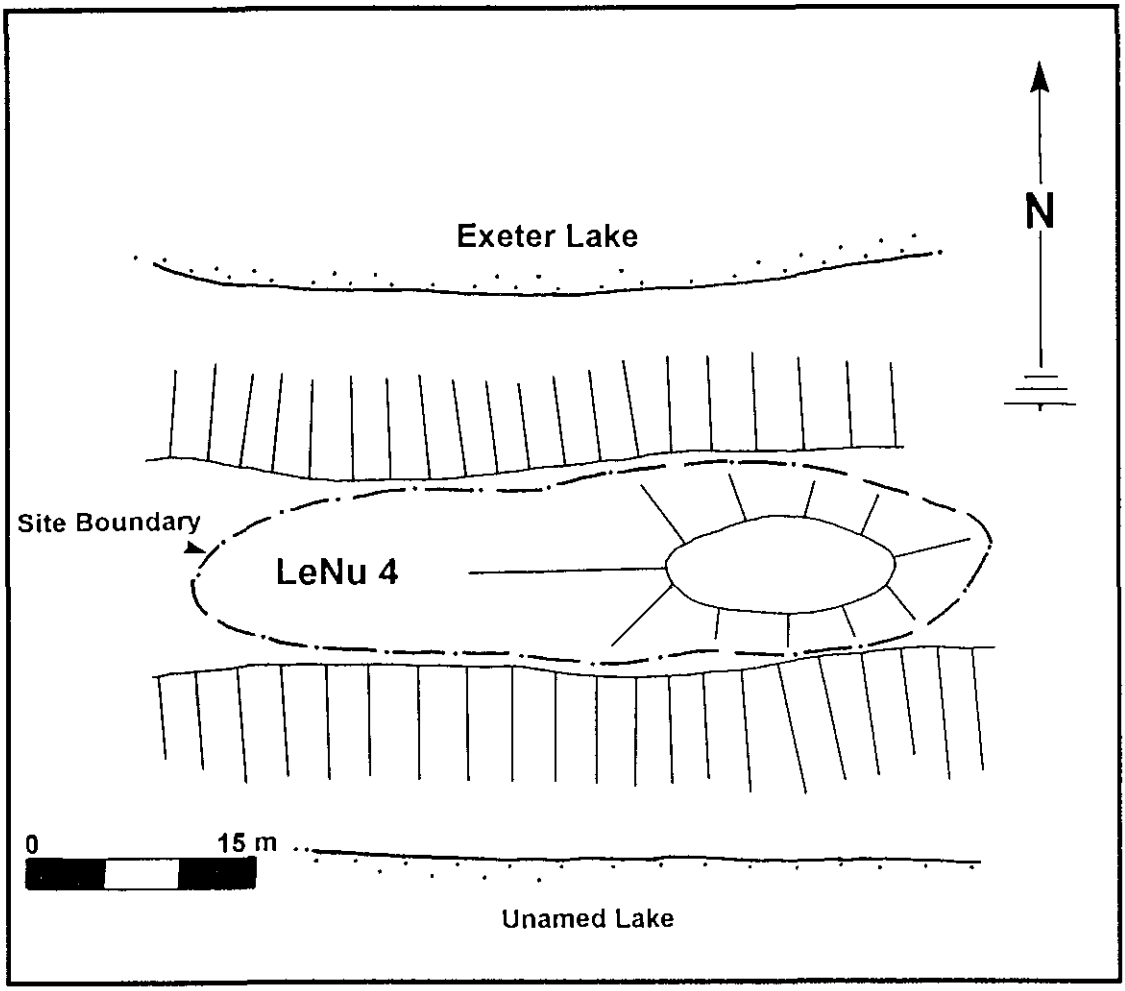


Figure 26. Site Map - LeNu-4.

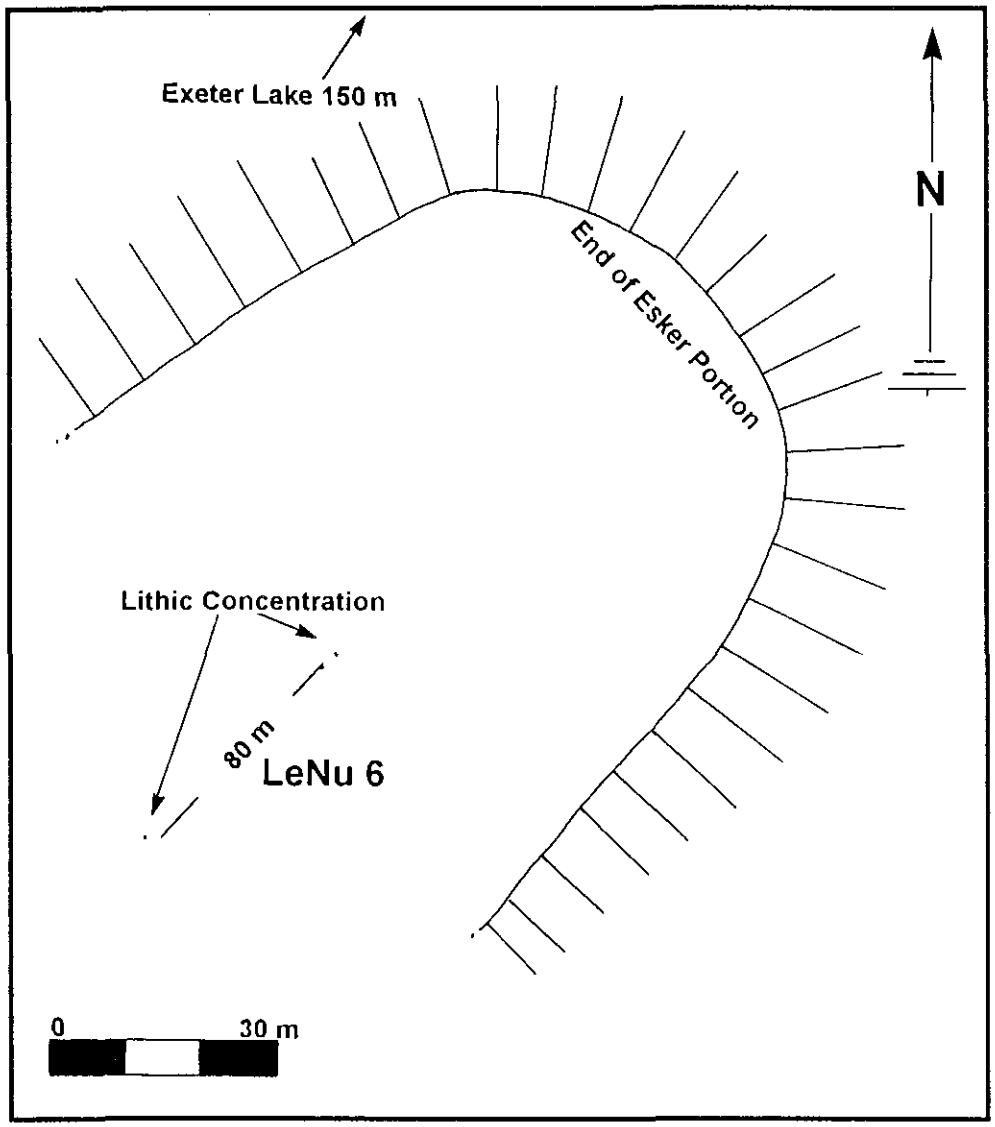


Figure 27 Site Map - LeNu-6.

it is truncated by a low, swampy area (Figure 22) Exposure was excellent and no artifacts were located between the two clusters. Because of deflation, no soil development was evident and no subsurface testing was required. No artifacts were collected No proposed development has been identified in this area The small size of the two clusters and the limited variety and yield of the observed artifacts suggest that LeNu-6 has low archaeological significance.

5.2.7. LeNu-7 (isolated find)

This locality contained a single, unworked flake The artifact was found on a relatively high portion of the esker which separates Exeter Lake and unnamed lake to the south (Figure 22) The flake was not collected No development has been identified in this vicinity LeNu-7 has been assigned low archaeological significance.

5.2.8. LeNu-8 (isolated find)

This locality contained a single, unworked flake The artifact was found on a relatively high portion of the esker which separates Exeter Lake and unnamed lake to the south (Figure 22) The flake was not collected No development has been identified in this vicinity LeNu-8 has been assigned low archaeological significance

5.2.9. LeNu-9 (BHP 94-26)

LeNu-9, a small (18 m N-S X 35 m E-W) lithic scatter (Figure 28), is located approximately 1 km east of Norm's Camp on the large esker (Photo 14) which separates Exeter Lake from a large lake to the south (Figure 22) This portion of the esker is approximately 40 m above the lake. Some raw material is exposed in the crest of the esker. The site consisted of approximately 20 flakes of white quartz No retouched lithic material was observed at this site and no artifacts were collected No development has been identified in this area The small size of this site and the limited yield and variety in the observed artifacts suggest that LeNu-9 has low archaeological significance

5.2.10. LeNu-10 (isolated find)

This locality contained a single, unworked flake. The artifact was found on a relatively high portion of the esker which separates Exeter Lake and unnamed lake to the south (Figure 22) and east of LeNu-9 The flake was not collected. No development has

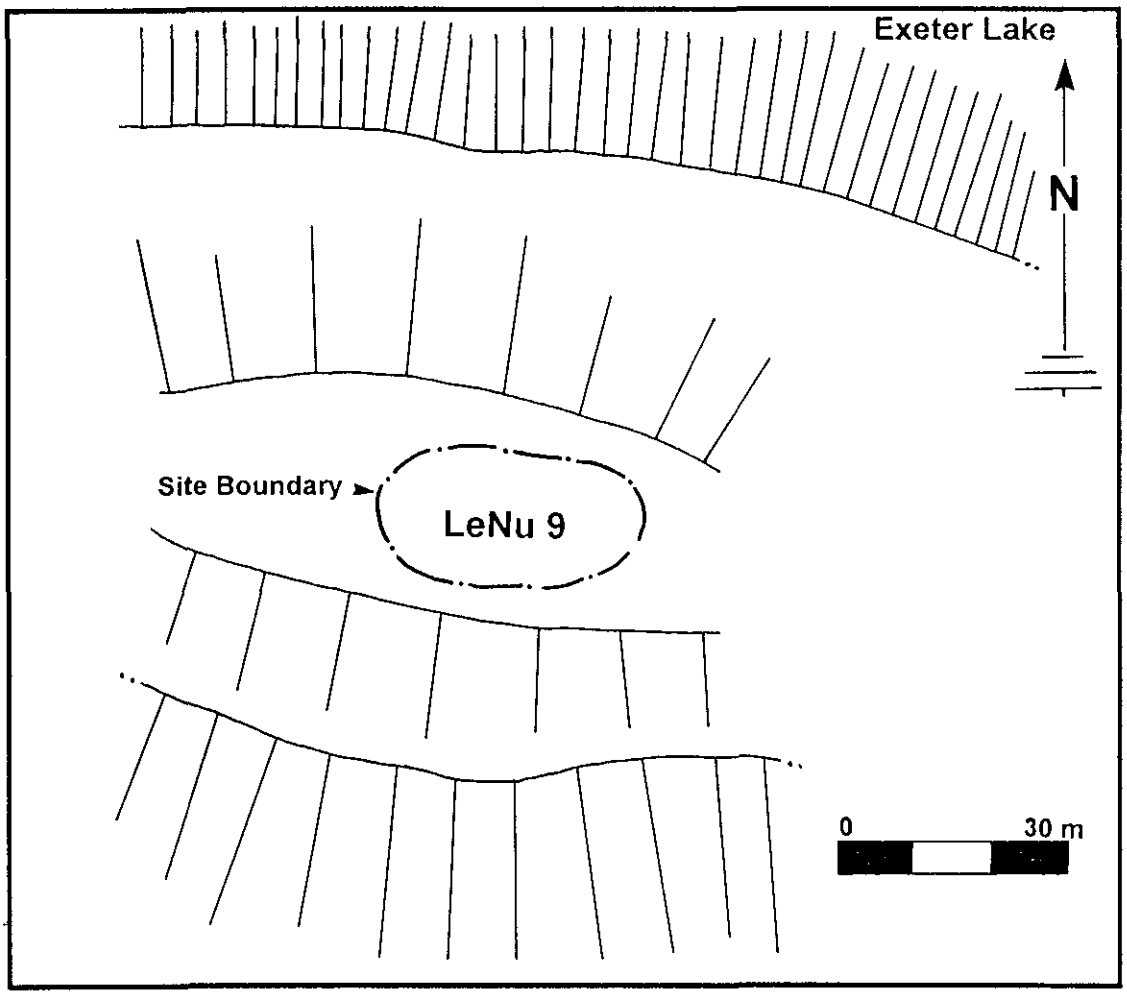


Figure 28. Site Map - LeNu-9.

been identified in this vicinity. LeNu-10 has been assigned low archaeological significance

5.2.11. LeNu-11 (BHP 94-27)

LeNu-11, a very large (approximately 1 km in length) site, is located on the esker between the two lakes (Figure 22). The site begins approximately 2.5 km east of Norm's Camp and extends for 1 km eastward (Figure 29). The eastern boundary of this site is the creek that connects the two lakes (Photo 15) The widest section of this esker approaches 250 m (N-S) and the height varies from lake level to 40 m above the lake.

Seven distinct clusters of lithics were noted at the site and numerous light scatters of lithics were evident. Lithic materials found at the site include white quartz, grey quartz, and translucent, milky white, and grey banded quartz. Smaller amounts of white chert and various granitic lithics were noted Very few flakes were found near the river, most occurred to the west on the high ridges and lower sheltered areas. Specimens of the raw quartz material are eroding from several areas of the site There are areas within the site that appear to have some soil development and these generally vegetated locations (Photo 16) suggest potential for buried cultural deposits. Artifacts collected from the site include: a formed biface fragment of banded grey quartz; a formed biface fragment of greyish-white quartz; a formed uniface of white chert; and an unformed uniface fragment of greyish-white quartz (Table 1, Appendix 1) The site likely represents a repeatedly used camp and activity area. No proposed development has been identified in this area. The large size of this site, the dense and varied yield, and the potential for buried deposits suggest that LeNu-11 has high archaeological significance

5.3. Winter Road Survey Area

During field reconnaissance, BHP requested that the route used as a winter road in past seasons be examined for archaeological resources The majority of this route is located in swampy deposits or on undulating taiga that is interspersed with small and medium-sized lakes. These landforms have little potential for archaeological resources and were flown, but were not consistently traversed One portion of this winter road is, however, located on a esker between Lac de Gras and Koala Camp. The southern four km of this road is on a small esker-like landform that extends west of Lac de Gras through a series of small lakes At this point, the smaller esker connects with a medium-sized esker that runs northwest for approximately 2 5 km. Much of the stretch from Lac de Gras west is quite low and boggy and was not investigated on foot, but some locales were examined. The area

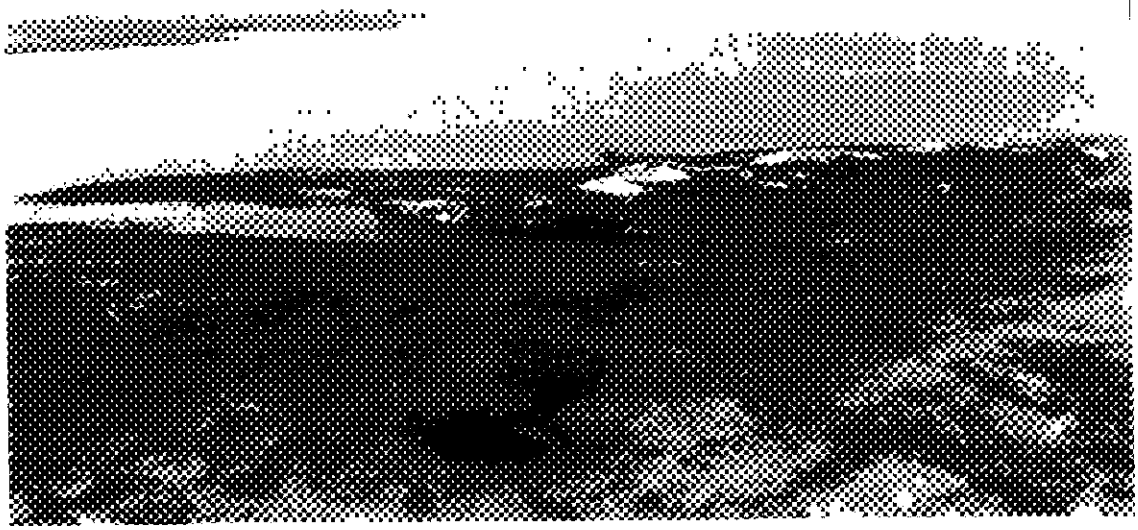


Photo 15. Aerial view of LeNu-11 (view southeast)

Photo 16 Overview of western portion of LeNu-11

northwest along the well defined esker was subject to a series of foot traverses A single, unworked white quartz flake was recorded and is identified as an isolated find, LdNt-7 (Figure 30), and was left in situ. LdNt-7 is assessed as having low archaeological significance. No proposed development was identified for this winter road route

5.4. South-Central Esker Survey Area

This survey area consists of a large esker located south and west of the winter road (Figure 30) It begins approximately 1 km north of Lac de Gras and extends 8 km to the north Six prehistoric archaeological sites, including two isolated finds, were recorded in this survey area.

5.4.1. LdNt-1 (isolated find)

This locality yielded a single, unworked flake. The site is located at the south end of an esker north of Lac de Gras (Figure 30). The artifact was not collected. No development has been identified in this vicinity LdNt-1 has been assigned low archaeological significance.

5.4.2. LdNt-2 (isolated find)

This locality yielded a single, unworked flake. The site is located on an esker north of Lac de Gras and is north of LdNt-1 (Figure 30). The artifact was not collected No development has been identified in this vicinity. LdNt-2 has been assigned low archaeological significance

5.4.3. LdNt-3 (BHP 94-28)

LdNt-3, a small (20 m N-S X 10 m E-W) lithic scatter (Figure 31), is located approximately 1.3 km north of Lac de Gras (Figure 30). It is situated upon a board, relatively low portion of the esker (approximately 5 m high) The site is truncated by an intermittent stream at its northern end The site consists of a scatter of between 5 and 10 unworked white quartz flakes and also contained one specimen of greyish-black shale Deflation provided excellent exposure and negated the need for subsurface testing No artifacts were collected. No development has been identified. The small size of this site and the limited yield of the observed artifacts suggest that LdNt-3 has low archaeological significance

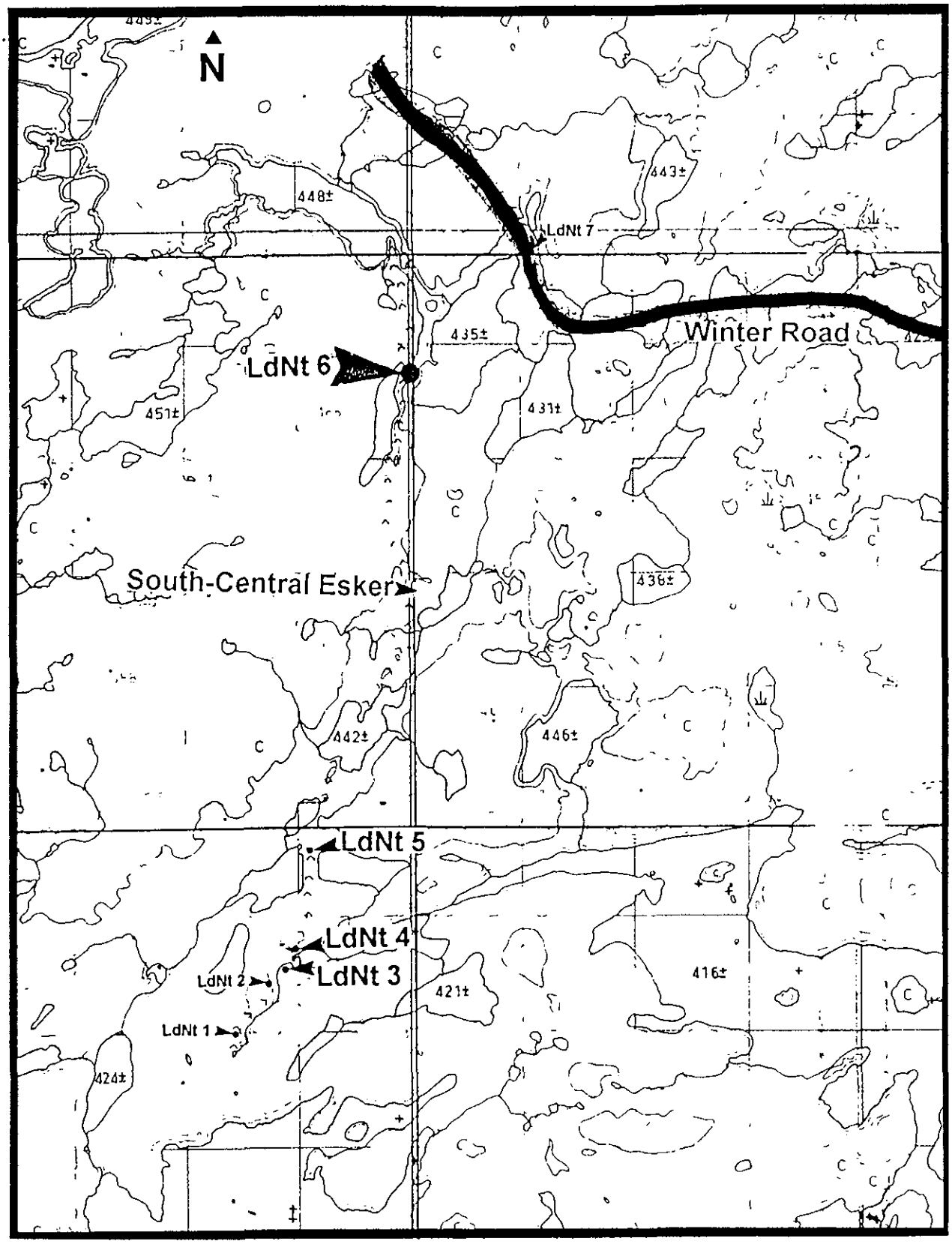


Figure 30 The south-central esker and winter road survey areas showing the location of recorded archaeological sites (1 50,000 map sheet 76D/10)

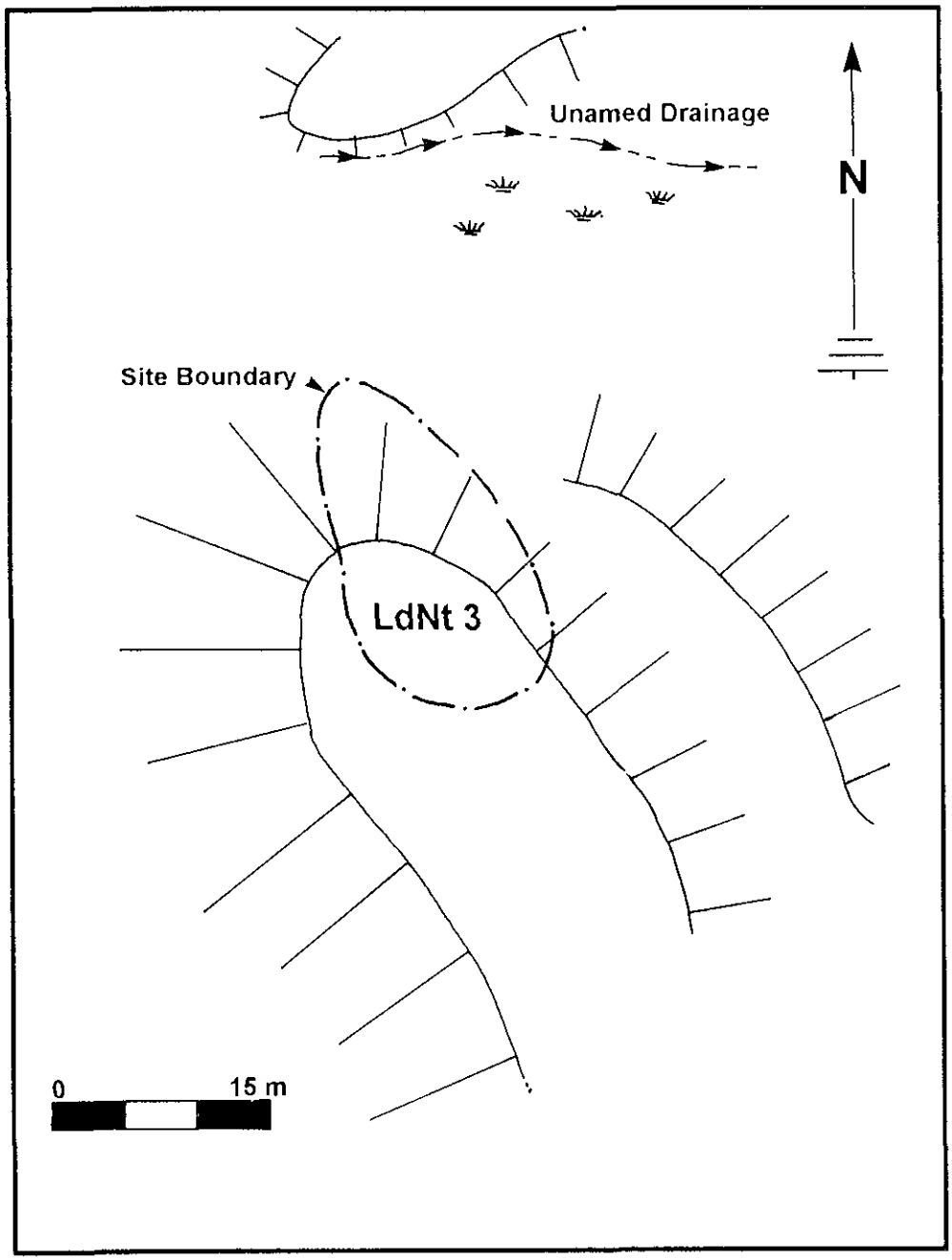


Figure 31 Site Map - LdNt-3

5.4.4. LdNt-4 (BHP 94-29)

LdNt-4, a small (33 m N-S X 18 m E-W) lithic scatter (Figure 32), is located immediately north of LdNt-3, but on a slightly higher portion of the esker (8 m high) and is separated from it by the intermittent stream (Figure 30). The site consists of between 15 and 20 white and grey quartz flakes, some with moderate retouch Exposure was very good and there was little potential for buried cultural material. No artifacts were collected No development has been identified. The small size and limited yield of this site suggest that LdNt-4 has low archaeological significance

5.4.5. LdNt-5 (BHP 94-30)

LdNt-5, a small (15 m N-S by 10 m E-W) lithic scatter (Figure 33), is located on a relatively low and broad portion of esker (Photo 17) situated between two unnamed, medium-sized lakes The site is approximately 7 km north of Lac de Gras (Figure 30) The site is characterized by a localized, but very dense cluster of grey quartz flakes A quantity of lithic raw material has been exposed by erosion suggesting that this site may represent a lithic reduction workshop or short term quarry site. There is some soil development evident and a considerable portion of the site vicinity is vegetated suggesting potential for buried cultural material. One of the shovel tests located near the exposed cultural deposits yielded a large quantity of lithics, including all stages of lithic reduction This cultural material extended to about 30 cm b.s. A subsequent test located 2 m southwest of the initial test failed to produce any further cultural material suggesting the scatter is very localized No worked specimens were discovered on the surface, but shovel testing yielded a core (Table 1, Appendix 1) and 90 unworked flakes (Table 2, Appendix 1); all specimens were grey quartz. No specific development has been identified for this area Although the site is restricted in area, the presence of a source of raw material, the possibility of buried deposits, and the quantity and manufacturing stage variety of the lithics suggest that LdNt-5 has moderate archaeological significance

5.4.6. LdNt-6 (BHP 94-31)

LdNt-6, a medium-large (90 m N-S X 70 m E-W) site (Figure 34), is located on an eroded section of esker adjacent to a medium-sized, unnamed lake (Figure 30, Photo 18) It is partially surrounded by bedrock outcrops that have permitted soil retention although a significant portion of the site is typified by erosion (wind deflation) It is highly likely that portions of this landform could contain buried cultural deposits although two subsurface tests

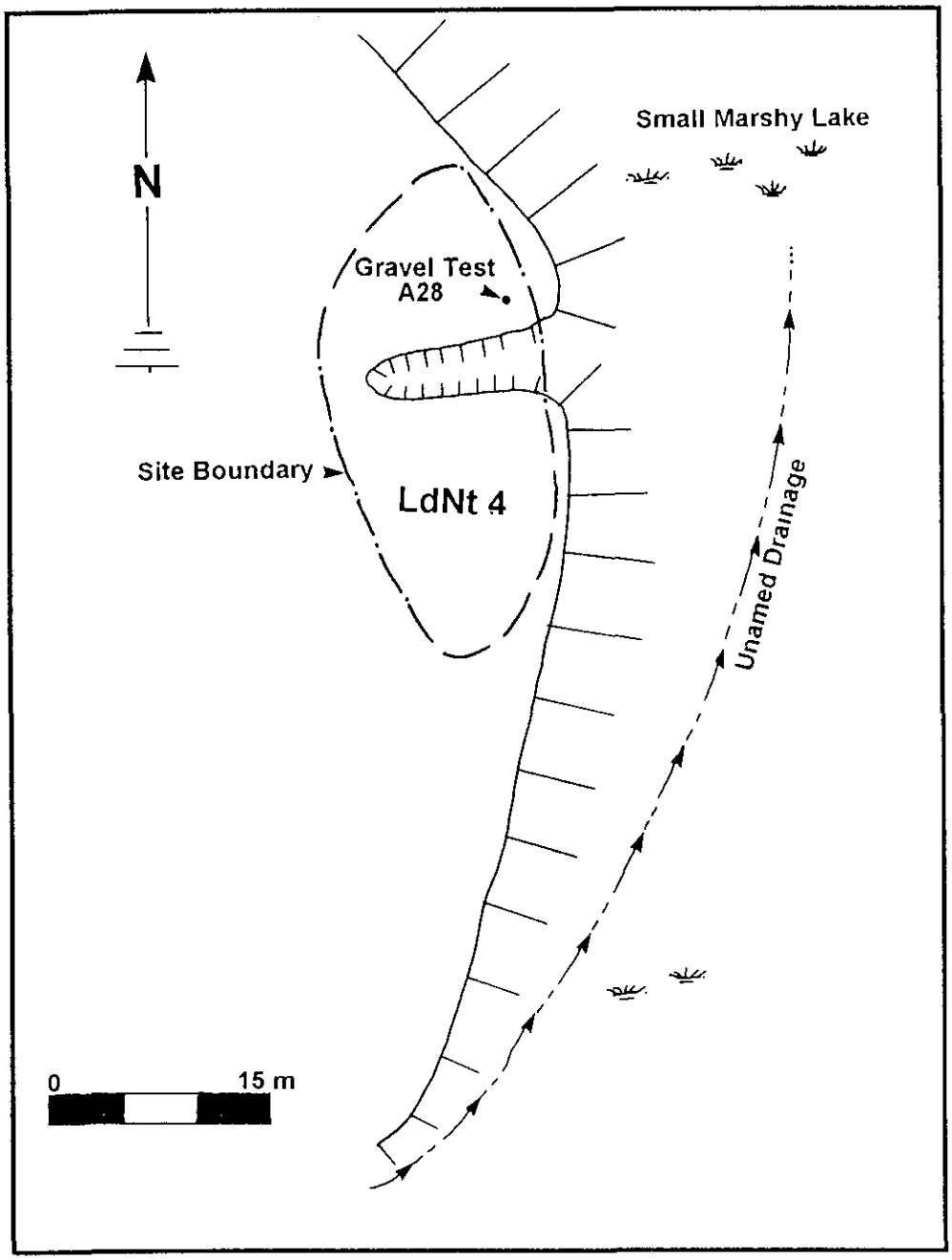


Figure 32 Site Map - LdNt-4.

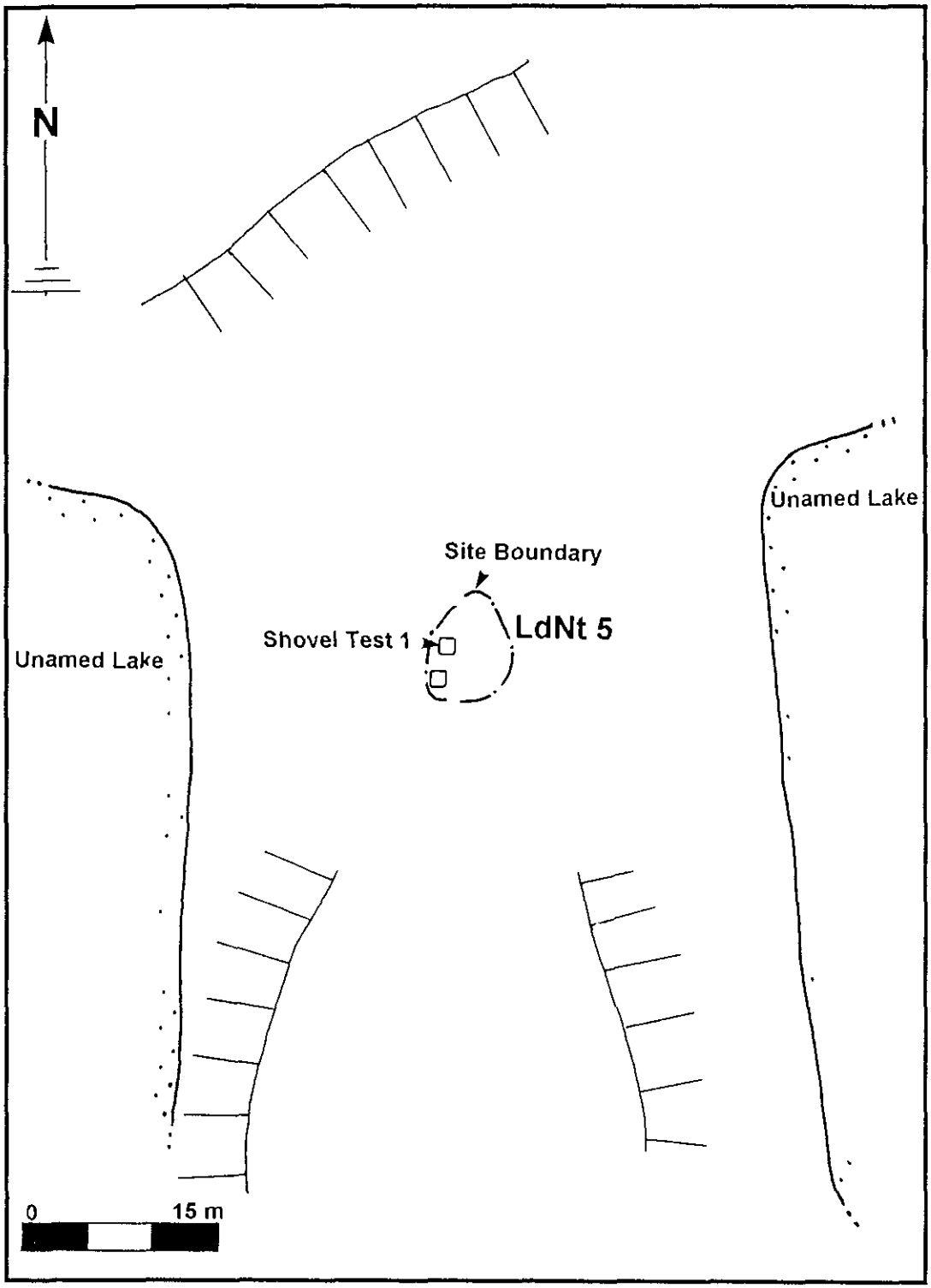


Figure 33 Site Map - LdNt-5

Photo 17 Overview of LdNt-5 (view north)

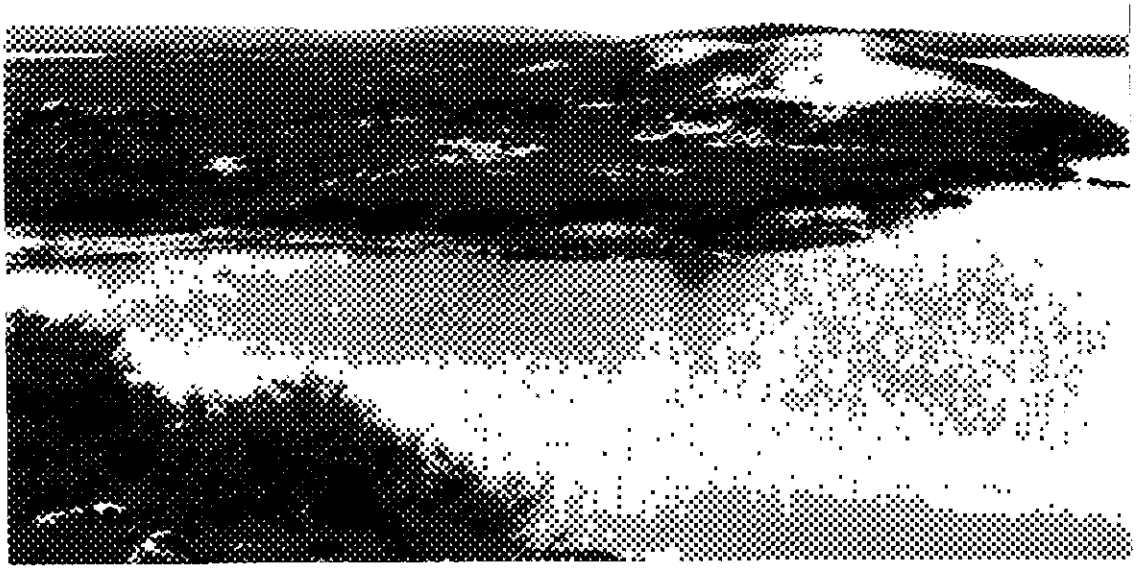


Photo 18 Overview of LdNt-6 (central portion of photograph) from opposite site of lake (view southeast)

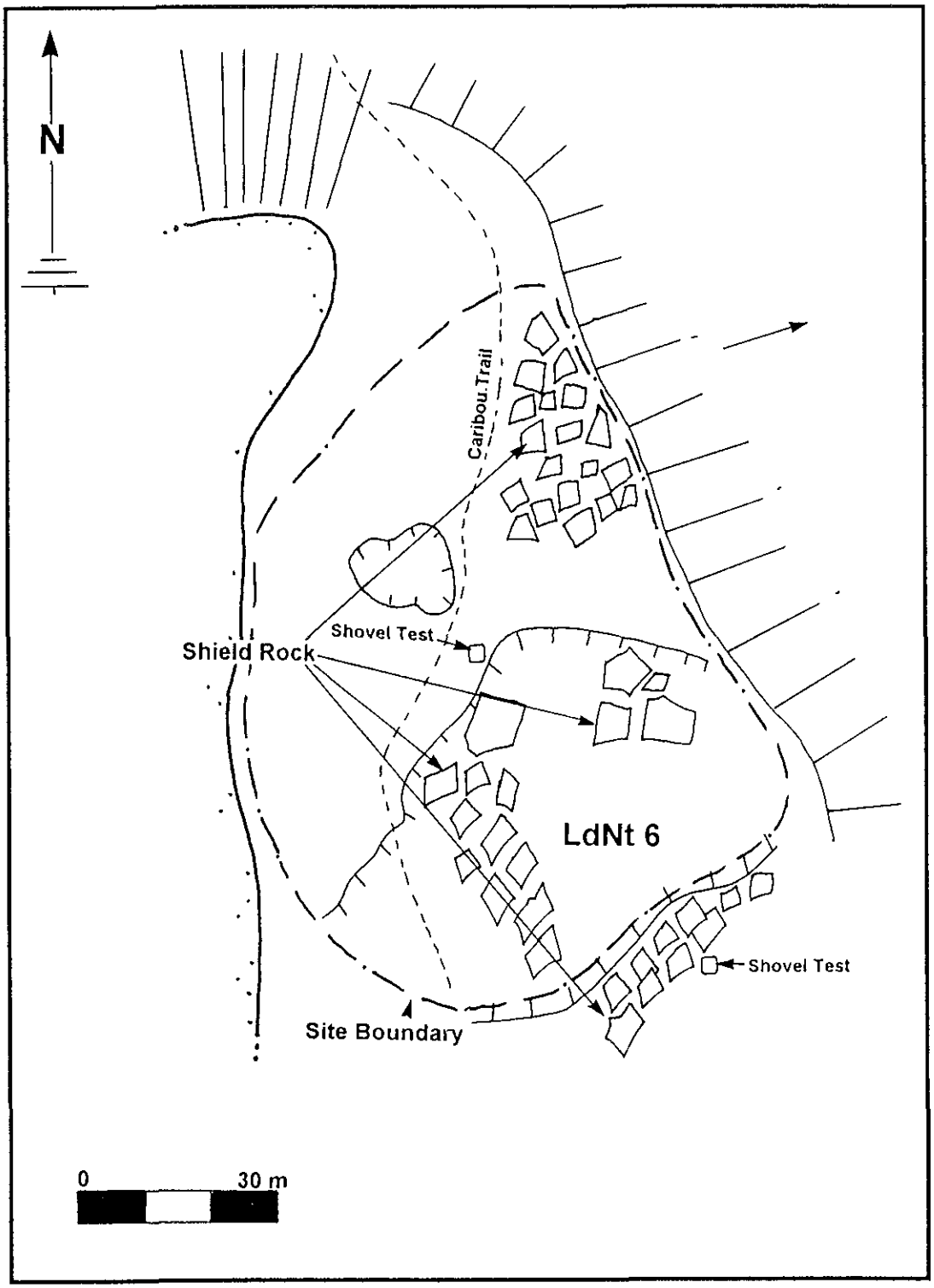


Figure 34. Site Map - LdNt-6.

and cutbank exposure examination yielded negative results The exposed portions of the site yielded a moderately dense (over 100) scatter of predominantly grey and white quartz flakes (unworked). A few flakes of greyish-black shale were also noted Approximately 5 flakes of white quartz were observed approximately 30 m to the north of the main cluster on a high ridge Artifacts that were collected include. one formed uniface of grey quartz; one unformed uniface of white quartz; and one unformed biface of clear quartz (Table 1, Appendix 1). No development has been identified for this area The variety and artifact content of this site, in conjunction with the potential for buried deposits, suggest that LdNt-6 has moderate archaeological significance.

5.5. Falcon and Ray's Camps Survey Area

Two exploration camps, one of which is highly mobile (Ray's Camp), are located on an esker that separates a large lake (to the north) and a medium-sized lake (to the south). As the camps are already established, some disturbance has occurred However, as a mobile camp, the disturbance associated with Ray's Camp is considerably less. This survey area is located north and east of Koala Camp and the lakes survey area. The area examined during the archaeological reconnaissance was a relatively continuous esker Field investigations were initiated at the western end of the medium-sized lake and continued for a distance of approximately 2 km. It should be noted that there are landforms in the surrounding area that are also judged to have archaeological potential, but they were outside of this survey area

Three small prehistoric sites (LeNt 5 to 7) and two isolated finds (LeNt 4 and 8) were located (Figure 35) Development associated with these two camps is likely to continue to impact on the esker and archaeological resources within it

5.5.1. LeNt-4 (isolated find)

This locality yielded a single, unworked flake The site is situated on a terrace-like landform at the northwestern edge of a lake (Figure 35). This location has experienced some disturbance and could continue to be impacted by the presence of Falcon Camp No specific development has been identified in this area The artifact was not collected LeNt-4 is assigned low archaeological significance

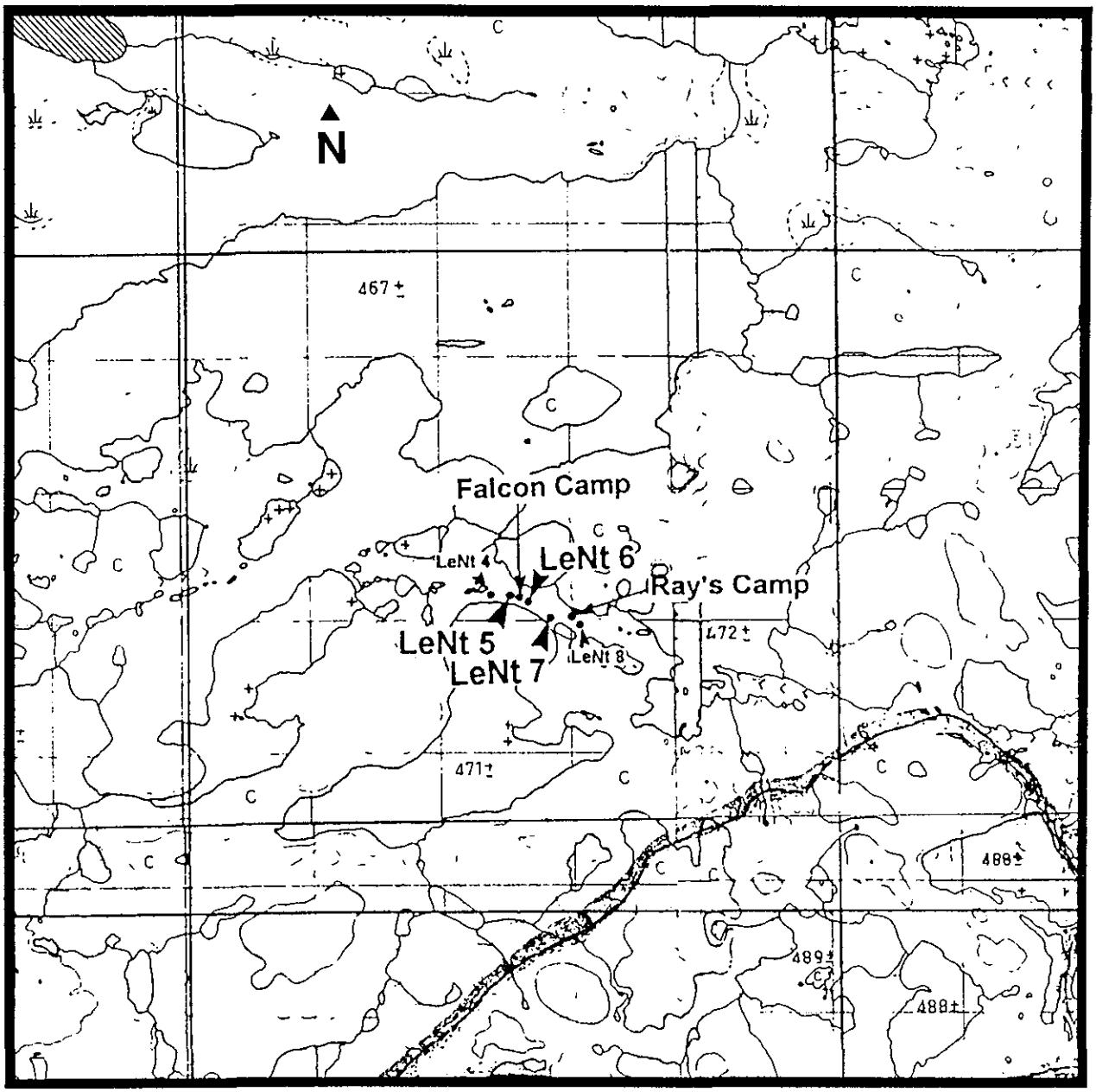


Figure 35. The Falcon and Ray's Camp survey area showing the location of recorded archaeological sites (1 50,000 map sheet 76D/15)

5.5.2. LeNt-5 (BHP 94-32)

LeNt-5, a small (10 m N-S X 28 m E-W) lithic scatter (Figure 36), is situated on a medium-sized knoll located on the esker at the western end of the medium-sized lake (Figure 35). It is approximately 10 m above this lake (locally referred to as Vulture Lake) The top of this knoll has been artificially levelled and currently serves as the location of a windsock for Falcon Camp (Photo 19). The disturbed site consists of between 8 and 12 white and grey quartz flakes (unworked), a few flakes were noted on the slope to the north. No vegetated areas suggestive of potential for soil development and intact buried deposits were observed. No artifacts were collected. Although disturbance has occurred at this site, it appears to have been limited to some moderate levelling activity. It is suspected that the yield would have been low even if disturbance had not occurred It is not known if any specific development is proposed for this area, but use of Falcon Camp will likely result in minor, but continuing impacts Site data suggests that LeNt-5 is suggestive of low archaeological significance.

5.5.3. LeNt-6 (BHP 94-33)

LeNt-6, a medium-sized (18 m N-S X 45 m E-W) lithic scatter (Figure 37), is located approximately 100 m east of Falcon camp on a small rise, within the esker, that is 3 to 4 m above Vulture Lake (Figure 35). This lithic scatter consists of two small clusters of lithic detritus located about 25 m apart Each cluster contained between 10 and 15 flakes of unworked white and grey quartz. One shovel test was excavated in a vegetated area between the clusters, however sterile fluvial deposits were encountered almost immediately and no cultural material was recovered. No artifacts were collected from this site and no specific development was identified, but use of Falcon Camp will likely continue to impact this site. The low and limited artifact yield and the small size of the two clusters suggest that LeNt-6 has low archaeological significance.

5.5.4. LeNt-7 (BHP 94-34)

LeNt-7, a small (35 m N-S X 12 m E-W) lithic scatter (Figure 38), is located on a moderately high, flat terrace situated between two small lakes (Photo 20) east of Vulture Lake (Figure 35). The site consists of between 20 and 30 unworked flakes of grey and white quartz and one possible core fragment An unformed biface fragment of grey quartz was collected (Table 1, Appendix 1). Although there is some vegetation nearby, cutbank exposures indicate that there is no significant soil development and thus there is little

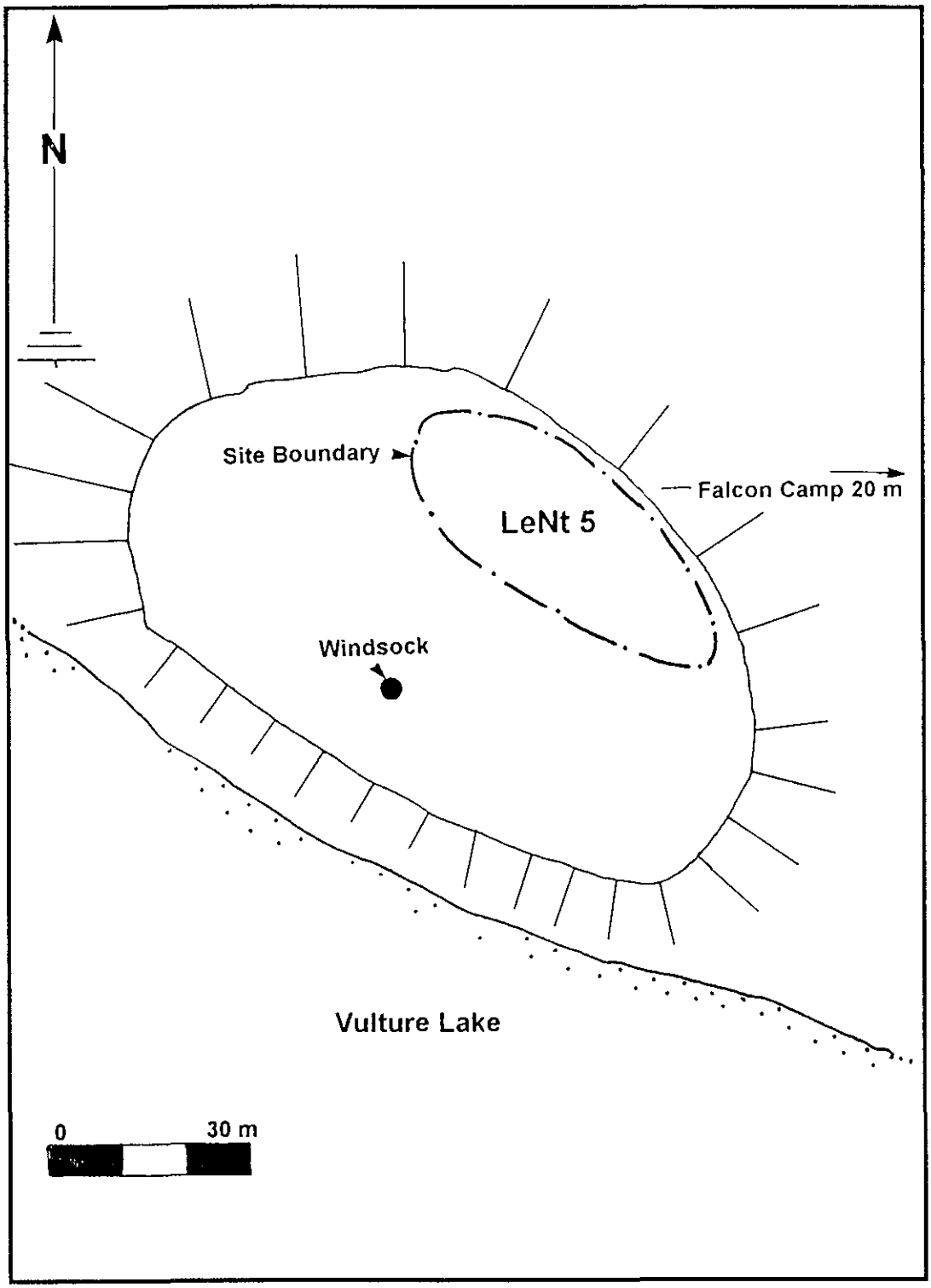


Figure 36. Site Map - LeNt-5.

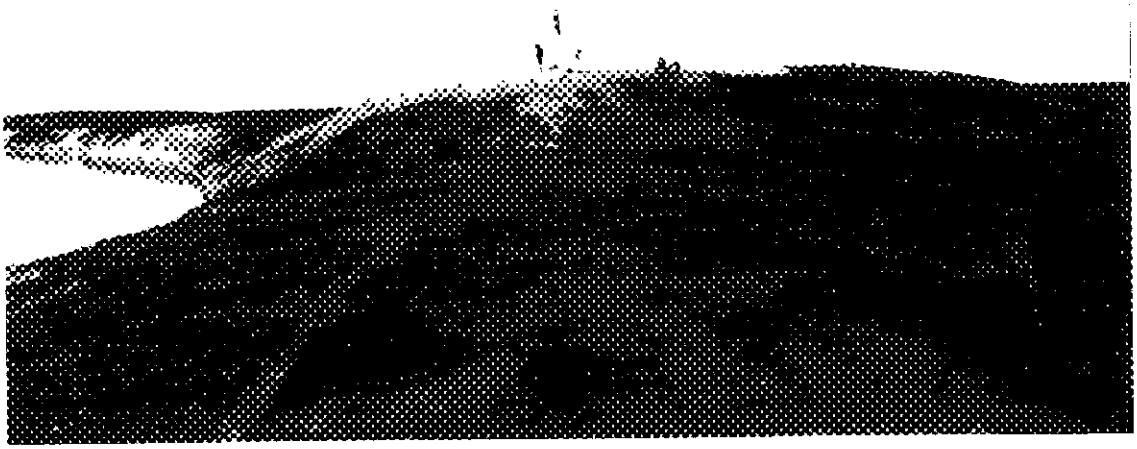


Photo 19 Overview of knoll containing LeNt-5 (view west)

Photo 20 Overview of LeNt-7 (view northwest)

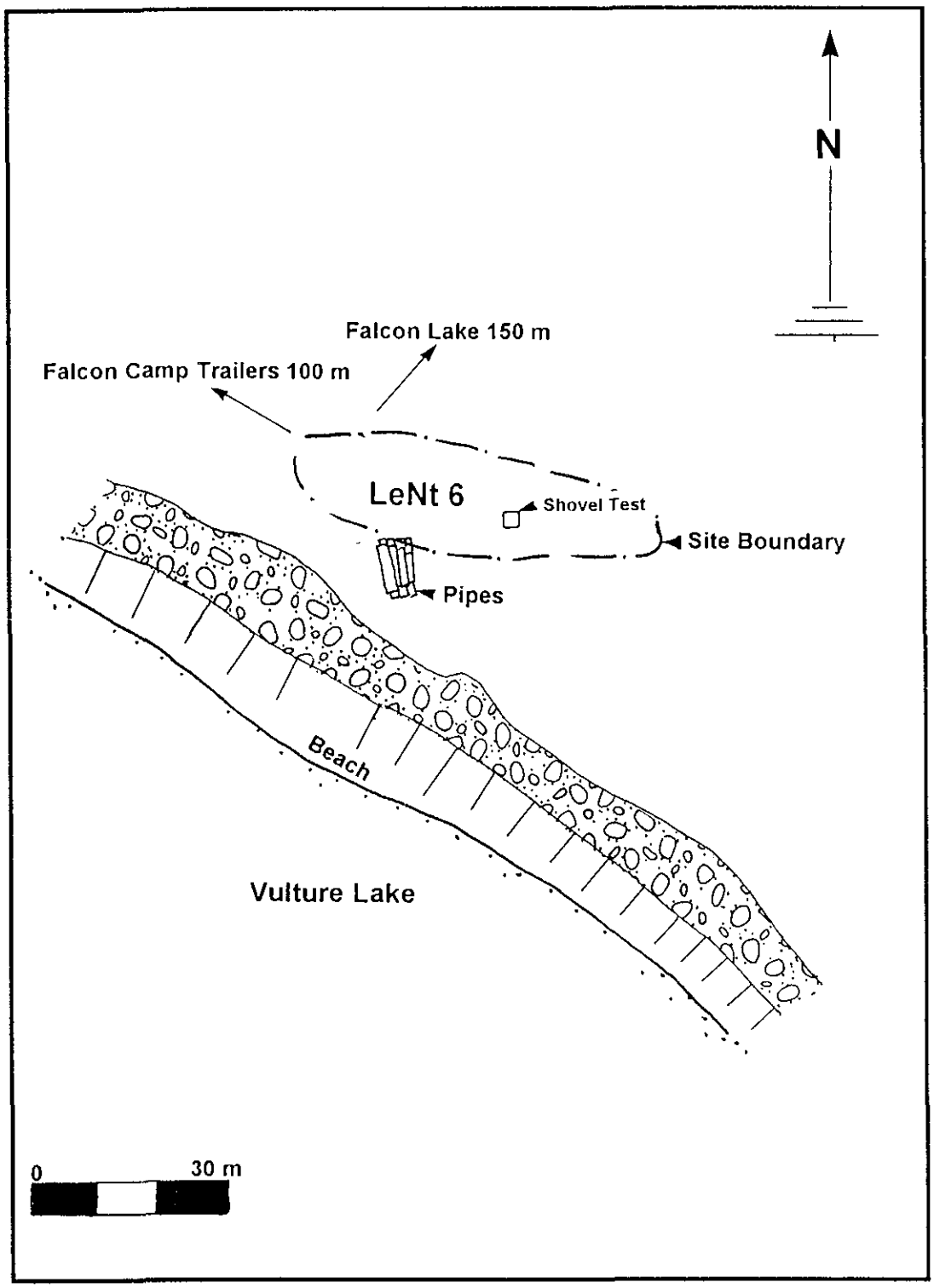


Figure 37 Site Map - LeNt-6

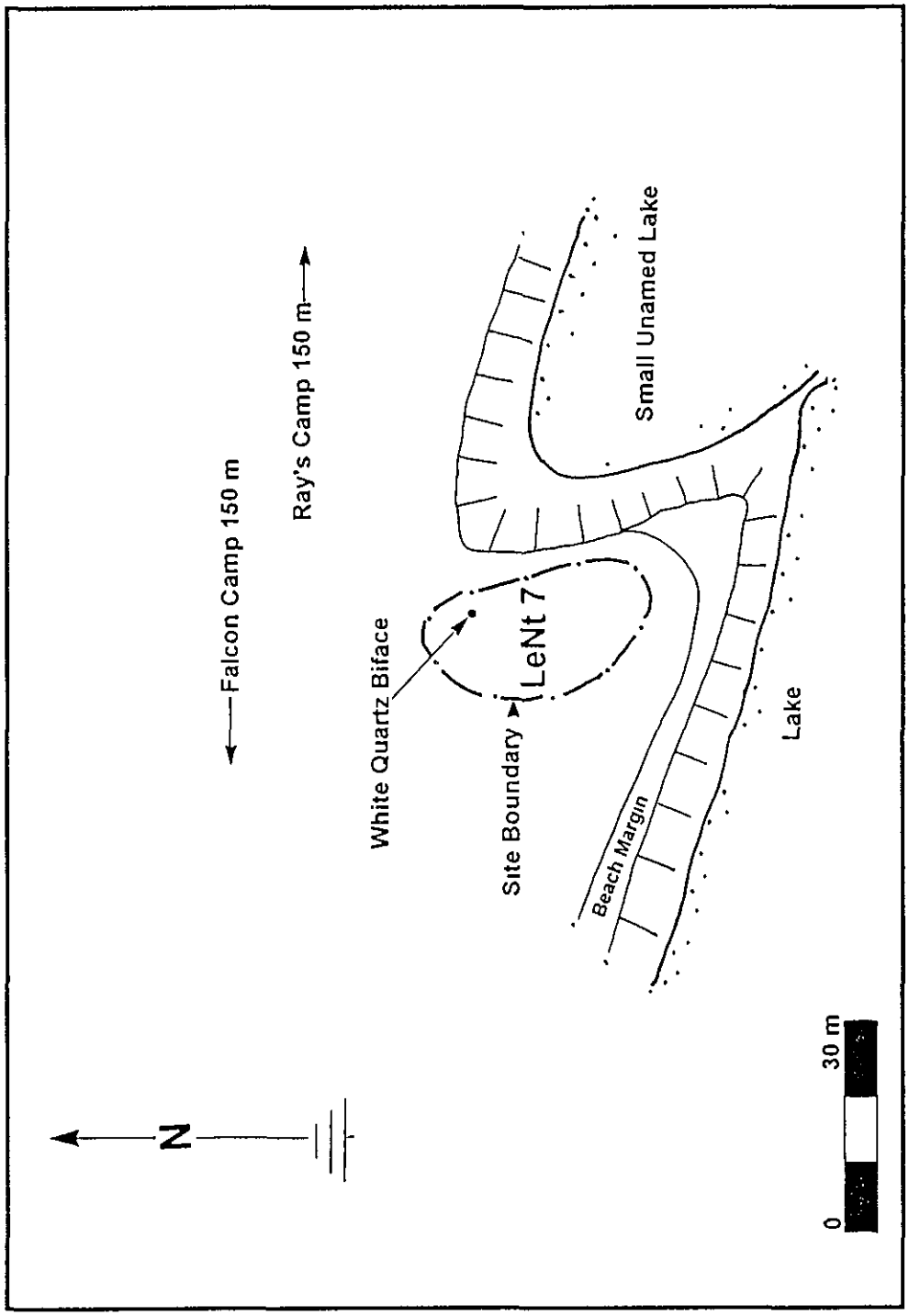


Figure 38. **Site Map - LeNt-7.**

potential for buried cultural material. No specific development has been identified, but use of the two camps could result in impact of this site. The small size of this site and the limited yield and variety in the observed artifacts suggests that LeNt-7 has low archaeological significance.

5.5.5. LeNt-8 (isolated find)

This locality yielded a single artifact. It was a formed biface fragment of clear quartz and was collected (Table 1, Appendix 1). The site is located in the interior of a raised, broad landform between two lakes and is east of the mobile Ray's Camp. This locality has not been disturbed, but the proximity to the exploration camp suggests that disturbance could occur. No specific development has been identified for this locality As the formed biface fragment was collected, LeNt-8 is assigned low archaeological significance

5.6. Lakes Survey Area

The lakes survey area (Figure 39) is located in a low-lying and undulating taiga environment characterized by numerous small and medium-sized lakes. Higher landforms tend to consist of limited areas of exposed rubbly, shield rock and small esker remnants Peat-like soils are dominant and well drained landforms with potential for archaeological sites are very limited. The majority of the development associated with the BHP NWT Diamonds Project is situated in this survey area. Included here are the proposed mine sites, the waste disposal areas, the existing and proposed camp and construction sites, the processing plant, the airstrip, a series of access roads, and the major tailings pond (Long Lake). Some of this development has already occurred, some is proposed. As no archaeological sites were discovered in this area, and little archaeological potential is predicted in areas that were not subject to ground reconnaissance, no impacts are identified

Five of the lakes in this area were examined on the ground during the 1994 field investigations, the remainder of the area was viewed numerous times during helicopter overflights. Panda, Koala, Leslie, and Fox Lakes are all being considered as possible mine and disposal areas (Figure 39). Long Lake is a proposed tailings pond Koala Camp and its associated developments are located between Koala Lake and Leslie Lake. Landforms surrounding Panda, Koala, Leslie, and Fox Lakes were subject to systematic foot traverses More intensive examination was conducted on better drained and better defined landforms associated with these lakes; no archaeological sites were located The negative results from the investigation of these lakes prompted a less intensive examination of Long Lake

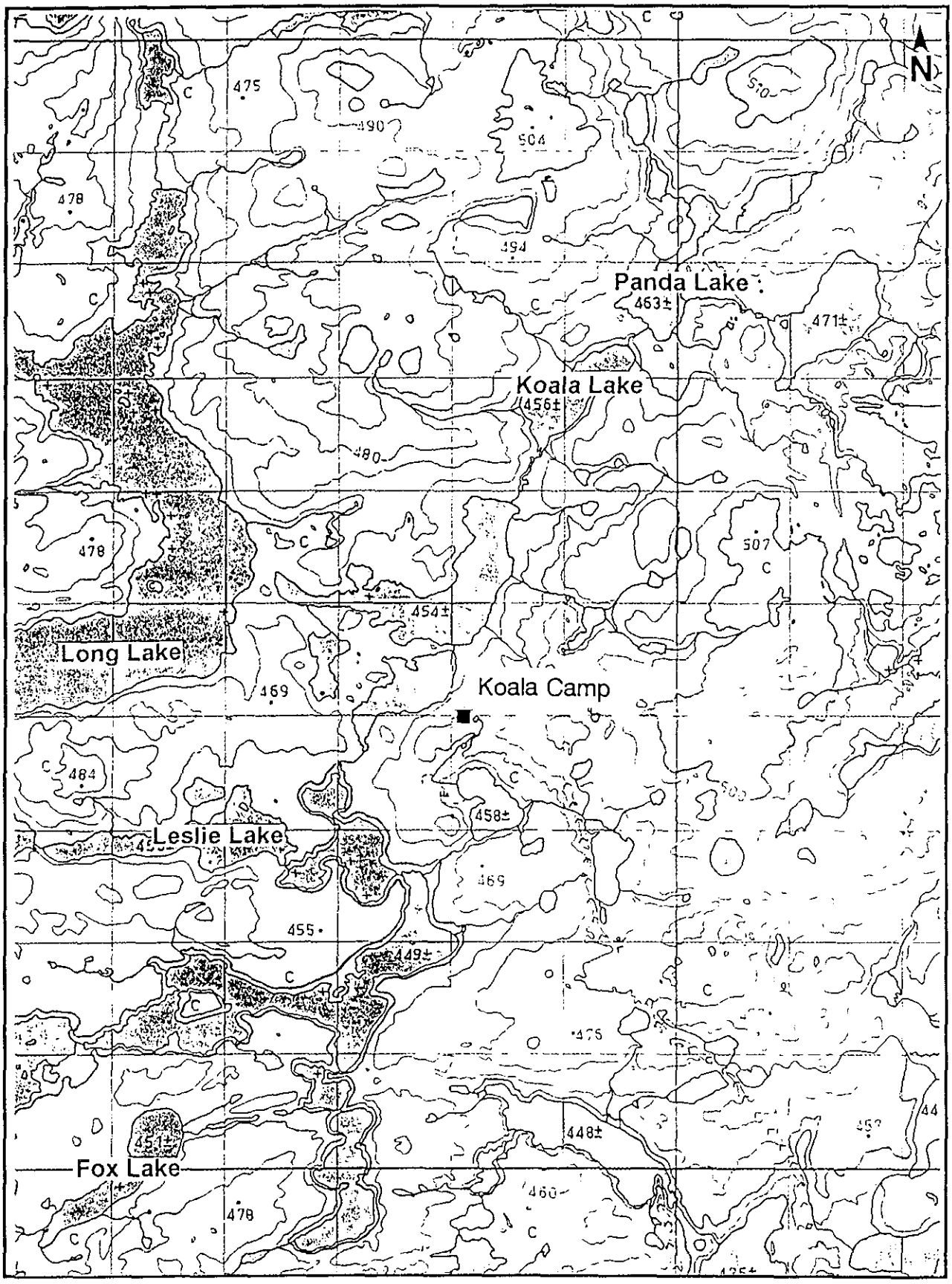


Figure 39 The lakes survey area - no archaeological sites were discovered (1 50,000 map sheet 76D/10)

Helicopter access was used to visit all landforms on Long Lake that were within the identified impact zone (increased water level and waste disposal areas) and were suggestive of archaeological potential. These landforms were those that were slightly elevated above Long Lake and were typified by good drainage and any locations with bedrock outcrops. No archaeological sites were located.

6. CONCLUSIONS AND RECOMMENDATIONS

The BHP study area was arbitrarily divided into six survey areas to facilitate discussion. The 'all weather' road survey area yield twenty-seven archaeological sites, seven of which were isolated finds. The seven isolated finds were assigned low archaeological significance Fourteen of the twenty-seven other recorded sites were assigned low archaeological significance, four were assigned low-moderate archaeological significance, and two were assigned high archaeological significance. Also noted were two possible caches and a possible signal rock As no definitive evidence of human use of these three localities was discovered, no further assessment was conducted.

The remaining twenty-three archaeological sites, nine of which were isolated finds, were located in four of the other five survey areas; no sites were found in the Lakes survey area No specific development has been identified for these four survey areas, but some exploration activity is occurring, or has occurred, in limited portions. One of these recorded sites was assigned high archaeological significance and two were assigned moderate archaeological significance; the remaining twenty sites, including the nine isolated finds, were suggestive of low archaeological significance.

In any archaeological study, it is possible that some sites could be missed as a result of survey coverage or vegetation. However, for this study area, it is unlikely that any sites, other than isolated finds or very sparse lithic scatters, were missed because of the intensive ground examination and the extensive exposure as a result of wind or water deflation One expected site type, burials, was not represented in the archaeological inventory. Any burials associated with rings of rock or rock mounds would have been found, but it is possible that there could be burials that are not identified in this manner With no surface features, the identification of such locations is next to impossible However, with the amount of exposure evident in much of this esker, there seems to be relatively low potential for burial sites to occur. In the event that burials are encountered during construction, all work should cease and the Prince of Wales Northern Heritage Center should be contacted.

The following discussion provides a summary of the six BHP survey areas and identifies the recommended mitigation measures

No sites were located in the lakes survey area that contains the majority of the proposed development No further archaeological investigation is required in this region unless it extends into new areas with eskers or other prominent, elevated landforms. The

winter road survey area yielded an isolated find (LdNt-7) which consisted of an unworked flake; the artifact was left in situ. The discovery and reporting of this isolated find, which has low archaeological significance, is judged to be sufficient mitigation. No further archaeological investigation is required in advance of use of this esker for any development (no development has been identified at this time).

The Falcon and Ray's Camp survey area yielded two isolated finds, LeNt-4 and LeNt-8, the artifact at the latter site was collected as it represented a tool This area also yielded three lithic scatters, LeNt-5, LeNt-6, and LeNt-7. Use of this esker is likely to result in impact at any or all of these sites (LeNt-5 has already been impacted) The recording and/or collection of the isolated finds is judged to be sufficient mitigation at these localities All three recorded sites are typified by a low yield (less than 50 flakes), little variety, and no potential for significant buried cultural material One is considered to be medium-sized, but is actually two small clusters of lithics. The other two sites are small in area All three sites have been assessed as having low archaeological significance As any formed tools or formed tool fragments have been collected, primarily unworked flakes remain The scientific information provided by such cultural remains is relatively limited and does not justify further work at these sites. It is thus suggested that detailed recording is sufficient mitigation if these sites are impacted.

It should be noted that all archaeological sites are significant to some degree, but not all have sufficient significance to justify further investigation. With small, low yield sites that are not unique, such as those above, detailed site recording is often the most valuable data that can be retrieved Avoidance is always the preferred mitigation recommendation, but in the case of LeNt-5, which is already disturbed, it is pointless to provide such a recommendation Although it would be preferable if LeNt-6 and LeNt-7 could be avoided, if they can't be avoided, further archaeological work would not make a significant contribution to our knowledge of this region.

No development has been proposed for the Exeter Lake or the south-central esker survey areas although the former area has seen some exploration activity. The Exeter Lake survey area yielded eleven archaeological sites, including four isolated finds (LeNu-5, LeNu-7, LeNu-8, and LeNu-10). Reporting of the isolated finds is judged to be sufficient mitigation Six of the seven larger Exeter sites (LeNu-1, LeNu-2, LeNu-3, LeNu-4, LeNu-6, and LeNu-9) were small, contained a low yield, had limited variety, and had no potential for buried cultural deposits These were assessed as having low archaeological significance. Although avoidance during future development plans would be preferable, no further

archaeological investigation is recommended. The seventh site, LeNu-11, is a very large site with a high yield, contains a variety of material types and tools, and has potential for buried deposits. This site is highly suggestive of a camping locality that was used repeatedly LeNu-11 has been assessed as having high archaeological significance and should be avoided by all development activity. The site should also be avoided by all traffic, whether during the winter or in other seasons, as such activity would impact the site If this site cannot be avoided, it would be necessary to conduct systematic data recovery

The south-central esker survey area yielded six archaeological sites, including two isolated finds, LdNt-1 and LdNt-2. Again, reporting of the isolated finds is judged to be sufficient mitigation Two of the lithic scatters, LdNt-3 and LdNt-4, are small sites that are typified by a low yield, limited variety, and low potential for buried cultural deposits They have been assigned low archaeological significance. Although avoidance is recommended, no further archaeological investigation is required if avoidance is not feasible. LdNt-5 is also a small site, but it contained a high yield and exhibited variety in the manufacturing stages represented by the lithic debitage. It also has some potential for additional buried cultural deposits. As this site may represent a lithic workshop or short term quarry, it is suggested that moderate archaeological significance is represented. Avoidance by all development and traffic is recommended. If avoidance is not feasible, systematic data recovery should be undertaken LdNt-6 is a medium-sized site, with a moderately-high yield, and some variety It too has potential for buried cultural deposits and has been assigned moderate archaeological significance. Avoidance by all development activity and traffic is recommended and systematic data recovery would be required if avoidance was not feasible

The sixth survey area, the all weather road, yielded twenty-seven sites, including seven isolated finds. Three of these isolated finds were tools that were collected as they were threatened (LdNs-4, LdNs-6, and LeNs-5), one site contained a tool (LdNs-2), but was not threatened. The remaining isolated finds (LeNs-7, LeNt-1, and LeNt-2) were represented by one unworked flake; these artifacts were left in situ.

The remaining twenty sites in the all weather road study area were primarily lithic scatters of various sizes. The size of the recorded sites is not a particularly valuable consideration in the assessment of these twenty sites as a number of medium-sized sites (and one very large one) are actually a series of clusters that are often separated by a considerable area with no cultural deposits. Thus, in the following discussion, size is not a major criteria in dividing the sites into groups with similar characteristics

Nine of the twenty sites (LdNs-1, LdNs-3, LdNs-5, LdNs-9, LdNs-12, LdNs-13, LeNs-2, LeNs-8, and LeNs-10) were characterized by a low yield (less than 50 flakes), limited variety, and had no or very little potential for buried cultural deposits. Six of these nine sites were small and three were medium-sized. All nine were assigned low archaeological significance.

Four of the twenty sites (LdNs-7, LdNs-10, LeNs-6, and LeNt-3) had a slightly higher yield (50 to 100 flakes), but were typified by low variety and no or little potential for buried cultural material. These were small and medium-sized sites They too, have been assigned low archaeological significance.

Four other sites (LdNs-11, LdNs-14, LeNs-1, and LeNs-9) were assigned low-moderate archaeological significance. Each of these sites had some characteristic that suggested they were slightly more significant than other similar sites. Both LdNs-11 and LdNs-14 have some potential for buried cultural deposits while LeNs-1 had a moderate yield with some variety and LeNs-9 had a high yield with lithic material type variety However, the limited yield and amount of exposure evident at LdNs-11 and LdNs-14 suggest that these buried deposits would not be substantial, nor would they likely contain significant items. There is not sufficient potential to rate them as moderate which would automatically require that some systematic data recovery be undertaken, thus they have been assigned low-moderate significance. LeNs-1 and LeNs-9 have a higher yield, and to some extent, more variety. However, both sites are typified by extensive exposure and were subject to intensive surface examination. Any tools visible were collected and thus, it is highly likely that only unworked flakes remain at these sites. Although there is some significance attached to debitage, there is not sufficient to justify systematic data recovery In addition, LeNs-9, although a very large site, could easily be divided into a number of smaller sites based on clusters These clusters, because of their decreased artifact yield and variety, would likely be individually assessed as having low archaeological significance

Most, if not all, of the sites rated as having low to low-moderate archaeological significance will be impacted by either road construction or borrowing activities Due to the nature of the esker, avoidance is not likely feasible if road construction proceeds Although the cumulative impact of the loss of seventeen archaeological sites appears high, it is believed that the cost of systematically collecting even a sample of these sites is not justified as the yield will most likely consist of unworked flakes The material types and rough numbers of flakes at each of these sites has been recorded and other site data has been collected. It is recommended that this documentation be viewed as sufficient mitigation in

light of site characteristics

The final three archaeological sites associated with the all weather road are LdNs-8, LeNs-3, and LeNs-4. LeNs-3 is the location that yielded the birch bark basket. The site is located in an outcrop of shield rock that will not likely be impacted by road construction or borrowing activity. In addition, the basket was collected and submitted to the Prince of Wales Northern Heritage Centre for conservation and intensive examination of this locality failed to yield any other cultural material. The site thus has low archaeological significance and no further work would be required even if impact was to occur Note that after the birch bark basket was stabilized by the conservation department at Prince of Wales Northern Heritage Centre, it was shipped to the Canadian Museum of Civilization

LdNs-8 and LeNs-4 both appear to be temporary occupation sites. Although little cultural material was found in association with LdNs-8, it does contain four stone tent rings and a small hearth. A second partial ring of stones was evident within two of these tent rings. This site has potential for shallowly buried cultural deposits and has been assigned high archaeological significance. LeNs-4 is a much larger site and contains a high yield and wide variety of artifacts. It has potential for buried cultural deposits and contained a hearth. It is highly likely that this site served as a camping location on repeated occasions This site has also been assigned high archaeological significance. Avoidance of LdNs-8 and LeNs-4 was recommended to BHP If avoidance was not feasible, systematic data recovery would be required.

LdNs-8 and LeNs-4 are located in the only two areas in which alternate road routes were identified and both are on the eastern option They can and should be avoided by using the western alternate In addition, to ensure that no mistakes occur, they should be adequately flagged (with a buffer zone) by an archaeologist aware of their boundaries, prior to the initiation of any activity associated with road construction No borrowing, traffic, or other activities should be permitted within the boundaries of these two sites These sites should be identified on development plans.

Note that BHP agreed with the recommendation of avoidance for LdNs-8 and LeNs-4 and Ian Franck returned to the study area to stake out the boundaries of these two site to ensure that they would be avoided during construction

In addition, if it becomes evident that any other sites can be avoided, it would be preferable to do so However, only those with moderate or high archaeological

significance would require some form of systematic data recovery if avoidance was not feasible. In consultation with BHP and Rescan, some means of identifying and protecting the sites in areas for which development is not currently proposed should be undertaken.

The majority of the sites located in the six survey areas are suggestive of short-term use. Most are suggestive of a single activity, such as the making or modification of a stone tool. However, at least three are suggestive of repeated, and possibly, longer term use; none are suggestive of a permanent occupation. No evidence of stratified deposits was encountered. Exposure was generally excellent due to deflation and as a result, intensive examination of surface artifacts was possible. Specimens suggestive of formed tools were collected as a reference sample. In total, 29 tools were collected from 15 sites, an average of two per site. In reality, ten sites yielded one tool each, three sites yielded three tools each, one site yielded four tools, and one site yielded six tools. As 50 new sites were recorded, the tool yield is not very high, but it should be acknowledged that unformed tools such as retouched flakes were not systematically collected.

The low yield of tools may be a result of their curative value or may be indicative of the possibility that rapidly made and minimally worked tools were sufficient for most activities conducted in this area. The presence of a number of bifaces presumed to represent projectile points suggests hunting was conducted - not a surprising suggestion considering that caribou migrate through this area. Other tools are suggestive of use as knives which could be used for a variety of purposes, including processing the results of hunting expeditions. A number of large and heavy duty tools that are believed to have been used for chopping or similar activities may also have been used in association with hunting However, many of these tools are multi-purpose and thus specific functions are not easily identified. Although it is presumed that hunting was conducted, other activities, such as food preparation, fishing, berry gathering, etc. could also have been undertaken At two sites, hearths were encountered. Whether these served as a source of warmth, were used to prepare food for immediate consumption, or were smudges, is unknown The primary function of one site, LdNt-5, appears to have been the procurement and/or modification of quartz for stone tools.

The majority of the specimens collected represent unformed tools, formed tools that were broken, or tool types that occur throughout time. It is thus not possible to compare these tools to specimens from specific time periods or cultural traditions. Two tools, one complete rectangular biface of basalt from LdNs-4 and one broken shouldered and stemmed biface from LeNs-5, are similar to specimens associated with the Taltheilei tradition

This tradition is first evidenced around 2500 B.P. However, these tools were found on the surface of two different sites at some distance from one another and represent too small a sample for a definitive statement on cultural associations As stated previously, it is possible that two sites, LeNs-3 (birch bark basket) and LdNs-8 (stone tent rings), could have been utilized relatively recently, but the lack of supporting data (no artifacts suggestive of prehistoric, protohistoric, or historic occupations were discovered) and the fact that the basket could have been preserved for a considerable period of time due to weather conditions, make it impossible to assign these sites to a specific time period

With the exception of the birch bark basket, the artifacts encountered during the inventory and impact assessment were made of stone. Quartz is the dominant lithic in the artifact sample viewed and collected, although other materials are represented, including a very fine grained basalt, a variety of cherts, and shale. Quartz occurs naturally in the esker deposits and its high frequency is not unexpected

The majority of the archaeological sites discovered were isolated finds (16) or small to medium-sized surface lithic scatters with fewer than 50 visible flakes (21) Nine sites contained 50 or more surface artifacts including one that may have served as a lithic quarry and/or workshop locale and one that may have been a temporary camp site The remaining four sites included one that yielded a unique artifact, a birch bark basket The other three represent more frequently used or longer term camp sites The sites types discovered are comparable, in frequency, size, and cultural content, to those found in adjacent areas.

The number and distribution of the sites suggest that eskers served as travel routes during the seasonal subsistence round. Large and small archaeological sites are associated with these eskers although the more prominent of these glacial features tend to have greater potential. Those portions of these eskers associated with the medium to large-sized lakes also appear to have more potential Similar landforms in adjacent areas should be subject to an archaeological assessment prior to any development

The reconnaissance conducted for the BHP NWT Diamonds project was the first detailed archaeological investigation conducted in this area The data retrieved during this study has made a contribution to the understanding of archaeological resources in this region of the Northwest Territories

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8. APPENDICES

8.1. Site Data (Tables)

Table 1 **Inventory of tools, including birch bark basket, recovered during the 1994 BHP archaeological reconnaissance**

Art #	Location	Artifact Type	Comments, dimensions, weight
LdNs-4:1	Surface	Formed Biface	A large, rectangular, fine-grained basalt biface; displays continuous bifacial retouch along all margins and on both faces; L=12 1 cm; W=5 7 cm; Th=1 5 cm; Wt=126.3 g.
LdNs-6:1	Surface	Spall	A large, ovate, metamorphic spall chopper; displays heavy, crude unifacial retouch along one margin; L=12 8 cm; W=9 6 cm; Th=2.5 cm; Wt=471 1 g
LdNs-7:1	Surface	Unformed Biface	A medium-sized, irregularly-shaped, coarse-grained greyish-white quartz fragment; displays discontinuous, marginal bifacial retouch; L=4 2 cm; W=3 4 cm; Th=1.2 cm; Wt=15 0 g.
LdNs-10:1	Surface	Unformed Biface	A medium-sized, pentagonal, grey quartz fragment; displays partial bifacial retouch; L=2.6 cm; W=2 2; Th=0 9 cm; Wt=7 0 g
LdNs-11:1	* S.T #1 (20-30 cm b.s.)	Unformed Uniface	A medium-sized, trapezoidal, grey quartz fragment; displays unifacial retouch along one margin; L=2 8 cm; W=1 7 cm; Th=0.8 cm; Wt=4.1 g.
LdNs-12:1	Surface	Formed Biface	A medium-sized, trapezoidal, clear quartz formed biface fragment; displays continuous and extensive bifacial retouch; broken transversely; L=3 3 cm; W=3 0 cm; Th=1 0 cm; Wt=8 4 g
LeNs-1:1	Surface	Formed Uniface	A medium-large, trapezoidal, grey quartz fragment; displays steep continuous unifacial retouch along two margins; L=5 7 cm; W=3.9 cm; Th=1 4 cm; Wt=26.8 g
LeNs-1:2	Surface	Unformed Uniface	A medium-sized, rhomboidal, grey quartz fragment; displays discontinuous unifacial retouch along one margin; L=3 5 cm; W=3 1 cm; Th=1 4 cm; Wt=11 7 g
LeNs-3:1	Surface	Birch Bark Basket	Almost complete basket constructed of birch bark; found in two large pieces (26 cm by 15 cm and 26 cm by 7 cm) with stitch holes; nine additional fragments form strips that also have stitch holes (all are 1 5 cm wide and lengths are: 7 cm, 7 5 cm, 8 cm, 11 cm, 11 cm, 18.5 cm, 19 cm, 29 cm, and 37 cm).
LeNs-4:1	Surface	Formed Biface	A large, ovate, grey quartz cutting/chopping tool; displays crude, continuous bifacial retouch along two margins; L=11 9 cm; W=6 5 cm; Th=2 8 cm; Wt=280 5 g
LeNs-4:2	Surface	Formed Biface	A small, white chert formed biface fragment, possibly the base of a stemmed projectile point base; displays fine continuous bifacial retouch; L=1 6 cm; W=1 1 cm; Th=0 3 cm; Wt=0 6 g.
LeNs-4:3	Surface	Unformed Uniface	A medium-sized, irregularly-shaped, grey banded chert flake; displays partial, marginal retouch along one margin; L=3 38 cm; W=2 57 cm; Th=0 55 cm; Wt=4 95 g.

Table 1. (continued)

Art #	Location	Artifact Type	Comment, dimensions, weight
LeNs-5:1	Surface	Formed Biface	A medium-sized, white chert shouldered and stemmed projectile point base; displays continuous bifacial retouch along both lateral margins and extensive retouch on one face; basal portion; broken transversely; distal portion missing; L=3 18 cm; W (shoulder)= 2 46 cm; W (neck)= 1.72; Th=0.54 cm; Wt=4 8 g.
LeNs-9:1	Surface	Formed Biface	A moderately large, ovate, greyish-white quartz biface fragment; displays continuous bifacial retouch; end missing; L=5.3 cm; W=4 2 cm; Th=1.4 cm; Wt=32.3 g
LeNs-9:2	Surface	Formed Biface	A medium-sized, parabolic-shaped greyish-black shale biface fragment; displays discontinuous bifacial retouch; possible grinding; L=3 3 cm; W=2 8 cm; Th=0.6 cm; Wt=7 1 g
LeNs-9:3	Surface	Unformed Uniface	A medium-sized, trapezoidal, coarse-grained white chert fragment; displays continuous unifacial use along one margin; L=2.5 cm; W=2.3; Th=0 9 cm; Wt=5 8 g
LeNs-9:4	Surface	Formed Biface	A medium-sized, triangular, white quartz biface fragment; displays continuous bifacial retouch on intact lateral edge; distal-lateral portion; broken L=2 7 cm; W=2 1 cm; Th=0 7 cm; Wt=3 6 g
LeNs-9:5	Surface	Formed Biface	A medium-sized, triangular, greyish white quartz biface preform fragment; displays continuous bifacial retouch; broken transversely; L=3 6 cm; W=2.2 cm; Th=1 3 cm; Wt=9.7 g.
LeNs-9:6	Surface	Formed Biface	A large ovate, grey quartz biface; displays continuous bifacial retouch on all edges and both faces; L=9 4 cm; W=5 9 cm; Th=1 8 cm; Wt=99 5 g
LeNu-11:1	Surface	Formed Biface	A medium-large, crescentic, banded grey quartz biface fragment; displays discontinuous bifacial retouch with extensive retouch on one face; broken transversely; L=5.9 cm; W=4.0 cm; Th=2 0 cm; Wt=42 0 g.
LeNu-11:2	Surface	Formed Biface	A medium-sized, rhomboidal, greyish-white quartz biface fragment; displays continuous bifacial retouch along one margin; L=3 9 cm; W=2 1 cm; Th=1 0 cm; Wt=7.0 g
LeNu-11:3	Surface	Unformed Uniface	A medium-sized, irregularly-shaped, greyish-white quartz uniface fragment; displays discontinuous, unifacial retouch along one margin; L=3 7 cm; W=3 3 cm; Th=1.1 cm; Wt=14 6 g
LeNu-11:4	Surface	Formed Uniface	A small, rhomboidal, white chert uniface; scraper; displays continuous, fine, steep unifacial retouch along two margins and one end; L=2 8 cm; W=1 7 cm; Th=0 6 cm; Wt=3 6 g.

Table 1 (continued)

Art.#	Location	Artifact Type	Comments, dimensions, weight
LdNt-5:1	*S.T.#1 (0-10 cm b s)	Core	A large, irregularly-shaped, grey quartz, possible core; displays flake scars and shatter planes; L=11.1 cm; W=7 6 cm; Th=3 2 cm; Wt=294 6 g
LdNt-6:1	Surface	Formed Uniface	A medium-sized, tear-shaped, grey quartz uniface; scraper; displays continuous steep unifacial retouch along one margin; L=4.7 cm; W=3.2 cm; Th=1 2 cm; Wt=19 7 g.
LdNt-6:2	Surface	Unformed Uniface	A medium-sized, pentagonal, white quartz uniface fragment; displays discontinuous, moderately steep, unifacial retouch along one margin and discontinuous marginal retouch along one edge; L=3 5 cm; W=2 8 cm; Th=0 9 cm; Wt=9 8 g.
LdNt-6:3	Surface	Unformed Biface	A medium-sized, trapezoidal, white quartz biface fragment; displays discontinuous bifacial retouch on one lateral edge; L=2 8 cm; W=2 8 cm; Th=0 8 cm; Wt=5 6 g.
LeNt-7:1	Surface	Unformed Biface	A medium-large, trapezoidal, grey quartz biface fragment; displays discontinuous bifacial retouch on one margin and discontinuous unifacial retouch on one margin; L=5 2 cm; W=4 3 cm; Th=1 5 cm; Wt=32 8 g
LeNt-8:1	Surface	Formed Biface	A medium-sized, triangular, clear quartz biface end fragment; displays fine, continuous and extensive bifacial retouch; broken transversely; L=3 4 cm; W=2 2 cm; Th=0 8 cm; Wt=7 65 g.

* **Shovel Test**

Table 2. Inventory of lithic waste flakes recovered from shovel tests and surface collection during the 1994 BHP archaeological reconnaissance.

LdNs 7

Provenience	Size Range* 1	2	3	4	5	Total Frequency	Total Weight	Materials Present
S.T #1 (0-10 cm DBS)		1				1	1.7 grams	shale
Surface				3	1	4	11 2 grams	shale

LdNt 5

Provenience	Size Range* 1	2	3	4	5	Total Frequency	Total Weight	Materials Present
S.T.#1	6	46	19	15	4	90	158.3 grams	grey quartz

LeNu 4

Provenience	Size Range* 1	2	3	4	5	Total Frequency	Total Weight	Materials Present
Surface				1		1	17 25 grams	rose quartz

*** Size Range**

1 - 0-5 mm
2 - 6-10 mm
3 - 1-2 cm
4 - 2-4 cm
5 - 4-6 cm

8.2. **Site Forms** (included only in the copies submitted to the Canadian Museum of Civilization and the Prince of Wales Northern Heritage Centre)

Appendix II - C2

Appendix II-C2
Outcrop's Socioeconomic Contacts Not Cited

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