HISTORICAL RESOURCES IMPACT ASSESSMENT

GLACIER POWER LTD
DUNVEGAN HYDROELECTRIC PROJECT

PERMIT 99-111
HISTORICAL RESOURCES
IMPACT ASSESSMENT

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DUNVEGAN HYDROELECTRIC PROJECT

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Prepared For
Glacier Power Ltd.
200, 622 Fifth Avenue S.W.
Calgary, Alberta
T2P 0M6

Prepared By
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March 2000
March 23, 2000

Glacier Power Ltd.
200, 622 Fifth Avenue S.W.
Calgary, Alberta
T2P 0M6

Attention: Mr. Bill Johnson

Dear Mr. Johnson:

I am pleased to submit to you this report entitled Historical Resources Impact Assessment Glacier Power Ltd. Dunvegan Hydroelectric Project.

Should you have any questions, please do not hesitate to contact me.

Sincerely yours,

FEDIRCHUK McCULLOUGH & ASSOCIATES LTD.

Gloria J. Fedirchuk, Ph.D.
/g
Summary

The Historical Resources Impact Assessment of the proposed Dunvegan Hydroelectric Project examined 16 archaeologically sensitive target areas and bedrock exposures for palaeontological remains. In addition, two powerline alternates and a north and south access road were assessed. Archival research was also carried out relative to early historic use from the perspective of Dunvegan. As a result of the field studies, 22 precontact and three historic sites were identified and assessed relative to the proposed Dunvegan Project. The type section for the Dunvegan Formation lies within the project area. In situ fossil Ostrea were also identified during the field reconnaissance.

The identified archaeological sites occurred in Target Areas 1 (Hines Creek area), 4 (Ksituan River), 6, 10, 13, 14 (Hamelin Creek) and in association with both access roads as well as Powerline Route Alternate 2 on the north side of the Peace River. Precontact site types represented in the site inventory consist of two isolated finds, nine artifact scatters, and 11 campsites. The historic sites consist of one of each of the following: homesteads, recent geotechnical test sites, and trails.

Of the total 25 sites, 16 are not in direct conflict with the proposed project. One site (GIQq 3) would potentially be subject to erosion and/or flooding of the headpond. This site is of sufficient historical resource value to warrant further study. An additional two sites are of moderate to high historical resource value and because of their location relative to the
headpond have been recommended for monitoring after construction to determine potential erosional effects and mitigative measures. The trail (GIQp H2) is representative of early communication and transportation systems associated with the settlement of Dunvegan and the Peace River area. Should Powerline Route Alternate 2 be selected for construction, restricted placement of the power poles along one edge of the trail is recommended. Assessment of any new realignments of either the access roads or powerline routes is recommended. Relative to the palaeontological studies, further study is recommended on the type section of the Dunvegan Formation. In addition, because strata are poorly exposed on the south bank of the river in the vicinity of the south access road, monitoring during construction is recommended.
Project Personnel

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INTRODUCTION

BACKGROUND

Glacier Power Ltd. (Glacier Power) proposes to construct the Dunvegan Hydroelectric Project (Dunvegan Project) on the Peace River, approximately three kilometers west of the Highway 2 bridge crossing at Dunvegan in northwestern Alberta (Figure 1). In keeping with the request by Alberta Environment, Glacier Power undertook to prepare an Environmental Impact Assessment (EIA) report for this project and to meet the Canadian Environmental Assessment Act (CEAA) study requirements. The Historical Resource requirements for this project were identified by the Archaeological Survey of Alberta, Alberta Community Development in Schedule A. The Historical Resources Impact Assessment was subsequently conducted under Archaeological Permit 99-111.

Human use of the Peace River extends back into the precontact era when the aboriginal people occupied the river banks. In the early historic era, Dunvegan served as a focal point for fur trade and post maintenance activities. Subsequently, homesteaders moved into the area and lands were broken for crops and pasture. More recently, the Peace River has been harnessed for hydroelectric power through the construction of the W. A. C. Bennett Dam (Bennett Dam) and the Peace Canyon Dam in British Columbia.
PROJECT DESCRIPTION

The proposed Dunvegan Project is located in Townships 80 and 81, Ranges 4, 5, and 6, West of the Sixth Meridian, near the community of Dunvegan. It would consist of a low-head, run-of-river hydro plant on the Peace River. The proposed hydroelectric power generation facility would consist of a concrete powerhouse with 40 one MW turbine/generation units, an adjustable weir type spillway, a 138 kV power line, short access roads on both banks, a facility for passing boats through the structure, and a boat launch on the upstream side of the headworks structure (Figure 2). The powerhouse, weir, and navigation lock are located within the river channel except at both ends where the headworks structure would be on crown land. Two alternates for power transmission have been identified. Alternate 1 interconnects with an existing Alberta Power’s 138 kV transmission line approximately eight kilometers to the southeast of the Project. Alternate 2 interconnects at the Anderson Gas Plant approximately 14 kilometers northeast of the Project.

The proposed headworks structure would raise the present water level by six meters, i.e. from the present depth of three meters to nine meters, forming a headpond on the upstream side. Contained within the present active river channel, a headpond flooding between 50 and 100 hectares (less than 20 meters on each side of the valley bottom) would be created which would not overtop the natural banks except under extreme flood events. The effects of the headpond extend upstream approximately 22.5 kilometers; beyond that point, water levels would remain at the present regulated fluctuation levels.

OBJECTIVES

The primary objectives of the Historical Resources Impact Assessment were to:

1. complete a full archival research program on the proposed project area;
Figure 2  Proposed Dunvegan Project facilities
2. inventory historical resource sites within the proposed development zone;
3. evaluate the significance of the individual sites identified;
4. forecast the nature and magnitude of site specific impacts;
5. design and implement an acceptable site specific mitigation program which would significantly eliminate adverse impacts to identified sites prior to construction; and
6. assess potential effects of facility failure on historic Fort Dunvegan.

SCOPE OF WORK

The scope of work for Historical Resources Impact Assessments undertaken by Fedirchuk McCullough & Associates Ltd. consisted of the following components:

1. **Archival Research** - to document the nature and extent of historic use of the proposed development project area.

2. **Record Review** - to identify previously recorded sites that could be affected by the proposed development project and to determine the nature of the data base in the area.

3. **Ground Reconnaissance** - to relocate, in the field, historical resource sites that were previously recorded, as well as to identify and record any new sites within the development zone. Site discovery was based on surficial inspection of exposures and subsurface testing, using a conventional shovel testing program, of potential site areas lacking suitable exposures.

Deep testing using an auger was undertaken in localities of high site potential associated with good depositional characteristics.
4. **Site Evaluation** - to evaluate the nature of the existing resource data base, the quantity and quality of observable remains (e.g. site condition, content, uniqueness, and complexity), and the potential of the site to contribute to public enjoyment and education. Sites were evaluated by inspection of exposures or by a standard shovel testing program. Additional controlled assessment may be conducted when a site is perceived to contain potentially significant cultural material. In the event that such potentially significant sites concealed by sediments are encountered, the need for further evaluation is satisfied through either an extensive systematic subsurface testing program, a controlled excavation program, or a backhoe testing program.

5. **Impact Assessment** - to delineate the magnitude of forecasted impacts to the individual identified historical resource sites as well as the local and regional data base and to recommend site-specific mitigative measures commensurate with the assigned value of the site.
ENVIRONMENTAL SETTING

INTRODUCTION

The economic strategy as well as many aspects of the material culture of precontact peoples were intimately related to the opportunities and constraints provided by the regional environment which they inhabited. In many respects, regional environment also strongly influenced where certain activities were conducted and consequently where archaeological sites, testimony to prehistoric use and occupation, are located. The distribution of precontact sites in the boreal forest includes a wide variety of landforms but sites are most frequently associated with knolls and ridges, with margins of escarpments, the edges of terraces overlooking drainage systems, and with sloughs and lakes. This distribution pattern partially reflects environmental opportunities presented to human populations but also cultural preferences in site location. Terrain influenced many forms of human activity, directing travel, biasing routes of communication, enhancing or restricting resource procurement, and restricting occupation areas to selected localities. As a result, human populations were not uniformly distributed across the landscape, but were non-randomly clustered within the most suitable habitats. Because of the close relationship which precontact occupants had with the environment, a brief description of the regional and local environments is provided.
REGIONAL ENVIRONMENT

The proposed Dunvegan Project lies within the Peace River Lowland of the Interior Plains physiographic region (Figure 3). Flat to gently rolling terrain is characteristic (Plate 1). Much of the cultivated lands in the general region are found in the Peace River Lowland. Primarily glacial drift and lacustrine deposits mantle the region with underlying bedrock comprised of Upper Cretaceous shale and sandstone (Spalding 1980: 266). During the waning stages of the Wisconsinan glaciation, the region was covered by Glacial Lake Peace, Indian Creek Stage, which drained approximately 10,000 to 11,000 years ago (Mathews 1980). The Peace River rapidly incised the present channel which stabilized near current levels at least 7300 years ago (Bobrowsky, Damkjar, and Gibson 1988).

The proposed Dunvegan is located in the Peace River Parkland Subregion of the Parkland Natural Region (Figure 4) of Alberta (Alberta Environmental Protection 1994). This subregion contains extensive grasslands; however, most of the area has been cultivated with few areas of native vegetation remaining. Aspen and balsam poplar with successional white spruce upland forests are comparable to the adjacent mixedwood boreal forest tracts. Sedges, oat grass, porcupine grass, wheat grass, and goldenrod dominate the grassland communities.

A number of important game species are present in the Dunvegan Project area which would have been economically important to precontact and historic residents. Elk, moose, and deer are currently available. Wood bison were present in precontact and early historic times. Black bear and wolf are common but the river valley does not represent prime habitat for smaller fur bearers.
Figure 3  Physiographic Regions of Alberta (Klassen 1989)
Plate 1  General view of flat to gently rolling terrain on prairie level, north of the Peace River valley.
Figure 4  Natural Regions and Subregions of Alberta (Alberta Environmental Protection 1994)
PROJECT ENVIRONMENT

The Dunvegan Project is dominated by the Peace River (Plate 2), a major tributary of the Mackenzie River system. The Peace River valley is deeply incised into glaciolacustrine deposits of Glacial Lake Peace and the underlying glacial drift on the uplands, and has cut through the Kaskapau and the Dunvegan bedrock Formations within the lower portions of the valley. Principal tributaries in the project area consist of Dunvegan and Hines creeks and the Ksituan River.

In the defined project area, the valley is approximately 200 meters deep and has eroded through surficial gravels, tills, and lake sediments, and the underlying fine-grained sandstone of the Dunvegan Formation. Concretionary, bentonitic silty shale bedrock of marine origin (Shaftsbury Formation) is exposed along the base of the valley (Green 1972). Because drift deposits are extremely shallow in the project area, much of the valley walls consist of bedrock. As a result, the valley walls are steep with varying degrees of stability and gully formations (Plate 3). Where present, alluvial overbank deposits tend to be expressed as very narrow benches (Plate 4). Four substantial floodplains, several hundred meters wide and one or two kilometers long, occur along the north side of the valley (Plate 5). Very few distinct terraces are evident above these floodplains. Sediments within the valley include alluvial deposits at lower levels and slope wash extending from the base of the valley walls. Small, irregular benches are the result of more massive slump events, some of them relatively recent (Plate 6).

Within the project area, distinct plant communities occur as a result of microenvironmental conditions. Specifically, south facing slopes exposed to long summer days are dominated by wheat grasses, needle grasses, and a variety of shrubs such as saskatoon, pin cherry, choke cherry, and wild rose. Brittle prickly-pear cactus also occurs, representing the northern limit of its range. In marked contrast, the north facing slopes are densely forested with aspen and spruce. Terraces and stable floodplains on both sides of the river are wooded, although those on the north side are occasionally broken by
Plate 2  General view of Peace River upstream of proposed project.

Plate 3  View of Peace River valley showing typical bedrock exposures.
Plate 4  View of project area with a typical alluvial bench.

Plate 5  Floodplain within the proposed project area.
Plate 6  Typical slump formation associated with project area.
natural meadows reflecting even slightly south facing slope. Availability of greater moisture on the floodplains supports balsam poplar and birch in addition to aspen and spruce.
HISTORICAL RESOURCES

DEFINITION

In Alberta, historical resources are protected under the Alberta Historical Resources Act (1980), and are defined as precontact, historic, and palaeontological sites and their contents. Precontact sites are comprised of artifacts, features, and residues of native origin. They predate the arrival of Europeans and are typically characterized by modified bone and stone, and stone structures. Historic sites are characterized by structures, features, and objects of European influence. Buildings and building remains represent the most prominent type of historic sites. Palaeontological sites are areas where fossils of animals or plants have been preserved. Palaeontological sites include only those sites which contain fossils of multicellular invertebrates, vertebrates, and plants. Cultural landscapes and traditional use sites are also identified as historical resources.

ARCHAEOLOGICAL OVERVIEW

The proposed project lies within the boreal forest cultural area (Figure 5). Cultural materials from the southern boreal forest share characteristics from the northern plains and the adjacent eastern slopes. Consistencies in cultural materials and dates in both areas bear testimony to the movements and cultural influences between these zones.
Figure 5  Precontact cultural areas in Alberta
Although relatively few archaeological sites have been excavated in the Peace River area, sufficient cultural material has been recovered to formulate a generalized sequence of cultural development. Time diagnostic artifacts, primarily projectile points, from the region are comparable to those recovered from the northern plains, and indicate that the study area was potentially continuously occupied for the past 11,000 years (Figure 6). The earliest occupation in the general region is represented by the presence of distinctive fluted lanceolate points of the Clovis Complex found near Sturgeon Lake (Bryan 1983), and the Smoky River (Brink and Dawe 1986). The succeeding early period occupations are represented by lanceolate forms identified as Alberta-Scottsbluff, Browns Valley-Frederick, and Plainview from the Peace River valley (Wormington and Forbis 1965; Magne 1986; Head 1993) and Agate Basin from the Bear Lake area to the south (McCullough 1991). In the area approximately between the British Columbia border and High Prairie, Le Blanc and Wright (1990) have studied some local collections (HcQj 1, GjQq 5, GiQf 4) containing early lanceolate projectile points associated with macroblades. Although the macroblades are similar to the Clovis forms in southwestern United States, they also bear some resemblance to the blades found in the boreal at sites around Fisherman Lake, Northwest Territories (Millar 1981).

Projectile points consistent with northern plains Middle Period typology are represented by Besant and Oxbow forms identified at HbQw 17, and HbQx 2, respectively and by a Pelican Lake form at HbQw 14 (Head 1993) to the west of the project area. To the south in the Grande Prairie area, Middle Period northern plains forms are more common and are represented by Oxbow, McKean, Pelican Lake, and Besant at the Tukwakin Site (GdQp 1) (Buchner 1978).

Typical boreal forest forms are stemmed projectile points characteristic of the Talthelei Tradition which have been found near Musreau Lake (Buchner 1978), on the Peace River (Head 1993), and in the Swan Hills (McCullough and Reeves 1976). Northern boreal forest-like materials are found also found to the east in the Lesser Slave Lake (LeBlanc 1983 personal communication) and Lac La Biche (McCullough 1982) regions.
South of the project area, the Karpinsky Site (GkQn 1) near Wanham (Bryan and Conaty 1975), contained stemmed and fish-tailed lanceolates associated with a radiometric date of 1070±55 B.P. (S-517) suggesting Late Period cultural associations. Late Period small side notched forms have also been recovered from HaQw 3 on the Peace River (Damkjar 1987). The Taltheilei Tradition is believed to be ancestral to the historic Athabascan speakers who occupied the western boreal forest. The presence of Taltheilei materials on the Peace and adjacent Athabasca drainage systems is consistent with the historic record as Athabascan speakers occupied this general region at the time of white contact.

The short Protohistoric Period is characterized by the persistence of precontact technologies with the addition of innovations resulting from small scale, indirect, contact with European culture. Among the most distinctive additions to native culture were the acquisition of the horse on the northern plains, a shift in emphasis to a trapping economy in the parkland and boreal forest, and the introduction of metal and other European trade goods. Much of the evidence used to interpret this period is based on eyewitness accounts by travellers and historians, rather than from the archaeological record.

PALAEONTOLOGICAL RESOURCES

The proposed headworks structure and the headpond are situated on strata of the middle part of the Dunvegan Formation (Upper Cretaceous, Cenomanian in age). The type section (Dawson 1881) is on the Peace River in the vicinity of Dunvegan and includes the area of the proposed headworks and headpond. Lithologically, the formation is comprised of marine and non-marine deltaic sandstones interbedded with well-bedded mudstones and fine grained sandstones and siltstones. Individual sandstones range from one to about six meters in thickness, and may be laterally continuous for several kilometers. Typically, they are trough or planar cross-stratified, indicating unidirectional or bidirectional flow. Individual sandstone beds typically exhibit unidirectional (fluvial) flow to the east in the western outcrops, but exhibit bidirection (fluvial and tidal) in the east. Contacts with underlying mudstones
are characteristically sharp with rip up clasts whereas the upper contact is sharp. Interbedded mudstones ‘coarsen up’ grading from true mudstones at the base to interbedded mudstones and fine sandstones at the top.

The Dunvegan Formation is conformably and gradationally underlain by the Shaftesbury Formation downstream from Dunvegan and is regionally conformably overlain by the Kaskapau Formation. Locally there is a suggestion that this contact is unconformable with the Dunveganoceras zone appearing to be absent at the top of the formation. Neither the underlying Shaftesbury Formation nor the overlying Kaskapau Formation will be impacted by the proposed project, and therefore, will not be considered in this report.

Palaeontologically, the Dunvegan Formation yields a marine to brackish water to fresh water fauna and flora. Typically, it contains a brackish water fauna including oysters, mussels, unionids, palecypods, ammonites, and foraminifera. *Inoceramus rutherfordi* indicates correlation with the Belle Fourche shale of Wyoming. A micro site on the highway on the north side of the Peace River has yielded turtle and gar pike fragments. Downstream from Dunvegan, dinosaur tracks have been recovered from the formation (on display at Dunvegan Park). Plant megafossils including dicotyledons, conifers, cycads, and ferns have been found in British Columbia. Collectively, the fossils indicate a later Cenomanian age for the Dunvegan Formation.
METHODOLOGY

RECORD REVIEW

The record review for archaeological and historic sites consisted of a search of the Archaeological Site Inventory Data and History Sites Inventory records maintained by the Cultural Facilities and Historical Resources Division. Relative to palaeontological resources, the Royal Tyrrell Museum of Palaeontology were consulted and a literature search was conducted to determine whether any previously recorded palaeontological sites would be impacted by the proposed project.

PRE-FIELD STUDIES

ARCHIVAL RESEARCH

Both primary and secondary source materials were reviewed as part of the archival research component. The first step in the research was compilation of a bibliography of published works dealing with the history of the Peace River country of Alberta and British Columbia since the late eighteenth century. These works may be categorized as anthropological studies of regional aboriginal peoples, published accounts of fur traders’ observations and journals, academic studies of the Peace River fur trade from historical and archaeological perspectives, and both academic and popular accounts of regional agricultural settlement. Supplementing these works are several first-hand travel accounts published mainly between 1880 and 1914.
As Fort Dunvegan was an important fur trade post from 1805 to 1917, the journals of the post were examined in detail for evidence of land use upstream from Dunvegan. The Hudson’s Bay Company Archives at Winnipeg hold the original Fort Dunvegan journals for the years 1822-66 and 1873 to 1900. These records, available on two reels of microfilm, were obtained through interlibrary loan. Additional fur trade journals for the years 1828-30, 1839-42, and 1853-55 were located at the Provincial Archives of Alberta and examined there.

ARCHAEOLOGICAL FIELD OVERVIEW

Relative to archaeological resources, a field overview of the headpond and infrastructure was conducted to clearly identify the overall scope of the project both in terms of the amount of disturbance involved and the archaeological potential of the area. The overview reconnaissance provided both indications of areas of high archaeological potential and areas of probable development-related impact.

HEADPOND

Within the area of the headpond, the river margins, i.e. areas that may be subject to flooding or accelerated erosion, were evaluated for archaeological/historical site potential. Along this river edge zone, terraces composed of alluvial silts, slump blocks of bedrock and till, and sheer valley walls occur. Alluvial terraces were identified as high potential because archaeologically they offered level ground for human occupation and because the silts and clays deposited during flooding effectively seal and protect occupation remains while separating them into a sequence of stratified temporal units (Brown 1997). Geoarchaeological investigations near the town of Peace River indicate that the Peace River stabilized, and development of some of the main lower terraces began, about 7400 years ago indicating a potential for early sites in the project area.
Slump blocks were also identified as high to medium archaeological potential as they potentially represent sufficient antiquity, reasonable stability, and suitable surfaces for human occupation and activities. Increased archaeological potential was assigned to confluences of creeks and streams where terrain suitable for human activities was present. The sheer valley walls have no archaeological potential and were not targeted for field assessment.

Based on this information, maps of the project area indicating relative archaeological sensitivity were prepared (Figure 7). Areas of low archaeological potential or where no impact from development was anticipated were classified as having low (or no) archaeological sensitivity. Copies of these maps, in which areas of archaeological sensitivity were targeted for assessment, were submitted with an Archaeological Permit Application to Alberta Community Development. This basic assessment format was approved under Permit 99-111.

FIELD RECONNAISSANCE

ARCHAEOLOGICAL/HISTORICAL RESOURCES

The archaeological and historical resources impact assessment was undertaken in accordance with Schedule A provided by the Archaeological Survey of Alberta, Alberta Community Development and the approved permit application. As such, the field assessment concentrated on areas to be directly affected by water levels, access roads, and other associated facilities. Areas that were not identified for disturbance were either not examined or were examined in a cursory manner.
LEGEND

- HIGH ARCHAEOLOGICAL POTENTIAL
- MEDIUM ARCHAEOLOGICAL POTENTIAL
- LOW ARCHAEOLOGICAL POTENTIAL

SCALE (metres)

SOURCE: 1:50 000 SURVEYS AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND RESOURCES, 83 M'15 RYRCROY, EDITION 3, NAD 1927

Figure 7  Relative archaeological sensitivity (Section 1 of 3)
Figure 7 Relative archaeological sensitivity (Section 2 of 3)
Figure 7  Relative archaeological sensitivity (Section 2 of 3)
Field assessment involved three main techniques: visual inspection, shovel testing, and auger testing. Visual inspection of the surface, especially existing exposures, provided some indication of potential subsurface cultural remains. Relative to the proposed project, inspection of riverbank exposures created by erosion was of primary importance. Cultivated fields provided useful surface visibility at some locations. The ground surface was also examined for features (depressions, mounds, or trails) that could relate to historic activities.

The second technique consisted of shovel testing. Because of the depth of deposits on alluvial terraces, deep shovel tests are necessary to identify sites as archaeological deposits are often deeply buried. As such, inspection of existing river bank exposures was expeditiously used to identify cultural materials in these locales. Shovel tests excavated during the reconnaissance averaged about 50 centimeters in diameter and 50 to 100 centimeters in depth. Occasionally, deeper shovel tests were excavated.

A hand operated soil auger was also used for assessment purposes. Not intended as a site discovery technique, auger testing did however, allow for assessment of subsurface deposits, especially buried soils, to a depth of 2.2 meters. The results of the augering program were used to exclude some terrain features from further consideration, to obtain some indication as to the antiquity of specific terraces based on buried soil development and organic content, to determine appropriate depths for shovel tests, and to evaluate the continuity of soil profiles over an area.

Site disturbance resulting from the rise in water levels will be greatest at the weir and progressively diminish upstream of the headpond. In general, assessment strategy in the headpond zone relied extensively on examination of river bank exposures where artifacts, faunal remains, and buried soils might be exposed by erosion. Where the river bank was not conducive to such examination (due to vegetation or slope wash), and where archaeological potential warranted, probing with a 2.5 meter auger and shovel tests were used. Deep testing with a backhoe was not conducted within the headpond area due to difficulty of access.
PALAEONTOLOGICAL RESOURCES

For assessing palaeontological remains, the field survey consisted of:
1) examination of all outcrops within the proposed headpond, 2) close examination of all outcrops 10 meters above projected full supply level (fsl), 3) random examination of outcrops up to 20 meters above fsl and occasional excursions up to 40 meters above fsl, 4) close examination of slump blocks that provided good exposures of bedding surfaces on blocks, 5) close examination of all talus slopes, 6) examination of lag concentrates for microvertebrates or bone fragments, and 7) examination of zones of rip up clasts.

SITE DESIGNATION

Archaeological sites are referred to by a Borden Number which consists of a four letter symbol accompanied by a number (i.e. FaPq 11). This uniform site designation scheme for archaeological sites in Canada was developed by geographer Charles Borden (1954). Within this system, the upper case letters (Figure 8) represent major blocks 2° by 4° blocks in size (i.e. F = 52° to 54° latitude, P = 112° to 116° longitude) and the lower case letters denote 10’ units within the major block (i.e. a = 0’ to 10’ latitude; q = 40’ to 50’ longitude). The numbers refer to specific sites within the units and are assigned by the Provincial Museum of Alberta, Cultural Facilities and Historical Resources Division.

Official Borden Numbers are not assigned to all historic sites (i.e. those which are not archaeological in nature do not receive a Borden Number). An extension of the Borden system is used for field numbering and reporting such undesignated historic sites. They are assigned a designation beginning with the Borden Block (e.g. FhPo) in which they occur, followed by a consecutive project designation number (e.g. H1). The field numbers are used for reporting identification purposes. Similarly, the system is extended to palaeontological sites, which are not officially designated within the Borden system. Palaeontological sites are identified by the Borden Block followed by a consecutive project number beginning with the letter P (e.g. P1).
SITE DOCUMENTATION

Sites encountered during the ground reconnaissance were plotted on 1:50,000 National Topographic Map Series map sheets and the relationship of each site to the proposed development zone was denoted. Site locales were then recorded to the nearest one hundred meters using the Universal Transverse Mercator (UTM) Grid Reference and to the nearest quarter of a quarter section. Detailed site maps were made indicating the locations of the shovel tests relative to the site and site features. The condition of each site and site characteristics were documented and included apparent site integrity, estimated site dimensions, content, setting, and complexity. In addition, each site was photographically documented using a 35 mm single lens reflex camera.

A sample of cultural material was collected from identified sites where disturbance was anticipated and where cultural material was observed or encountered. In general, cultural specimens collected from the surface consisted of temporally diagnostic, finished tools, and a representative sample of other observed cultural materials. All artifacts encountered in shovel tests were collected. These items were bagged as distinct provenience units.

SITE CLASSIFICATION

Sites identified were classified on the basis of their primary physical attributes and/or predicted primary function. Precontact and archaeological historic sites identified in Alberta are classified according to site types (Table 1) identified by the Provincial Museum of Alberta (Guide to Archaeological Site Inventory Data Form).

SITE EVALUATION

The nature of site evaluation completed at any specific site was partially contingent upon the nature of the site identified and partially by the anticipated disturbance. At surficially exposed sites, a subsurface testing program, consisting of shovel tests (each approximately 40x40 centimeters in
Isolated Find - consists of one item only.

Scatter - a locale in which archaeological specimens are located on the ground surface with no apparent spatial patterning nor any evidence of subsurface occurrences.

Campsite - contains evidence of a fireplace or hearth (e.g. firebroken rock, ash) and at least one other culturally modified material such as lithics, faunal remains, ceramics, and/or structural remains.

Stone Feature - any arrangement or formation of stone. Seven categories of stone features have been defined: stone circles, cairns, medicine wheels, stone lines, drive lanes, effigies, and other.

Stone circles are comprised of any ring or circular formation of rocks. This category refers to all sizes of stone rings constructed of various sizes and kinds of rocks (i.e. flat slabs, boulders, cobbles). Includes rings and tipi rings.

Cairns are stones intentionally piled by humans. This category refers to all sizes of stone piles constructed of various sizes and kinds of rocks (i.e. flat slabs, boulders, cobbles).

Medicine Wheels are primarily constructed of unmodified natural stone, with the possibility of some earth intentionally incorporated in the construction of prominent central cairns. All medicine wheels consist of a generalized and radially symmetrical arrangement of at least two of the following components: a) a prominent, centrally located cairn of varying size; b) usually one but sometimes several concentric rings of generally circular shape; c) multiple (two or more) lines radiating outward from a central origin, central cairn, or margins of a stone ring. Includes ceremonial rings.

Stone Line is a line or linear formation of rocks. Refers to all sizes of stone/cairn lines constructed of various sizes and kinds of rocks, i.e. flat slab, boulders, cobbles. Does not include drive lanes or drive lines.

Drive Lanes are single or multi-rock or cairn alignments used to direct animals towards a trap, jump or other mass kill.

Effigies are rock arrangements in the general shape of an animal or human.

Other stone features consist of arcs, partial circles, marker lanes, rock lined depressions, vision quest features, and other stone feature types not described above.
CONTINUED DEFINED PREHISTORIC SITE TYPES

Killsite - an area where animals were killed and butchered. Killsites may vary from the remains of a single animal to a massive deposit of bone and associated tools. Site categories included in this site type consist of jumps, processing areas, traps, and box canyon traps.

Workshop - an area where lithic reduction has occurred with no other indications of cultural activity or habitations. Includes flaking areas, chipping stations.

Quarry - a site where lithic raw material has been mined or extracted, for example and outcrop or glacial till or alluvial source location.

Rock Art - includes petroglyphs and pictographs.

Petroglyphs are pictures, symbols, or other rock art work pecked, carved, etched, incised, ground or rubbed into natural rock surfaces. Includes ribstones, petroglyphs, carvings on rock.

Pictographs are aboriginally painted designs on natural rock surfaces. Red ochre and charcoal are the most commonly used pigments. Natural, figurative, and abstract motifs may be presented.

Human Burial - any human interment, including crevice burials, i.e. flexed, extended, single, multiple, secondary, crib, scaffold, grave, cemetery.

Ceremonial - an area where special features exist or set of acts or special ceremonies were conducted (e.g. medicine wheels, sundance lodges).

Other - site types not described above.

PROVINCIAL MUSEUM OF ALBERTA - DEFINED HISTORIC SITE TYPES

Homestead - remains of farm buildings, such as foundations, depressions, dumps.

Trading post - evidence of a complex of historic buildings used in exchanging goods during the historic period.

Industrial - remains of industry or manufacturers. May include historic period mines and quarries.

Other - site types not described above.
size) to various depths was implemented to determine whether additional undisturbed cultural deposits were present. Sites with remains in buried context generally required a more intensive evaluation program in order to more accurately define site parameters. Generally, a larger number of shovel tests were excavated to obtain the required data. In addition, deep testing either by shovel or by auger was also implemented to adequately evaluate site potential. The specific program was contingent upon the perceived nature of each site.

At all sites identified in the project area, a shovel testing program was implemented to determine the presence, nature, and depth of cultural materials present at the site. The number of shovel tests, each approximately 50 centimeters in diameter, excavated at any particular site was partially determined by perceived impact from the proposed development, the size of the landform, and partially by the results of the shovel testing program as it progressed.

**HISTORICAL RESOURCE EVALUATION**

Historical resource site values, at the assessment stage of information, are based on the material remains observed and/or recovered as a result of the field program as well as the regional archaeological context. Factors considered include site type, size and complexity; presence or absence of subsurface features and number and nature of artifacts observed and/or recovered. A distinctive aspect of evaluation of scientific value is the interpretive potential of the remains.

Interpretive potential of any particular precontact site is generally assessed relative to its ability to answer basic questions regarding the precontact occupants to which the cultural remains belong. Interpretive potential is relevant at all three levels of archaeological data: site, locality, and region. The basic questions addressed include archaeological visibility of the past occupants and their activities, site structure, site function, typological visibility of the artifacts recovered, archaeological phase identification, and exploitation range of the phase represented.
The historical resource value of a specific site is deemed to be low if archaeological visibility is low, if substantial disturbance has occurred, if only isolated artifacts are recovered from undisturbed subsurface provenience, and/or if the surficial artifacts observed or recovered lack finished tools, if temporally diagnostic (including radiometrically sufficient samples of bone and/or charcoal) or exotic lithic material types are lacking. However, sites containing substantial quantities of identifiable bone, particularly if it exhibits some form of processing; cultural stratification, or a large number of stone features, particularly if they contain rare or unusual features, are classified as having high value.

In addition to these tangible variables, each site is viewed from the perspective of the regional data base. For example, the presence or proximity of archaeological ideological constructs is considered to be indicative of relatively high significance. Similarly, sites containing diagnostic artifacts attributable to early occupants or cultural entities about which little is known, are also deemed to be potentially of high significance.

HISTORICAL RESOURCE VALUES

- **Scientific Value** - The potential of a site to enhance current understanding of cultural or natural history and development as well as its potential to shed light on current research problems are attributes of scientific value. Of prime importance to scientific value is site integrity, that is whether or not it has been disturbed. The frame of reference for evaluation of scientific value can consist of either the site, local or regional level of scientific data. For example because our knowledge of details of precontact lifestyles is incomplete, often dictated by vagaries of past human use and discard, as well as preservation, all three levels of data must be considered when determining scientific archaeological value. However, the first order of scientific evaluation occurs at the site level. Only after the potential of a site to provide substantive data has been established, are local and regional implications considered.
• **Public Value** - Public or social value of historical and archaeological sites is evaluated from the perspective of their potential to contribute to public understanding or appreciation of past human lifestyles and their potential for development as interpretive or tourist facilities. Current use or visitation by the public, as well as public concern expressed at community consultation meetings are also considered in ascribing public value to a site.

• **Ethnic Value** - Ethnic value is based either on the perceived value of a site to a particular ethnic group or on expressed importance to a particular group. Traditional land use sites are evaluated primarily from the perspective of ethnic value.

• **Palaeontological Value** - Palaeontological value is based on scientific importance, preservation, age and rarity. Of particular importance are association with type sections and rare or little known sections containing fossil remains.

• **Historical Value** - Historical value is relevant only to historic sites and is based on the association of a particular site with personages, themes or events evincing important or lasting contributions to society on a local or regional level. Other factors considered include the presence of physical structural remains and the potential of the archaeological remains to provide information relating to consumption, provisioning, disposal, ethnic and social stratification, technological development and economic transitions.

• **Economic Value** - Economic value is also a consideration and is generally associated with the feasibility and suitability of a site for interpretive and tourism purposes.
FORMULATION OF RECOMMENDATIONS

Context for Recommendations - Site specific recommendations are formulated primarily on the basis of the level of available information and the perceived site values within the context of the predicted impact. Because of the non-renewable and irreversible nature of historical resources, avoidance as a mitigative measure is recommended as the preferred option at sites with established historical resource values. Sites of limited scientific value and of limited ethnic value (for example, isolated artifact finds or fossil fragments) are generally not recommended for further study and are not considered for avoidance mitigation as the data collected at the Historical Resources Impact Assessment stage has effectively reduced or eliminated impact from the proposed development. Further study is recommended at sites which cannot be avoided and at which the data collected during the Historical Resources Impact Assessment is considered to be insufficient to mitigate effects from the proposed development.

Dunvegan Hydroelectric Project – Archaeological sites identified in the Dunvegan Hydroelectric Project for which further work was recommended included those that could not be avoided by the proposed development and those at which the assessment stage indicated a potential for information concerning temporal and cultural associations, resource exploitation, and regional land utilization strategies, i.e. substantive data regarding past aboriginal lifestyles. Similarly, further study was recommended at sites potentially holding information regarding relatively rare or little understood aspects of aboriginal cultures.

At those sites where avoidance would not be feasible, the recommended mitigative measures include controlled excavation and site mapping. Site specific mitigative measures reflect the nature and content of each site and the historical resource values ascribed to each site. As such, the site specific scope of studies recommended at each site represents a professional judgment as to an appropriate balance in compensation for scientific information lost through site disturbance. Final mitigation requirements will be set by Alberta Community Development.
Public value was evaluated from the perspective of the potential of historical resources to contribute to public understanding or appreciation of past human lifestyles and the potential for development as an interpretive or tourist facility. Public values were also considered in the development of mitigative measures.
Three themes dominate the history of the Dunvegan area: aboriginal land use, fur trading, and agriculture.

ABORIGINAL LAND USE

Aboriginal peoples frequented the valley of the Peace River for some ten and one-half millennia before non-aboriginal fur traders arrived in the late eighteenth century. By the protohistoric period, Beaver and Sekani peoples had come to dominate the area. As the Beaver acquired firearms through Cree middlemen in the fur trade, they were able to push the Sekani ever more westward and into the mountains of what is now British Columbia. By the late eighteenth century, the Sekani had retreated to the area drained by the Finlay and Parsnip rivers (Ridington 1981: 357), and only occasionally ventured east of the mountains (Denniston 1981: 433). This broad territorial division was reinforced by the development of fur trading posts that tended to anchor each band to a specific locale (Ridington 1981: 357).  

Drawn to the Peace River country by abundant game, such as wood bison, moose, and sometimes woodland caribou, both the Beaver and the Sekani subsisted by hunting and gathering. The Sekani also fished, mostly notably for salmon, but the Beaver disdained fish except in terms of

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1 A dissenting view of these tribal distributions may be found in Brian J. Smith, Mary Margaret Smith and Kathleen M. Neary. “Archaeological Investigations, Dunvegan, Alberta: Hudson’s Bay Company 1877 Factor’s House (GlQp-8) and St. Charles Mission Catholic Church (GlQp-6), Permit 89-20,” report prepared for The Fort Dunvegan Historical Society and Alberta Culture and Multiculturalism, Archaeological Survey, Provincial Museum of Alberta, 1991.

Camps were moved frequently in order to take advantage of available food resources or other resources critical to survival, and settlement patterns were characterized by regulated mobility. Technologies were highly efficient, being neither cumbersome to transport nor difficult to construct. Social organization was adapted to the environment. Like other hunters in the North, the Beaver and the Sekani had learned to live in harmony with, rather than in opposition to, their environment.

Their knowledge of the land and skill at exploiting its resources gave them a critical role in the regional fur trade.

The natives integrated the demands of the fur trade into their traditional subsistence round. The seasonal round of the Beaver, which has been described in detail by Hugh Brody (1981), is ably summarized here by Burley, Hamilton, and Fladmark (1996: 15):

Brody believes that the Beaver relationship to the land changed little from the early days of the fur trade tip to the 1960s, in spite of major technological innovations. After the establishment of the fur trade, hunting consisted of five essential activities, each occurring within a specifically defined territory and each serving to constrain the size of the participant group. First, the seasonal round began in late summer and early fall, a time when the people were widely dispersed in small camps in order to carry out the hunt and to prepare meat for winter provisions. Second, in late autumn these smaller groups gathered at base camps, and individual family beads made a trip to the trading post to acquire winter supplies. During the early years of the fur trade, 'outfits' were given on credit to lie paid back in the spring, a practice often referred to as 'jawbone.' Third, following the trading session, and upon regrouping at tile base camp, dispersal occurred once again, though now individual family groups went to traplines for the procurement of marten, lynx, fisher, and wolverine. Fourth, after four months it was time to move to new territories for the early spring beaver hunt. Fifth, with the conclusion of the beaver hunt, furs were sold and summer aggregation at traditional camping sites took place. The summer was a time of plenty, when all the people were again together, and when singing, dancing, courting, gambling, games, and the many other joys of life could be carried out without concern. In August the seasonal round began anew.
During the historic period, then, the Beaver dominated the territory around Fort Dunvegan. Sekani did trade there sometimes, particularly after events like the closure of Fort St. John, their customary post, in 1823, but such visits were the exception rather than the rule over the life of Fort Dunvegan (Denniston 1981: 439). Other aboriginal peoples, such as Assiniboine, Saulteaux, Cree, and Iroquois, traded at Dunvegan from time to time, but their visits were highly irregular (Francis and Payne 1993: 122). For the most part, then, this Dunvegan region was the precinct of the Beaver. This remained the situation until the 1930s, by which time the traditional Beaver territory was almost completely settled by non-aboriginal farmers (Ridington 1981: 358).

FUR TRADE ERA

ESTABLISHMENT OF FORT DUNVEGAN

Fur traders first came to the Peace River country in the last quarter of the eighteenth century. They had three objectives: (1) exploitation of the region’s fur bearers; (2) harvest of local game to supply provisions to the more northerly posts of the Athabasca District; and (3) exploration to find an overland route to the Pacific Ocean. They succeeded at all three, and the area around Fort Dunvegan remained important within the fur trade for more than a century.

For nearly a century after receiving its Royal charter in 1670, the Hudson’s Bay Company claim on the fur trade in Rupert’s Land, which encompassed all that territory draining into Hudson Bay and James Bay, was largely unchallenged. Beginning in the 1770s, however, independent traders based along the St. Lawrence River pushed the trade farther and farther inland until the commercial rivalry came to focus on the rich fur fields of Mackenzie River basin. Fort Chipewyan, situated near the Peace-Slave River delta, emerged as the center of this Athabasca trade.
Fleet canoe brigades made it possible to conduct trade over such great distances. The brigades of the independent traders, who were customarily (if not always accurately) referred to as the North West Company after 1774, were able to travel the 1,800 kilometers from Lachine, near Montreal, to Grand Portage (and, later, Fort William) at the head of Lake Superior in about eight weeks. At Grand Portage, they exchanged their cargo of trade goods for fur bundles that had been brought from the inland posts by other canoe brigades along a 3,000 kilometer water route. So aggressive and successful were the Nor’westers in conquering distance that the Hudson’s Bay Company had no choice but to build competing trade establishments in the western interior. By the turn of the nineteenth century, rival posts were strung like beads along all the great inland waterways that drained into Hudson Bay and the Arctic Ocean.

Meeting this annual challenge of strength and endurance demanded the involvement of more than a thousand men. Because the brigade crews could not take time from their pressing schedule to hunt as they traveled, it was necessary to provide them with foodstuffs sufficient to sustain them throughout their annual race against the weather. Fort Dunvegan, located in a territory known for ample game, was one of these important provisioning posts.

The reaches of the upper Peace, where Dunvegan was built, were first explored by Alexander Mackenzie in 1793 as he sought an overland passage to the Pacific Ocean on behalf of the North West Company (Lamb 1970). Beginning his journey at Fort Chipewyan on Lake Athabasca, Mackenzie traveled up the Peace, crossed the Rocky Mountains, discovered the Fraser River, and eventually reached tidewater at the mouth of the Bella Coola River. Exploration like this, just as much as commercial trade, was used by the partners of the North West Company to ensure continued government support for their inland trading activities.

Dunvegan was not the first post on the upper Peace. That distinction went to Fort Fork, at the junction of the Peace and Smoky rivers, which Mackenzie established in 1792 as he prepared for his western journey. Two
years later, the North West Company built Rocky Mountain Fort where the Moberly River joins the Peace. It served as a center for the Sekani trade until 1805, when it was replaced by Rocky Mountain Portage House farther upstream. In the autumn of the same year, the Nor’westers established Fort Dunvegan as a provisioning post and trading center for the Beaver Indians. Dunvegan operated almost without interruption until it was closed for good in 1918.

LAND USE UPSTREAM OF DUNVEGAN

The historical record contains few references to land use within the confines of the valley walls upstream from Fort Dunvegan. This may be explained, at least in part, by the steepness of the banks and the swiftness of the current. That stretch of the river was simply not hospitable to human occupation or use. The scant references left by traders and explorers suggest neither regular, continuing use of the area nor individual incidents of historical significance. One would do well to remember the words of William Traill (Glenbow-Alberta Institute M1241, File 10: 2), an employee of the Hudson’s Bay Company, who commented in 1884 that he had traveled some 70 miles upstream from Dunvegan and was delighted with the scenery the whole way. Sublime scenery, as defined by the nineteenth century mind, was characteristically rugged in the extreme, offering none of the openness and flatness that were most conducive to occupation or economic activity in a pre-industrial age.

Construction of Fort Dunvegan began in the summer of 1805 under the direction of Archibald Norman McLeod, a wintering partner with the North West Company (Francis and Payne 1993:19). As a location he chose a flat piece of alluvial riverbank on the sheltering north side of the valley. Much of the spruce used in its construction came from stands directly across the river. The first vegetable gardens, several acres in extent, were likely near the post.
Fort Dunvegan was rebuilt almost completely or altered markedly several times: in 1829, 1834, 1858, 1877, and 1896. Yet, as Francis and Payne (1993: 19) note, its physical appearance changed little during the period of trade monopoly (1821-60). The character and size of the post reflected its stability as a trading and provisioning facility of limited importance. Accordingly, there was no need to expand its physical dimensions upriver from the original location.

In fact, only five principal resource use activities ever seem to have occurred at some distance from the post: haying, trapping, hunting, bark collection, and cordwood cutting. Unfortunately, as the work of Francis and Payne (1993) has shown conclusively, the Dunvegan records reveal little about the geography of such activities. Nonetheless, limited additional information may be teased from the daily post journals, suggesting that a number of routine activities took place upstream to some extent.

**HAYING**

As a provisioning post, Dunvegan always maintained herds of livestock. Oxen were used as the main draught animals, horses for lighter hauling, and cattle for beef, dairy products and hides. Although the horses in particular were allowed to graze freely on the adjacent plains (Francis 1991), hay had to be cut and stacked annually for the cattle. In any given year, the men might put up as many as 20 stacks of hay. The volume of the stacks is unknown. Typically, haying took place in high summer (late July or early August), although aberrant weather patterns did occasionally produce variations in this routine.

Hay was obtained from two principal locations: sloughs on the plains high above the fort and the swampy lands on the opposite river bank (Hudsons Bay Company Archives B.56.a.7; B.56.a.14). With respect to the former, a Geological Survey of Canada (Map Series 151) map from 1879-80.
shows a Hay Lake some kilometers north of the post, on the east side of Muddy Creek. In many years, however, fire raged across the adjacent country and destroyed the hay crop. In the spring of 1809, trader Daniel Harmon (Lamb 1957: 127) noted that The Plains around us are on fire. The post journal of July 1837 (Hudsons Bay Company Archives Outfit 1837/39) similarly observed that prairie fires were burning in all directions from the fort, which meant that the men had to travel some two days to cut hay (Hudsons Bay Company Archives Outfit 1837/39). In such circumstances, maintenance of the cart trails to the distant hay stacks became another of the men’s regular duties (Hudsons Bay Company Archives Outfit 1841/42). Haying on this scale remained an annual event until 1888, and then declined when the Hudson’s Bay Company decided to establish a ranch at Spirit River, some 33 kilometers southwest of Dunvegan. For various reasons, the ranch failed and was sold in 1896 (Francis and Payne 1993: 32).

**TRAPPING**

Trapping was always important to Dunvegan’s continued existence. The Beaver Indians excelled at trapping because of their intimate knowledge of the country and its resources, and each winter came to the fort to be ‘outfitted’ for the hunt and each spring to trade their winter’s catch for manufactured goods. Other visits occurred intermittently throughout the year.

It is impossible to establish the location of the traplines from extant post records. Part of the challenge stems from the fact that, historically, trapping areas among the Beaver were not fixed spatially, but rather adjusted routinely to account for local variations in the population of fur bearers (Brody 1981). It was this fact that led to confrontation between the Beaver and federal government officials when fixed, registered traplines were imposed during the 1920s.

Lack of precision in the available data compounds the problem. For example, Fort Dunvegan journal (Hudsons Bay Company Archives B.56.a.16) entries such as one made by Albert Tate, the post manager, in January of 1896, namely that an Indian arrived from line of traps up the river reveal little
about geography. Just as uninformative is his reference, written about a month later (Hudsons Bay Company Archives B.56.a.16), to a number of trappers from Slave Lake who were going up the Peace about 20 miles. In other words, we are able to determine that the country upstream from Fort Dunvegan was sometimes used for trapping, but we can say almost nothing about specific locations.

**HUNTING**

As provisioning was a key function of Fort Dunvegan, particularly during the first half of the nineteenth century, men went out in search of game almost daily. Francis and Payne (1993: 58) have estimated the annual harvest of fresh meat at 30,000 to 40,000 pounds. They also point out that it also took a great deal of meat to satisfy the needs of the post inhabitants themselves: in 1822, for example, 192 pounds of meat were needed to feed the people of the post each day. Despite the almost unimaginable scale of the meat harvest, we know almost nothing about preferred hunting locales or the way in which those preferences may have changed over the years.

By their very nature, hunting camps were transient, shifted about as game moved through the region. Nonetheless, we know that fort hunters did sometimes try their luck upstream from Dunvegan. In 1843, for example, the post journal (Hudsons Bay Company Archives Outfit 1843/44) records that the hunters returned from above with nothing. During the same season, the men returned from above with [a] load of bear skins. William Francis Butler (1968: 197-8), the British explorer who traveled up the Peace River in 1872, observed an Indian kill a moose on the ice of the river four days journey upstream from Dunvegan.

Compounding the difficulty of determining the locations of hunting camps (as well as other points of activity) is the obscurity of the region’s geographical nomenclature. For example, the post journal of 1838/39 (Hudsons Bay Company Archives Outfit 1838/39) reported that Grand Oreilles had a hunting camp on Little Mountain on the south shore, but the
location of this feature is unknown. Similarly, the journal of 1842 (Hudson Bay Company Archives Outfit 1842/43) noted that Tranquille, a hunter, *killed a bear in the little river above*. The identity of the ‘little river’ is not known.

**CORDWOOD CUTTING**

The severe winters of the Peace River country obligated the men of the post to cut large quantities of firewood each year. Each was expected to cut 25 cords to supply his own needs. This typically occurred in March or April (Francis and Payne 1993: 52). Additional wood was harvested for the construction of buildings, fences, rafts, carts, and sleds. During the first third to half of the nineteenth century, it would appear that the stands of trees close by the fort sufficed to meet these needs. In 1838, for example, the men were still cutting cordwood across the river from Dunvegan (Hudsons Bay Company Archives Outfit 1838/39). As time went on, however, and both harvesting and fires reduced the local stands, cordwood cutting seems to have moved upstream from the post. In 1840, the men are recorded (Provincial Archives of Alberta 74.1/120) as going *above for some Birch & Pine lumber*. A journal entry from 1842 (Hudsons Bay Company Archives Outfit 1842/43) tells us that the men went upriver to cut wood for the runners of their ox sleds. A reference from 1844 (Hudsons Bay Company Archives Outfit 1844/45) indicates the men making a trip to *upper Point* for wood, which suggests an upstream location. Yet another reference (Provincial Archives of Alberta 74.1/123) from 1854, states that firewood *is very scarce about*. The earliest maps of the region help little. For example, the map prepared as part of A. R. C. Selwyn’s (University of Alberta W. C. Wonders Collection 111) 1875 survey for the Geological Survey of Canada refers to *wooded slopes*, *spruce forest* and *Thick spruce and poplar woods* upstream from Dunvegan. More than this is simply not known.

**BARK COLLECTION**

The collection of tree bark was another fort routine that sometimes took place upstream from Dunvegan, especially prior to the mid-1820s when canoes were still the main mode of transportation on the Peace. The
preparation of oakum from the inner fibre of the trees, which was used to caulk canoe seams, was a related activity. According to one study, in 1822 twenty-four per cent of the work at Dunvegan was devoted to collecting material for and building canoes (Francis and Payne 1993: 51). Bark was also used to shingle buildings at the post. Loads of bark were also sent upstream to New Caledonia posts such as Fort St. John on occasion (Hamilton and Fladmark 1996: Appendix B).

Here again we confront the problem of determining locations. The post journals record that the men gathered bark for canoes, or were collecting oakum, but fail to relate these activities to specific locations. There is one reference, in the 1822/23 journal (Hudsons Bay Company Archives Outfit 1822/23), to the Bark Mountains, but their location is not certain. In all likelihood, however, the Bark Mountains are the same as the “Birch Hills” noted on an 1897 Geological Survey of Canada map (University of Alberta W. C. Wonders Collection 596), which places them southeast of Fort Dunvegan. Another reference (Hudsons Bay Company Archives Outfit 1841/42) talks of bringing a raft of bark down from little river. Clearly, this was upstream from the fort, but nothing more is known.

OTHER ACTIVITIES

The demands of everyday life in the Peace River country during the pre-settlement era raise the possibility of other activities having taken place upstream from Fort Dunvegan. Fishing, ice-block harvesting, moss collection, spruce gum collection, berry-picking, and quarrying are distinct possibilities, but there is no firm evidence in the historical record that relates such activities to the country upriver from the post.

1 In the early winter of 1853, the men of the post caught 800 whitefish and pike, although we do not know the location of their catch. See Provincial Archives of Alberta, 74.1/123, Journals of Fort Dunvegan, entry of 20 November 1853.

2 See Provincial Archives of Alberta, 74.1/123, Journals of Fort Dunvegan, entry of 10 March 1854, which reads “Finished cutting and hauling up the ice.”

3 See Provincial Archives of Alberta, 74.1/123, Journals of Fort Dunvegan, entry of 21 November 1853, which reads “Bapt. & Antoine off to ille des Epinette for moss.”

4 Provincial Archives of Alberta, 74.1/120, Dunvegan Journal, 1839, entry of 20 May 1841.
THE EVIDENCE OF MISSIONARIES

From 1867 to 1903, Roman Catholic (Oblate) missionaries ministered to the Beaver Indians and the Métis of the district. St. Charles Mission was about a kilometer east of Fort Dunvegan (Larmour 1990). The records that the Oblates kept on their activities, and on the activities of others in the area, are second only to those of the Hudson’s Bay Company in importance. Nothing in their voluminous archive points to significant human activity in the upper reaches of the Peace River (Larmour, personal communication 1999).

It would be wrong to conclude that this implies the missionaries never visited or referred to the river upstream from Fort Dunvegan. In fact, being dependent as they were on the Hudson’s Bay Company for many things in the remote Peace River country, the missionaries traveled on Company boats up the river to visit members of their flock. In 1859, for example, Father Henri Faraud rode the HBC barge west from Dunvegan to Fort St. John (Larmour 1990: 63). This was probably quite routine, as the work of the mission demanded that the resident priest, Father Tissier, travel all along the Peace River (Larmour 1990: 78-79). Tissier is known to have traveled by Company transport or canoe. The frequency of such travels probably increased after Protestant missionaries established themselves in the district. When the Reverend John Gough Brick of the Anglican Church was appointed to serve St. Savior’s Mission at Dunvegan in 1882, Bishop Grouard advised Father Faraud, who had relieved Tissier, that additional priests would be needed at Dunvegan to counter the Anglicans and that one of those priests needed to focus exclusively on the missions “en haut,” or upriver from Dunvegan (Larmour 1990: 103).

Although the Oblate missionaries were dependent on the Hudson’s Bay Company for many things, they did not choose to be. As far as possible, Tissier and his successors strove to be self-reliant. This attitude was
characteristic of the Oblates on the frontier, although the tension that existed between the Catholic missionaries and the largely Protestant post staff contributed to it as well. Such dependence was also costly. For such reasons, the Mission tried to raise its own livestock and produce, and to see to its own cordwood needs. The livestock needed hay, and brothers from St. Charles routinely walked to nearby meadows to scythe and stack the hay (Larmour 1990: 276-277). We do not know the locations of those meadows, but the topography of the district leads to the conclusion that they were on the flats above the valley. In common with post employees, the Mission staff also cut large volumes of cordwood and shingles and then transported them to St. Charles (Larmour 1990: 281). The precise locations at which this wood was cut are not known, but it is conceivable that some of the Oblate supply was harvested upstream from the post and then floated or rafted down to the Mission.

Over time, the declining fortunes of the trading post affected St. Charles Mission as well. By the turn of the twentieth century, there were typically few natives around the post except at outfitting and religious feast time. The missionaries were losing their flock. Accordingly, the priests became more itinerant than ever. And while the river immediately upstream from the post must for a time have loomed larger than ever in their lives as they fanned out to serve the faithful, they continued to be mute about it. It was, in a word, unremarkable. These shifting patterns of residence culminated, in 1903, with the closure of St. Charles Mission and the establishment of St. Joseph’s Mission at Spirit River as the main spiritual center for Catholics in the district.

TRANSIENT USERS OF THE UPPER PEACE

While the best historical evidence about the upper Peace has come down to us from the journals of fur traders at Fort Dunvegan, many other individuals, including government representatives, sportsmen and north-bound Klondikers recorded their impressions of the Peace River country and its main features during the nineteenth century. Notable in these observations is the lack of information about that stretch of river immediately
east of Fort Dunvegan. Most of these individuals were transient visitors, merely passing through on their way to another destination or, at most, in the country for a few days or weeks at most to accomplish a specific objective. In 1899, for example, a party of Half-Breed Scrip commissioners, appointed by the federal government to extinguish whatever rights the Métis might have to the lands on which they squatted, arrived at Dunvegan on July 18th and were gone just a few days later (Mair 1999). Klondike prospectors, in search of an easy route to the newly-discovered goldfields of the Yukon, moved upriver by the hundreds between the summer of 1897 and the summer of 1898, yet almost none left a record of their passing that focused on the geographical minutia of the trip (MacGregor 1970). Well-heeled hunters, like the British sportsman H. Somers Somerset (1895), stayed only a few days and had nothing of import to say about the upstream trip in his published memoirs. Surveyors with the Geological Survey of Canada, who passed through this country every few years after 1879, drew maps with terse annotations about the upstream region that were more enlightening than their written reports. This lack of comment stood in sharp contrast to their typically descriptive writing about areas of economic or social importance to the local people. The yawning silence that characterized the writings of such transient individuals as they passed upstream from Dunvegan leads to the conclusion that they saw that part of the river primarily as a means of reaching some other place. None is known to have identified it as the site of significant human activity.

THE AGRICULTURAL FRONTIER

During the final quarter of the nineteenth century, the Canadian agricultural frontier moved steadily in a northwesterly direction, subjugating, if not entirely displacing, all other forms of local economy in the process. The fur trade of the Peace River district was not an exception to this trend; it merely took longer for farm settlement to reach the remote district. The district’s farming potential had long been apparent to anyone who knew of the successful gardens that grew adjacent to every trading post and religious mission. But until the Klondike gold rush of 1896-98 focused new attention on the north, few people other than local traders and missionaries were
aware of that potential. As the turn of the century approached, both northern ‘boosters’ and agents of the federal government waxed enthusiastically about the agricultural prospects of the district and enticed a few pioneers to settle. Their journey was made easier by the presence of a railway to Edmonton after 1891, but beyond that place lay 200 miles of muskeg and bush that made travel difficult and export next to impossible.

Around 1912, there was much speculation about railways being built in the Peace River district. Dunvegan figured largely in these schemes for a brief time. As Carl Dawson (1934: 36-39) has written:

Many thought that Dunvegan, at the river crossing of an ancient trail, would be a natural railroad centre for the lines north and south of the Peace. At least the promoters made this a vivid possibility to their customers in many parts of the world. The prospectus left nothing to the imagination. There were business streets, long avenues of prosperous homes, crowded street cars, bustling hotels, and golf courses for the relaxation of the tired business men in their thriving north. Men bought eagerly; they were allowed to get in on the ground floor. Lots on streets neither paved nor even laid out were bought and sold. In distant Edmonton and other cities this thriving metropolis in the land of the midnight sun looked like a new Eldorado.

Promotional maps depicting this real estate show that the lots in question were all on the plains above Fort Dunvegan, mainly to the north and east (Leonard and Lemieux 1992: 61). There are no indications of developments being promoted upstream from the post. These circumstances changed little until the Edmonton, Dunvegan, and British Columbia Railway reached the new town of Peace River, at the junction of the Peace and the Smoky, in 1916. In the same year, a branch line was constructed from McLennan to Spirit River and Grande Prairie.

Changes in transportation were both the raison-d’être and the bane of Fort Dunvegan that led to its ultimate abandonment in 1918. Subsequently, interest in that stretch of the Peace River immediately upstream from Dunvegan waned in accordance with its enhanced insignificance as a reach of extremely limited human activity.
ARCHAEOLOGICAL RESULTS

RECORD REVIEW

Nine previously recorded historical resource sites occur within the Borden Block (GlQp) in which Dunvegan is located. All are situated either in or near the river valley. Two additional artifact scatters, HaQr 1 and HaQr 2, were recorded on either side of Hamelin Creek, approximately 25 kilometers upstream of Dunvegan, as part of the Dunvegan Hydro Power Site Feasibility Study (Acres Consulting Services Ltd, Stelck, and Storer 1976).

Four of the previously recorded sites are located either within or along the edges of the proposed impact zone associated with the Dunvegan Project. Site GlQp 1 was recorded by Ruth Gruhn, University of Alberta, in 1964. This artifact scatter was observed exposed in a roadway just east of the mouth of Hines Creek. Site GlQp 2, recorded by W. Beattie in 1979, is a palaeontological site containing bison bones. It was observed in a gravel pit just east of Dunvegan Creek on the south side of the Peace River. The two remaining sites (HaQr 1, HaQr 2) are artifact scatters recorded on Hamelin Creek by Alan Bryan in 1976. All of these sites were revisited and reassessed relative to the proposed Dunvegan Project.

PREVIOUS STUDIES

Thirteen archaeological projects have been conducted in the general project area. The earliest study was undertaken in 1964 by Ruth Gruhn of the University of Alberta. At the same time, a survey of the Peace River downstream of the town of Peace River was conducted by J. V. Wright and
W. C. Noble. Intensive surveys associated with the Bennett River Dam were initiated by R. McGhee in 1965 and were continued by K. Fladmark. A. L. Bryan completed survey of the Peace River between Dunvegan and the British Columbia border as part of the Dunvegan Hydro Feasibility study in 1975. Some archaeological excavation was also completed at a site south of Fairview in that year by R. S. Kidd. Between 1982 and 1985, H. Pyszczyk assessed and excavated at Fort Dunvegan and the associated missions. This research was continued by B. J. Smith between 1987 and 1993. More recent historical resources impact assessments have been conducted in association with recreational development in the vicinity of Fort Dunvegan, at the boat launch on the south side of the river (Damkjar 1989), and at Pratts Landing some 25 kilometers upstream from Dunvegan.

**PRE-FIELD ASSESSMENT**

**HEADPOND**

Based on the field overview of the project area, 16 Target Areas were identified along the length of the headpond for field assessment (Figures 9 to 11).

**Target Area 1**

Target Area 1 is located on the north side of the river, just upstream from the weir location. Although it is characterized by sheer valley walls with no archaeological potential, the top of the valley slope for about one kilometer upstream from the weir site could be subject to accelerated erosion as a result of higher water levels. As such, field assessment was warranted.

**Target Area 2**

This target area consists of a narrow terrace about two kilometers in length and 50 to 100 meters wide on the south side of the river, between the weir location and the Ksituan River. Vegetation consists of poplar, aspen, birch, and spruce. The terrace is rather low, with an undulating surface and
Figure 9  Archaeological Target Areas, Section 1, Dunvegan Project
Figure 10: Archaeological Target Areas, Section 2, Dunvegan Project
Figure 11  Archaeological Target Areas, Section 3, Dunvegan Project
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numerous concave slump features, with good subsurface visibility. Otherwise, the bank is rounded, draped with recent sediments, and heavily vegetated, offering very little exposure. The undulating nature of the terrace is partly due to numerous mudflows which have spilled onto the terrace from the valley walls, extending to within 50 meters of the bank.

Target Area 3

Elevated water levels associated with the project will invade the currently dry Ksituan River basin for a distance of about 800 meters. The entire length was targeted for examination. Although confluence areas are typically considered to have high archaeological potential, the sides of the Ksituan River valley and adjacent portions of the Peace River valley are steep from top to bottom, offering no suitable terraces or benches for habitation. One terrace occurs on the west side of the Ksituan River about 400 meters upstream from its mouth.

Target Area 4

Across the Peace River, and slightly up stream from the Ksituan River (approximately KP 3), is Target Area 4 consisting of a small floodplain flat associated with an unnamed stream. Like the Ksituan River, this small valley cut bisecting the terrace will be invaded by elevated water levels in Peace River.

Target Area 5

A long, narrow, alluvial terrace on the south side of the river (approximately KP4 to KP6) is thickly wooded with poplar, birch, and spruce. This feature, constituting Target Area 5, is approximately 150 to 200 meters wide, becoming narrower at both ends. The surface is sloping to gently sloping and represents a habitable feature. Good intermittent bank exposures occur over the entire length of the feature.
Target Area 6

Target Area 6 is represented by a large, broad, terrace extending from approximately KP6.5 to KP9 on the north side of the river. It is known locally as Smook’s Flats after the current owners. This terrace has been farmed for about 75 years and is accessible by a road which is, in places, steep and in poor condition. Most of the terrace has been cleared, the exceptions being two stream cuts and the east end of the terrace. An island just upstream from the terrace is lower and, undoubtedly, much younger in age. Although part of Target Area 6, it is considered to have lower archaeological potential than the terrace.

Target Area 7

This Target Area consists of the mouth of a stream on the south side of the Peace River (ca. KP9).

Target Area 8

Target Area 8 consists of a series of contiguous and overlapping slump events which are represented by a narrow, uneven, bench-like feature between approximately KP10.5 and KP12.

Target Area 9

A second series of slump features comprised Target Area 9 at approximately KP15. Both isolated slump blocks and narrow terrace-like features occur.

Target Area 10

Target Area 10 consists of a narrow terrace occurring between KP16.2 and KP17.8. The feature is approximately 100 meters wide and has a gently sloping surface. Although much of the bank was obscured by vegetation and slump, the upper 1.0 to 1.5 meters was exposed in many places.
Target Area 11

A small level area on the east side of the Peace River at KP16.5 constitutes Target Area 11.

Target Area 12

Target Area 12 is represented by a series of slump blocks that have created high, uneven, bench-like features between approximately KP19 and KP19.7.

Target Area 13

Target Area 13 consists of a long narrow terrace on the south side of the Peace River between about KP19.7 and KP21.7. The terrace, approximately five to 10 meters above river level, is set back from a low, log-littered foreshore, 50 or more meters wide. A higher terrace about 30 to 40 meters above the level also occurs within this target area but lies well above the projected impact zone.

Target Area 14

The mouth of Hamelin Creek constituting Target Area 14 was visually assessed in 1976 (Bryan 1976) relative to proposed hydroelectric development. Two archaeological sites were recorded on the second terrace in Target Area 13, one on either side of the Hamelin Creek mouth. Although these sites do not appear to be within the impact zone of the proposed project, they were revisited and re-evaluated relative to the proposed project as Target Area 14.

Target Area 15

Target Area 15 is a broad terrace on the north side of the Peace River between KP21.2 and KP23.2. The terrace is relatively low, approximately five to seven meters above river level and supports relatively large poplar and
spruce trees as well as considerable underbrush. Within about 25 meters of the river, the terrace is somewhat hummocky, probably as a result of differential sedimentation amongst the vegetation during the last flood event.

**Target Area 16**

This terrace, known locally as Pratt’s Landing, is much longer and somewhat higher (approximately eight to ten meters) than Target Area 15. Large poplar, birch, and spruce are present. Portions have been developed for recreational use and, as a result, there are several paths cross-cutting the bank.

**INFRASTRUCTURE**

**South Access Road**

For over two thirds of its 2.75 kilometer length, the South Access Road follows an existing vehicle trail through a gravel pit, down into the Dunvegan Creek ravine, and up the other side. Where the existing trail turns south, the proposed access road continues north and then northwest for 750 meters through a thick forest of poplar, aspen, birch, and spruce. Very little of the route crosses level ground, most of which occurs in the gravel pit or the gravelly bottom of the ravine, both of which have been disturbed and retain no archaeological potential. A ford of a shallow creek is present at the proposed bridge crossing. The entire route was targeted for field assessment.

**North Access Road**

The North Access Road is about 1.8 kilometers in length and includes a bridge over Hines Creek, a “laydown area and boat parking”, and a boat launch area. Where possible, the route hugs the base of the valley slope. East of the creek, the proposed road is about 300 meters inland from the Peace River while west of the creek, the route crosses a terrace before meeting and following the base of the valley slope near the river’s edge. The route is relatively undisturbed except for some cultivated areas east of the
creek. Vegetation along the route is a mixture of grass, poplar, and spruce forest; some cultivated fields are also traversed by the North Access Road. Almost all of the route was considered to have high archaeological potential and was targeted for field assessment.

**Proposed Powerline Route Alternative 1**

Powerline Route Alternate 1 is about 4.7 kilometers long in which the northern half parallels the South Access Road. The southern half goes up the wooded valley slope and through several cultivated fields, close to existing fence lines. All of the route was targeted for field assessment.

**Proposed Powerline Route Alternative 2**

Powerline Route Alternative 2 is about 14 kilometers long. Beginning in the west, the first kilometer parallels the North Access Road. From the proposed bridge crossing of Hines Creek, the route heads northeast to follow a wooded stream cut up to the prairie level above the valley. The route then parallels existing road allowances for the remaining 11 kilometers. The portion which follows the stream cut crosses sloping ground within a V-shaped drainage, an area not associated with high archaeological potential. Above the valley, the route passes through the edges of cultivated fields for most of its length. A few wooded sections remain in low-lying areas. Most of the route was targeted for field assessment.

**TARGET AREA FIELD RESULTS**

**TARGET AREA 1**

During assessment of Target Area 1, the top of the valley slope for approximately one kilometer upstream from the proposed weir site and the valley slope in the vicinity of observed historic remains were inspected. Two archaeological sites (GIQp 20, GIQp 21) and a historic feature (GIQp H1) were identified during visual examination of this Target Area.
TARGET AREA 2

Exposures associated with the slump blocks and profiles in the six auger holes excavated in this target area, exhibited thick alluvial layers separating thin, poorly developed, soils. Bits of wood, bark, and even a piece of bone, were found in the buried soils throughout the top two meters. Shovel testing was limited to creating or improving exposures along the banks. Despite the presence of some large trees on this terrace, it appears that the alluvial deposits are relatively recent, representing hundreds, rather than thousands, of years of accumulation. A few shovel tests were excavated in the mudflow features which extended from the valley walls to within 50 meters of the river bank. No historical resource sites were identified in Target Area 2.

TARGET AREA 3

Inspection of bank exposures and excavation of six shovel tests and one auger hole indicated that the alluvial deposits comprising this terrace are quite recent. This conclusion is consistent with other evidence relating to intense seasonal flushing. No Historical resources were identified.

TARGET AREA 4

The bank along the Ksituan River provided good exposure in many places, especially west of the stream mouth. The entire length of this target area was examined; eight auger holes and 14 shovel tests were excavated within about 10 meters of the bank. The stream cut along the narrow terrace was examined for a distance of about 300 meters. This terrace is at a higher elevation than Target Area 3 and exhibited stronger soil development. Two archaeological sites (GlQq 1, GlQq 2) were recorded in Target Area 4.

TARGET AREA 5

The bank associated with the narrow terrace on the south side of the river provided good, although intermittent, exposure which was examined over the entire length of the target area. In addition, seven auger holes and
15 shovel tests were excavated. In general, buried soils at the west end of the terrace were more numerous but less developed than those toward the east end. No historical resources sites were recorded.

TARGET AREA 6

Although this terrace had not been cultivated in some years, fair to good surface visibility over much of the terrace allowed for surface inspection. Additionally, 15 auger tests and 23 shovel tests were excavated. Although exposures were not associated with the rounded and vegetated bank, stream cuts, especially the central one, did provide a few useful exposures. Three archaeological sites (GlQq 3, GlQq 4, GlQq 5) and one historic site (GlQq H1) were recorded and assessed in Target Area 6.

TARGET AREA 7

The banks of an unnamed stream on the south side of the Peace River at approximately KP9 was examined as Target Area 7. Augering of the only level spot in the target area indicated that over two meters of alluvial silt, uninterrupted by buried soils, were present. No historical resources sites were identified in Target Area 7.

TARGET AREA 8

Exposures associated with the river bank in Target Area 8 were examined and 26 shovel tests were excavated on raised level areas. No cultural resources were found.

TARGET AREA 9

Detailed inspection of the isolated slump blocks during the field assessment indicated that they were mostly sloping and unsuitable for habitation. Some narrow terrace-like areas at the northern portion of this target area were found to be rather low in relation to river levels. Six shovel tests were excavated in Target Area 9. No historical resources were identified.
TARGET AREA 10

Bank exposures associated with Target Area 10 were examined along the entire length of the terrace. Additionally, 17 shovel tests were excavated. One archaeological site (HaQq 2) was recorded in Target Area 10.

TARGET AREA 11

Four shovel tests and examination of exposures associated with an unnamed stream in Target Area 11 did not result in the identification of any cultural remains.

TARGET AREA 12

The slump blocks in Target Area 12, some 15 to 20 meters above river level, were examined during the field assessment. They were found to be too steeply sloping for human use.

TARGET AREA 13

Although field assessment focused on the lower terrace, approximately five to ten meters above river level, it is unlikely that it will be affected by increased water levels associated with the Dunvegan Project. Only a slight change in water level is expected in this reach of the headpond; the area also contains a protective foreshore. The higher terrace, at about 30 to 40 meters above the river, is well beyond any potential impact zone. Assessment consisted of visual examination of the intermittently exposed banks and three road cuts, and excavation of 14 shovel tests. The upper terrace was only examined at the point where it is intersected by a road cut. One archaeological site (HaQr 3) was identified on the upper terrace.

TARGET AREA 14

This target area is comprised of two previously recorded archaeological sites (HaQr 1, HaQr 2). The sites were relocated and tested.
Ten shovel tests were excavated at the two sites. Additionally, a low terrace (four to five meters above the river) on the east bank of the creek was tested by auger. Two very thin organic layers at about one meter below surface were observed in the otherwise pure silt and sand alluvium extending to a depth of 2.2 meters.

TARGET AREA 15

Good exposures along most the terrace edge in Target Area 15 were examined but very few buried soils are evident. The terrace surface, within about 20 meters of the river, was also examined by excavation of six shovel tests. However, it was obvious that any existing buried soils would only be encountered at considerable depth. No historical resources were recorded in Target Area 15.

TARGET AREA 16

Exposures associated with the foot trails and the natural terrace edge provided good visibility. Only the portion of the terrace between KP24 and KP25.5 were examined. Buried soils were found to be more evident toward the downstream end. Because Target Area 16 is located at the extreme upstream limit of the headpond where water levels will not change substantially, shovel testing or augering was not conducted.

SOUTH ACCESS ROAD

Assessment of the South Access Road involved visual inspection of the existing bulldozed trail, especially exposures along the edges. In addition, about 150 meters of eroding ravine edge were examined on the west side of the creek. Where the proposed route crosses undisturbed ground, six shovel tests were excavated. Because of the steepness of the slope in the northernmost 500 meters, shovel testing was not warranted. One archaeological site (GlQp 10) was identified along the existing bulldozed trail.
NORTH ACCESS ROAD

Assessment of the North Access Road consisted of walking the entire route several times inspecting a variety of exposures, including some off the right-of-way, and shovel testing. Augering was completed only on the Hines Creek terrace. In all, three auger tests and 50 shovel tests were excavated, including those used to evaluate four of the five archaeological sites (GlQp 1, GlQp 11, GlQp 12, GlQp 13, GlQp 15) recorded during assessment of the North Access Road.

POWERLINE ROUTE ALTERNATE 1

The northern half of the Route Alternate 1 of the proposed powerline was assessed concurrently with the South Access Road. The southern half was surface searched and shovel tested. Most of the level or gently sloping areas were cultivated or recently cleared offering fair to excellent surface visibility. Twelve shovel tests were excavated in the few locations with good archaeological potential but no existing exposure. One archaeological site (GlQp 16) was recorded along a trail adjacent to the proposed route.

POWERLINE ROUTE ALTERNATE 2

The entire proposed Route Alternate 2 was traversed on foot. Assessment of the first kilometer was integrated with inspection of the North Access Road. Primarily surface inspection was conducted as virtually all high to medium potential areas had good to excellent surface visibility. Fifteen shovel tests were used to assess subsurface deposits at the four archaeological sites recorded (GlQp 17, GlQp 18, GlQp 19, HaQp 1) (not including those also associated with the North Access Road). Additionally, the portion of the route that follows the stream cut was found to parallel, if not follow, an old narrow trail that was recorded as a historic site (GlQp H2).
PRECONTACT SITES (N = 22)

Of the 22 precontact sites identified during the field study, two are isolated finds (GlQp 18, HaQr 3), nine are artifact scatters (GlQp 1, GlQp 10, GlQp 13, GlQp 16, GlQp 17, GlQp 19, GlQp 20, GlQp 21, HaQr 2), and 11 are campsites (GlQp 11, GlQp 12, GlQp 15, GlQq 1, GlQq 2, GlQq 3, GlQq 4, GlQq 5, HaQp 1, HaQq 2, HaQr 1) (Figures 12 to 17; Table 2).

Isolated Finds

Site GiQp 18  (Figures 12, 18; Table 2; Plate 7; Appendix I-33, I-36)
An isolated projectile point was found on the east slope of a small ridge located in an area of undulating terrain about one kilometer from the edge of the Peace River valley. The site area has been bisected by an east-west section road. Additionally, the north portion of the ridge remnant has been cleared and lightly bladed recently in association with the installation of a fence. The site is associated with the proposed Powerline Route Alternate 2 and may be impacted by construction activities if this route alternate is selected for development.

Evaluation. Detailed inspection of the well exposed surface and excavation of five shovel tests in the area of the find did not reveal any other cultural material. The black chert projectile point is small (24.9x20.4x5.0 mm) with a triangular blade, a slightly expanding stem (12.4 mm wide; 6.5 mm long), and a straight base. It is reminiscent of Late Prehistoric Athapaskan styles reported from the Northwest Territories (Noble 1971, 1977, 1981). The recovery of a time diagnostic artifact is scientifically significant. However, the site has been substantially disturbed and there does not appear to be additional associated cultural material. Scientific and public historical resource values are low.
Figure 12  Location of identified sites, Powerline Alternate 2, Dunvegan Project
<table>
<thead>
<tr>
<th>Site Number</th>
<th>Site Type</th>
<th>Site Context</th>
<th>Site Visibility</th>
<th>Geographical Setting</th>
<th>Association</th>
<th>N.T.S. Map Reference</th>
<th>U.T.M. Reference</th>
<th>Recommendations</th>
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Plate 7  General view of GIQp 18 on low ridge adjacent to section road.
Recommendations. Recovery and documentation of the artifact find constitute adequate mitigation relative to the proposed project. No further study is recommended.

Site HaQr 3 (Figures 16, 19; Table 2; Plate 8; Appendix I-85, I-88)
A black chert end scraper was found on a trail bisecting the terrace in Target Area 13. The terrace lies approximately 30 to 40 meters above and on the south bank of the Peace River. The site lies well above the projected full supply level of the headpond and will not be subject to primary impact from the proposed Dunvegan Project.

Evaluation. No other cultural material was observed in the existing exposures. Detailed assessment was not conducted as the site lies above the projected full supply level.
Figure 15  Projectile point recovered from GlQp 18

Figure 16  End scraper collected at HaQr 3
Plate 8  General view of site HaQr 3 on trail in Target Area 13.
Recommendations. No further study relative to the proposed project is recommended. However, should changes in project design or future development be anticipated, additional site assessment is warranted.

Artifact Scatters

Site GlQp 10  (Figure 13; Table 2; Plate 9; Appendix I-1, I-4)
Three pieces of black chert debitage were found scattered along a sloping portion of a bulldozed dirt trail on the east side of the Dunvegan Creek ravine. The proposed South Access Road follows this trail from a gravel pit above the ravine to a bridge crossing of the creek. As such, GlQp 10 would be subject to primary impact during road construction.

Evaluation. Four shovel tests were excavated along the edge of the trail in the area of the finds with negative results. Given the location of the cultural material on a slope and their
Plate 9  GiQp 10 at center on Hines Creek.
association with bulldozed trail, well below the original surface, the debitage is likely out of context. It was either moved during the bulldozing activities or tumbled down the slope. The top of the slope is extensively disturbed as a result of gravel pit activities. Examination of available exposures in this area and excavation of three additional shovel tests did not result in the identification of any cultural material. Scientific and public historical resource values are low.

**Recommendations.** Photographic documentation, recording, and collection of the artifacts have adequately mitigated any potential impact to the site. No further study is recommended.

**Site GIQp 13** (Figure 13; Table 2; Plate 10; Appendix I-13, I-16)

Site GIQp 13 is located on a small lobe of slopewash, about 50 meters west of GIQp 12, on the west side of Hines Creek. Two black chert flakes were found 12 meters apart in the center of a previously cultivated field during assessment of the North Access Road. The site lies at least 50 meters south of the proposed North Access Road and will not be impacted by proposed construction associated with the Dunvegan Project.

**Evaluation.** Three shovel tests excavated in the area of the surface finds revealed a thin humic mat, supporting hay and weeds, overlying a 25 centimeter thick dark brown plough zone of almost pure clay. The underlying material consisted of yellowish brown clay with a few small pebbles which extended to the base of the tests at 40 to 50 centimeters below surface. All three tests were culturally sterile. Scientific and public historical resource values are low.
Plate 10  Site GIQp 13 in background in field on west side of Hines Creek.
Recommendations. Photographic documentation, recording, and collection of the artifacts have mitigated any potential impact to the site. No further study relative to the proposed project is recommended.

Site GlQp 1  
(Figure 13; Table 2; Plate 11; Appendix I-17, I-20)
During assessment of the North Access Road, a lobe of clay-rich slope wash along the east edge of the Hines Creek ravine was examined. The southern portion appears to be a natural, south-facing, meadow, while the higher north portion supports large spruce and poplar trees. Erosion from Hines Creek has left a steep scarp along the west side which obviously post-dates the main body of this feature. During shovel testing of the feature, GlQp 1 was identified. A portion of this site lies within the proposed North Access Road.

Evaluation. Of the 21 shovel tests excavated in the site area, 13 yielded cultural material. In all, 174 artifacts were recovered consisting of chert debitage, some quartzite debitage, and a few pieces of pink chert debitage. The assemblage includes four cores but no formed tools or retouched flakes. Positive tests occurred in the southern and western parts of the assessed area, defining a site area of approximately 0.6 hectares. Three concentrations were discernible in test #1, test #4, and test #s 13 and 14.

The site is undisturbed. Soil profiles exhibit heavy clay soils with a very blocky structure. Buried soils are faintly visible and appear to correspond to three cultural horizons within the top 40 to 60 centimeters of the profile. Generally, cultural material is more deeply buried in the northern part of the site than in southern portion. Most of the cultural material was associated with the second cultural horizon.
Plate 11  Site GiQp 1 in natural meadow on east bank of Hines Creek.
The proposed North Access Road passed through the northern portion of the site. This route took advantage of an existing gully to enter the ravine and the bridge crossing of Hines Creek. Results of the assessment program indicate that GlQp 1 is undisturbed, relatively productive, multi-component, and stratified. Scientific and public historical resource values are high.

**Recommendations.** Based on the results of the assessment program, avoidance or further study is recommended. The proponent has elected to avoid the site by realignment of the proposed North Access Road. In the event that site avoidance is not feasible, staged controlled mitigative excavations are recommended in which the first stage consists of 10 1x1 meter units. Depending on the results of the first stage, additional excavations may be warranted.

Site GlQp 16  
(Figure 13; Table 2; Plate 12; Appendix I-25, I-28)

Two black chert flakes were found on a dirt trail about 50 meters east of the proposed Powerline Route Alternative 1 on the southern edge of the river valley. The trail runs east-west, crossing the proposed powerline right-of-way. No cultural material was identified on the proposed Powerline Route Alternate 1 and no site impact is anticipated.

**Evaluation.** Exposures within the proposed right-of-way were examined but no cultural material was observed. In addition, cultivated fields provided fair to good surface visibility. Based on the results of the assessment, GlQp 16 is a small disturbed site with little scientific and public historical resource value.
Plate 12  Site GIQP 16 adjacent to Powerline Route Alternate 1.
**Recommendations.** Photographic documentation, recording, and collection of the artifacts have mitigated any potential impact from construction. No further study is recommended.

**Site GlQp 17**  
(Figure 12; Table 2; Plate 13; Appendix I-29, I-32)  
Two black chert flakes were recovered from a cultivated field in the extreme northwest corner of LSD 13-17-80-04 West of the 6th Meridian. The site is located on the proposed Powerline Route Alternate 2 and will be impacted by proposed construction if this alternate is selected.

**Evaluation.** The slightly undulating field in which the site is located was recently ploughed at the time of the assessment, providing excellent surface visibility. Although there is no remaining evidence, the 1990 NTS map (83 M/15) indicates the presence of a well site at this location. Site disturbance from both cultivation and well site construction is extensive. Scientific and public historical resource values are low.

**Recommendations.** Photographic documentation, recording, and collection of the artifacts have mitigated any potential impact to the site. No further study is recommended.

**Site GlQp 19**  
(Figures 12, 20; Table 2; Plate 14; Appendix I-37, I-40)  
This site is situated in a slightly undulating cultivated field, just north of an east-west section road. A biface tip fragment and a small flake, both of black chert, were observed and collected from the surface. The site is associated with the proposed Powerline Route Alternate 2 and may be impacted by construction activities if this route alternate is selected for development.

**Evaluation.** The biface tip (37.5x31.4x6.8 mm) exhibits a few small flake scars on one face which originated from the snapped bottom edge, possibly indicating use or modification.
Plate 13  Site GIQp 17 in cultivated field at left on Powerline Route Alternate 2.

Plate 14  View of GIQp 19 adjacent to existing section road.
Figure 17  Biface recovered from GlQp 19

Figure 19  Endscraper from GlQp 15
Plate 15  Site GlQp 20 at the edge of prairie level, Peace River.
examined relative to potential erosion by raised water levels associated with the Dunvegan Project.

**Evaluation.** Because increased erosion is not expected to occur in association with the proposed project, the site and the adjacent area were cursorily examined to obtain general information regarding the archaeological potential of the valley edge. Although approximately 15 artifacts were observed, no collections were made and no shovel tests were excavated.

**Recommendation.** Increased erosion associated with the proposed project is not expected to occur; no further study prior to construction is recommended. It is, however, recommended that the site be monitored relative to natural erosion to evaluate erosional processes, related site impacts, and assess whether site mitigation is warranted.

**Site GiQp 21** (Figure 13; Table 2; Plate 16; Appendix I-45, I-48)

A small scatter of lithic artifacts was found on the surface of a sloping projection of land approximately two thirds of the way up the south facing slope of the Peace River valley. The site occurs in native prairie with sparse vegetation providing good surficial visibility. Five pieces of debitage, three of black chert and two of quartzite, were observed over a 10x15 meter area. The site is associated with the headpond area of the Dunvegan Project.

**Evaluation.** The artifacts were not collected. The terrain feature exhibits an angle of approximately 30 degrees and lies 20 or 30 meters below the prairie level suggesting that it has slumped to this position from above. It is not possible to determine whether the artifacts predate slumpage of the block or were deposited on the current feature. Additional erosion may impact the site. The small size and nature of the assemblage represent low scientific and public site values.

**Recommendations.** No further study relative to the proposed project is recommended.
Plate 16  Site GIQp 21 on slump block along valley edge of Peace River.
Site HaQr 2  (Figure 17; Table 2; Plate 17; Appendix I-81, I-84)
Site HaQr 2 was recorded in 1976 by A. Bryan of the University of Alberta as part of the Dunvegan Hydroelectric Feasibility Study. It is located on a slightly lower bench (about 25 meters above river level) than HaQr 1 on the east side of the mouth of Hamelin Creek. The site is above the full supply level of the headpond of the proposed project.

**Evaluation.** Four shovel tests were excavated on the bench; all yielded cultural material. Inspection of the site area also revealed that artifacts are eroding out of the river bank. Forty-seven pieces of debitage were collected, four of quartzite and the remainder of black chert. Thirty-one were recovered from one shovel test, whereas the other 16 artifacts were evenly divided between three tests and the eroding bank. Cultural material was concentrated in a grey silty clay at 15 to 30 centimeters below surface. Based on the location of the shovel tests and bank exposures containing artifacts, the site area is minimally 10x20 meters in size. Based on the positive results of the assessment program, the scientific and public historical resource site values are high.

**Recommendations.** No further study relative to the proposed project is recommended. However, should future development or activities be anticipated in the site area, further study is recommended.

Campsites

Site GiQp 11  (Figures 13, 21; Table 2; Plates 18, 19; Appendix I-5, I-8)
Site GiQp 11 is located on the west bank of the mouth of Hines Creek. Alluvial deposits and buried soils were observed exposed along Hines Creek for a distance of 120 meters and along the Peace River for 90 meters. The floodplain above the exposure is flat and wooded with poplar, birch, and spruce. The site is associated with the proposed North Access Road.
Plate 17  Site HaQr 2 at center at the mouth of Hamelin Creek.
Plate 18  GIQp 11 exposed in cutbank at the mouth of Hines Creek.

Plate 19  Detail of buried soils in cutbank exposures, GIQp11.
Figure 21  Schematic profile sketches of GIQp 11
**Evaluation.** Although the exposed banks are not within the development zone, they were examined as part of the assessment of the North Access Road. For most of their length, the exposed banks are between two and four meters in vertical extent with several meters of slumped deposits at the base. From six to 14 buried soils were visible as thin, dark bands (buried Ah), often with an associated red (Bf) horizon. Eight schematic profile sketches were made at locations where cultural material was found in situ. Because the profile is interrupted by cracks, slump blocks, roots, vegetation, and other disturbances, not all of the horizons can be traced for the full length of the exposure. The northern portion of the site along Hines Creek exhibits a different depositional history with more massive accumulations of clay and silt and only a few recent (i.e. heavily organic) buried soils.

All of the visible stone artifacts and a few of the bones were collected from the profile and their positions indicated on schematic profile sketches. A total of nine pieces of black chert and one piece of quartzite debitage were collected. They suggest an emphasis on primary lithic reduction of pebbles and cobbles from the river and creek beds to produce useable tools. The single quartzite flake has been retouched.

Bone was observed in 12 locations but was only collected at three locations. Most of the bone represents unidentifiable large mammal. Some of the bone is calcined. The largest specimen consists of approximately 100 fragments of a large left radius, probably bison, from Profile H. An isolated fishbone found in association with a thin clay level in Profile F was not collected.
The 10 shovel tests excavated on the floodplain associated with the exposed bank did not exceed 50 centimeters below surface and did not yield any cultural material. Within the area identified for the North Access road, two auger tests were excavated. Both indicated pure alluvial sediments over two meters thick with no detectable buried soils. These results were consistent with the last 50 meters of exposed cutbank along Hines Creek which contained silt and clay with very few soils. Based on the results of the auger tests and the nature of the cutbank exposure sediments, the proposed North Access Road will avoid the cultural bearing deposits of GIQp 11.

Cultural material was sporadically and thinly distributed along the 210 meters of exposed bank. Bone, firebroken rock, and debitage occurred at about 14 different locations. Because some finds were adjacent to each other, data was combined in the schematic sketches. In addition, a few associated cobbles were observed which, although not modified, are likely cultural. Because individual horizons could not be traced over the length of the profile, the exact relationship between cultural localities is uncertain. However, there appears to be at least six culture bearing buried soils between 0.5 and 2.0 meters below surface. This is a significant site with multiple buried cultural horizons. Despite the modest amount of material visible in the bank exposures and the lack of diagnostic or formed tools in the collected sample, the site has considerable potential for more substantial, stratified, cultural remains back from the cutbank. The scientific and public historical values of this site are high.

**Recommendation.** Avoidance of the archaeologically productive portion of the site by proposed road construction is recommended. Should any changes to routing or right-of-way plans or future development be anticipated, mitigative studies are recommended.
Site GlQp 12  (Figure 13; Table 2; Plate 20; Appendix I-9, I-12)

GlQp12 is situated on a broad, low, lobe of slope wash extending south approximately 150 meters from the base of the valley slope. It was identified during assessment of the North Access Road. A surface scatter of debitage and firebroken rock over an 0.7 hectare area was identified in a previously cultivated field. Cultural material was found scattered over the southern half of the lobe but was not observed on the northern part of the feature. The proposed North Access Road will pass through the northern part of the feature approximately 30 meters north of the site area; direct impact from road construction is not anticipated.

**Evaluation.** Surface inspection of the cultivated field identified 27 pieces of debitage at 23 locations. The lithic material consists primarily of black chert (N = 22) but some quartzite (N = 6) is also represented. Four pieces of firebroken rock were observed. One of two shovel tests in the center of the scatter yielded 14 additional pieces of debitage concentrated in a yellowish-brown horizon at 30 to 40 centimeters below surface. The sediments are a mixture of silt and clay with clay content increasing rapidly with depth. The result of this test suggest that a portion of the site may be undisturbed just below the plough zone. Surface examination and shovel testing found no cultural material in the northern part of the lobe, in the vicinity of the proposed road. The results of the field assessment indicate that this site has moderate scientific and public values.

**Recommendations.** Avoidance of the archaeologically productive portion of the site by proposed road construction is recommended. Should any changes to routing or right-of-way plans or future development be anticipated, mitigative studies are recommended.
Plate 20  Site GlQp 12 on lower terrain feature adjacent to Peace River.
Site GlQp 15 (Figures 13, 22; Table 2; Plate 21; Appendix I-21, I-24)

GlQp 15 is situated on a large lobe of talus and slope wash extending southeastward from the confluence of the Peace River and Hines Creek. This relatively elevated area, about 300 meters west of Hines Creek and 100 meters north of the Peace River, was the location for a proposed laydown area and for boat parking in association with the North Access Road.

Evaluation. Shovel testing in the site area yielded cultural remains including stone artifacts, bone, and firebroken rock. Five of eight shovel tests were positive defining a site area of approximately 275 meters square. Shovel tests extended to approximately 40 centimeters below surface where clay and ironstone nodules were encountered. Exposed soil profiles indicated that the rich humic surface soils are shallow, overlying a thin grey silty clay level. A better developed humic soil with a faint Bf horizon comprised the underlying material. Another two buried soils, separated by 10 to 20 centimeters, were also observed. In general, proportions of clay increased with depth.

Shovel test #s 1 to 4 yielded a total of 101 pieces of black chert debitage, two black chert cores, four pieces of quartzite debitage, one black chert end scraper, 18 pieces of bone, and several pieces of firebroken rock. Shovel test #5 yielded only firebroken rock. Shovel test #4 was the most productive, containing 80 artifacts.

Two archaeological components were identified in the upper 25 centimeters. A third horizon at approximately 35 to 40 centimeters contained only a few pieces of debitage. The upper component (10 to 15 centimeters below surface) yielded stone debitage, an end scraper, bone, and firebroken rock. The good bone preservation suggests that the site is
Plate 21  Site GlQP 15 on lower terrain feature at the mouth of Hines Creek.
not as old as other components in the Hines Creek area. The second component, at 20 to 25 centimeters below surface, was the most productive, in terms of stone debitage. Based on the results of the assessment program, the site has high scientific and public historic resource values.

Recommendations. Avoidance or further study is recommended. The proponent has elected to avoid the site area by relocating the laydown and boat parking areas associated with the North Access Road. In the event that avoidance is not feasible, staged controlled mitigative excavations are recommended in which the first stage consists of 10 1x1 meter units. The scale of Stage II would be contingent upon the results of the first stage of mitigation.
Site GIQq 1  (Figure 13; Table 2; Plate 22; Appendix I-49, I-52)

Site GIQq 1 is located in Target Area 4. It consists of eight pieces of firebroken rock associated with a shallowly buried soil at approximately 10 centimeters below the surface of the mineral soil. The site is associated with headpond of the Dunvegan Project and may be impacted by erosional processes.

**Evaluation.** The firebroken rocks are of several different igneous types with a combined weight of three to four kilograms. Although there is scattered charcoal in the buried soil, and the rocks are somewhat blackened, there is no soil discoloration indicative of a hearth. Six shovel tests excavated in the area of the feature produced no additional material or rocks. Based on the context of the firebroken rock in alluvial silts where stones and cobbles do not naturally occur, the finds are considered to represent human activity. Although the shallow depth and fire blackening indicate a fairly recent age for the feature, the absence of modern debris suggests that it is of some antiquity. However, based on the negative results of the shovel testing program, the site is considered to have low scientific and public historical resource value.

**Recommendations.** Photographic documentation and recording have mitigated potential impacts. No further study is recommended.

Site GIQq 2  (Figure 13; Table 2; Plate 23; Appendix I-53, I-56)

Site GIQq 2 is located about 30 meters from the mouth of a stream cut which bisects the terrace in Target Area 4. At least nine buried soils separated by alluvial sediments were observed in a three meter cutbank exposure. An additional two to three meters of slump occurs at the base of the exposure. At least two soils, between about 1.3 and 1.8 meters below surface, contained a small amount of firebroken
Plate 22  Detail of shovel test containing firebroken rock, GIQq 1
Plate 23  Site GIQq 2 exposed in cutbank of Peace River.
rock, a few cobbles, and bone, some of it calcined and associated with ash and charcoal. The site is associated with the proposed headpond of the project and will be subject to undercutting by higher water levels in the Peace River.

**Evaluation.** No stone debitage or finished tools were found. A small bulk sample taken from the exposures yielded a considerable amount of burned and calcined bone but no debitage. Despite the absence of stone artifacts, the recovered assemblage is indicative of precontact human occupation. More extensive cultural deposits may occur back from the stream cut. Based on the field assessment, this site is of moderate scientific and public value.

**Recommendations.** Providing that increased erosion and undercutting of the site area does not occur in association with the proposed project, no further study prior to construction is recommended. It is, however, recommended that the site be monitored after completion of construction to evaluate potential erosional impacts and assess whether site mitigation is warranted.

**Site GlQq 3**

(Figure 14; Table 2; Plate 24; Appendix I-57, I-60)
Like GlQq 2, this site was identified in a cutbank exposure about 30 meters from the mouth of an unnamed stream in Target Area 6. About two meters below surface, one of eight buried soils visible in the profile contained a concentration of ash, charcoal, bone, and firebroken rock. The site is associated with the proposed headpond. Presently approximately five meters above the river level, it may be impacted by flooding of the stream bed and undercutting of the bank by higher water levels.

**Evaluation.** Shovel testing of the site area was not feasible because of the depth of the cultural material. Because of lack of access, use of a backhoe to assess the deeply buried materials was not undertaken. Consequently, the site was assessed by excavating into the wall of the exposure. An
Plate 24  Site GIQq 3 exposed in cutbank of unnamed stream in Target Area 6.
area of approximately 0.3 meters square centered on the ash concentration was exposed yielding more firebroken rock and eight black chert flakes. The feature represents a hearth. Based on the results of the field assessment, the site is considered to have moderate to high scientific and public historical resource values.

**Recommendations.** Based on the historical resource value of the site and the likelihood of impact from the proposed project, further study is recommended. Staged controlled excavation is recommended in which Stage I consists of 10 1x1 meter units to determine the scope and nature of additional mitigative measures.

**Site GiQq 4**

(Figure 14; Table 2; Plate 25; Appendix I-61, I-64)

A scatter of nine pieces of debitage, 12 pieces of firebroken rock, and three bone fragments was observed along a low east-west ridge on Smoos Flats about 45 meters back from the Peace River bank (Target Area 6). The site is located above the anticipated water levels associated with the proposed Dunvegan Project.

**Evaluation.** This site has been extensively disturbed by cultivation. The distribution and density of cultural material observed are partially representative of the discontinuous nature of available exposures as most of the area is obscured by crops or weeds. Seven culturally sterile shovel tests indicate that cultivation has cut into a well developed buried soil which is likely associated with the cultural items. The scientific and public historical resource value of the site is low.

**Recommendations.** Photographic documentation, recording, and collection of the artifacts have mitigated any potential impacts from the project. No further study is recommended.
Plate 25  Site GlQq 4 on Smooks Flats; lower terrace at center right.
Site GlQq 5  (Figure 14; Table 2; Plate 26; Appendix I-65, I-68)
Located approximately 500 meters west of GlQq 4, a concentration of firebroken rock was observed on the same low ridge and about 50 meters back from the river bank. About 15 pieces of firebroken rock were scattered over an area approximately 7x18 meters in size, with a concentration in a 5x6 meter area. The site is located above the anticipated water levels associated with the proposed Dunvegan Project.

**Evaluation.** The firebroken rock likely originated in a shallowly buried soil which has been disturbed by cultivation. Although stone tools were not found, the presence of a concentration of firebroken rock in the middle of an alluvial terrace is indicative of human occupation. Detailed assessment was not undertaken as the site is not within the anticipated impact zone.

**Recommendations.** No further study relative to the proposed study is recommended.

Site HaQp 1  (Figures 12, 23; Table 2; Plate 26; Appendix I-69, I-72)
A small scatter of stone artifacts and firebroken rock was found in a hay field with good surface visibility. The site is located on a low ridge in an otherwise flat field, just north of an east-west section road. It is associated with the proposed Powerline Route Alternate 2.

**Evaluation.** The site is disturbed by cultivation and possibly by a nearby pipeline development. Five shovel tests excavated in the site area were culturally sterile. Five artifacts were collected, including the base of a black chert biface, a large, crude bifacially worked quartzite spall, a thick black chert flake fragment, a quartzite flake, and a piece of black chert shatter. The biface fragment (35.7 mm long; 25.1 mm wide; 8.1 mm thick) has almost straight, parallel, lateral edges and a convex base.
Plate 26  Site GIQq 5 at center on Smooks Flat.

Plate 27  General view of site HaQp 1 adjacent to section road.
Figure 23  Biface collected from HaQp 1

**Recommendations.** Photographic documentation, recording, and collection of the artifact have mitigated any potential impact to the site. No further study is recommended.

**Site HaQq 2**  (Figure 16; Table 2; Plate 28; Appendix I-73, I-76)
While examining the river bank exposures in Target Area 10, artifacts were observed about 50 meters apart in the cutbank. A large black chert flake with ventral retouch along one edge was found about one meter below surface. A piece of black chert shatter and a piece of firebroken rock were observed at the base of the profile. Still in place at the second location, also about one meter below surface, was a concentration of large mammal bone, some of it burned and calcined. The site is presently five meters above river level. The projected rise in water levels indicate that accelerated erosion will not occur in the site area.
Plate 28  Site HaQq 2 exposed in cutbank of Peace River.
Evaluation. Shovel testing was not conducted because of the depth of the cultural deposits. The exposed banks were scraped back to determine whether additional cultural material was present. No cultural material was encountered. Additional assessment was not undertaken as the site lies above the projected impact zone. The site is considered to have moderate scientific and public historical resource value.

Recommendations. Providing that increased erosion and undercutting of the site area does not occur, no further study relative to the proposed project is recommended. It is, however, recommended that the site be monitored after completion of construction to evaluate potential erosional impacts and assess whether site mitigation is warranted.

Site HaQr 1  
(Figure 17; Table 2; Plate 29; Appendix I-77, I-80)  
Recorded in 1976 by A. L. Bryan, HaQr 1 is situated on a fairly open and level bench about 30 meters above the Peace River on the west side of the mouth of Hamelin Creek. The site lies above the projected increase in water levels associated with the Dunvegan Project.

Evaluation. Of the seven shovel tests excavated at the site, three contained 11 artifacts of black chert and three of quartzite and a few pieces of firebroken rock. Based on the distribution of positive shovel tests, the site is 10x15 meters in size. The recovered cultural material includes two cores and 12 pieces of debitage. Shovel tests #1 and 3, closest to the edge of the bench, coincide with a slightly sloping surface and cultural material was found just below the sod, on top of pebbly silt. Shovel test #2, on level ground, contained almost 25 centimeters of pebble-free silt overlying dark grey clay. In this test, the cultural material originated primarily from the top 15 to 20 centimeters, although one quartzite flake occurred at 10 centimeters and one quartzite flake was found at 25 centimeters below surface. Scientific and public site values are considered to be high.
Plate 29   Site HaQr 1 at center left on Hamelin Creek.
**Recommendations.** The site lies above the defined impact zone. No further study relative to the proposed project is recommended. However, should future development be anticipated in the site area, additional study is warranted.

**HISTORIC SITES**

Three historic period sites were identified during the field reconnaissance. They consist of one homestead (GiQq H1), one recent geotechnical test site (GiQp H1), and one trail (GiQp H2) (Figures 13, 14; Table 3).

**Homestead**

**Site GiQq H1** (Figure 14; Table 3; Plates 30, 31, 32; Appendix II-5, II-6)

The remains of a homestead comprised of a small farmhouse and associated shed and workshop were identified at Smooks Flats (Target Area 6) within a few meters of the bank of the Peace River. The farmhouse is faced with stucco. According to a guest book inside the building, it was built by Howard Frazer over 75 years ago. However, homestead records indicate that the land was homesteaded by Howard Harrison Fraser in 1935 and patented in 1940. It is currently owned and used by Bob Smook.

**Evaluation.** The farm house is about 6x6 meters in size and about three meters in height at the eaves. A fairly high pitched roof adds to the height. Although the exterior is stucco, the interior reveals that it is constructed of squared logs with dove tailed corners. There are single windows in the south, west, and north walls of the main floor and to the north and east of the second floor. It appears that the ceiling on the main floor was raised subsequent to construction. There is a trap door to a cellar, which was not investigated. The house is furnished and in generally good condition.
### Table 3 Summary of identified historic sites

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<th>Site Context</th>
<th>Site Visibility</th>
<th>Geographical Setting</th>
<th>Association</th>
<th>N.T.S. Map Reference</th>
<th>U.T.M. Reference</th>
<th>Recommendations</th>
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<td>Undisturbed</td>
<td>Surficial Features</td>
<td>Peace River Bank</td>
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Plate 30  Side view of farmhouse at GlQq H1 on Peace River.

Plate 31  View of farmhouse illustrating back of structure, GlQq H1.
Plate 32  Remains of workshop associated with GIQq H1.
The remains of a small wood plank shed are located about 11 meters to the southeast and a workshop of round, notched log construction is situated 30 meters to the north. The latter appears to have been used as a blacksmith shop. Both of these buildings are in poor condition with collapsed roofs. This site is of local historical significance and is apparently valued by the present owner as a monument to local history. The farmhouse is situated only five meters from the river bank; erosion is not, however, expected to increase sufficiently at this location to impact the site.

**Recommendations.** No further study relative to the proposed project is recommended.

**Geotechnical Test Site**

**Site GlQp H1** (Figure 13; Table 3; Plates 33, 34; Appendix II-1, II-2)

About 800 meters west of the proposed weir location, a wood cribbed shaft entrance about 35 meters above river level was identified. It includes a plank platform, washed part way down the slope, and the framed entrance. According to Corey Froese (1999 personal communication) it appears to represent a geotechnical test location associated with the Dunvegan Feasibility Study of 1975. At 35 meters above river level, it will not be directly affected by development. However, elevated water levels in the area could accelerate erosion eventually impacting the site.

**Evaluation.** The entrance (opening) is about 130 centimeters wide and 145 centimeters high. The frame and the associated platform are constructed from 2x12 inch lumber and 4x4 inch posts. The roof of the entrance includes a sheet of plywood. Some of the wood is rotten but much is sound. Among the debris are a rubber hose (ca. 2.5 inch diameter) and a nickel plated pipe protruding out of the ground. A shovel test placed immediately inside the entrance...
Plate 33  Geotechnical Test Site (GIIq H1) on Peace River (platform in foreground; entrance at upper left).

Plate 34  Detail of entrance, GIIq H1.
yielded a plastic bottle for windshield washer fluid concentrate and revealed a wood floor. It is of recent vintage with little historical value.

**Recommendations.** The site has been adequately recorded and is of no further concern.

**Trail**

**Site GIQp H2** (Figures 13, 24, 25; Table 3; Plate 35; Appendix II-3, II-4)

As Power line Route Alternative 2 goes up out of the river valley, it takes a northeasterly route along a stream cut. For about 400 meters it appears to follow an abandoned trail which also takes advantage of the low grade afforded by the stream cut.

**Evaluation.** The trail is overgrown with trees but is clearly visible as it has been cut into the sloping sides of the stream cut. It is narrow, approximately two meters wide, possibly designed for wagons.

The earliest map of the region was compiled by G. M. Dawson (1881) from his explorations in 1879 which illustrates the basic network passing through the Dunvegan area. His map indicates a main trail crossing of the Peace River to the east of the unnamed stream on the south bank and to the east of Muddy (Hines) Creek on the north bank. This trail led north to Hay Lake and Lac des Iles and continued north to the Battle (Whitemud) River. To the south it bifurcated in the area north of Ghost (Spirit) River with the eastern branch going south to wend its way along the Wapiti River whereas the western branch cut almost directly west skirting the Saddle Hills across to the valley of the Pouce Coupe River. The trail and crossing of the Peace River in the vicinity of Dunvegan is also shown on the Canadian Northern Railway map for 1913 on which it passes through Dunvegan to the
Figure 24  Portion of Dawson's (1881) map showing trail adjacent to Dunvegan
Figure 25  Department of Interior map of 1916 showing trails and settlements in the Dunvegan District
Plate 35  General view of trail GIQp H2 adjacent to Hines Creek.
east of Island River (Hines Creek) whereas on a map made by the Department of Interior in 1916 it is located to the west of the Dunvegan settlement running north to the vicinity of Waterhole where it branches. The eastern branch runs northeast to the community of Shaftesbury near Peace River. The trail identified in the field undoubtedly represents either an alternate of this main trail or a spur of this historic trail. It should be noted that the Canadian Northern Railway map clearly identifies the trail through Dunvegan to Shaftsbury as a *wagon road*. The trail is historical importance not only because of its association with the historic site of Dunvegan but also because of its role as part of a primary transportation and communication route in the settlement of the Peace River district.

**Recommendations.** Although the trail has high historic value, installation of power poles would have only moderate impact, primarily esthetic impact, on the feature. As such, should this alternate be selected, it is recommended that the power poles be placed along one of the edges of the trail. Because the portion to be affected by the proposed powerline represents only a small segment of this trail, further study is not recommended.

**EFFECTS ON HISTORIC FORT DUNVEGAN**

In addition to effects of construction and operation of the Dunvegan Hydroelectric Project on historical resources, Schedule A from Alberta Community Development required an assessment of the potential effects of dam failure on historic Fort Dunvegan. The locality of historic Fort Dunvegan, approximately two kilometers downstream from the proposed powerhouse and control weir, actually consists of a cluster of sites. These include early Fort Dunvegan (GlQp 3) occupied from 1805 to 1876, later Fort Dunvegan (GlQp 8) occupied from 1877 to 1918; the St. Charles Catholic Mission (GlQp 6) used by the Oblates from 1864 to 1903 and later occupied by a number of families (1909 - 1940), and St. Saviour's Anglican Mission (GlQp 7).
in use between 1874 and 1895. In addition, precontact horizons are present at sites GIQP 6 and GIQP 9, a few hundred meters downstream.

The historic sites consist primarily of buried archaeological remains including refuse and a variety of structural features such as walls, posts, etc. However, a portion of later Fort Dunvegan is still standing, for example, the Factor’s House which has been restored (Pyszczyk and Smith 1987; Smith, Smith and Neary 1991). Two structures at the St. Charles Catholic Mission have also been restored and represent the 1889 (second) house-chapel or rectory and the 1886 church (Smith and Neary 1991).

Precontact archaeological remains have been recorded at depths as great as three meters below surface in association with at least four and possibly six of the 11 buried soil horizons preserved at GIQP 6. The precontact remains consist of lithics, mainly black chert and quartzite, faunal remains, and firebroken rock. Although neither diagnostic artifacts nor formal tools were recovered, nine radiometric dates ranging from 670±120 years before present (BP) to 4450±90 BP (Smith, Smith and Neary 1991; Smith and Neary 1991) provide temporal associations for the occupations.

Although archaeological investigations at Dunvegan locality have provided much data on the nature of the historic and precontact remains, the integrity of the sites has been compromised by a variety of 20th century activities. Any additional impact to these sites could result in a loss of not only scientific information but contribute to a decrease in interpretive potential and consequently loss to public education and enjoyment.

If failure were to occur in the headworks structure, the obvious consequence would be flooding. Assuming full failure and rapid release of water, the maximum height of water rise would be less than three meters, i.e. the maximum depth of the headpond above normal river levels. Because the river widens downstream from the dam, water levels would drop in relation to the breadth of the valley and flood effects would decrease correspondingly. It should be noted that the three meter rise in water levels is still below trim line, i.e. the elevation at which flood scouring affected valley morphology during the pre-Bennett flow regime.
The cluster of historical resource sites at Fort Dunvegan is situated on a floodplain approximately 15 meters above present river level. Although the sites occur across much of the floodplain, the three standing structures are within about 20 meters of the bank. A flood associated with a maximum of a three meter rise in water levels resulting from headworks structure failure would not overtop the current bank. The structures and associated historic materials would not be impacted.

Predictable effects associated with rapidly rising and moving water on bank stability would consist primarily of erosion and undercutting of unstable river banks and of locations where the river strikes the bank at an obtuse angle, such as road cuts. Bank failure could be expected at these locations. However, because of the rapid rise and fall in water level, i.e. brevity of the event, soils along the banks would not become deeply saturated and be prone to slumping. Because of the relative uniformity of the river valley in the vicinity of Dunvegan, bank failure is highly unlikely. Further, a buffer of approximately 20 meters of floodplain exists between the bank and the standing structures. Impact to the historic structures at the locality of Fort Dunvegan is not expected.

With respect to buried archaeological remains in this locality, Smith and Neary (1991) have concluded that in the vicinity of GlQp 6 there has been net deposition, rather than erosion, along the bank. They estimate that 5.2 meters of deposition have been added to the bank edge in the last 70 to 80 years. On this basis, a modest amount of bank erosion would not have any effect on the precontact archaeological resources in the area.

The above discussion assumes more or less free flow of water following headworks structure failure. However, if failure occurred in winter and/or a large part of the powerhouse structure was washed downstream, a jam of ice or structural debris could potentially result. The effects of such an event are more difficult to predict and evaluate. Depending on the nature and extent of the ice/structural jam, local water levels could spill over the banks, flooding the Fort Dunvegan area. Assuming that no protective measures were instituted, it seems likely that floodwaters would be widespread but
shallow because of the broad floodplain. As such, the standing structures at Dunvegan could become inundated with fairly shallow flood waters. The probability that floodwaters would be of sufficient velocity and magnitude to lift the buildings off their foundations is extremely low. Floods associated with natural ice jams do occur along the Peace River in the vicinity of the delta; the primary effect is inundation of low lying areas, resulting in deposition of silt and clay mud. Ice jams are not characteristic of breakup in the project area. As such, the potential for impact to the precontact archaeological resources at Dunvegan is low. Although major slumping of the bank could impact archaeological sites, the accretional nature of the current bank has resulted in relatively recent near-bank deposits with little archaeological potential.

SUMMARY

The proposed Dunvegan Hydroelectric Project consists of four main on-shore components, all of which were assessed for impact to historical resources. Twenty-two precontact and three historic sites were recorded (Tables 2, 3).

HEADPOND

The headpond is 25 kilometers long. It will flood approximately 100 hectares of land, most of which lies at the eastern end of the headpond, i.e. near the weir. Eleven precontact archaeological sites and two historic sites were recorded within the headpond. None of the identified sites lie within the full supply level of the headpond. One site will likely be affected by flooding and/or associated erosion whereas another two sites could potentially be impacted by erosion during the life of the project. Within the headpond only G1Qq 3 is recommended for mitigative study. G1Qq 3 is currently exposed in a cut bank. Of the eight buried soils exposed, one contained a hearth feature with ash, charcoal, bone, and firebroken rock as well as chert debitage. The site is of moderate to high scientific and public historical resource value and could be undercut or eroded by invasion of headpond waters into the associated stream bed. Additional study is recommended to mitigate any potential adverse effects to the site.
The site specific effects of the headpond area relative to sites above the full supply level are largely unknown at this time. Of particular importance to archaeological sites are the potential for, and extent of, accelerated erosion of the river bank. Although it poses potential impact to known sites, erosion can also expose previously unidentified sites and monitoring of the terraces and benches along the valley walls of the headpond is recommended.

SOUTH ACCESS ROAD

The proposed South Access Road is approximately 2.8 kilometer long and will impact approximately 11 hectares, much of which is associated with an existing trail. One small disturbed artifact scatter (GlOp 10) is associated with this development. No further study is recommended relative to the proposed facility.

NORTH ACCESS ROAD

The North Access Road is approximately 1.8 kilometers long and would affect approximately 10 hectares of land. This facility consists of a road, a bridge crossing of Hines Creek, a laydown area, a boat parking area and a boat launch. Five precontact archaeological sites (GlQp 1, GlQp 11, GlQp 12, GlQp 13, GlQp 15) are associated with the North Access Road. Two of these sites (GlQp 1, GlQp 15) were in conflict with the proposed facility. The proponent has elected to avoid both sites by rerouting the proposed North Access Road. However, because both sites exhibit high scientific and public historical resource values, further study is recommended at both sites should avoidance not be feasible. Assessment of the new rerouted alignment is also recommended.

POWERLINE ROUTE ALTERNATES

Two powerline route alternates were assessed. The northern alternate is 14.5 kilometers long whereas the southern route is 4.7 kilometers long. Both parallel existing roads for a portion of their lengths. The proposed routing of the northern alternate on the north side of the existing road would
add little impact to the sites identified. However, it coincides with an historic trail (GIQp H2) and would intercept four precontact sites (GIQp 17, GIQp 18, GIQp 19, HaQp 1) on the prairie level. None of these sites are of sufficient historical resource value to warrant further study. One historical resource site (GIQp 16) was identified on the southern alternate. It is of low historical resource value. No further study is warranted in relation to this route alternate.

POTENTIAL DOWNSTREAM EFFECTS ON FORT DUNVEGAN

The locality of historic Fort Dunvegan is associated with a floodplain approximately 15 meters above the present water level. Headworks structure failure could be expected to discharge water at levels three meters above the current level which would not result in flood conditions at this locality. Should a major debris dam occur downstream of Dunvegan, primarily inundation of the low lying areas could be expected to occur. Assuming no protective measures at the site, minor damage to the extant structures at Fort Dunvegan could occur. Effects on the precontact archaeological components in the locality would be negligible as recent accretional deposition buffers the buried components. It is concluded that effects on the locality of historic Fort Dunvegan in the event of dam failure would be minor.
PALAEONTOLOGICAL RESULTS

LOCAL STRATIGRAPHY

Rock outcrops in the study area range from excellent to poor with those on the north side (Plates 2, 36 to 39) better than those on the south side (Plate 40) of the river. Sandstones on both sides of the valley are better exposed than interbedded strata. Bidirectional trough and planar cross stratification characterize sandstones in the western reaches of the reservoir (Plates 41, 42). In the mid reaches, bidirectional cross stratification appears and becomes common in outcrops just upstream from the proposed dam (Plate 43). Low angle planar cross stratification is locally present (Plate 44). Rip up clasts of mudstone and ironstone are common at the base of the sandstone units (Plate 45).

The intersandstone units are generally poorly exposed, but where exposed coarsen up from massive mudstone to interbedded mudstone, siltstone, and fine grained sandstone, with the latter two becoming dominant at the top of the units (Plate 39). Organic matter comprised of finely divided particles to small woody fragments is present throughout these units. The above observations indicate that the sandstones were deposited in a fluvial system in the west, which became tidally dominated to the east.
Plate 36  Exposures of the Dunvegan Formation in upper reaches of proposed reservoir, north side of Peace River.

Plate 37  Exposures of the Dunvegan Formation, upper reaches of the proposed reservoir, north bank of Peace River.
Plate 38  Exposure at KP 1 where basal sandstone (river level), prominent sandstone (center) and interbedded strata were assessed.
Plate 39  Slump face exhibiting characteristic bedding of intersandstone units. Unionid fragments were found in both the face and talus below.
Plate 40  Typical exposure on south side of Peace River.

Plate 41  Unidirectional cross-stratified sandstones in upper reaches of proposed reservoir.
Plate 42  Unidirectional cross-stratification, mid section on south bank of Peace River, indicating paleocurrent to east.
Plate 43  Midsection and north bank of Peace River, bidirectional sandstones. Note trough cross-stratification (base of pick handle) indicating paleoflow from east to west, whereas the planar cross-stratification (pick head) indicates paleoflow from west to east. It appears to represent the start of significant tidal influence.
Plate 44  Low angle plan cross-stratification and trough cross-stratification indicating upper shoreface sedimenation. Lower to mid section of proposed reservoir; south bank of Peace River.

Plate 45  Rip up clasts typical of the base of the sandstone units.
IDENTIFIED PALAEONTOLOGICAL LOCALITIES

Locally, float of mussel coquinas were common, indicating their nearby occurrence in situ. However, no primary occurrences were found because of poor exposures. A single horizon with isolated *Ostrea* specimens (Plate 46) was found at the base of the sandstone at approximately KP 3.0. Specimens were collected for the Royal Tyrell Museum of Palaeontology.

Unionid shell fragments were found on talus slopes (Plate 47). Trace fossils, although not common, are present throughout the area (Plate 48). Specimens were collected for the Tyrell Museum of Palaeontology.

DUNVEGAN FORMATION TYPE SECTION

When initially described by G. M. Dawson in 1881, no type section was designated for the Dunvegan Formation. Subsequent researchers in the area have not designated a type section. Therefore, the area remains an important reference area for the formation within the context of the stratigraphic code. Type sections/sites are of national and international palaeontological value because they are of critical importance as standards of comparison for identification of lithological structure and lateral facies change, and fossil contents. The proposed Dunvegan Project would include an area flanked by the middle and upper portions of the formation.

RECOMMENDATIONS

No significant fossil occurrences were found. On this basis, no pre-construction mitigative work is recommended. However, development of the Dunvegan Project would require construction of an access road on the south side of the Peace River which would expose otherwise poorly exposed strata. It is recommended that this area be monitored during road construction.

Of particular importance is the occurrence of the Type Section for the Dunvegan Formation in the study area. Loss of access to the Type Section is of concern. In this context, a detailed stratigraphic and sedimentological study in the area of the Type Section is recommended.
Plate 46  *Ostrea* shells in float from about KP 3.

Plate 47  Surface of talus slope with small unionid fragments.
Plate 48  Trace fossils including pelecypod molds from approximately KP0.5, south bank, Peace River.
NATURE OF HISTORICAL RESOURCES

Archaeological, historical, and palaeontological sites are non-renewable and are susceptible to alteration, damage and destruction by any type of development project. The value of these resources cannot be measured in terms of individual artifacts or biological specimens, rather the value of historical resources lies in the integrated information which is derived from the interrelationship of the individual artifacts and fossil specimens, associated features, spatial relationships (distribution), and contextual situation. Interpretation of historical resource materials, and the ability to interpret the significance of particular sites in a landscape, is based on an understanding of the nature of the relationship between archaeological or palaeontological materials and the sediments and strata within which they are contained. Removal or mixing of these sediments results in the permanent loss of information basic to the understanding of these resources. As a result, historical resources are increasingly susceptible to destruction and depletion through disturbance.

Archaeological resources are comprised of residues of past cultures or societies. Because the cultural milieu in which they functioned no longer exists, these resources are non-renewable. Although the cultural entities responsible for deposition of the archaeological material are unavailable for observation, the preserved context and associations in which the remains
functioned can reveal much about past human behavior, adaptations, and relationships. Many facets of these resources, particularly patterns of cultural deposition (observable in undisturbed context) are extremely fragile, ephemeral, and the product of unique processes and conditions of preservation. Site integrity, i.e. undisturbed state, is therefore extremely important to interpretation of the remains. Consequently, once they are disturbed, they cannot be replaced, re-created or restored. Due to the nature of their origin and preservation, archaeological resources are finite in quantity.

Reconstructions of the behaviour of extinct human societies are formulated almost exclusively from the analysis and distribution of the cultural remains which have been preserved through time. These remains and their spatial relationships with the aid of ethnographic analogy regarding tool use, technological processes and socioeconomic relationships, form the basis from which information on prevalent subsistence and economic systems, settlement and social organization and interaction systems are elicited. Examination of these material remains, their spatial relationships and analogies with societies having the same level of technology and living in identical or similar environments are used to make inferences about the social or non-material aspects of culture.

The archaeological record is formed by only those activities having material consequences which the natural processes of deterioration and erosion have not destroyed through time (Gifford 1978; Wilson 1981). Some activities, however, leave few to no tangible remains and are not reflected in the archaeological record. In the forest, preservation of archaeological remains is influenced by acidity of the soils, generally resulting in the chemical deterioration of all organic materials and leaving only such elements as lithic tools with related manufacturing debris for archaeological interpretation. Poor preservation of organic items such as wood, bone and horn is particularly important in areas where these resources were extensively used for camp maintenance and manufacture and refurbishing of tool components.
The interpretive capacity of a site is also influenced by other factors. Disturbance such as erosion and cultural disturbance caused by inconsistent curation, abandonment of cultural items, flexibility in activity distribution by the occupants, and scavenging by subsequent occupants distort the original context of deposition (Figure 26), limiting or complicating interpretation. The relative scale of the interpretive potential of a site is related to the degree to which the cultural associations of the activities were preservable, were preserved, and the degree to which the original context of activities has not been disturbed or destroyed through natural, cultural or mechanical means. If only identification of a single activity is possible (for example, the discovery of a single flake limits interpretation to the lowest level of ‘modification of stone’), the site may be said to have limited interpretive potential. Sites are said to have a high degree of interpretive potential if the cultural materials allow for the identification of the economic base and activities and the identification and interaction of the social units, i.e. the context of the activities can be reconstructed. These typically are sites characterized by patterning of artifacts, features, and biotic materials reflecting the economic base and social activities.

Another factor affecting site visibility is susceptibility of site contents to destruction from natural processes. Sites can be completely obliterated, particularly those subject to riverine or lacustrine erosional processes. These locations, adjacent to the waters edge, were highly favoured for campsite situation. Destruction of these sites by active erosional processes is imminent because of their proximity to the edge of the water body.

Historic sites, particularly if they are comprised of simple wooden structures, are highly susceptible to natural processes of deterioration and decomposition. Unless associated with temporally and functionally diagnostic artifacts such as calendars, ceramics, or metal objects, it is difficult to ascribe dates or activities to the observed remains. Similarly, unless functionally diagnostic artifacts, historic records or knowledgeable informants are available, the activities or function of the site cannot be reconstructed or interpreted.
Figure 26  Archaeological site preservation processes
Palaeontological resources are similar to archaeological resources in that they represent the sole remains of living organisms characteristic of extinct ecosystems. These remains provide information not only on the individual organism, but also on past environmental conditions, species evolution, and behaviour patterns, data which can only be obtained from these remains. Like archaeological resources, palaeontological remains are finite in quantity and susceptible to destruction and depletion as a result of disturbance.

PROJECT SPECIFIC EFFECTS

Site inventory studies associated with the proposed project have resulted in an increase in the existing data base for the project area. Data has accrued through the collection of intangible data at each site identified such as site location, site content, and site associations. The effect of these activities on the extent of current scientific knowledge on the cultural history of the area has been positive.

Disturbance to historical resource sites by the proposed Dunvegan Hydroelectric Project as a consequence of predictable construction activities, associated infrastructure development, and inundation processes will be minimal. Construction activities such as forest and vegetation clearing, soil removal, and grading which would result in an alteration or removal of existing historical resources will not be required in the area of the headworks structure. Associated infrastructure development will consist of access (including roads and power line rights-of-way), a boat launch, the powerhouse and weir and associated disturbances. Rerouting of linear facilities and relocation of associated facilities will avoid identified historical resource sites. Although inundation processes will conceal landforms containing historical resource sites, impact to historical resource sites at lower elevations may result from water/wave action. Sites at higher elevations could also be impacted through undercutting/erosional processes associated with higher water levels but the probability of impact is low.
MITIGATIVE OPTIONS

Avoidance represents the preferred mitigation option as it results in site preservation. Consequently, no loss of information or interpretive potential occurs. Other mitigative measures include replacement, restoration, compensation or other means (Canadian Environmental Assessment Agency 1994a). Of these options only compensation (i.e. detailed mapping, controlled collection or controlled excavation of a sample of the site area to be impacted) is relevant to historical resources. The recommended mitigative options for the identified historical resource sites include avoidance and compensation in the form of controlled excavation at archaeological sites and detailed mapping of bedrock formations. Monitoring has also been recommended for palaeontological remains and at archaeological sites where erosional impacts are uncertain.

IMPACT ASSESSMENT PARAMETERS

Within the context of the scientific and cultural (ethnic) historical resource values, adverse impacts are evaluated from the perspective of the nature of the projected disturbance as well as spatial and regional implications, with the objective of determining the magnitude of impact to each specific resource. In the absence of comparable guidelines in Alberta the Indicators for Assessing Impacts on Archaeological Sites defined in the British Columbia Archaeological Impact Assessment Guidelines were used, with some modification, as the basis for assessment. Although the terms and definitions were developed specifically for archaeological resources, they have been modified for application to all historical resources.

- **Direction of Effect** - Effects arising from development projects can be positive or negative. Because of the nature of historical resources and the site specific nature of anticipated disturbance, the direction of effect is, with few exceptions, negative. Positive effects are those which contribute to the current scientific knowledge of cultural history.
• **Geographic Extent** - The spatial breadth, whether widespread or site-specific, in which the effects of the impact will be perceived. The geographic extent of impact or loss of historical resources is evaluated at three levels of data which are analogous to geographic extent. **Site extent** (expressed as *site data* in the archaeological literature) consists of the remains occurring at any specific historical resource site. **Local geographic extent** (local data in archaeological literature) refers to the geographic extent of the detailed field inventory associated with the proposed project. Information from a locality is important for providing stratigraphic and spatial relationships within the context of the regional historical resource data base. **Regional geographic extent** (also regional data in archaeological literature) refers to the approximate geographic extent of the Peace River valley from the confluence of the Smoky River to the Bennett Dam and represents a holistic perspective of the cultural and environmental context in which past societies and biological species operated. For example, for archaeological resources regional data consists of geological deposits and soils, past and present ecological zones, vegetation and animal communities, precontact and historic settlement patterns, and the communication features, all of which are necessary for integrating precontact and historic sites into a regional framework.

• **Duration** - The length of time the effect of an adverse impact persists. Although adverse impacts may occur over a short-term period, if disturbance of land surface or historical resource remains is associated, the effect on historical resource sites is long-term.

• **Magnitude** - The amount of physical alteration or destruction which can be expected. The resultant loss of historical resource value is measured either in amount or degree of disturbance. The scales of magnitude are evaluated as low, medium or high. The magnitude of disturbance or loss that occurs at various levels of historical resource data represents the magnitude of impact. Disturbance or loss levels are project specific and can only be assessed relative to the regional data base after adequate investigation of the development zone and the sites located in these zones have been completed.
High impact represents the loss of a significant proportion of data at either the site, local or regional level. With high impact, the interpretive capacity of the remains following impact is minimal. Medium impact occurs when a proportion of the data at either the site, local or regional level is lost but in which a significant proportion of the data remains unimpaired. After medium impact, the interpretive capacity of the remains is hindered by the loss of basic data about the past making it difficult to provide complete cultural descriptions and conclusive statements concerning precontact lifestyles. Low impact is the loss of a minor proportion of data at either the site, local or regional level. After low impact, the interpretive capacity of the remains is virtually intact, limited only by the loss of minor items and/or features.

• **Probability of Occurrence** – The likelihood that physical alteration to or destruction of a historical resource will occur. With the exception of those sites which are identified adjacent to the proposed development zone and those which are avoided through project re-design, the probability of impact occurrence is high.

• **Confidence** – The certainty with which impact prediction is made. Confidence levels are dependent on the level of information available regarding the nature of the activity producing the impact and geographic location of the activity relative to specific historical resource sites. Relative to historical resources, the level of confidence, is with few exceptions, high.

• **Permanence** - The irreversibility of an impact. Adverse impacts which result in a totally irreversible and irretrievable loss of historical resource value are of the highest severity or permanence. Because of the non-renewable nature of historical resources, all effects causing a loss of data are irreversible.

• **Cumulative Effects** - Effects resulting from activities at all levels of geographic extent and levels of historical resource data that will accrue from past, existing, and imminent projects relative to each geographic
extent. The cumulative effects assessment on historical resources is based on the existing data in 48 Borden Blocks that generally correspond to the regional study area.

METHODOLOGY

IDENTIFICATION OF ISSUES

The following historical resource issues were identified relative to the proposed project:

1) disturbance of identified historical resource sites
2) disturbance to historic Fort Dunvegan

Issues were identified based on perceived effects on a non-renewable resource from a scientific perspective as well as on the basis of public concerns regarding potential effects on cultural properties.

ANALYSIS

ANALYTICAL UNITS

Common to all historical resource values is the interpretive potential of the archaeological, historical, or palaeontological remains present at any particular site. Site contents and therefore, site types, represent the basis for determining in interpretive potential or capacity. In this context, loss of historical resource sites or site information results in a loss in interpretive capacity of the historical resource data at the site, local, and regional levels.

• Precontact Sites - The site types assigned to precontact finds are based primarily on interpreted function, for example, campsite, kill site, etc. However, when diagnostics or other characteristics are not present, the finds are classified on the basis of amount of cultural material present, i.e. isolated finds, artifact scatters. Site content or site type represent the analytical units. The sites identified within the proposed Dunvegan Hydroelectric Project
Environmental Effects Assessment

Isolated finds are those locations at which only a single artifact was found and which are presumed to represent a tool or waste material from tool manufacture which has been either lost or discarded. These are generally associated with exposed or disturbed locations where it can be said with some confidence that only a single artifact is present. The primary importance of isolated finds lies in their location, as mapping of these sites provides some information as to general terrain usage in the precontact past. Because only an isolated artifact is present at these sites, little can be inferred regarding activities that the find represents. Finished tools present at these sites are of value if they contribute to providing a holistic view of the material culture assemblage of the region, i.e., if the tool is diagnostic or representative of a particular activity. In general, unless made of stone material imported from outside of the immediate area, a single flake or general waste material has limited interpretive capability.

Artifact scatters are sites containing more than one artifact. Sites are assigned to this category if they lack artifacts or features which are indicative of a primary activity. These sites may represent a wide variety of activities from tool manufacturing or refurbishing (resharpening, mending, etc.) to hunting outlooks, to short term specialized activity locales for a variety of reasons (travel, berry picking, etc.). The interpretive potential of artifact scatters may be of scientific value if a range of tool types, tools and tool manufacturing waste are present. If present, such artifacts provide the potential for making inferences about trade and
communication, tool kit content, and methods of tool manufacture. The locations of these sites provide information on preferred terrain usage. Depending on the range and nature of site contents and the perceived potential to provide these types of scientific information, the interpretive capacity of these sites may range from low to moderate to high.

Sites are classified as **campsites** if they contain features such as hearths, or remains such as bone or artifacts (for example, scrapers used in hide processing) indicative of camp maintenance activities. These sites, by their internal diversity, generally have the most potential for providing meaningful information on the past occupants, their activities, and the time that occupation occurred. Diagnostic tools, if present, allow for correlation of the tool kit with other sites in the area and integration into the existing archaeological sequence. Because a multitude of activities are required to maintain a campsite, artifacts in these sites are more varied and are more likely to be recognized as to general or specific use. Any animal remains, should they have been preserved, allow for the reconstruction of subsistence preferences and season of use of the immediate site locale. Should adequate amounts of bone or charcoal from campsites be present, it is possible to date the occupation of the site. Depending on the diversity of the cultural assemblage, the interpretive capacity of a campsite may range from low to high.

**Lookouts** are sites associated with elevated terrain offering unobstructed views of the surrounding countryside. They are generally assumed to have been used for spotting game. Associated cultural material is generally limited to refurbishingdebitage and perhaps some expedient tool manufacture as might be expected to occur as a by-product of hunting activities. In Alberta, lookouts are commonly classified as artifact scatters as use as a lookout station is based solely on site location rather than artifact content. The interpretive potential is comparable to that associated with artifact scatters.
Workshops are also commonly classified as artifact scatters. These sites contain only debitage relating to stone reduction; they lack evidence of any other cultural activity or habitation. Unless a site has been extensively excavated, it is difficult to determine whether a site functioned specifically as a workshop. The interpretive potential of workshops is limited to stone tool technology.

Burials are sites of human internment. They are important because they provide data on human beliefs and cultural practices associated with this facet of the life cycle.

• Historic Sites - Homesteads, cabins, and trails represent the most commonly recorded historic period sites in Alberta. In the Dunvegan area, fur trade and missionary activities are also represented in the historical resource site inventory. Unlike precontact sites, the interpretive potential of each historic site type is related to an important historic theme, personage or event and provides information relevant to different developmental aspects of the historical development of Alberta. Like precontact sites, the range and nature of site contents and the associated potential for providing information relating to periods or aspects of historical growth represent the interpretive capacity of these sites. Interpretive potential of historic sites may range from low to moderate to high.

Historic sites identified consist of homesteads and trails in the local study area. Although a recent geotechnical test site was also identified, it does not relate to the identified historical themes in Alberta. Homestead sites represent individual economic foci, providing information on agrarian development and growth whereas trails relate to transportation and communication. Both site types contain interpretive potential relating to lifestyles and changing economic and social patterns associated with the historical development of the province.
EXISTING CONDITIONS

Local Data Base

Precontact Sites — Twenty-two precontact sites are on record in the local study area. Two are isolated finds, nine are artifact scatters, and 11 are campsites (Table 2). Six sites are either well above or well removed from proposed development (GlQp 20, GlQp 21, GlQq 5, HaQr 1, HaQr 2, HaQr 3). No further study relative to the proposed project is recommended at any of these sites. Nine of the sites (GlQp 10, GlQp 13, GlQp 16, GlQp 17, GlQp 18, GlQp 19, GlQq 1, GlQq 4, HaQp 1) are of limited scientific and public value. No further study is recommended at these sites. Avoidance, further study, and monitoring is recommended at the remaining seven sites (GlQp 1, GlQp 11, GlQp 12, GlQp 15, GlQq 2, GlQq 3, HaQq 2).

Historic Sites — Three historic period sites were recorded in the local study area (Table 3). One contains homestead remains (GlQq H1), one represents a recent geotechnical test site (GlQp H1), and one represents a trail (GlQp H2). GlQp H1 is recent and of no further concern. No further study is recommended at the remaining two historic sites.

Palaeontological Sites — The Type Section for the Dunvegan Formation is located within the proposed headpond. Further study is recommended. Ostrea and unionids were identified within the local study area. Because the proposed South Access Road may expose otherwise poorly exposed strata, monitoring during construction is recommended.

Regional Data Base

The regional data base consists of all sites recorded in the 64 Borden Units associated with the valley of the Peace River between the Smoky River and the Bennett Dam. Of these Borden Units, 13 blocks (GlQj, GlQk, GlQm, GlQn, GlQr, GlQs, HaQl, HaQs, HaQv, HbQj, HbQt, HcQs, HcQt) have no recorded sites associated and have not been listed in the following tables. Within Alberta, 139 (84.2%) of the components are associated with the precontact era whereas 13 components (7.9%) date to the historic period.
One palaeontological site is on record in each of the provinces. In British Columbia, 639 components (93.3%) are precontact and 54 (7.9%) are of historic age. There is no data for 13 sites (7.7%) in Alberta and 7 sites (1.0%) in British Columbia.

Precontact Sites - Table 4 summarizes the precontact site types recorded in the regional study area. Because some of the site types represent relatively uncommon occurrences, for simplicity similar site types have been grouped. In the regional study area lithic (artifact) scatters are the most common site. However, because defined site types differ between Alberta and British Columbia, there is a bias towards this site type as isolated finds and campsites are not represented in the latter inventory. Further, site types present in British Columbia are not represented in the Alberta inventory, i.e., hearths, cache pits, depressions, mounds, stone feature sites (cairns, tent rings, stone alignments), petroforms, and petroglyphs. Together, these site types represent less than 3.0% of the regional inventory.

Over one-half of the precontact sites in regional study area falling within Alberta were recorded as a result of the Dunvegan Feasibility Study completed in 1975-76. The remainder were recorded during impact assessments of developments and as part of research projects. Artifact scatters (51.1%) are the most commonly occurring site type, followed by campsites (34.5%). Isolated finds (12.2%) are also relatively common whereas sites classified as workshops (1.4%) and burials (0.7%) are relatively rare. There is no available data as to site types for 9.4% (N = 13) of the recorded precontact sites in Alberta.

Three hundred and ten of the sites in the regional study area falling within British Columbia were recorded as part of a five year study associated with Dam Site C downstream of the confluence of the Peace and Moberly rivers. The largest proportion (93.6%) of the total identified site types are classified as lithic (artifact) scatters. Only 1.3% are campsites and 1.4% are isolated finds; the remaining 3.8% are represented by petroform/petroglyphs, pits/depressions, mounds, and burials.
Table 4 Precontact site types in the regional study area by Borden Block (Alberta)

<table>
<thead>
<tr>
<th>Borden Block</th>
<th>Isolated Finds</th>
<th>Artifact Scatters/lookout</th>
<th>Campsites</th>
<th>Workshops</th>
<th>Petroglyph/Petroform</th>
<th>Pit/Depression</th>
<th>Mound</th>
<th>Burials</th>
<th>No Data</th>
<th>Project Association</th>
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<th>Borden Block Total</th>
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<td>6</td>
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<td>23***</td>
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***Contains one palaeontological site and sites with a precontact component and historic remains
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* One site is palaeontological
**Contains both a precontact component and historic remains
*** Contains a palaeontological site and sites with a precontact component and historic remains

Frequencies shown relate to total precontact sites only
The total number of precontact sites identified in the local study area represents less than 16.0% of the total number of precontact sites recorded in the Alberta portion of the regional study area and less than 4.0% of the total number within the entire regional study area.

**Historic Sites** - Table 5 summarizes the historic site types recorded in these Borden Blocks. Again for simplicity, some of the site type categories have been grouped. Most of these sites were identified as a result of impact assessments of proposed developments.

The largest number of historic sites (N = 25; 37.3%) are represented by cabins and structures. Next most frequently occurring are homesteads (N = 15; 22.4%), followed by trading posts (N = 11; 16.4%). Historic campsites/artifact scatters are also well represented (N = 8; 11.9%). Missions (N = 2; 3.0%), root cellars (N = 3; 4.5%), burials (N = 2; 3.0%), and trails (N = 1; 1.5%) are not common site types in the historic inventory. Of note, the sole trail recorded is associated with the proposed Dunvegan Project. The total number of historic sites identified in the local study area represents 5.0% per cent of the total number of historic sites recorded in the regional study area.

**Palaeontological Sites** - Previously recorded palaeontological sites in the regional study area consist of collections originating just downstream of Dunvegan, on the north side of the Peace River on the highway, and collections from British Columbia. The type section for the Dunvegan Formation is located in the Project area; finds of unionids were made within the local study area.
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Table 5  Historic site types identified by Borden Blocks in the regional study area (continued)

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<tr>
<th>Borden Block</th>
<th>Trading Posts</th>
<th>Missions</th>
<th>Homesteads</th>
<th>Cabins/Structures</th>
<th>Root Cellars</th>
<th>Campsites/Scatters/Geotech</th>
<th>Burials</th>
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<td>2</td>
<td>1</td>
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<tr>
<td>%</td>
<td>16.4%</td>
<td>3.0%</td>
<td>22.4%</td>
<td>37.3%</td>
<td>4.5%</td>
<td>11.9%</td>
<td>3.0%</td>
<td>1.5%</td>
<td>20</td>
<td></td>
<td>7.9%</td>
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</tr>
</tbody>
</table>

* One site is palaeontological

** Contains both a precontact component and historic remains

*** Contains a palaeontological site and sites with a precontact component and historic remains

Frequencies shown relate to total historic sites assigned to Borden Blocks only.
EFFECTS ASSESSMENT

LOCAL STUDY AREA

Twenty-five historical resource sites (three historic and twenty-two precontact) were identified during the Historical Resources Impact Assessment. Eleven of the precontact and all three of the historic sites are undisturbed. The remainder have been disturbed by either agricultural practices \((N = 7)\) or previous development \((N = 4)\).

Sixteen of the sites, 14 precontact and two historic sites, are not in direct conflict with the proposed development (Table 6). Two sites (GlQp 1, GlQp 15) were in direct conflict with the proposed Project as they occurred on the North Access Road/Laydown/Boat Parking areas. The proponent has elected to avoid these sites by rerouting of the North Access Road. One site (GlQq 3) may potentially be subject to erosion and/or flooding. These sites (12\% of the total number of recorded sites in the local study area) are currently undisturbed and are of sufficient historical resource value to warrant either avoidance or further study (Table 6). Two sites, GlQp 11 and GlQp 12 with high and moderate historical resource values respectively, are located immediately adjacent to proposed access roads. Avoidance of the productive areas of these sites is recommended. Because of the unknown effects of erosion, an additional two currently undisturbed sites (GlQq 2, HaQq 2) (representing 8\% of the total number of recorded sites within the local study area) with moderate to high historical resource values have been recommended for monitoring in association with the proposed project. Site HaQr 2 with high historical resource values will not be affected by the proposed project. The remaining five historical resource sites (GlQp 10, GlQp 17, GlQp 18, GlQp 19, HaQp 1) in direct conflict with the project have little historical resource value; no further study is recommended at these sites.

The trail, GlQp H2, is related to early settlement of Dunvegan and the general Peace River area. Should Powerline Alternate 2 be selected for construction, visual impact to this site would occur. Placement of the power poles along one edge of the trail is recommended to minimize visual impairment of the trail.
### Table 6  Summary of identified historical resource sites and predicted impacts

<table>
<thead>
<tr>
<th>Site Number</th>
<th>Site Type</th>
<th>Site Context</th>
<th>Project Association</th>
<th>Elevation Above River</th>
<th>Predicted Effect from Proposed Project*</th>
<th>Historical Resource Value</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>GlQp 1</td>
<td>Artifact Scatter</td>
<td>Undisturbed</td>
<td>North Access Road</td>
<td>25 m</td>
<td>Partial loss</td>
<td>High</td>
<td>Avoidance or further study</td>
</tr>
<tr>
<td>GlQp 10</td>
<td>Artifact Scatter</td>
<td>Disturbed</td>
<td>South Access Road</td>
<td>30 m</td>
<td>Loss</td>
<td>Low</td>
<td>No further study</td>
</tr>
<tr>
<td>GlQp 11</td>
<td>Campsite</td>
<td>Undisturbed</td>
<td>North Access Road</td>
<td>4 m</td>
<td>None</td>
<td>High</td>
<td>Avoidance or further study</td>
</tr>
<tr>
<td>GlQp 12</td>
<td>Campsite</td>
<td>Disturbed</td>
<td>North Access Road</td>
<td>20 m</td>
<td>None</td>
<td>Moderate</td>
<td>Avoidance or further study</td>
</tr>
<tr>
<td>GlQp 13</td>
<td>Artifact Scatter</td>
<td>Disturbed</td>
<td>North Access Road</td>
<td>20 m</td>
<td>None</td>
<td>Low</td>
<td>No further study</td>
</tr>
<tr>
<td>GlQp 15</td>
<td>Campsite</td>
<td>Undisturbed</td>
<td>North Access Road/Laydown/Boat Parking</td>
<td>20 m</td>
<td>Loss</td>
<td>High</td>
<td>Avoidance or further study</td>
</tr>
<tr>
<td>GlQp 16</td>
<td>Artifact Scatter</td>
<td>Disturbed</td>
<td>Powerline Alternate 1</td>
<td>200 m</td>
<td>None</td>
<td>Low</td>
<td>No further study</td>
</tr>
<tr>
<td>GlQp 17</td>
<td>Artifact Scatter</td>
<td>Disturbed</td>
<td>Powerline Alternate 2</td>
<td>200+ m</td>
<td>Loss</td>
<td>Low</td>
<td>No further study</td>
</tr>
<tr>
<td>GlQp 18</td>
<td>Isolated Find</td>
<td>Disturbed</td>
<td>Powerline Alternate 2</td>
<td>200+ m</td>
<td>Loss</td>
<td>Low</td>
<td>No further study</td>
</tr>
<tr>
<td>GlQp 19</td>
<td>Artifact Scatter</td>
<td>Disturbed</td>
<td>Powerline Alternate 2</td>
<td>200+ m</td>
<td>Loss</td>
<td>Low</td>
<td>No further study</td>
</tr>
<tr>
<td>GlQp 20</td>
<td>Artifact Scatter</td>
<td>Undisturbed</td>
<td>Headpond</td>
<td>200 m</td>
<td>None</td>
<td>High</td>
<td>Avoidance/no further study relative to proposed project</td>
</tr>
<tr>
<td>GlQp 21</td>
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<td>Headpond</td>
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<td>Low</td>
<td>No further study relative to proposed project</td>
</tr>
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<td>GlQq 1</td>
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<td>Headpond</td>
<td>6 m</td>
<td>Erosion?</td>
<td>Low</td>
<td>No further study</td>
</tr>
<tr>
<td>GlQq 2</td>
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<td>Undisturbed</td>
<td>Headpond</td>
<td>5 m</td>
<td>Erosion</td>
<td>Moderate</td>
<td>Monitoring/further study</td>
</tr>
<tr>
<td>GlQq 3</td>
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<td>Headpond</td>
<td>5 m</td>
<td>Flooding/erosion</td>
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<td>Further study</td>
</tr>
<tr>
<td>GlQq 4</td>
<td>Campsite</td>
<td>Undisturbed</td>
<td>Headpond</td>
<td>8 m</td>
<td>None</td>
<td>Low</td>
<td>No further study</td>
</tr>
<tr>
<td>GlQq 5</td>
<td>Campsite</td>
<td>Disturbed</td>
<td>Headpond</td>
<td>8 m</td>
<td>None</td>
<td>Unknown</td>
<td>No further study relative to proposed project</td>
</tr>
<tr>
<td>HsQp 1</td>
<td>Campsite</td>
<td>Disturbed</td>
<td>Powerline Alternate 2</td>
<td>200+ m</td>
<td>Loss</td>
<td>Moderate</td>
<td>Further study</td>
</tr>
<tr>
<td>HsQq 2</td>
<td>Campsite</td>
<td>Undisturbed</td>
<td>Headpond</td>
<td>5 m</td>
<td>None</td>
<td>Moderate</td>
<td>Monitoring/further study</td>
</tr>
<tr>
<td>HsQr 1</td>
<td>Campsite</td>
<td>Undisturbed</td>
<td>Headpond</td>
<td>30 m</td>
<td>None</td>
<td>High</td>
<td>Avoidance/no further study relative to proposed project</td>
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<td>HsQr 2</td>
<td>Artifact Scatter</td>
<td>Undisturbed</td>
<td>Headpond</td>
<td>25 m</td>
<td>None</td>
<td>High</td>
<td>Avoidance/no further study relative to proposed project</td>
</tr>
<tr>
<td>HsQr 3</td>
<td>Isolated Find</td>
<td>Disturbed</td>
<td>Headpond</td>
<td>30 m</td>
<td>None</td>
<td>Unknown</td>
<td>No further study relative to proposed project</td>
</tr>
<tr>
<td>GiQq H1</td>
<td>Homestead</td>
<td>Undisturbed</td>
<td>Headpond</td>
<td>8 m</td>
<td>None</td>
<td>Moderate</td>
<td>No further study relative to proposed project</td>
</tr>
<tr>
<td>GiQp H1</td>
<td>Geotech Site</td>
<td>Undisturbed</td>
<td>Headpond</td>
<td>35 m</td>
<td>None</td>
<td>Low</td>
<td>No further study</td>
</tr>
<tr>
<td>GiQp H2</td>
<td>Trail</td>
<td>Undisturbed</td>
<td>Powerline Alternate 2</td>
<td>100 m</td>
<td>Partial Loss/Visual Impact</td>
<td>High</td>
<td>No further study</td>
</tr>
</tbody>
</table>

* Assumes that identified alternate is selected
Even after mitigation (including recording and collection during the Historical Resources Impact Assessment), the direction of effect on the nine historical resource site within the proposed development zones will be negative; site context will be destroyed and some of the site contents will be lost. The duration of the effect will be long term and within the context of the nature of historical resources, the effect will be irreversible. However, relative to all historical resources within the local study area, the effect of the proposed project will be positive in that the sites have been recorded and added to the provincial data base and scientific data will be retrieved as a result of mitigative studies.

REGIONAL STUDY AREA

The one precontact site (GIQq 3) that potentially lies in direct conflict with the proposed Dunvegan Project represents just over 2% of the campsites recorded in Alberta and less than 2% of the campsites recorded in the regional study area. Should increased erosion/undercutting affect the two additional sites of moderate to high historical resource value, the proportional loss relative to the total number of campsites at the regional level would increase to 5.4%.

CUMULATIVE EFFECTS

Environmental effects may be cumulative through time and/or space (Northey 1994: 313). They represent those effects that are likely to result from the project and those that accrue as a result of other projects or activities that have occur in the past or will occur in the future (FEARO 1994; CEAA 1994b). Assessment of the cumulative effect of development on historical resource sites can be measured in only the broadest of terms. The inventory of historical resource sites in general area of the Dunvegan Project has been compiled primarily through impact assessment studies. As a result, the annual growth of the inventory represents an index of the cumulative effects of development on the historical resources in this portion of Alberta. The cumulative effect of non-development related impacts on historical resources
are much more difficult to measure, as they result from increased human presence, as well as clandestine collection, disturbance, and vandalism of known historical resources.

Table 7 summarizes the available information regarding cumulative effects by development on historical resource site types in the Dunvegan regional area as defined by the relevant Borden Blocks. There is a lack of information regarding site context and current disturbance in the site data available from British Columbia. Consequently, the proportion of sites which have been affected by other development, including agricultural practices, are probably under represented in the table. In this context, a minimum of approximately 33% of all precontact sites have been disturbed and loss of information has occurred. Information from only a minimum of 3% of the historic sites has been lost as a result of disturbance. In Alberta, all 17 of the isolated finds have been affected either by agriculture or by development; approximately one-half of the artifact scatters (53.5%) and the campsites (54.2%) have similarly been impacted. None of the historic sites recorded in the Alberta portion of the regional study area have been impacted by either agriculture or development.

It is not possible to predict the number of sites that might be disturbed as a result of increased human activity in areas not directly associated with these developments. Together, the number of sites for which there is recorded data available and that would be directly affected by all development projects represents approximately 30% of the existing inventory of historical resource sites within the regional study area.

**IMPACT ASSESSMENT SUMMARY**

Because of the non-renewable nature of historical resource sites and the importance of undisturbed site context to the understanding of these resources, the potential effect of the proposed Dunvegan Project on one precontact site, GIQq 3, would be adverse. In terms of the proposed project, 16 of the 25 historical resource sites identified in the local study area are not associated with the project footprint. The information acquired from these sites reflects a net gain, or positive effect, on the growth of the historical
Table 7  Summary of Cumulative Effects of development on Historical Resource Sites by Site Type

<table>
<thead>
<tr>
<th>Precontact Site Type</th>
<th>Historic Site Type</th>
<th>Number of Sites in regional study area</th>
<th>Number of Sites Affected by Proposed Project</th>
<th>Number of Sites Affected by Other Developments (including agriculture)</th>
<th>No Data</th>
<th>Total Number of Sites Affected (% of Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isolated Finds</td>
<td></td>
<td>26</td>
<td>1</td>
<td>23</td>
<td>3</td>
<td>24 (92%)</td>
</tr>
<tr>
<td>Artifact Scatters</td>
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<td>669</td>
<td>3</td>
<td>200</td>
<td>453</td>
<td>203 (30%)</td>
</tr>
<tr>
<td>Campsites</td>
<td></td>
<td>56</td>
<td>2</td>
<td>26</td>
<td>30</td>
<td>28 (50%)</td>
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<tr>
<td>Other</td>
<td></td>
<td>27</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td>778</td>
<td>6 (0.8%)</td>
<td>249 (32%)</td>
<td>486</td>
<td>255 (33%)</td>
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<td>Trading Posts</td>
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<td>11</td>
<td>0</td>
<td>1</td>
<td>10</td>
<td>1 (9%)</td>
</tr>
<tr>
<td>Homesteads</td>
<td></td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Cabins/ Structures</td>
<td></td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Root Cellars</td>
<td></td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Campsites/ Scatters/ GeoTech</td>
<td></td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Burials</td>
<td></td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1 (50%)</td>
</tr>
<tr>
<td>Trails</td>
<td></td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td>67</td>
<td>1 (1.5%)</td>
<td>2 (3%)</td>
<td>62</td>
<td>2 (3%)</td>
</tr>
<tr>
<td>No Data</td>
<td></td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>865</td>
<td>7 (0.8%)</td>
<td>251 (29%)</td>
<td>568</td>
<td>257 (30%)</td>
</tr>
</tbody>
</table>

Resource data base in the region. The precontact sites (GIQq 3) in potential conflict with the proposed headpond is associated with scientific historical resource values which require compensation studies. With the completion of mitigative studies consisting of controlled excavation at GIQq 3, loss of data will be offset by information gain. When viewed from the perspective of all archaeological sites, the magnitude of impact will not be significant. In the context of the regional data base, after mitigation studies at GIQq 3 there will be no significant adverse effects arising out of the proposed Dunvegan Project.
Given the nature of historical resources, the confidence with which the predicted impact is made (i.e. the likelihood of effects) is high. Magnitude at the site and local levels is high. Within the regional study area and relative to cumulative effects of development in the regional study area, the magnitude of impact to archaeological sites decreases significantly. Because historical resource sites are non-renewable, the duration of impact would be permanent (long term).

Successive developments in a region result in the overall attrition of information regarding the nature of historical resources and precontact lifestyles. However, the direction of effects is also positive through the contribution of information to the current body of knowledge about precontact and historic site types and distribution. Relative to the Dunvegan Project, the cumulative effect of development from past and proposed projects would result in disturbance of approximately 30% of the total number of recorded historical resource sites in the Borden Blocks analyzed. The proposed Dunvegan Project would contribute to the disturbance of less than 1% of this existing data base.

After mitigation in the context of the regional level, the effect of the proposed Dunvegan Project will not be significant. Relative to the total number of sites recorded, the number of sites avoided, the site types represented, and the positive effects that site inventory and mitigation contribute to the historical resources data base, there will be no significant environmental effect on historical resources (Table 8).
Table 8  Summary of environmental effects on historical resource sites

<table>
<thead>
<tr>
<th>Issue</th>
<th>Site</th>
<th>Mitigative Measure</th>
<th>Residual Effect</th>
<th>Direction</th>
<th>Geographic Extent</th>
<th>Duration</th>
<th>Magnitude</th>
<th>Probability</th>
<th>Confidence</th>
<th>Permanence</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GlQp 1</td>
<td>Avoidance</td>
<td>None</td>
<td>Positive</td>
<td>Local</td>
<td>N/A</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>N/A</td>
<td>Positive effect</td>
</tr>
<tr>
<td></td>
<td>GlQp 11</td>
<td>Avoidance</td>
<td>None</td>
<td>Positive</td>
<td>Local/regional</td>
<td>N/A</td>
<td>N/A</td>
<td>Unknown</td>
<td>N/A</td>
<td>Unknown</td>
<td>Positive effect</td>
</tr>
<tr>
<td></td>
<td>GlQp 12</td>
<td>Avoidance</td>
<td>None</td>
<td>Positive</td>
<td>Local</td>
<td>N/A</td>
<td>N/A</td>
<td>Unknown</td>
<td>N/A</td>
<td>Unknown</td>
<td>Positive effect</td>
</tr>
<tr>
<td></td>
<td>GlQp 15</td>
<td>Avoidance</td>
<td>None</td>
<td>Positive</td>
<td>Local/regional</td>
<td>N/A</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>N/A</td>
<td>Positive effect</td>
</tr>
<tr>
<td></td>
<td>GlQq 2</td>
<td>Monitoring</td>
<td>Loss of site context</td>
<td>Positive</td>
<td>Local</td>
<td>N/A</td>
<td>N/A</td>
<td>Unknown</td>
<td>N/A</td>
<td>Unknown</td>
<td>Positive effect</td>
</tr>
<tr>
<td></td>
<td>GlQq 3</td>
<td>Additional study</td>
<td>Loss of site context</td>
<td>Negative</td>
<td>Local</td>
<td>Long term</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>Irreversible</td>
<td>No significant adverse effect</td>
</tr>
<tr>
<td></td>
<td>HaQq 2</td>
<td>Monitoring</td>
<td>Loss of site context</td>
<td>Positive</td>
<td>Local</td>
<td>N/A</td>
<td>N/A</td>
<td>Unknown</td>
<td>N/A</td>
<td>Unknown</td>
<td>Positive effect</td>
</tr>
</tbody>
</table>
SUMMARY AND CONCLUSIONS

Glacier Power Ltd. proposes to construct a low-head run-of-river hydroelectric facility approximately three kilometers upstream from Dunvegan, Alberta. As part of the environmental studies associated with the Dunvegan Hydroelectric Project, Fedirchuk McCullough & Associates Ltd. conducted an Historical Resources Impact Assessment of the project area. Archival studies, examination of 16 archaeological target areas, and palaeontological field studies were undertaken as part of the assessment.

Twenty-five historical resource sites were identified during the archaeological field reconnaissance. These consist of 22 precontact sites and three historic period sites. The precontact sites are comprised of two isolated finds (GIQp 18, HaQr 3), nine artifact scatters (GIQp 1, GIQp 10, GIQp 13, GIQp 16, GIQp 17, GIQp 19, GIQp 20, GIQp 21, HaQr 2), and 11 campsites (GIQp 11, GIQp 12, GIQp 15, GIQq 1, GIQq 2, GIQq 3, GIQq 4, GIQq 5, HaQp 1, HaQq 2, HaQr 1). One of the historic sites is a homestead (GIQq H1), one is a recent geotechnical test site (GIQp H1), and one is a trail (GIQp H2).

Eleven of the precontact and all three of the historic sites are undisturbed. The remainder have been disturbed by either agricultural practises (N = 7) or previous development (N = 4). Sixteen of the sites, 14 precontact and two historic sites, are not in direct conflict with the proposed development. Two sites (both precontact) may be affected by erosion and undercutting by wave action.
One site (GlQq 3) would potentially be subject to erosion and/or flooding. This site is currently exposed in a cut bank and is of sufficient historical resource value to warrant further study. Because of the unknown effects of erosion, an additional two currently undisturbed sites (GlQq 2, HaQq 2) with moderate to high historical resource values have been recommended for monitoring during the project. Sites GlQp 11 and HaQr 2 reflect high historical resource values but will not be affected by the proposed project. The trail, GlQp H2, is related to early settlement of Dunvegan and the general Peace River area. Should Powerline Alternate 2 be selected for construction, visual impact to this site would occur. Placement of the power poles along one edge of the trail is recommended to minimize visual impairment of the trail. Assessment of any rerouted road or powerline alignments is recommended.

During the field assessment, in situ fossil finds (Ostrea) were found at the base of the sandstone at approximately KP 3.0. Float fossil finds of mussel coquinas were common whereas unionid shell fragments were observed on the talus slopes. No further study is recommended relative to these finds. Strata on the south side of the Peace River in the area of the South Access Road is poorly exposed; monitoring during road construction is recommended. The type section for the Dunvegan Formation lies within the proposed project area. Further study is recommended relative to the Dunvegan Formation.
References Cited

Acres Consulting Ltd., C. R. Stelck and J. Storer

Alberta Environmental Protection

Bobrowsky, P.; E. Damkjar, and T. Gibson

Borden, C. E.

Brink, J. W. and R. Dawe

Brody, H.

Brown, A. G.
Bryan, A. L.  
1983 Alberta Site Inventory Data forms, Provincial Museum of Alberta. Edmonton.  
Bryan, A. and G. Conaty  
Buchner, A. P.  
Burley, D., S. Hamilton, and K. Fladmark  
Butler, W. F.  
Canada, Department of the Interior  
Canadian Environmental Assessment Agency  
1994b The responsible authority’s guide to the Canadian Environmental Assessment Act. Environment Canada. Hull  
Canadian Northern Railway  
1913 Peace River country showing trails and settlements. Glenbow Archives. Calgary.  
Damkjar, E.  
Damkjar, E.  
1989 Historical resources impact assessment proposed Dunvegan boat launch project Section 7 of Township 80, Range 4, W6M. Consultant’s report on file, Provincial Museum of Alberta. Edmonton.

Dawson, C.  

Dawson, G. M.  

Denniston, G.  

Federal Environmental Assessment Review Office (FEARO)  

Francis, D.  

Francis, D. and M. Payne  

Gilford, D.  

Glenbow-Alberta Institute  
Green, R.

Head, T.

Hudson's Bay Company Archives
B.56.a.7 Fort Dunvegan Post Journal, Outfit 1838/39. Reel 1M42.
B.56.a.14 Fort Dunvegan Post Journal, 1866. Reel 1M42.
B.56.a.16 Fort Dunvegan Post Journals, 1895-1900. Reel 1M1002.
Outfit 1822/23 Fort Dunvegan Post Journal, Outfit 1822/23.
Outfit 1841/42 Fort Dunvegan Post Journal, Outfit 1841/42.
Outfit 1842/43 Fort Dunvegan Post Journal, Outfit 1842/43.
Outfit 1843/44 Fort Dunvegan Post Journal, Outfit 1843-44.

Klassen, R. W.

Lamb, W. K.
Larmour, J.

Le Blanc, R. and M. Wright

Leonard, D. W. and V. L. Lemieux

McCullough, E. J.

McCullough, E. J. and B. O. K. Reeves

MacGregor, J. G.

Magne, M.

Mair, C.
Mathews, W. H.

Millar, J. F. V.

Noble, W.

Northey, R.

Provincial Archives of Alberta
74.1/120 Dunvegan Journal 1839.
74.1/123 Fort Dunvegan Journals.

Pyszczyk, H. and M. M. Smith

Ridington, R.
Smith, B. J. and K. Neary

Smith, B. J., M. M. Smith, and K. M. Neary

Somerset, H. S.

Spaulding, S.

University of Alberta


Wilson, M.

Wormington, H. M. and R. G. Forbis
Take boat launch road to west of Highway 2 on south side of Peace River. Stay to the left and enter gravel pit. Follow the trail past the gravel pit for about 200 m. Site is on sloping part of road.

Cultural material was found on quite steeply sloping trail on east side of Dunvegan Creek near its mouth. Area is wooded with poplar, aspen, birch, and spruce.
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

Three pieces of debitage scattered along a bulldozed dirt trail. Material must be out of context and very likely came from above. However, this area is destroyed by a gravel pit.

15. Materials observed /collected (frequencies if possible)

<table>
<thead>
<tr>
<th>observed / collected</th>
<th>observed / collected</th>
<th>observed / collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>projectile points</td>
<td>faunal remains</td>
<td>shell</td>
</tr>
<tr>
<td>lithic tools</td>
<td>human remains</td>
<td>metal</td>
</tr>
<tr>
<td>lithic delitage</td>
<td>floral remains</td>
<td>glass</td>
</tr>
<tr>
<td>bone tools</td>
<td>tephra</td>
<td>other, specify</td>
</tr>
<tr>
<td>ceramics</td>
<td>soil samples</td>
<td></td>
</tr>
<tr>
<td>fire cracked rock</td>
<td>macrofossils</td>
<td></td>
</tr>
<tr>
<td>charcoal</td>
<td>wood</td>
<td></td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials,)

Three small debitage of black chert. No secondary modification.

   Dispositions File No. ..........................................

18. Photo/Images  yes
   Repository

19. Culture  
   [ ] Early Prehistoric  [ ] Late Prehistoric  [ ] Historic
   [ ] Middle Prehistoric  [ ] Fur Trade/Contact  [ ] Undetermined

   Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
The cultural material was found out of context on a ravine slope. Top of the slope is heavily disturbed by a gravel pit. Testing revealed no buried or intact cultural deposits. No further work recommended.
From Highway 2, take exit for Dunvegan Interpretive Centre on north side of the Peace River. Proceed west under the bridge for about 600 m to the point where the road turns north and a dirt trail heads down to the river flats. Follow this trail west for about 400 m to mouth of Hines Creek.

Site is on the west side of the mouth of Hines Creek. Up to four metres of alluvial deposits exposed along Hines Creek and Peace River. Flood plain above is wooded with poplar, birch and spruce.
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

Cultural material is sporadically and thinly distributed along bank exposures extending for 120 m along Hines Creek and 90 m along the Peace River. Bone, fire-broken rock, and debitage occur between 0.5 m and 2.0 m below surface. There are also associated cobbles which, although not modified, are likely cultural. Shovel testing back from the bank did not extend beyond 50 cm BS and did not yield any cultural material.

15. Materials observed / collected (frequencies if possible)

<table>
<thead>
<tr>
<th>observed / collected</th>
<th>observed / collected</th>
<th>observed / collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>projectile points</td>
<td>10</td>
<td>3 faunal remains</td>
</tr>
<tr>
<td>lithic tools</td>
<td>1</td>
<td>human remains</td>
</tr>
<tr>
<td>lithic debitage</td>
<td>17</td>
<td>floral remains</td>
</tr>
<tr>
<td>bone tools</td>
<td>5</td>
<td>tephra</td>
</tr>
<tr>
<td>ceramics</td>
<td>5</td>
<td>soil samples</td>
</tr>
<tr>
<td>fire cracked rock</td>
<td></td>
<td>macrofossils</td>
</tr>
<tr>
<td>charcoal</td>
<td></td>
<td>wood</td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials,)

Seventeen black chert and one quartzite debitage specimens were collected. They suggest an emphasis on primary lithic reduction of pebbles and cobbles from the river and creek beds to produce usable flakes or tools. The single quartzite flake is retouched, but otherwise, there is no secondary modification.


Dispositions File No. ........................................

18. Photo/Images  yes  Repository

19. Culture  

<table>
<thead>
<tr>
<th>Early Prehistoric</th>
<th>Late Prehistoric</th>
<th>Historic</th>
<th>Middle Prehistoric</th>
<th>Fur Trade/Contact</th>
<th>Undetermined</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
22. Estimated Dimensions  
N-S  120 m,  E-W  90 m,  Depth  2 m

23. Means of Estimating Dimensions  
☐ surface inspection  
☒ erosion exposure

24. Estimated Portion Intact  
100 %

25. Disturbance Factors (natural, human, current, potential) 

Will current development impact site  
☐ yes  ☒ no  ☐ unknown

Type of Disturbance

☐ agriculture  ☒ road/highway  ☐ coal mine  ☐ transmission line  ☐ industrial area
☐ pipeline  ☐ gravel/sand pit  ☐ oil sands  ☐ reservoir  ☐ vandalism
☐ wellsite  ☐ residential area  ☐ forestry  ☐ recreation area  ☐ erosion

Disturbance Factors Remarks

Site is close to a proposed bridge and access road for a boat launch to be built on upstream side of proposed hydroelectric weir. However, it appears this site will not be affected by the development.

26. Researcher/Permit Holder  Eric Damkjar  Date (Y/M/D)  99/9/17

27. Observed by  Eric Damkjar, J. Priegert  Date (Y/M/D)  99/9/18

28. Surface collected by  Eric Damkjar, John Priegert  Date (Y/M/D)  99/10/6

29. Tested/assessed by  Eric Damkjar, J. Priegert & Glen Horseman  Date (Y/M/D)  99/9/18

30. Excavated/mitigated by  Date (Y/M/D)  

31. Form completed by  Eric Damkjar  Date (Y/M/D)  99/10/25

32. Project name/Report Title  

33. Site Significance/Recommendations  
☐ no additional investigation required (justify):  
☒ additional investigation required (specify):

This is a significant site with multiple buried horizons. However, testing indicates the proposed bridge and road will bypass the site. Augering within the right-of-way revealed pure alluvial sediment to a depth of 2 m without buried soils. No mitigation is required in connection with the proposed development.

34. Additional Remarks  

35. Site Map
**ARCHAEOLOGICAL SITE INVENTORY DATA**

**1. Site Name:** Dunvegan 3

**2. Field No.:** Dunvegan 3

**3. Elevation:** 360

**4. N.T.S. 1:50,000 Map No. & Name:** 83 M/15 Rycroft

**5. U.T.M. Grid Zone:** 11ULM

**Easting:** 991

**Northing:** 989

**6. Legal Description:** LSD 14 Section 7 Township 80 Range 4 W of 6 M

**7. Land Owner:** L. McLaklin

**Land Owner Name/Address:**

---

**8. Access (refer to highway, road number, trail, cardinal directions, landmarks, nearest settlement, distances):**

From Highway 2, take exit for Dunvegan Interpretive Centre on north side of the Peace River. Proceed west under the bridge for about 600 m to the point where the road turns north and a dirt trail heads down to the river flats. Follow road north for about 160 m, stopping before the road ascends the valley slope. Then proceed west, on foot, following a trail for about 400 m to a playground. The site is located about 100 m west of the playground.

---

**9. Site Environment/Setting (describe in terms of drainage, slope, aspect, vegetation, soil type, landforms):**

The site is situated on a broad, low, lobe of accumulated slope wash material, which extends southward for about 150 m from the base of the valley slope. The site area is cultivated.

---

**10. Site Class:**

- [ ] prehistoric
- [ ] indigenous historic
- [ ] historic
- [ ] contemporary
- [ ] undetermined

**11. Sub Type:**

- [ ] surface
- [ ] subsurface
- [ ] underwater
- [ ] stratified
- [ ] undetermined

**12. Site Type:**

- [ ] isolated find
- [ ] quarry
- [ ] ranch
- [ ] school
- [ ] rock art
- [ ] burial
- [ ] trading post
- [ ] ceremonial/religious
- [ ] palaeoenvironmental
- [ ] police post
- [ ] industrial
- [ ] settlement
- [ ] mine
- [ ] trail
- [ ] transportation
- [ ] workshop
- [ ] homestead
- [ ] farm
- [ ] mission

**13. Features (frequencies if possible):**

- [ ] stone circle
- [ ] medicine wheel
- [ ] pit
- [ ] mound
- [ ] foundation
- [ ] effigy
- [ ] pictograph
- [ ] depression
- [ ] celler
- [ ] petroglyph
- [ ] cabin
- [ ] dump
- [ ] hearth
- [ ] house
- [ ] fence
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

Although surface exposure was limited, as the field has not been cultivated in some time, it was sufficient to reveal a surface scatter of debitage and fire-broken-rock over an area of about 0.7 ha. Surface inspection of the field identified 27 pieces of debitage from 23 find spots, primarily black chert, but also some quartzite. Four pieces of fire-broken rock were observed. One of two shovel tests in the centre of the scatter yielded 12 additional pieces of debitage and one fire-broken rock concentrated in a yellowish-brown band at 30 to 40 cm below surface. The sediments are a mixture of silt and clay with clay content increasing rapidly with depth. This test also suggested that a portion of the site may be undisturbed just below the plough zone.

15. Materials observed / collected (frequencies if possible)

<table>
<thead>
<tr>
<th>observed / collected</th>
<th>observed / collected</th>
<th>observed / collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>projectile points</td>
<td>1</td>
<td>faunal remains</td>
</tr>
<tr>
<td>lithic tools</td>
<td></td>
<td>human remains</td>
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<td>lithic delitage</td>
<td>4</td>
<td>floral remains</td>
</tr>
<tr>
<td>bone tools</td>
<td></td>
<td>tephra</td>
</tr>
<tr>
<td>ceramics</td>
<td></td>
<td>soil samples</td>
</tr>
<tr>
<td>fire cracked rock</td>
<td>1</td>
<td>macrofossils</td>
</tr>
<tr>
<td>charcoal</td>
<td></td>
<td>wood</td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials)

In total, 33 pieces of black chert, seven quartzite, and one siliceous argillite debitage. Collection includes two split pebble cores of black chert and two quartzite spalls. The remainder are flakes and shatter.

17. Collection Repository

Provincial Museum of Alberta, Archaeological Survey

Dispositions File No. ...........................................

18. Photo/Images

Yes

Repository

19. Culture

☐ Early Prehistoric ☐ Late Prehistoric ☐ Historic

☐ Middle Prehistoric ☐ Fur Trade/Contact ☒ Undetermined

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
22. Estimated Dimensions N-S 60 m, E-W 150 m, Depth .4 m
23. Means of Estimating Dimensions ☑ surface inspection ☐ erosion exposure 10 No. of shovel tests No. of backhoe tests
24. Estimated Portion Intact 100 %
25. Disturbance Factors (natural, human, current, potential)
   Will current development impact site ☐ yes ☑ no ☐ unknown
   Type of Disturbance
   ☑ agriculture ☑ road/highway ☕ coal mine ☑ transmission line ☐ industrial area
   ☑ pipeline ☑ gravel/sand pit ☕ oil sands ☑ reservoir ☐ vandalism
   ☑ wellsite ☑ residential area ☑ forestry ☑ recreation area ☑ erosion
   Disturbance Factors Remarks
   Site has been disturbed by cultivation. The currently proposed development, consisting of an access road, will be located more than 25 m north of the site.

26. Researcher/Permit Holder Eric Damkjar Date (Y/M/D) 99/9/17
27. Observed by Eric Damkjar, J. Priegert & Glen Horseman Date (Y/M/D) 99/9/18
28. Surface collected by Eric Damkjar, J. Priegert Date (Y/M/D) 99/10/6
29. Tested/assessed by Eric Damkjar, J. Priegert & Glen Horseman Date (Y/M/D) 99/9/18
30. Excavated/mitigated by ☐ Date (Y/M/D) ☐
31. Form completed by Eric Damkjar Date (Y/M/D) 99/10/26
32. Project name/Report Title ☐
33. Site Significance/Recommendations ☑ no additional investigation required (justify):
   ☐ additional investigation required (specify):
   The site will not be impacted by the proposed development so no mitigation is required. However, one positive shovel test suggests the south part of the site could be reasonably productive and contain intact deposits worth further investigation in the future.

34. Additional Remarks

35. Site Map
Access (refer to highway, road number, trail, cardinal directions, landmarks, nearest settlement, distances)

From Highway 2, take exit for Dunvegan Interpretive Centre on north side of the Peace River. Proceed west under the bridge for about 600 m to the point where the road turns north and a dirt trail heads down to the river flats. Follow road north for about 160 m, stopping before the road ascends the valley slope. Then proceed west, on foot, following a trail for about 400 m to a playground. The site is located about 250 m west of the playground in a small open field.

Site Environment/Setting (describe in terms of drainage, slope, aspect, vegetation, soil type, landforms)

The site is situated on a narrow, low, lobe of accumulated slope wash material, which extends southward for about 150 m from the base of the valley slope. The site area is cultivated.
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

Two small black chert flakes were found 12 m apart in the centre of the field. Three shovel tests revealed a thin humic mat, supporting hay and weeds, over a 25 cm thick dark brown plough zone of almost pure clay. Below this is yellowish brown clay with a few small pebbles to the base of the tests at 40-50 cm below surface. All three tests were negative. This site is not considered just an extension of GIQp-12 since the two are separated by a small north-south gully.

15. Materials observed /collected (frequencies if possible)

<table>
<thead>
<tr>
<th>observed / collected</th>
<th>observed / collected</th>
<th>observed / collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>projectile points</td>
<td>faunal remains</td>
<td>shell</td>
</tr>
<tr>
<td>lithic tools</td>
<td>human remains</td>
<td>metal</td>
</tr>
<tr>
<td>lithium delitage</td>
<td>floral remains</td>
<td>glass</td>
</tr>
<tr>
<td>bone tools</td>
<td>tephra</td>
<td>other, specify</td>
</tr>
<tr>
<td>ceramics</td>
<td>soil samples</td>
<td></td>
</tr>
<tr>
<td>fire cracked rock</td>
<td>macrofossils</td>
<td></td>
</tr>
<tr>
<td>charcoal</td>
<td>wood</td>
<td></td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials,)


Dispositions File No. ........................................

18. Photo/Images  Repository

19. Culture  

<table>
<thead>
<tr>
<th>Early Prehistoric</th>
<th>Late Prehistoric</th>
<th>Historic</th>
<th>Middle Prehistoric</th>
<th>Fur Trade/Contact</th>
<th>Undetermined</th>
</tr>
</thead>
</table>

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
22. Estimated Dimensions

<table>
<thead>
<tr>
<th>Direction</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-S</td>
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</tr>
<tr>
<td>E-W</td>
<td>10 m</td>
</tr>
</tbody>
</table>

23. Means of Estimating Dimensions

- ☑ surface inspection
- ☐ erosion exposure

24. Estimated Portion Intact

<table>
<thead>
<tr>
<th>Portion</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>0</td>
</tr>
</tbody>
</table>

25. Disturbance Factors (natural, human, current, potential)

- ☑ agriculture
- ☐ road/highway
- ☐ coal mine
- ☐ transmission line
- ☐ industrial area
- ☐ pipeline
- ☐ gravel/sand pit
- ☐ oil sands
- ☐ reservoir
- ☐ vandalism
- ☐ wellsite
- ☐ residential area
- ☐ forestry
- ☐ recreation area
- ☐ erosion

26. Researcher/Permit Holder

<table>
<thead>
<tr>
<th>Name</th>
<th>Date (Y/M/D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eric Damkjar</td>
<td>99/9/17</td>
</tr>
</tbody>
</table>

27. Observed by

<table>
<thead>
<tr>
<th>Name</th>
<th>Date (Y/M/D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eric Damkjar, J. Priegert &amp; Glen Horseman</td>
<td>99/9/18</td>
</tr>
</tbody>
</table>

28. Surface collected by

<table>
<thead>
<tr>
<th>Name</th>
<th>Date (Y/M/D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eric Damkjar, J. Priegert</td>
<td>99/10/6</td>
</tr>
</tbody>
</table>

29. Tested/assessed by

<table>
<thead>
<tr>
<th>Name</th>
<th>Date (Y/M/D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eric Damkjar, J. Priegert</td>
<td>99/10/6</td>
</tr>
</tbody>
</table>

30. Excavated/mitigated by

<table>
<thead>
<tr>
<th>Name</th>
<th>Date (Y/M/D)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

31. Form completed by

<table>
<thead>
<tr>
<th>Name</th>
<th>Date (Y/M/D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eric Damkjar</td>
<td>99/10/27</td>
</tr>
</tbody>
</table>

32. Project name/Report Title

<table>
<thead>
<tr>
<th>Name</th>
<th>Date (Y/M/D)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

33. Site Significance/Recommendations

- ☑ no additional investigation required (justify): 
- ☐ additional investigation required (specify):

This appears to be a very small, disturbed site.

34. Additional Remarks

<table>
<thead>
<tr>
<th>Name</th>
<th>Date (Y/M/D)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
From Highway 2, take exit for Dunvegan Interpretive Centre on north side of the Peace River. Proceed west under the bridge for about 600 m to the point where the road turns north and a dirt trail heads down to the river flats. Follow road north for about 160 m, stopping before the road ascends the valley slope. Then proceed west, on foot, following a trail for about 400 m to a playground. The site is located about 400 m west of the playground along the edge of the Hines Creek ravine.

The site is situated on a narrow, low, lobe of accumulated slope wash material, which extends along the east edge of the Hines Creek ravine. The southern portion appears to be a natural, south-facing, meadow, while the higher north portion supports large spruce and poplar trees. Erosion from Hines Creek has left a steep scarp along the west side which obviously post-dates the main body of this topographic feature.

<table>
<thead>
<tr>
<th>Site Class</th>
<th>Sub Type</th>
<th>Features (frequencies if possible)</th>
</tr>
</thead>
<tbody>
<tr>
<td>prehistoric</td>
<td>surface</td>
<td>stone circle, cairn, stone arc, stone line, drive lane, medicine wheel, pit, mound, depression, cabin, house, hearth, depression, pit, mound, effigy, pictograph, petroglyph, hearth, foundation, cellar, dump, fence</td>
</tr>
<tr>
<td>historic</td>
<td>subsurface</td>
<td>structure</td>
</tr>
<tr>
<td>contemporary</td>
<td>underwater</td>
<td>Other Features:</td>
</tr>
<tr>
<td>undetermined</td>
<td>stratified</td>
<td></td>
</tr>
<tr>
<td></td>
<td>undetermined</td>
<td></td>
</tr>
<tr>
<td></td>
<td>single component</td>
<td></td>
</tr>
<tr>
<td></td>
<td>multi component</td>
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<td></td>
<td>undetermined</td>
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</tr>
<tr>
<td></td>
<td>3 or more # components</td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

8. Access (refer to highway, road number, trail, cardinal directions, landmarks, nearest settlement, distances)

9. Site Environment/Setting (describe in terms of drainage, slope, aspect, vegetation, soil type, landforms)
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

Twenty shovel tests were excavated, 13 of which yielded cultural material. In all, 212 lithic debitage specimens were recovered, consisting of 197 black chert, 13 quartzite, one pink chert, and one chalcedony. The assemblage includes four large pebble cores but no formed tools or retouched flakes. Positive tests occur in the south and west parts of the assessed area, allowing us to define a site area of approximately 0.6 ha. Within this, three concentrations were found — test 1, test 4, and tests 13 and 14. There is no doubt, however, that other concentrations exist. The site is undisturbed apart from erosion along the ravine edge. Soil profiles reveal a thin dark grey silty clay (loam) over heavy clay with a very blocky structure. Buried soils are faintly visible which seem to correspond with three cultural horizons within the top 40-60 cm. Generally, cultural material is more deeply buried in the north part of the site, compared with the south. Most of the material appears to come from the lowest horizon. There is no faunal preservation. Ten pieces of large mammal longbone from Test 16 does not appear to be associated with the lithics.

15. Materials observed / collected (frequencies if possible)

<table>
<thead>
<tr>
<th>observed / collected</th>
<th>observed / collected</th>
<th>observed / collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>projectile points</td>
<td>10</td>
<td>faunal remains</td>
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<tr>
<td>lithic tools</td>
<td></td>
<td>human remains</td>
</tr>
<tr>
<td>21/2</td>
<td></td>
<td>floral remains</td>
</tr>
<tr>
<td>lithic delitage</td>
<td></td>
<td>glass</td>
</tr>
<tr>
<td>bone tools</td>
<td></td>
<td>tephra</td>
</tr>
<tr>
<td>ceramics</td>
<td></td>
<td>other, specify</td>
</tr>
<tr>
<td>fire cracked rock</td>
<td></td>
<td>macrofossils</td>
</tr>
<tr>
<td>charcoal</td>
<td></td>
<td>wood</td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials,)

No recognizable features or fire-broken rock were encountered. Thus, we can tentatively identify this as a workshop site where pebbles and cobbles from the creek and river beds were flaked. However, further investigations will likely reveal a broader range of activities at the site.


Dispositions File No. .................................

18. Photo/Images  Repository

19. Culture

- Early Prehistoric
- Late Prehistoric
- Historic
- Middle Prehistoric
- Fur Trade/Contact
- Undetermined

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
22. Estimated Dimensions  
   N-S  150 m, E-W 70 m, Depth .6 m

23. Means of Estimating Dimensions  
   ☐ surface inspection  ☐ erosion exposure

24. Estimated Portion Intact  75 %

25. Disturbance Factors (natural, human, current, potential)
   Will current development impact site  ☑ yes  ☐ no  ☐ unknown
   Type of Disturbance
   ☐ agriculture  ☑ road/highway  ☐ coal mine  ☐ transmission line  ☐ industrial area
   ☐ pipeline  ☐ gravel/sand pit  ☐ oil sands  ☐ reservoir  ☐ vandalism
   ☐ wellsite  ☐ residential area  ☐ forestry  ☐ recreation area  ☐ erosion

26. Researcher/Permit Holder  Eric Damkjar  Date (Y/M/D) 99/9/17

27. Observed by  Eric Damkjar, J. Priegert & Glen Horseman  Date (Y/M/D) 99/9/30

28. Surface collected by  Date (Y/M/D)

29. Tested/assessed by  Eric Damkjar, J. Priegert & Glen Horseman  Date (Y/M/D) 99/10/3

30. Excavated/mitigated by  Date (Y/M/D)

31. Form completed by  Eric Damkjar  Date (Y/M/D) 99/10/25

32. Project name/Report Title

33. Site Significance/Recommendations  ☐ no additional investigation required (justify):
   ☑ additional investigation required (specify):
   Testing indicates that this is a significant site. It is undisturbed, relatively productive, multi-component, and stratified. Although no formed tools were found during our assessment, the prospect for finding such artifacts is good. Mitigation of this site will be necessary.

34. Additional Remarks

35. Site Map
From Highway 2, take exit for Dunvegan Interpretive Centre on north side of the Peace River. Proceed west under the bridge for about 600 m to the point where the road turns north and a dirt trail heads down to the river flats. Follow this trail west for about 400 m to mouth of Hines Creek. From there, walk about 200 m west of Hines Creek mouth, along Peace River. Then, follow a path north for about 100 m. Site is in wooded area, just south of clearing.

Before reaching its mouth, Hines Creek meanders around a large lobe of talus and slope wash extending southeastward from the juncture of the river valley and creek ravine. At the base of the valley slope, open grass grades to closed poplar and spruce forest. The site is situated in the wooded area.
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

Five of eight shovel tests were positive, allowing us to define a site area of approximately 275 m2. Shovel tests extended to about 40 cm below surface where clay and ironstone nodules were encountered. At least two buried soils are visible in the dry, blocky, clay matrix and each has an associated archaeological component. There may be a third sparse component just above the clay and ironstone base. The upper component yielded stone debitage, an endscraper, bone, and fire-broken rock. It is quite shallow at 10 – 15 cm below surface. The good bone preservation suggests that it is not as old as other components in the Hines Creek area. The second component, at 20-25 cm below surface, was the most productive, in terms of stone debitage. The third component, at 35-40 cm below surface, contained only a few pieces of debitage.

15. Materials observed / collected (frequencies if possible)

<table>
<thead>
<tr>
<th>observed / collected</th>
<th>observed / collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>projectile points</td>
<td>faunal remains</td>
</tr>
<tr>
<td>1 lithic tools</td>
<td>human remains</td>
</tr>
<tr>
<td>lithic delitage</td>
<td>floral remains</td>
</tr>
<tr>
<td>bone tools</td>
<td>tephras</td>
</tr>
<tr>
<td>ceramics</td>
<td>soil samples</td>
</tr>
<tr>
<td>fire cracked rock</td>
<td>macrofossils</td>
</tr>
<tr>
<td>charcoal</td>
<td>wood</td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials.)

Tests 1 to 4 yielded a total of 101 pieces of black chert debitage, two black chert cores, four pieces of quartzite debitage, one black chert endscrapper, 18 pieces of bone, and several pieces of fire-broken rock. Test 5 yielded only fire-broken rock. Test 4 was the most productive with 80 items.

17. Collection Repository Province Museum of Alberta, Archaeological Survey

Dispositions File No. __________________________

18. Photo/Images Repository

19. Culture

- Early Prehistoric
- Late Prehistoric
- Historic
- Middle Prehistoric
- Fur Trade/Contact
- Undetermined

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
22. Estimated Dimensions   N-S 20 m, E-W 20 m, Depth .4 m
23. Means of Estimating Dimensions  X surface inspection 8 No. of shovel tests
                              X erosion exposure  No. of backhoe tests
24. Estimated Portion Intact 100 %
25. Disturbance Factors (natural, human, current, potential)

<table>
<thead>
<tr>
<th>Type of Disturbance</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>agriculture</td>
<td>no</td>
</tr>
<tr>
<td>pipeline</td>
<td>no</td>
</tr>
<tr>
<td>wellsite</td>
<td>no</td>
</tr>
<tr>
<td>road/highway</td>
<td>yes</td>
</tr>
<tr>
<td>coal mine</td>
<td>no</td>
</tr>
<tr>
<td>gravel/sand pit</td>
<td>no</td>
</tr>
<tr>
<td>oil sands</td>
<td>no</td>
</tr>
<tr>
<td>reservoir</td>
<td>no</td>
</tr>
<tr>
<td>forestry</td>
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</tr>
<tr>
<td>recreation area</td>
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<tr>
<td>industrial area</td>
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<td>transmission line</td>
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<td>agriculture</td>
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<td>pipeline</td>
<td>no</td>
</tr>
<tr>
<td>wellsite</td>
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<td>road/highway</td>
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<td>coal mine</td>
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<tr>
<td>gravel/sand pit</td>
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<td>reservoir</td>
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<td>industrial area</td>
<td>no</td>
</tr>
<tr>
<td>transmission line</td>
<td>no</td>
</tr>
<tr>
<td>vandalism</td>
<td>no</td>
</tr>
</tbody>
</table>

Disturbance Factors Remarks

The site area is proposed for a laydown area and boat parking as part of the North Access Road for the Dunvegan Power Plant project. Based on present information, the site will be entirely destroyed by the development.

26. Researcher/Permit Holder  Eric Damkjar Date (Y/M/D) 99/9/17
27. Observed by              Eric Damkjar, J. Priegert & Glen Horseman Date (Y/M/D) 99/9/30
28. Surface collected by     Date (Y/M/D)
29. Tested/assessed by        Eric Damkjar, J. Priegert & Glen Horseman Date (Y/M/D) 99/10/3
30. Excavated/mitigated by    Date (Y/M/D)
31. Form completed by         Eric Damkjar Date (Y/M/D) 99/10/27
32. Project name/Report Title

33. Site Significance/Recommendations

This is a significant site, which will be directly impacted by the proposed development. It is undisturbed, relatively productive, includes bone preservation, is multi-component, and stratified. Mitigation of this site will be necessary.

34. Additional Remarks

35. Site Map
8. Access (refer to highway, road number, trail, cardinal directions, landmarks, nearest settlement, distances)

Take first exit to east of Highway 2, 4.6 km south of Dunvegan Bridge. Drive 1.67 km to northeast and, then, take trail to east along municipal district boundary for 300 m to north-south fenceline running down centre of Section 6. Follow fenceline north for 900 m. Site is on trail about 50 east of fenceline.

9. Site Environment/Setting (describe in terms of drainage, slope, aspect, vegetation, soil type, landforms)

Dirt trail through gently rolling cultivated field on south edge of Peace River valley.

10. Site Class

- prehistoric
- indigenous historic
- historic
- contemporary
- undetermined

11. Sub Type

- surface
- subsurface
- underwater
- stratified
- undetermined

12. Site Type

- isolated find
- scatter (<10)
- scatter (>10)
- campsite
- stone feature
- killsite
- workshop
- quarry
- rock art
- burial
- palaeoenvironmental
- settlement
- homestead
- farm
- ranch
- dwelling
- trading post
- police post
- mine
- trail
- mission
- school
- urban
- industrial
- transportation
- ceremonial/religious

13. Features (frequencies if possible)

- stone circle
- cairn
- stone arc
- stone line
- drive lane
- medicine wheel
- effigy
- pictograph
- petroglyph
- hearth
- pit
- mound
- depression
- cabin
- house
- foundation
- cellar
- dump
- fence

- Other Features:
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

Two black chert flakes were found on a dirt trail about 50 m east of the proposed Powerline Route.

15. Materials observed /collected (frequencies if possible)

<table>
<thead>
<tr>
<th>observed / collected</th>
<th>observed / collected</th>
<th>observed / collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>projectile points</td>
<td>faunal remains</td>
<td>shell</td>
</tr>
<tr>
<td>lithic tools</td>
<td>human remains</td>
<td>metal</td>
</tr>
<tr>
<td>lithic delitage</td>
<td>floral remains</td>
<td>glass</td>
</tr>
<tr>
<td>bone tools</td>
<td>tephra</td>
<td>other, specify</td>
</tr>
<tr>
<td>ceramics</td>
<td>soil samples</td>
<td></td>
</tr>
<tr>
<td>fire cracked rock</td>
<td>macrofossils</td>
<td></td>
</tr>
<tr>
<td>charcoal</td>
<td>wood</td>
<td></td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials)


Dispositions File No.  ..............................................

18. Photo/Images  Repository

19. Culture

- Early Prehistoric
- Late Prehistoric
- Historic
- Middle Prehistoric
- Fur Trade/Contact
- Undetermined

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
22. Estimated Dimensions | N-S | 5 m | E-W | 10 m | Depth | m

23. Means of Estimating Dimensions
   - ☑ surface inspection
   - ☐ erosion exposure
   - No. of shovel tests
   - No. of backhoe tests

24. Estimated Portion Intact | 0 %

25. Disturbance Factors (natural, human, current, potential)
   - Will current development impact site: ☑ yes ☐ no ☐ unknown
   - Type of Disturbance
     - ☑ agriculture
     - ☐ road/highway
     - ☐ coal mine
     - ☐ transmission line
     - ☐ industrial area
     - ☐ pipeline
     - ☐ gravel/sand pit
     - ☐ oil sands
     - ☐ reservoir
     - ☐ vandalism
     - ☐ wellsite
     - ☐ residential area
     - ☐ forestry
     - ☐ recreation area
     - ☐ erosion

Disturbance Factors Remarks
This is a small, disturbed, site off the proposed right-of-way and is of no concern for this development.

26. Researcher/Permit Holder | Eric Damkjær | Date (Y/M/D) | 99/9/17
27. Observed by | Eric Damkjær | Date (Y/M/D) | 99/10/4
28. Surface collected by | Eric Damkjær | Date (Y/M/D) | 99/10/4
29. Tested/assessed by | Date (Y/M/D)
30. Excavated/mitigated by | Date (Y/M/D)
31. Form completed by | Eric Damkjær | Date (Y/M/D) | 99/11/1
32. Project name/Report Title

33. Site Significance/Recommendations
   - ☑ no additional investigation required (justify):
   - ☐ additional investigation required (specify):

Site area is cultivated and has a trail running through it. Despite excellent surface visibility, very little cultural material was found.

34. Additional Remarks

35. Site Map
Take first road to west from Highway 2 north of Peace River Valley. Drive west for 3.2 km until road turns to south. Site is in cultivated field southeast of the corner.

Slightly undulating cultivated field about 700 m east of Hines Creek ravine and a similar distance north of Peace River valley.
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

Two black chert flakes were recovered from a cultivated field. The slightly undulating field was recently ploughed, offering excellent surface visibility.

15. Materials observed /collected (frequencies if possible)

<table>
<thead>
<tr>
<th>observed / collected</th>
<th>observed / collected</th>
<th>observed / collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>projectile points</td>
<td>faunal remains</td>
<td>shell</td>
</tr>
<tr>
<td>lithic tools</td>
<td>human remains</td>
<td>metal</td>
</tr>
<tr>
<td>lithic delitage</td>
<td>floral remains</td>
<td>glass</td>
</tr>
<tr>
<td>bone tools</td>
<td>tephrá</td>
<td>other, specify</td>
</tr>
<tr>
<td>ceramics</td>
<td>tephra</td>
<td></td>
</tr>
<tr>
<td>fire cracked rock</td>
<td>soil samples</td>
<td></td>
</tr>
<tr>
<td>charcoal</td>
<td>macrofossils</td>
<td></td>
</tr>
<tr>
<td>wood</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials,)


Dispositions File No.  ........................................

18. Photo/Images  Repository

19. Culture  

- Early Prehistoric  
- Late Prehistoric  
- Middle Prehistoric  
- Fur Trade/Contact  
- Historic  
- Undetermined  

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
22. Estimated Dimensions | N-S | 5 m, E-W | 10 m, Depth | m

23. Means of Estimating Dimensions
- [ ] surface inspection
- [ ] erosion exposure

24. Estimated Portion Intact | 0 %

25. Disturbance Factors (natural, human, current, potential)

<table>
<thead>
<tr>
<th>Type of Disturbance</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>agriculture</td>
<td>yes</td>
</tr>
<tr>
<td>road/highway</td>
<td>no</td>
</tr>
<tr>
<td>coal mine</td>
<td>unknown</td>
</tr>
<tr>
<td>transmission line</td>
<td>yes</td>
</tr>
<tr>
<td>industrial area</td>
<td>no</td>
</tr>
<tr>
<td>pipeline</td>
<td>unknown</td>
</tr>
<tr>
<td>gravel/sand pit</td>
<td>yes</td>
</tr>
<tr>
<td>oil sands</td>
<td>no</td>
</tr>
<tr>
<td>reservoir</td>
<td>yes</td>
</tr>
<tr>
<td>vandalism</td>
<td>no</td>
</tr>
<tr>
<td>wells site</td>
<td>yes</td>
</tr>
<tr>
<td>residential area</td>
<td>no</td>
</tr>
<tr>
<td>forestry</td>
<td>yes</td>
</tr>
<tr>
<td>recreation area</td>
<td>no</td>
</tr>
<tr>
<td>erosion</td>
<td>yes</td>
</tr>
</tbody>
</table>

Disturbance Factors Remarks

Although there is no remaining evidence, the 1990 NTS map (83 M/15) indicates a well site at this location. Combined with the cultivation, this is obviously a disturbed site. Moreover, it is very likely that the powerline would be located across the road from this site. This site is of no concern for this development.

26. Researcher/Permit Holder | Eric Damkjär | Date (Y/M/D) | 99/9/17
27. Observed by | Eric Damkjär, J. Priegert & Glen Horseman | Date (Y/M/D) | 99/9/30
28. Surface collected by | Eric Damkjär, J. Priegert & Glen Horseman | Date (Y/M/D) | 99/9/30
29. Tested/assessed by | | Date (Y/M/D) |
30. Excavated/mitigated by | | Date (Y/M/D) |
31. Form completed by | Eric Damkjär | Date (Y/M/D) | 99/11/2
32. Project name/Report Title | | |

33. Site Significance/Recommendations
- [ ] no additional investigation required (justify):
- [ ] additional investigation required (specify):

The site is very small and heavily disturbed. There is no evidence to support a need for further investigations.

34. Additional Remarks

35. Site Map
**ARCHAEOLOGICAL SITE INVENTORY DATA**

Return to: Archaeological Inventory and Permit Coordinator
Archaeological Survey, 8820 - 112 St.
Edmonton, Alberta T6G 2P8

Update/Revisit Date:

<table>
<thead>
<tr>
<th>1. Site Name</th>
<th>2. Field No.</th>
<th>Dunvegan 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Elevation</td>
<td>4. N.T.S. 1:50,000 Map No. &amp; Name</td>
<td>565</td>
</tr>
<tr>
<td>5. U.T.M. Grid Zone</td>
<td>Easting</td>
<td>Northing</td>
</tr>
<tr>
<td>11UMN</td>
<td>0155</td>
<td>0045</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>6. Legal Description: LSD</th>
<th>Section</th>
<th>Township</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSD 1</td>
<td>20</td>
<td>80</td>
<td>4 W of 6 M</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. Land Owner</th>
<th>D.J.C. Winter</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>8. Access (refer to highway, road number, trail, cardinal directions, landmarks, nearest settlement, distances)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take first road to west from Highway 2 north of Peace River Valley. Drive west for 1.8 km. Site is on a small ridge on the north side of the road.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. Site Environment/Setting (describe in terms of drainage, slope, aspect, vegetation, soil type, landforms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A small ridge located in an area of undulating terrain about 1 km back from the edge of the Peace River valley has been bisected by an east-west section road. Additionally, the north portion of the ridge remnant has been cleared and lightly bladed recently in conjunction with the installation of a fence</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10. Site Class</th>
<th>11. Sub Type</th>
<th>12. Site Type</th>
<th>13. Features (frequencies if possible)</th>
</tr>
</thead>
<tbody>
<tr>
<td>prehistoric</td>
<td>surface</td>
<td>isolated find</td>
<td>stone circle</td>
</tr>
<tr>
<td>indigenous historic</td>
<td>subsurface</td>
<td>quarry</td>
<td>caign</td>
</tr>
<tr>
<td>historic</td>
<td>underwater</td>
<td>rock art</td>
<td>stone arc</td>
</tr>
<tr>
<td>contemporary</td>
<td>stratified</td>
<td>burial</td>
<td>stone line</td>
</tr>
<tr>
<td>undetermined</td>
<td>undetermined</td>
<td>palaeoenvironmental</td>
<td>drive lane</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12. Site Type</th>
<th>13. Features (frequencies if possible)</th>
</tr>
</thead>
<tbody>
<tr>
<td>isolated find</td>
<td>stone circle</td>
</tr>
<tr>
<td>quarry</td>
<td>medicine wheel</td>
</tr>
<tr>
<td>rock art</td>
<td>pit</td>
</tr>
<tr>
<td>burial</td>
<td>mound</td>
</tr>
<tr>
<td>palaeoenvironmental</td>
<td>mound</td>
</tr>
<tr>
<td>trading post</td>
<td>foundation</td>
</tr>
<tr>
<td>police post</td>
<td>...</td>
</tr>
<tr>
<td>industrial</td>
<td>school</td>
</tr>
<tr>
<td>transportation</td>
<td>urban</td>
</tr>
<tr>
<td>mission</td>
<td>school</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>13. Features (frequencies if possible)</th>
<th>Other Features:</th>
</tr>
</thead>
<tbody>
<tr>
<td>stone circle</td>
<td>Other Features:</td>
</tr>
<tr>
<td>medicine wheel</td>
<td></td>
</tr>
<tr>
<td>pit</td>
<td></td>
</tr>
<tr>
<td>mound</td>
<td></td>
</tr>
<tr>
<td>depression</td>
<td></td>
</tr>
<tr>
<td>cabin</td>
<td></td>
</tr>
<tr>
<td>dump</td>
<td></td>
</tr>
<tr>
<td>house</td>
<td></td>
</tr>
<tr>
<td>fence</td>
<td></td>
</tr>
</tbody>
</table>

- 2 -
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

An isolated projectile point was found on the east slope of the ridge. Scrutiny of the well exposed surface and five shovel tests did not reveal any other cultural material.

15. Materials observed /collected (frequencies if possible)

<table>
<thead>
<tr>
<th>observed / collected</th>
<th>1 projectile points</th>
<th>faunal remains</th>
<th>shell</th>
</tr>
</thead>
<tbody>
<tr>
<td>lithic tools</td>
<td></td>
<td>human remains</td>
<td>metal</td>
</tr>
<tr>
<td>lithic delitage</td>
<td></td>
<td>floral remains</td>
<td>glass</td>
</tr>
<tr>
<td>bone tools</td>
<td></td>
<td>tephra</td>
<td>other, specify</td>
</tr>
<tr>
<td>ceramics</td>
<td></td>
<td>soil samples</td>
<td></td>
</tr>
<tr>
<td>fire cracked rock</td>
<td></td>
<td>macrofossils</td>
<td></td>
</tr>
<tr>
<td>charcoal</td>
<td></td>
<td>wood</td>
<td></td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials,)

The black chert point is small, with a triangular blade portion, slightly expanding stem, and straight base. It is reminiscent of Late Prehistoric Athapaskan styles reported from the Northwest Territories (Noble 1971, 1977, 1981).


Dispositions File No. ........................................

18. Photo/Images Repository

19. Culture  

- Early Prehistoric
- Middle Prehistoric
- Late Prehistoric
- Fur Trade/Contact
- Historic
- Undetermined

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

Late Prehistoric Athapaskan based on projectile point.

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
33. Site Significance/Recommendations

The recovery of a diagnostic artifact is always a significant find. However, in this case, the site is already disturbed and there does not appear to be other associated material. Recovery and documentation of this find has provided adequate mitigation. No further investigations are recommended.

34. Additional Remarks
**ARCHAEOLOGICAL SITE INVENTORY DATA**

### Return to:
Archaeological Inventory and Permit Coordinator  
Archaeological Survey, 8820 - 112 St.  
Edmonton, Alberta  T6G 2P8

### Update/Revisit Date:

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Site Name</td>
<td></td>
<td>2. Field No.</td>
<td>Dunvegan 14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Elevation</td>
<td>565</td>
<td>4. N.T.S. 1:50,000 Map No. &amp; Name</td>
<td>83 M/15 Rycroft</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. U.T.M. Grid Zone</td>
<td>11UMN</td>
<td>Easting</td>
<td>0215</td>
<td>Northing</td>
<td>0540</td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Legal Description: LSD</td>
<td></td>
<td>Section</td>
<td>4</td>
<td>Township</td>
<td>81</td>
<td>Range</td>
</tr>
<tr>
<td>7. Land Owner</td>
<td>A. Caspar</td>
<td>Land Owner Name/Address</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Drive west 1.4 km on township road from Highway 2. Site is on north side of road.**

**9. Site Environment/Setting (describe in terms of drainage, slope, aspect, vegetation, soil type, landforms)**

This site is situated in a very slightly undulating cultivated field with good surface visibility. Hines Creek ravine begins about 150 m to the northwest.

**10. Site Class**
- ☑ prehistoric
- ☐ indigenous historic
- ☐ historic
- ☐ contemporary
- ☐ undetermined

**11. Sub Type**
- ☑ surface
- ☐ subsurface
- ☐ underwater
- ☐ stratified
- ☐ undetermined

**12. Site Type**
- ☑ isolated find
- ☐ quarry
- ☐ ranch
- ☐ school
- ☐ rock art
- ☐ dwelling
- ☐ urban
- ☐ burial
- ☐ trading post
- ☐ ceremonial/religious
- ☐ campsite
- ☐ industrial
- ☐ stone feature
- ☐ police post
- ☐ transportation
- ☐ stone feature
- ☐ settlement
- ☐ mine
- ☐ trail
- ☐ workshop
- ☐ homestead
- ☐ mission

**13. Features**
- ☑ stone circle
- ☑ medicine wheel
- ☑ pit
- ☐ structure
- ☐ foundation
- ☐ Other Features:

**14. Features (frequencies if possible)**
- ☑ stone cairn
- ☑ effigy
- ☐ structure
- ☐ foundation
- ☐ Other Features:
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

A biface tip fragment (37.5 mm by 31.4 mm by 6.8 mm) and a small flake, both of black chert, were surface collected. The biface tip has a few small flake scars on one face originating from the snapped bottom edge, possibly indicating use or continued modification after it broke.

15. Materials observed /collected (frequencies if possible)

<table>
<thead>
<tr>
<th>observed / collected</th>
<th>observed / collected</th>
<th>observed / collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>projectile points</td>
<td>faunal remains</td>
<td>shell</td>
</tr>
<tr>
<td>1 lithic tools</td>
<td>human remains</td>
<td>metal</td>
</tr>
<tr>
<td>..................</td>
<td>..................</td>
<td>..................</td>
</tr>
<tr>
<td>lithic delitage</td>
<td>floral remains</td>
<td>glass</td>
</tr>
<tr>
<td>..................</td>
<td>..................</td>
<td>..................</td>
</tr>
<tr>
<td>bone tools</td>
<td>tephra</td>
<td>other, specify</td>
</tr>
<tr>
<td>ceramics</td>
<td>soil samples</td>
<td></td>
</tr>
<tr>
<td>fire cracked rock</td>
<td>macrofossils</td>
<td></td>
</tr>
<tr>
<td>charcoal</td>
<td>wood</td>
<td></td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials,)

17. Collection Repository

Dispositions File No. ..............................

18. Photo/Images Repository

19. Culture

☐ Early Prehistoric  ☐ Late Prehistoric  ☐ Historic

☐ Middle Prehistoric  ☐ Fur Trade/Contact  ☒ Undetermined

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
22. Estimated Dimensions  
   N-S  10  m,  E-W  20  m,  Depth  m

23. Means of Estimating Dimensions  
   ☑ surface inspection  
   ☐ erosion exposure

24. Estimated Portion Intact  0  %

25. Disturbance Factors (natural, human, current, potential)

<table>
<thead>
<tr>
<th>Type of Disturbance</th>
</tr>
</thead>
</table>
| ☐ agriculture  
| ☐ pipeline  
| ☐ wellsite  
| ☐ road/highway  
| ☐ gravel/sand pit  
| ☐ coal mine  
| ☐ oil sands  
| ☐ reservoir  
| ☐ forestry  
| ☐ recreation area  
| ☐ erosion  
| ☐ transmission line  
| ☐ industrial area  
| ☐ vandalism |

26. Researcher/Permit Holder  Eric Damkjar  Date (Y/M/D)  99/9/17

27. Observed by  Eric Damkjar, J. Priegert & Glen Horseman  Date (Y/M/D)  99/9/30

28. Surface collected by  Eric Damkjar, J. Priegert & Glen Horseman  Date (Y/M/D)  99/9/30

29. Tested/assessed by  Eric Damkjar, J. Priegert & Glen Horseman  Date (Y/M/D)  99/9/30

30. Excavated/mitigated by  Date (Y/M/D)  

31. Form completed by  Eric Damkjar  Date (Y/M/D)  99/11/4

32. Project name/Report Title  

33. Site Significance/Recommendations  
   ☑ no additional investigation required (justify):  
   ☐ additional investigation required (specify):

This site is heavily disturbed by cultivation and a pipeline development a few metres to the east. Surface examination and five shovel tests revealed no further cultural material.

34. Additional Remarks  

35. Site Map
Permit No. 99-111

N.T.S. 1:50,000 Map Inset
Map No.: 83 M/15 Rycroft

Legend

- find spot
- positive test
- negative test
- site area

approximate powerline RoW

very slight ridge

ditch

road

15 m sided pipeline right-of-way
From the mouth of Hines Creek, walk up the north bank of the Peace River for 1.4 km. Then, ascend to the top of the valley to site.

From the mouth of Hines Creek, walk up the north bank of the Peace River for 1.4 km. Then, ascend to the top of the valley to site.

Level to slightly sloping native prairie on the Peace River valley edge, about 1.4 km west of the Hines Creek.

<table>
<thead>
<tr>
<th>Site Class</th>
<th>10. Site Class</th>
<th>Site Type</th>
<th>12. Site Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>prehistoric</td>
<td>prehistoric</td>
<td>isolated find</td>
<td>isolated find</td>
</tr>
<tr>
<td>indigenous historic</td>
<td>indigenous historic</td>
<td>quarry</td>
<td>quarry</td>
</tr>
<tr>
<td>historic</td>
<td>historic</td>
<td>scatter (&lt;10)</td>
<td>scatter (&lt;10)</td>
</tr>
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<td>contemporary</td>
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<td>scatter (&gt;10)</td>
<td>scatter (&gt;10)</td>
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<td>undetermined</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Sub Type</th>
<th>11. Sub Type</th>
<th>Features (frequencies if possible)</th>
</tr>
</thead>
<tbody>
<tr>
<td>surface</td>
<td>surface</td>
<td>stone circle</td>
</tr>
<tr>
<td></td>
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<td>medicine wheel</td>
</tr>
<tr>
<td></td>
<td>underwater</td>
<td>pit</td>
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<td></td>
<td>stratified</td>
<td>mound</td>
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<tr>
<td></td>
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<td>structure</td>
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<td>fence</td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

8. Access (refer to highway, road number, trail, cardinal directions, landmarks, nearest settlement, distances)

From the mouth of Hines Creek, walk up the north bank of the Peace River for 1.4 km. Then, ascend to the top of the valley to site.

9. Site Environment/Setting (describe in terms of drainage, slope, aspect, vegetation, soil type, landforms)

Level to slightly sloping native prairie on the Peace River valley edge, about 1.4 km west of the Hines Creek.
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

A thin surface scatter of mostly large quartzite artifacts over an area of approximately 150 m by 100 m of native prairie. Fifteen items were observed but nothing was collected and no shovel tests were excavated. Items include cores, spalls, anddebitage.

15. Materials observed /collected (frequencies if possible)

<table>
<thead>
<tr>
<th>observed / collected</th>
<th>observed / collected</th>
<th>observed / collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>projectile points</td>
<td>faunal remains</td>
<td>shell</td>
</tr>
<tr>
<td>5</td>
<td>lithic tools</td>
<td>human remains</td>
</tr>
<tr>
<td>5</td>
<td>lithic delitage</td>
<td>floral remains</td>
</tr>
<tr>
<td>10</td>
<td>bone tools</td>
<td>tephra</td>
</tr>
<tr>
<td>ceramcics</td>
<td>soil samples</td>
<td>other, specify</td>
</tr>
<tr>
<td>fire cracked rock</td>
<td>macrofossils</td>
<td></td>
</tr>
<tr>
<td>charcoal</td>
<td>wood</td>
<td></td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials,)

17. Collection Repository

Dispositions File No. ........................................

18. Photo/Images Repository

19. Culture

- Early Prehistoric
- Late Prehistoric
- Historic
- Middle Prehistoric
- Fur Trade/Contact
- Undetermined

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
22. Estimated Dimensions | N-S | m, E-W | m, Depth | m
23. Means of Estimating Dimensions | | | | 
   ☐ surface inspection
   ☐ erosion exposure
24. Estimated Portion Intact | %
25. Disturbance Factors (natural, human, current, potential)
   Will current development impact site
   ☐ yes ☐ no ☐ unknown
   Type of Disturbance
   ☐ agriculture ☐ road/highway ☐ coal mine ☐ transmission line ☐ industrial area
   ☐ pipeline ☐ gravel/sand pit ☐ oil sands ☐ reservoir ☐ vandalism
   ☐ wellsite ☐ residential area ☐ forestry ☐ recreation area ☐ erosion
   Disturbance Factors Remarks
   This site and the adjacent area were examined to gain some preliminary indication of the archaeological potential of the valley edge given the hypothetical potential for accelerated erosion due to heightened water levels. However, as this is not expected to occur, the investigations were kept to a minimum. If that expectation is borne out by engineering studies, this site is of no concern for this development.
26. Researcher/Permit Holder | Eric Damkjar | Date (Y/M/D) 99/9/17
27. Observed by | Eric Damkjar, J. Priegert & Glen Horseman | Date (Y/M/D) 99/10/3
28. Surface collected by | | Date (Y/M/D)
29. Tested/assessed by | | Date (Y/M/D)
30. Excavated/mitigated by | | Date (Y/M/D)
31. Form completed by | Eric Damkjar | Date (Y/M/D) 99/11/5
32. Project name/Report Title | | 
33. Site Significance/Recommendations
   ☐ no additional investigation required (justify):
   ☑ additional investigation required (specify):
   The site is undisturbed and has not been tested. It would be worth further investigation should the site be threatened by development, erosion, or for research purposes.
34. Additional Remarks
35. Site Map
N.T.S. 1:50,000 Map Inset  Map No.:  83 M/15 Rycroft  Legend
From the mouth of Hines Creek, walk up the north bank of the Peace River for 1.0 km. Site is about two thirds of the way up the valley slope.

A sloping projection of land on the edge of the Peace River valley. Natural prairie vegetation.

<table>
<thead>
<tr>
<th>1. Site Name</th>
<th>Horeseman Site</th>
<th>2. Field No.</th>
<th>Dunvegan 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Elevation</td>
<td>455</td>
<td>4. N.T.S.</td>
<td>1:50,000 Map No. &amp; Name 83 M/15 Rycroft</td>
</tr>
<tr>
<td>5. U.T.M. Grid Zone</td>
<td>11ULM Easting 9785 Northing 9945</td>
<td>□ NAD27 □ NAD83</td>
<td></td>
</tr>
<tr>
<td>6. Legal Description: LSD 7</td>
<td>Section 13 Township 80 Range 5 W of 6 M</td>
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<td></td>
</tr>
<tr>
<td>7. Land Owner</td>
<td>Crown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land Owner Name/Address</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. Access (refer to highway, road number, trail, cardinal directions, landmarks, nearest settlement, distances)

From the mouth of Hines Creek, walk up the north bank of the Peace River for 1.0 km. Site is about two thirds of the way up the valley slope.

9. Site Environment/Setting (describe in terms of drainage, slope, aspect, vegetation, soil type, landforms)

A sloping projection of land on the edge of the Peace River valley. Natural prairie vegetation.

10. Site Class □ prehistoric □ indigenous historic □ historic □ contemporary □ undetermined
11. Sub Type □ surface □ subsurface □ underwater □ stratified □ undetermined □ single component □ multi component □ undetermined □ # components
12. Site Type □ isolated find □ scatter (<10) □ rock art □ burial □ campsite □ palaeoenvironmental □ settlement □ mine □ cabin □ workshop □ homestead □ farm □ ranch □ school □ dwelling □ urban □ trading post □ police post □ industrial □ transportation □ mission
13. Features (frequencies if possible) stone circle cairn stone arc stone line drive lane medicine wheel effigy pictograph petroglyph hearth
pit mound depression cabin dump house
structure foundation cellar fence

Other Features:
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

Five pieces of debitage, three of black chert and two of quartzite were observed over a 10 m by 15 m area but not collected, and no shovel tests were made. The site surface is sloping at about a 30º angle and is 20 or 30 m below the prairie level above—it may have slumped to this position. We don’t know whether the cultural material was deposited at a time when the ground was less sloping but, at present, the site would not be suitable for habitation. Another possibility is that the material has washed down from above, though we found no obvious source.

15. Materials observed /collected (frequencies if possible)

<table>
<thead>
<tr>
<th>observed / collected</th>
<th>observed / collected</th>
<th>observed / collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>projectile points</td>
<td>faunal remains</td>
<td>shell</td>
</tr>
<tr>
<td>lithic tools</td>
<td>human remains</td>
<td>metal</td>
</tr>
<tr>
<td>...... ......</td>
<td>...... ......</td>
<td></td>
</tr>
<tr>
<td>lithic delitage</td>
<td>floral remains</td>
<td>...... ......</td>
</tr>
<tr>
<td>...... ......</td>
<td>...... ......</td>
<td>glass</td>
</tr>
<tr>
<td>bone tools</td>
<td>tephras</td>
<td>other, specify</td>
</tr>
<tr>
<td>ceramics</td>
<td>tephra</td>
<td></td>
</tr>
<tr>
<td>...... ......</td>
<td>...... ......</td>
<td></td>
</tr>
<tr>
<td>fire cracked rock</td>
<td>macrofossils</td>
<td></td>
</tr>
<tr>
<td>...... ......</td>
<td>...... ......</td>
<td></td>
</tr>
<tr>
<td>charcoal</td>
<td>wood</td>
<td></td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials,)


17. Collection Repository

Dispositions File No. ..............................

18. Photo/Images

Repository

19. Culture

- [ ] Early Prehistoric
- [ ] Late Prehistoric
- [ ] Historic
- [ ] Middle Prehistoric
- [ ] Fur Trade/Contact
- [ ] Undetermined

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)


20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
Disturbance Factors Remarks

This site is at risk from erosion but whether this will be accelerated by the development is doubtful. Moreover, surface indications are this is a very small scatter of little significance. This site is of no concern for this development.

22. Estimated Dimensions  
N-S 15 m, E-W 10 m

23. Means of Estimating Dimensions
- ☑ surface inspection
- ☑ erosion exposure

24. Estimated Portion Intact

25. Disturbance Factors (natural, human, current, potential)

- Will current development impact site ☐ yes ☐ no ☐ unknown

- Type of Disturbance
  - ☑ agriculture
  - ☑ road/highway
  - ☑ coal mine
  - ☑ transmission line
  - ☑ industrial area
  - ☑ pipeline
  - ☑ gravel/sand pit
  - ☑ oil sands
  - ☑ reservoir
  - ☑ vandalism
  - ☑ wellsite
  - ☑ residential area
  - ☑ forestry
  - ☑ recreation area
  - ☑ erosion

Disturbance Factors Remarks

This site is at risk from erosion but whether this will be accelerated by the development is doubtful. Moreover, surface indications are this is a very small scatter of little significance. This site is of no concern for this development.

26. Researcher/Permit Holder
Eric Damkjar

27. Observed by
Eric Damkjar, J. Priegert & Glen Horseman

28. Surface collected by
Eric Damkjar, J. Priegert & Glen Horseman

29. Tested/assessed by
Eric Damkjar, J. Priegert & Glen Horseman

30. Excavated/mitigated by
Eric Damkjar, J. Priegert & Glen Horseman

31. Form completed by
Eric Damkjar, J. Priegert & Glen Horseman

32. Project name/Report Title

33. Site Significance/Recommendations
☒ no additional investigation required (justify):
☐ additional investigation required (specify):

Surface indications are this is a very small scatter of little significance.

34. Additional Remarks

35. Site Map
**Site Name:** Dunvegan 10

**Elevation:** 350

**N.T.S. 1:50,000 Map No. & Name:** 83 M/15 Rycroft

**U.T.M. Grid Zone:** 11ULM

**Easting:** 954

**Northing:** 995

**GPS:** Yes

**Legal Description:** LSD 5 Section 14 Township 80 Range 5 W of 6 M

**Land Owner:** Crown

**Site Environment/Setting:**

A narrow terrace on the north side of the Peace River. Site is 5 m back from exposed bank. Site area is vegetated with aspen, birch, and spruce.

**Site Class:**
- **Prehistoric**
- **Indigenous historic**
- **Historic**
- **Contemporary**
- **Undetermined**

**Site Type:**
- **Isolated find**
- **Scatter (<10)**
- **Scatter (>10)**
- **Campsites**
- **Stone feature**
- **Killsite**
- **Workshop**

**Features:**
- **Stone circle**
- **Cairn**
- **Stone arc**
- **Stone line**
- **Drive lane**
- **Medicine wheel**
- **Effigy**
- **Pictograph**
- ** Petroglyph**
- **Hearth**
- **Pit**
- **Mound**
- **Depression**
- **Cabin**
- **Hearth**
- **House**
- **Cellar**
- **Dump**
- **Foundation**
- **Concentration**

**Other Features:**
- **X**

**Access:**
Travel 4.5 km upstream on the Peace River from the Dunvegan Bridge (Highway 2). Site is on north bank.
A concentration of eight pieces of fire-broken rock was found at about 10 cm below mineral surface associated with a shallowly buried soil. The rocks are of several different types, but all igneous, with a combined weight of 3-4 kg. Although there is scattered charcoal in the buried soil, and the rocks are somewhat blackened, there is no indication of a hearth. Six shovel tests in the general area produced no other cultural material or rocks. Being only 10 cm below surface in an alluvial context, this site cannot be of great age. Sedimentary evidence suggests it predates one flood episode. The black staining is also consistent with a relatively recent age but the absence of modern debris or an obvious hearth suggests it is not modern.

15. Materials observed /collected (frequencies if possible)

<table>
<thead>
<tr>
<th>observed / collected</th>
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</tr>
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<tbody>
<tr>
<td>projectile points</td>
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<tr>
<td>lithic tools</td>
<td>human remains</td>
<td>metal</td>
</tr>
<tr>
<td>......... ...........</td>
<td>lithic delitage</td>
<td>floral remains</td>
</tr>
<tr>
<td>......... ...........</td>
<td>bone tools</td>
<td>tephra</td>
</tr>
<tr>
<td>ceramics</td>
<td>soil samples</td>
<td>other, specify</td>
</tr>
<tr>
<td>......... ...........</td>
<td>fire cracked rock</td>
<td>macrofossils</td>
</tr>
<tr>
<td>......... ...........</td>
<td>charcoal</td>
<td>wood</td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials,)


17. Collection Repository

Disposition File No. ........................................

18. Photo/Images

Repository

19. Culture

☐ Early Prehistoric ☐ Late Prehistoric ☐ Historic

☐ Middle Prehistoric ☐ Fur Trade/Contact ☒ Undetermined

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)


20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
22. Estimated Dimensions  N-S  5 m, E-W  5 m, Depth  0.1 m

23. Means of Estimating Dimensions
   - surface inspection
   - erosion exposure
   - No. of shovel tests  6
   - No. of backhoe tests

24. Estimated Portion Intact  0 %

25. Disturbance Factors (natural, human, current, potential)
   - Will current development impact site  ☑ yes  ☐ no  ☐ unknown

   Type of Disturbance
   - ☐ agriculture
   - ☐ road/highway
   - ☐ coal mine
   - ☐ transmission line
   - ☐ industrial area
   - ☐ pipeline
   - ☐ gravel/sand pit
   - ☐ oil sands
   - ☐ reservoir
   - ☐ vandalism
   - ☐ wellsite
   - ☐ residential area
   - ☐ forestry
   - ☐ recreation area
   - ☐ erosion

   Disturbance Factors Remarks
   As the site is only about 2.5 km from the proposed weir, bank erosion affecting the site is very possible.

26. Researcher/Permit Holder  Eric Damkjar        Date (Y/M/D)  99/9/17

27. Observed by  Eric Damkjar, J. Priegert & Glen Horseman Date (Y/M/D)  99/19/23

28. Surface collected by  Date (Y/M/D)

29. Tested/assessed by  Eric Damkjar, J. Priegert & Glen Horseman Date (Y/M/D)  99/19/23

30. Excavated/mitigated by  Date (Y/M/D)

31. Form completed by  Eric Damkjar        Date (Y/M/D)  99/12/3

32. Project name/Report Title  

33. Site Significance/Recommendations  ☑ no additional investigation required (justify):
   ☐ additional investigation required (specify):

   Without some associated cultural material, there is little more to be interpreted from this site. It is of no concern for this development.

34. Additional Remarks  

35. Site Map  

Borden No.  GIQq-1
Permit No. 99-111
Travel 5.0 km upstream on the Peace River from the Dunvegan Bridge (Highway 2). Site is on north bank 30 m up a dry stream bed.

Site is 30 m up a small stream where a 3 m high profile is revealed in a stream meander. The stream bisects a narrow terrace which is vegetated with aspen, birch and spruce.
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

About nine buried soils are separated by alluvial sediments. At least two soils, between about 1.3 m and 1.8 m below surface, contain a small amount of fire-broken rock, a few cobbles, and bone, some of it calcined and associated with ash, charcoal, and a patch of reddened soil. No stonedebitage or other artifacts were found. A small bulk sample yielded a considerable amount of burned and calcined bone but nodebitage.

15. Materials observed /collected (frequencies if possible)

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<tr>
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<td>lithic tools</td>
<td></td>
<td>human remains</td>
</tr>
<tr>
<td>lithic delitage</td>
<td></td>
<td>floral remains</td>
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<tr>
<td>bone tools</td>
<td></td>
<td>tephra</td>
</tr>
<tr>
<td>ceramics</td>
<td></td>
<td>soil samples</td>
</tr>
<tr>
<td>fire cracked rock</td>
<td></td>
<td>macrofossils</td>
</tr>
<tr>
<td>charcoal</td>
<td></td>
<td>wood</td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials,)

17. Collection Repository

Dispositions File No. ................................

18. Photo/Images

Repository

19. Culture

☐ Early Prehistoric ☐ Late Prehistoric ☐ Historic
☐ Middle Prehistoric ☐ Fur Trade/Contact ☐ Undetermined

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
Despite the absence of stone artifacts, the above material is convincing evidence of prehistoric human occupation. However, without stone artifacts or a denser concentration of other material, such as identifiable animal bone, there is not much more to be learned from this site. Of course, richer deposits may lie back from the stream cut. In short, this site is potentially significant but this is yet to be demonstrated. The site will probably be affected by accelerated erosion from higher water levels which will invade the stream bed. There is insufficient evidence to recommend mitigative excavations at this time but some form of monitoring involving a revisit to examine fresh exposures would be warranted.
**Archaeological Survey**
Provincial Museum of Alberta

**ARCHAEOLOGICAL SITE INVENTORY DATA**

<table>
<thead>
<tr>
<th>1. Site Name</th>
<th>2. Field No.</th>
<th>Dunvegan 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Elevation</td>
<td>350</td>
<td></td>
</tr>
<tr>
<td>4. N.T.S. 1:50,000 Map No. &amp; Name</td>
<td>83 M/15 Rycroft</td>
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</tr>
<tr>
<td>5. U.T.M. Grid Zone</td>
<td>11ULM</td>
<td>Easting 9495 Northing 9950</td>
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<tr>
<td>GPS</td>
<td>yes</td>
<td>no</td>
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<tr>
<td>6. Legal Description: LSD</td>
<td>8</td>
<td>Section 15</td>
</tr>
<tr>
<td>7. Land Owner</td>
<td>crown</td>
<td>Land Owner Name/Address</td>
</tr>
</tbody>
</table>

**Access** (refer to highway, road number, trail, cardinal directions, landmarks, nearest settlement, distances)

Travel 5.0 km upstream on the Peace River from the Dunvegan Bridge (Highway 2). Site is on north bank 30 m up a dry stream bed.

**Site Environment/Setting** (describe in terms of drainage, slope, aspect, vegetation, soil type, landforms)

Site is 30 m up a small stream where a 3 m high profile is revealed in a stream meander. The stream bisects a narrow terrace which is vegetated with aspen, birch and spruce.

<table>
<thead>
<tr>
<th>10. Site Class</th>
<th>11. Sub Type</th>
<th>12. Site Type</th>
<th>13. Features (frequencies if possible)</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ prehistoric</td>
<td>☑ surface</td>
<td>☑ isolated find</td>
<td>stone circle</td>
</tr>
<tr>
<td>☑ indigenous historic</td>
<td>☑ single component</td>
<td>quarry</td>
<td>medicine wheel</td>
</tr>
<tr>
<td>☑ historic</td>
<td>☑ multi component</td>
<td>ranch</td>
<td>pit</td>
</tr>
<tr>
<td>☑ contemporary</td>
<td>☑ undetermined</td>
<td>burial</td>
<td>mound</td>
</tr>
<tr>
<td>☑ undetermined</td>
<td>☑ undetermined</td>
<td>trading post</td>
<td>foundation</td>
</tr>
<tr>
<td>☑</td>
<td>☑</td>
<td>palaeoenvironmental</td>
<td>structure</td>
</tr>
<tr>
<td>☑</td>
<td>☑</td>
<td>police post</td>
<td>Other Features:</td>
</tr>
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<td>☑</td>
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<td>☑</td>
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<td>other</td>
</tr>
<tr>
<td>☑</td>
<td>☑</td>
<td>ceremonial/religious</td>
<td>Others</td>
</tr>
</tbody>
</table>

---

**Other Features:**

- medicine wheel
- pit
- mound
- depression
- cellar
- dump
- fence
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

About nine buried soils are separated by alluvial sediments. At least two soils, between about 1.3 m and 1.8 m below surface, contain a small amount of fire-broken rock, a few cobbles, and bone, some of it calcined and associated with ash, charcoal, and a patch of reddened soil. No stone debitage or other artifacts were found. A small bulk sample yielded a considerable amount of burned and calcined bone but no debitage.

15. Materials observed /collected (frequencies if possible)

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<tr>
<td>ceramics</td>
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<tr>
<td>fire cracked rock</td>
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<td>macrofossils</td>
</tr>
<tr>
<td>charcoal</td>
<td></td>
<td>wood</td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials,)

17. Collection Repository

Dispositions File No. ....................................

18. Photo/Images

Repository

19. Culture

[ ] Early Prehistoric  [ ] Late Prehistoric  [ ] Historic

[ ] Middle Prehistoric  [ ] Fur Trade/Contact  [ ] Undetermined

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
22. Estimated Dimensions
   N-S 15 m, E-W 15 m, Depth 2 m

23. Means of Estimating Dimensions
   ☑ surface inspection
   ☑ erosion exposure

24. Estimated Portion Intact 50 \% 

25. Disturbance Factors (natural, human, current, potential)
   Will current development impact site ☑ yes ☐ no ☐ unknown

<table>
<thead>
<tr>
<th>Type of Disturbance</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ agriculture</td>
</tr>
<tr>
<td>☐ road/highway</td>
</tr>
<tr>
<td>☐ coal mine</td>
</tr>
<tr>
<td>☑ transmission line</td>
</tr>
<tr>
<td>☐ industrial area</td>
</tr>
<tr>
<td>☗ pipeline</td>
</tr>
<tr>
<td>☐ gravel/sand pit</td>
</tr>
<tr>
<td>☐ oil sands</td>
</tr>
<tr>
<td>☑ reservoir</td>
</tr>
<tr>
<td>☐ vandalism</td>
</tr>
<tr>
<td>☐ wellsite</td>
</tr>
<tr>
<td>☐ residential area</td>
</tr>
<tr>
<td>☐ forestry</td>
</tr>
<tr>
<td>☐ recreation area</td>
</tr>
<tr>
<td>☐ erosion</td>
</tr>
</tbody>
</table>

Disturbance Factors Remarks
Site is subject to ongoing natural erosion during seasonal runoff and possibly high water invading from the Peace River. Elevated water levels associated with the proposed Dunvegan Power Plant will cause more frequent, if not permanent, water in this part of the stream which will accelerate erosion.

26. Researcher/Permit Holder Eric Damkjar
    Date (Y/M/D) 99/9/17

27. Observed by Eric Damkjar, J. Priegert & Glen Horseman
    Date (Y/M/D) 99/19/23

28. Surface collected by Eric Damkjar, J. Priegert & Glen Horseman
    Date (Y/M/D) 99/19/23

29. Tested/assessed by Eric Damkjar
    Date (Y/M/D) 99/19/23

30. Excavated/mitigated by Eric Damkjar
    Date (Y/M/D) 99/12/9

31. Form completed by Eric Damkjar
    Date (Y/M/D) 99/12/9

32. Project name/Report Title
    ________________________________

33. Site Significance/Recommendations ☑ no additional investigation required (justify):
    ☐ additional investigation required (specify):

Despite the absence of stone artifacts, the above material is convincing evidence of prehistoric human occupation. However, without stone artifacts or a denser concentration of other material, such as identifiable animal bone, there is not much more to be learned from this site. Of course, richer deposits may lie back from the stream cut. In short, this site is potentially significant but this is yet to be demonstrated. The site will probably be affected by accelerated erosion from higher water levels which will invade the stream bed. There is insufficient evidence to recommend mitigative excavations at this time but some form of monitoring involving a revisit to examine fresh exposures would be warranted.

34. Additional Remarks

35. Site Map
Travel 10.0 km upstream on the Peace River from the Dunvegan Bridge (Highway 2) to a broad floodplain. Site is on north bank 30 m up a dry stream bed. Site can also be accessed by a trail which descends the Peace River valley about 1 km northwest of the site.

The site is situated on the east bank of a small stream cut about 30 m upstream from its mouth at the Peace River. The stream traverses a broad floodplain which is largely cultivated although the margins of the stream are undisturbed and wooded with aspen, birch, and spruce. The site is exposed in a 5 m high bank.

Other Features:

- surface
- subsurface
- single component
- multi component
- underwater
- undetermined
- stratified
- undetermined
- # components

- ranch
- school
- dwelling
- urban
- trading post
- ceremonial/religious
- police post
- industrial
- transportation
- mission

- cairn
- effigy
- mound
- foundation
- depression
- cellar
- cabin
- dump
- house
- fence
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

About 2 m below surface, one of eight buried soils visible in the profile contains a concentration of ash, charcoal, bone, and fire-broken rock. Excavating into the wall of the profile, just above this soil, allowed us to expose an area of about 0.3 m² centred on the ash concentration. The area appears to be a hearth and, in addition to more of the above items, yielded eight black chert flakes.

15. Materials observed /collected (frequencies if possible)

<table>
<thead>
<tr>
<th>observed / collected</th>
<th>observed / collected</th>
<th>observed / collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>projectile points</td>
<td>20+ faunal remains</td>
<td>shell</td>
</tr>
<tr>
<td>lithic tools</td>
<td>human remains</td>
<td>metal</td>
</tr>
<tr>
<td>8.0</td>
<td>floral remains</td>
<td>glass</td>
</tr>
<tr>
<td>bone tools</td>
<td>tephra</td>
<td>other, specify</td>
</tr>
<tr>
<td>ceramics</td>
<td>soil samples</td>
<td></td>
</tr>
<tr>
<td>fire cracked rock</td>
<td>macrofossils</td>
<td></td>
</tr>
<tr>
<td>charcoal</td>
<td>wood</td>
<td></td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials,)


Dispositions File No.  ........................................

18. Photo/Images  Repository

19. Culture  

- Early Prehistoric
- Late Prehistoric
- Historic
- Middle Prehistoric
- Fur Trade/Contact
- Undetermined

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
Elevated water levels associated with the proposed Dunvegan Power Plant will invade the stream bed accelerating erosion of the banks. It is likely that such impacts would extend to the site area.

Present evidence suggests this deeply buried site is small although cultural deposits could be more substantial back from the stream edge. The existing exposure is sufficient to indicate that the site warrants additional investigation if it is impacted by the proposed development as seems possible when higher water levels invade the stream mouth.
Archaeological Survey
Provincial Museum of Alberta

ARCHAEOLOGICAL SITE INVENTORY DATA

1. Site Name: Dunvegan
2. Field No.: 8
3. Elevation: 350
4. N.T.S. 1:50,000 Map No. & Name: 83 M/15 Rycroft
5. U.T.M. Grid Zone: 11ULN
   Easting: 901
   Northing: 011
   GPS: yes
6. Legal Description: LSD 1
   Section: 19
   Township: 80
   Range: 5
   W of: 6
7. Land Owner: R. Tolen
   Land Owner Name/Address:

8. Access (refer to highway, road number, trail, cardinal directions, landmarks, nearest settlement, distances)

Travel 10.0 km upstream on the Peace River from the Dunvegan Bridge (Highway 2) to a broad floodplain. Site is about 50 m back from the river bank, west of a stream. Site can also be accessed by a trail which descends the Peace River valley about 1 km northwest of the site.

9. Site Environment/Setting (describe in terms of drainage, slope, aspect, vegetation, soil type, landforms)

Cultural material is distributed along a low ridge about 50 m back from the Peace River. The site area is cultivated floodplain.

10. Site Class:
   - [x] prehistoric
   - [ ] indigenous historic
   - [ ] historic
   - [ ] contemporary
   - [ ] undetermined
11. Sub Type:
   - [x] surface
   - [ ] subsurface
   - [ ] underwater
   - [ ] stratified
   - [ ] undetermined
12. Site Type:
   - [ ] isolated find
   - [ ] quarry
   - [ ] ranch
   - [ ] school
   - [ ] rock art
   - [ ] dwelling
   - [ ] urban
   - [ ] burial
   - [ ] trading post
   - [ ] ceremonial/religious
   - [ ] campsite
   - [ ] palaeoenvironmental
   - [ ] police post
   - [ ] industrial
   - [x] scatter (<10)
   - [ ] settlement
   - [ ] mine
   - [ ] trail
   - [ ] transportation
   - [ ] scatter (>10)
   - [ ] stone feature
   - [ ] homestead
   - [ ] mission
   - [ ] workshop
   - [ ] farm
13. Features (frequencies if possible):
   - [ ] stone circle
   - [ ] medicine wheel
   - [ ] pit
   - [ ] structure
   - [ ] Other Features:

   [ ] caimn
   [ ] effigy
   [ ] mound
   [ ] foundation
   [ ] cellarch
   [ ] pictograph
   [ ] depression
   [ ] dump
   [ ] stone line
   [ ] petroglyph
   [ ] cabin
   [ ] fence
   [ ] drive lane
   [ ] hearth
   [ ] house

- 2 -
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

A thin scatter of nine pieces of black chert debitage, ten pieces of fire-broken rock, and five small bone fragments is distributed along a low east-west ridge about 50 m back from the Peace River bank on Smooks Flats (Area 6). The distribution and density of cultural material are partially a function of the spotty surface visibility – most of the area is obscured by crops or weeds with occasional semi-open patches. However, it is clear that the scatter of cultural material is sparse.

15. Materials observed /collected (frequencies if possible)

<table>
<thead>
<tr>
<th>Type of Material</th>
<th>Observed / Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>projectile points</td>
<td>3</td>
</tr>
<tr>
<td>lithic tools</td>
<td></td>
</tr>
<tr>
<td>lithic delitage</td>
<td>9</td>
</tr>
<tr>
<td>bone tools</td>
<td></td>
</tr>
<tr>
<td>ceramics</td>
<td></td>
</tr>
<tr>
<td>fire cracked rock</td>
<td>10</td>
</tr>
<tr>
<td>charcoal</td>
<td></td>
</tr>
<tr>
<td>faunal remains</td>
<td>2</td>
</tr>
<tr>
<td>human remains</td>
<td></td>
</tr>
<tr>
<td>floral remains</td>
<td></td>
</tr>
<tr>
<td>tephra</td>
<td></td>
</tr>
<tr>
<td>soil samples</td>
<td></td>
</tr>
<tr>
<td>macrofossils</td>
<td></td>
</tr>
<tr>
<td>shell</td>
<td></td>
</tr>
<tr>
<td>metal</td>
<td></td>
</tr>
<tr>
<td>glass</td>
<td></td>
</tr>
<tr>
<td>other, specify</td>
<td></td>
</tr>
<tr>
<td>wood</td>
<td></td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials,)

17. Collection Repository

Dispositions File No. ....................................

18. Photo/Images Repository

19. Culture

- Early Prehistoric
- Late Prehistoric
- Historic
- Middle Prehistoric
- Fur Trade/Contact
- Undetermined

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
The site is well back from the river and will not be affected by the higher water levels associated with the proposed Dunvegan Power Plant. There are no concerns with this site.

This sparse site has been heavily disturbed by cultivation. Seven negative shovel tests indicate that the plough has cut into a well developed buried soil which is probably the source of the cultural items.
**1. Site Name**  
Dunvegan 11

**2. Field No.**  
Dunvegan 11

**3. Elevation**  
350

**4. N.T.S. 1:50,000 Map No. & Name**  
83 M/15 Rycroft

**5. U.T.M. Grid Zone**  
11ULN

**6. Legal Description:**  
LSD 3 Section 19 Township 80 Range 5 W of 6 M

**7. Land Owner**  
R. Tolken

**8. Access (refer to highway, road number, trail, cardinal directions, landmarks, nearest settlement, distances)**

Travel 10.5 km upstream on the Peace River from the Dunvegan Bridge (Highway 2) to a broad floodplain. Site is about 50 m back from the river bank, 250 m west of an abandoned farmhouse. Site can also be accessed by a trail which descends the Peace River valley just north of the site.

**9. Site Environment/Setting (describe in terms of drainage, slope, aspect, vegetation, soil type, landforms)**

Cultural material is distributed along a low ridge about 50 m back from the Peace River. The site area is cultivated floodplain.

**10. Site Class**  
- prehistoric
- indigenous historic
- historic
- contemporary
- undetermined

**11. Sub Type**  
- surface
- subsurface
- underwater
- stratified
- undetermined

**12. Site Type**  
- isolated find
- scatter (<10)
- rock art
- scatter (>10)
- burial
- campsite
- palaeoenvironmental
- stone feature
- settlement
- workshop
- killsite
- homestead
- ranch
- dwelling
- mining
- road
- trading post
- police post
- ceremonial/religious
- industrial
- trail
- transportation
- railway

**13. Features**  
(frequencies if possible)
- stone circle
- cairn
- stone arc
- stone line
- drive lane
- medicine wheel
effigy
- pictograph
- petroglyph
- hearth
- pit
- mound
- depression
- cabin
- house
- structure
- foundation
- cellar
dump
- fence

**Other Features:**

- Additional features or specific archaeological finds can be noted here.
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

A concentration of fire-broken rock centred on a low ridge about 50 m back from the river bank. About 15 pieces are spread over an area of approximately 7 m by 18 m, most of it concentrated in a 5 m by 6 m area.

15. Materials observed / collected (frequencies if possible)

<table>
<thead>
<tr>
<th>observed / collected</th>
<th>observed / collected</th>
<th>observed / collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>projectile points</td>
<td>faunal remains</td>
<td>shell</td>
</tr>
<tr>
<td>lithic tools</td>
<td>human remains</td>
<td>metal</td>
</tr>
<tr>
<td>lithic delitage</td>
<td>floral remains</td>
<td>glass</td>
</tr>
<tr>
<td>fire cracked rock</td>
<td>tephra</td>
<td>other, specify</td>
</tr>
<tr>
<td>ceramics</td>
<td>soil samples</td>
<td></td>
</tr>
<tr>
<td>charcoal</td>
<td>macrofossils</td>
<td></td>
</tr>
<tr>
<td>wood</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials,)

17. Collection Repository

Dispositions File No. ....................................

18. Photo/Images Repository

19. Culture

- Early Prehistoric
- Late Prehistoric
- Historic
- Middle Prehistoric
- Fur Trade/Contact
- Undetermined

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
22. Estimated Dimensions | N-S | 7 m, E-W | 18 m, Depth | m
23. Means of Estimating Dimensions | ☑ surface inspection | ☑ erosion exposure | No. of shovel tests | No. of backhoe tests
24. Estimated Portion Intact | 0% |
25. Disturbance Factors (natural, human, current, potential)

<table>
<thead>
<tr>
<th>Type of Disturbance</th>
<th>☐ agriculture</th>
<th>☐ road/highway</th>
<th>☐ coal mine</th>
<th>☐ transmission line</th>
<th>☐ industrial area</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ pipeline</td>
<td></td>
<td>☐ gravel/sand pit</td>
<td>☐ oil sands</td>
<td>☐ reservoir</td>
<td>☐ vandalism</td>
</tr>
<tr>
<td>☐ wellsite</td>
<td></td>
<td>☐ residential area</td>
<td>☐ forestry</td>
<td>☐ recreation area</td>
<td>☐ erosion</td>
</tr>
</tbody>
</table>

Disturbance Factors Remarks

The site is well back from the river and will not be affected by the higher water levels associated with the proposed Dunvegan Hydroelectric Project. There are no concerns with this site.

26. Researcher/Permit Holder | Eric Damkjar | Date (Y/M/D) | 99/9/17
27. Observed by | Eric Damkjar, J. Priegert & Glen Horseman | Date (Y/M/D) | 99/9/27
28. Surface collected by | Eric Damkjar, J. Priegert & Glen Horseman | Date (Y/M/D) | 99/9/27
29. Tested/assessed by | | Date (Y/M/D) |
30. Excavated/mitigated by | | Date (Y/M/D) |
31. Form completed by | Eric Damkjar | Date (Y/M/D) | 99/12/11
32. Project name/Report Title | | |

33. Site Significance/Recommendations | ☑ no additional investigation required (justify): |
| ☐ additional investigation required (specify): |

The fire-broken rock likely originated in a shallowly buried soil which has been disturbed by cultivation. Although no stone tools were found, the presence of such a concentration of fire broken rock in the middle of an alluvial terrace must be indicative of human occupation. It is very possible that better surface exposure would reveal a modest amount of related cultural material such as stone debitage. However, this is clearly a small, disturbed site, with few cultural remains and, therefore, of little interpretive significance.

34. Additional Remarks

35. Site Map
Travel 18.5 km upstream on the Peace River from the Dunvegan Bridge (Highway 2) to a broad floodplain. Site is located on the west river bank.

Site is on the edge of a narrow floodplain of the Peace River, about 6 m above present river level. The floodplain is densely vegetated with aspen, birch, and spruce.

10. Site Class
- prehistoric
- historic
- contemporary
- undetermined

11. Sub Type
- surface
- subsurface
- underwater
- stratified
- undetermined

12. Site Type
- isolated find
- quarry
- ranch
- school
- rock art
- dwelling
- urban
- burial
- trading post
- cerimonial/religious
- rock art
- palaeoenvironmental
- police post
- industrial
- campsite
- settlement
- mine
- trail
- transportation
- workshop
- homestead
- trail
- mission

13. Features (frequencies if possible)
- stone circle
- medicine wheel
- pit
- structure
- cairn
- effigy
- mound
- foundation
- stone arc
- pictograph
- depression
- cellar
- stone line
- petroglyph
- cabin
- dump
- drive lane
- hearth
- house
- fence
- Other Features:

-
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

While examining the river bank exposures in Area 10, two stone artifacts were found, about 50 m apart. A large black chert flake with ventral retouch along one edge was found about 1 m below surface. The second find spot included a piece of black chert shatter and a piece of fire-broken rock out of situ at the base of the profile. Still in place at the second find spot, also about 1 m below surface, was a concentration of large mammal bone, some of it burned and calcined.

15. Materials observed /collected (frequencies if possible)

<table>
<thead>
<tr>
<th>observed / collected</th>
<th>35+</th>
<th>observed / collected</th>
<th>68</th>
</tr>
</thead>
<tbody>
<tr>
<td>projectile points</td>
<td>1</td>
<td>faunal remains</td>
<td>1</td>
</tr>
<tr>
<td>1 lithic tools</td>
<td></td>
<td>human remains</td>
<td></td>
</tr>
<tr>
<td>lithium delitage</td>
<td></td>
<td>floral remains</td>
<td></td>
</tr>
<tr>
<td>bone tools</td>
<td></td>
<td>tephra</td>
<td></td>
</tr>
<tr>
<td>ceramics</td>
<td></td>
<td>soil samples</td>
<td></td>
</tr>
<tr>
<td>fire cracked rock</td>
<td></td>
<td>macrofossils</td>
<td></td>
</tr>
<tr>
<td>charcoal</td>
<td></td>
<td>wood</td>
<td></td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials,)


Dispositions File No.  

18. Photo/Images Repository

19. Culture  

- Early Prehistoric
- Late Prehistoric
- Historic
- Middle Prehistoric
- Fur Trade/Contact
- Undetermined

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
22. Estimated Dimensions   N-S 50 m, E-W 5 m, Depth 1 m

23. Means of Estimating Dimensions  
   ☑ surface inspection
   ☑ erosion exposure

24. Estimated Portion Intact  75 %

25. Disturbance Factors (natural, human, current, potential)
   Will current development impact site  ☐ yes  ☐ no  ☑ unknown

   Type of Disturbance
   ☐ agriculture  ☐ road/highway  ☐ coal mine  ☐ transmission line  ☐ industrial area
   ☐ pipeline  ☐ gravel/sand pit  ☐ oil sands  ☐ reservoir  ☐ vandalism
   ☐ wellsite  ☐ residential area  ☐ forestry  ☐ recreation area  ☐ erosion

Disturbance Factors Remarks

This site is located on the margins of the Dunvegan Hydroelectric Project reservoir. However, the small rise in water levels projected for this area will not likely accelerate erosion of this site.

26. Researcher/Permit Holder  Eric Damkjar, J. Priegert & Glen Horseman  Date (Y/M/D) 99/9/17

27. Observed by  Eric Damkjar, J. Priegert & Glen Horseman  Date (Y/M/D) 99/9/21

28. Surface collected by  Eric Damkjar, J. Priegert & Glen Horseman  Date (Y/M/D) 99/9/21

29. Tested/assessed by  Eric Damkjar, J. Priegert & Glen Horseman  Date (Y/M/D) 99/10/2

30. Excavated/mitigated by  Date (Y/M/D) ...

31. Form completed by  Eric Damkjar  Date (Y/M/D) 99/12/14

32. Project name/Report Title  

33. Site Significance/Recommendations  
   ☑ no additional investigation required (justify):
   ☐ additional investigation required (specify):

No shovel testing was done due to the depth of the cultural deposits. Instead, the exposed banks were scraped back in search of more material. However, nothing was found so we are left with the few items described above. It is surprising that the two find spots are so far apart if the cultural material is as sparse as the data suggest. It seems likely there is more to be found at this site. The site would be worth a revisit in the future to see if additional material becomes exposed.

34. Additional Remarks

35. Site Map
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

Five items were surface collected, including a black chert biface base, a large, crude bifacially worked quartzite spall, a thick black chert flake fragment, a quartzite flake, and a piece of black chert shatter. The chert biface fragment has almost straight, parallel lateral edges and a convex base. It is 35.7 mm long, 25.1 mm wide, and 8.1 mm thick. There is no edge grinding. This may be a broken preform. In addition, three pieces of fire-broken rock were observed.

15. Materials observed /collected (frequencies if possible)

<table>
<thead>
<tr>
<th>observed / collected</th>
<th>observed / collected</th>
<th>observed / collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>projectile points</td>
<td>faunal remains</td>
<td>shell</td>
</tr>
<tr>
<td>2</td>
<td>human remains</td>
<td>metal</td>
</tr>
<tr>
<td>lithic tools</td>
<td>floral remains</td>
<td>glass</td>
</tr>
<tr>
<td>lithic delitage</td>
<td></td>
<td>other, specify</td>
</tr>
<tr>
<td>bone tools</td>
<td>tephra</td>
<td></td>
</tr>
<tr>
<td>ceramics</td>
<td>soil samples</td>
<td></td>
</tr>
<tr>
<td>fire cracked rock</td>
<td>macrofossils</td>
<td></td>
</tr>
<tr>
<td>charcoal</td>
<td>wood</td>
<td></td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials,)


Dispositions File No. ..........................

18. Photo/Images  Repository

19. Culture  
- Early Prehistoric  
- Late Prehistoric  
- Historic  
- Middle Prehistoric  
- Fur Trade/Contact  
- Undetermined

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
22. Estimated Dimensions  
N-S  70  m,  E-W  30  m,  Depth  m  

23. Means of Estimating Dimensions  
☐ surface inspection  
☐ erosion exposure  

24. Estimated Portion Intact  
%  

25. Disturbance Factors (natural, human, current, potential)  

<table>
<thead>
<tr>
<th>Type of Disturbance</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>agriculture</td>
<td>no</td>
</tr>
<tr>
<td>road/highway</td>
<td>no</td>
</tr>
<tr>
<td>coal mine</td>
<td>no</td>
</tr>
<tr>
<td>transmission line</td>
<td>no</td>
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<tr>
<td>industrial area</td>
<td>no</td>
</tr>
<tr>
<td>pipeline</td>
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<tr>
<td>gravel/sand pit</td>
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</tr>
<tr>
<td>oil sands</td>
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<tr>
<td>reservoir</td>
<td>no</td>
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<tr>
<td>vandalism</td>
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<tr>
<td>wellsite</td>
<td>no</td>
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<td>residential area</td>
<td>no</td>
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<tr>
<td>forestry</td>
<td>no</td>
</tr>
<tr>
<td>recreation area</td>
<td>no</td>
</tr>
<tr>
<td>erosion</td>
<td>no</td>
</tr>
</tbody>
</table>

The site has already been disturbed by cultivation, road development, and possibly by a nearby pipeline development. Any added impact from the proposed transmission line will be negligible.

26. Researcher/Permit Holder  
Eric Damkjar  
Date (Y/M/D)  99/9/17  

27. Observed by  
Eric Damkjar & J. Priegert  
Date (Y/M/D)  99/9/30  

28. Surface collected by  
Eric Damkjar & J. Priegert  
Date (Y/M/D)  99/9/30  

29. Tested/assessed by  
Eric Damkjar & J. Priegert  
Date (Y/M/D)  99/9/30  

30. Excavated/mitigated by  
Date (Y/M/D)  99/9/30  

31. Form completed by  
Eric Damkjar  
Date (Y/M/D)  99/12/14  

32. Project name/Report Title  

33. Site Significance/Recommendations  
☐ no additional investigation required (justify):  
☐ additional investigation required (specify):  

Site is small, unproductive, and heavily disturbed.

34. Additional Remarks  

35. Site Map
Travel about 23.5 km upstream on the Peace River from the Dunvegan Bridge (Highway 2) to the mouth of Hamelin Creek on the south side of the river. Site on an elevated terrace on the west side of the creek mouth.

HaQr-1 is situated on a fairly open and level terrace about 30 m above the Peace River on the west side of the mouth of Hamelin Creek. The site area is vegetated with low brush while the surrounding area is wooded with aspen, birch, and spruce.

<table>
<thead>
<tr>
<th>1. Site Name</th>
<th>Dunvegan 17</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Field No.</td>
<td></td>
</tr>
<tr>
<td>3. Elevation</td>
<td>380</td>
</tr>
<tr>
<td>4. N.T.S. 1:50,000 Map No. &amp; Name</td>
<td>32 D/2 Hines Creek</td>
</tr>
<tr>
<td>5. U.T.M. Grid Zone</td>
<td>11ULN</td>
</tr>
<tr>
<td>Easting</td>
<td>8295</td>
</tr>
<tr>
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<td>1050</td>
</tr>
<tr>
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<td>no</td>
</tr>
<tr>
<td>Land Owner Name/Address</td>
<td>crown</td>
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<tr>
<td>6. Legal Description: LSD</td>
<td>14</td>
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<tr>
<td>Section</td>
<td>16</td>
</tr>
<tr>
<td>Township</td>
<td>81</td>
</tr>
<tr>
<td>Range</td>
<td>6 W of 6 M</td>
</tr>
<tr>
<td>7. Site Environment/Setting (describe in terms of drainage, slope, aspect, vegetation, soil type, landforms)</td>
<td></td>
</tr>
<tr>
<td>HaQr-1 is situated on a fairly open and level terrace about 30 m above the Peace River on the west side of the mouth of Hamelin Creek. The site area is vegetated with low brush while the surrounding area is wooded with aspen, birch, and spruce.</td>
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<td>10. Site Class</td>
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<tr>
<td>Indian/indigenous</td>
<td>historic</td>
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<tr>
<td>historic</td>
<td>contemporary</td>
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<td>undetermined</td>
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<td>surface</td>
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<td>multi component</td>
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<tr>
<td>stratified</td>
<td>undetermined</td>
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<td># components</td>
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<tr>
<td>12. Site Type</td>
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</tr>
<tr>
<td>quarry</td>
<td>ranch</td>
</tr>
<tr>
<td>ranch</td>
<td>school</td>
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<td>rock art</td>
<td>dwelling</td>
</tr>
<tr>
<td>burial</td>
<td>urban</td>
</tr>
<tr>
<td>trading post</td>
<td>ceremonial/religious</td>
</tr>
<tr>
<td>police post</td>
<td>industrial</td>
</tr>
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<td>transportation</td>
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<td>mission</td>
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<td>workshop</td>
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<td>workshop</td>
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<tr>
<td>13. Features (frequencies if possible)</td>
<td></td>
</tr>
<tr>
<td>stone circle</td>
<td>medicine wheel</td>
</tr>
<tr>
<td>medicine wheel</td>
<td>pit</td>
</tr>
<tr>
<td>pit</td>
<td>structure</td>
</tr>
<tr>
<td>...</td>
<td>foundation</td>
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<td>foundation</td>
<td></td>
</tr>
<tr>
<td>Other Features:</td>
<td></td>
</tr>
<tr>
<td>fence</td>
<td></td>
</tr>
</tbody>
</table>
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

Three shovel tests yielded 14 stone artifacts, 11 of black chert and three of quartzite, and a few pieces of fire-broken rock. The sample includes two cores and 12 pieces ofdebitage. The majority of material came from the top 10 to 15 cm but a possible second component is present at about 25 cm below surface. Below this depth, the sediments become dark grey clay.

15. Materials observed / collected (frequencies if possible)

<table>
<thead>
<tr>
<th>obeserved / collected</th>
<th>faunal remains</th>
<th>shell</th>
</tr>
</thead>
<tbody>
<tr>
<td>projectile points</td>
<td>human remains</td>
<td>metal</td>
</tr>
<tr>
<td>lithic tools</td>
<td>floral remains</td>
<td>glass</td>
</tr>
<tr>
<td>14</td>
<td>tephra</td>
<td>other, specify</td>
</tr>
<tr>
<td>bone tools</td>
<td>soil samples</td>
<td></td>
</tr>
<tr>
<td>ceramics</td>
<td>floral remains</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>macrofossils</td>
<td></td>
</tr>
<tr>
<td>fire cracked rock</td>
<td>charcoal</td>
<td>wood</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials)


Dispositions File No.  ...........................................

18. Photo/Images

19. Culture

<table>
<thead>
<tr>
<th>Early Prehistoric</th>
<th>Late Prehistoric</th>
<th>Historic</th>
<th>Middle Prehistoric</th>
<th>Fur Trade/Contact</th>
<th>Undetermined</th>
</tr>
</thead>
</table>

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
Site is located near the edge of the proposed reservoir for the Dunvegan Hydroelectric Project but well above the projected water level. Although natural erosion is ongoing at the site, the proposed project will have no negative impact.

This site has reasonably productive, undisturbed cultural deposits and is possibly multicomponent.
Travel about 23.5 km upstream on the Peace River from the Dunvegan Bridge (Highway 2) to the mouth of Hamelin Creek on the south side of the river. Site on an elevated terrace on the east side of the creek mouth.

HaQr-1 is situated on a fairly open and level terrace about 25 m above the Peace River on the east side of the mouth of Hamelin Creek. The site area is vegetated with low brush and grass while the surrounding area is wooded with aspen, birch, and spruce.

1. Site Name 2. Field No. Dunvegan 5
3. Elevation 380 4. N.T.S. 1:50,000 Map No. & Name 84 D/2 Hines Creek
5. U.T.M. Grid Zone 11ULN Easting 832 Northing 105 ☒ NAD27 ☐ NAD83
6. Legal Description: LSD 14 Section 16 Township 81 Range 6 W of 6 M
7. Land Owner crown

8. Access (refer to highway, road number, trail, cardinal directions, landmarks, nearest settlement, distances)

Travel about 23.5 km upstream on the Peace River from the Dunvegan Bridge (Highway 2) to the mouth of Hamelin Creek on the south side of the river. Site on an elevated terrace on the east side of the creek mouth.

9. Site Environment/Setting (describe in terms of drainage, slope, aspect, vegetation, soil type, landforms)

HaQr-1 is situated on a fairly open and level terrace about 25 m above the Peace River on the east side of the mouth of Hamelin Creek. The site area is vegetated with low brush and grass while the surrounding area is wooded with aspen, birch, and spruce.

10. Site Class ☒ prehistoric ☐ indigenous historic ☐ historic ☐ contemporary ☐ undetermined

11. Sub Type ☐ surface ☐ subsurface ☐ underwater ☐ stratified ☐ undetermined ☒ single component ☐ multi component ☐ undetermined 2?... # components

12. Site Type ☐ isolated find ☐ quarry ☐ ranch ☐ school  ☐ scatter (<10) ☐ rock art ☐ dwelling ☐ urban  ☐ scatter (>10) ☐ burial ☐ trading post ☐ ceremonial/religious  ☐ campsite ☐ palaeoenvironmental ☐ police post ☐ industrial  ☐ stone feature ☐ settlement ☐ mine ☐ trail  ☐ killsite ☐ homestead ☐ farm ☐ mission  ☐ workshop ☐ workshop ☐ ranch ☐ school

13. Features (frequencies if possible) stone circle medicine wheel pit ...... structure foundation Other Features:  
stone cairn effigy mound ...... cellar  
stone arc pictograph depression ...... dump  
stone line petroglyph cabin ...... fence  
drive lane hearth house
Four shovel tests all yielded cultural material, which also was found eroding from the bank. Forty-seven pieces of debitage were collected, four of quartzite, the rest black chert. Thirty-one were concentrated in one shovel test, the other 16 quite evenly divided between three tests and the eroding bank. The shovel tests and bank exposures define a site area minimally 10 m by 20 m in size. Cultural material was concentrated in a grey silty clay at 15 to 30 cm below surface.

16. Collection Remarks (formed tools, raw materials,

    Dispositions File No. ........................................

18. Photo/Images Repository

19. Culture  □ Early Prehistoric  □ Late Prehistoric  □ Historic  □ Middle Prehistoric  □ Fur Trade/Contact  □ Undetermined

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)

21. Radiocarbon Dates
22. Estimated Dimensions | N-S | 20 m, E-W | 10 m, Depth | 0.3 m
23. Means of Estimating Dimensions | ☑ surface inspection | ☑ erosion exposure
24. Estimated Portion Intact | 100 %
25. Disturbance Factors (natural, human, current, potential)
   - Will current development impact site: □ yes □ no □ unknown
   - Type of Disturbance
     - ☑ agriculture
     - ☑ road/highway
     - ☑ coal mine
     - ☑ transmission line
     - ☑ industrial area
     - ☑ pipeline
     - ☑ gravel/sand pit
     - ☑ oil sands
     - ☑ reservoir
     - ☑ vandalism
     - ☑ wells
     - ☑ residential area
     - ☑ forestry
     - ☑ recreation area
     - ☑ erosion

Disturbance Factors Remarks
Site is located near the edge of the proposed reservoir for the Dunvegan Hydroelectric Project but well above the projected water level. Although natural erosion is ongoing at the site, the proposed project will have no negative impact.

26. Researcher/Permit Holder | Eric Damkjær | Date (Y/M/D) 99/9/17
27. Observed by | Eric Damkjær, J. Priegert & Glen Horseman | Date (Y/M/D) 99/10/2
28. Surface collected by | Eric Damkjær, J. Priegert & Glen Horseman | Date (Y/M/D) 99/10/2
29. Tested/assessed by | Eric Damkjær, J. Priegert & Glen Horseman | Date (Y/M/D) 99/10/2
30. Excavated/mitigated by | | Date (Y/M/D) 
31. Form completed by | Eric Damkjær | Date (Y/M/D) 99/12/116
32. Project name/Report Title | | 
33. Site Significance/Recommendations
   - □ no additional investigation required (justify):
   - ☑ additional investigation required (specify):

This site has reasonably productive, undisturbed cultural deposits and is possibly multicomponent. It appears to be more productive than HaQr-1 and should be considered a significant site worth future investigations.

34. Additional Remarks

35. Site Map
Travel about 23 km upstream on the Peace River from the Dunvegan Bridge (Highway 2). The site is on an elevated terrace on the south side of the river, centred on the westernmost of two vehicle trails which cut through the terrace edge.

The site is located on the edge of a narrow terrace about 30 m above river level on the south side of the Peace River. The site is centred on a road cut where some clearing has taken place but the area is otherwise wooded with Aspen, poplar, birch, and spruce.
14. Description (spatial extent, patterning, density and variety of remains, diagnostics and exotic material, for historic archaeological sites provide details regarding site ownership, origins, function and context)

A black chert endscraped was found on the trail, obviously out of context. No other cultural material was present but it is likely the artifact was originally associated with this elevated terrace, an extension of the bench on which HaQr-2 is found.

15. Materials observed /collected (frequencies if possible)

<table>
<thead>
<tr>
<th>observed / collected</th>
<th>observed / collected</th>
<th>observed / collected</th>
</tr>
</thead>
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<tr>
<td>projectile points</td>
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<td>shell</td>
</tr>
<tr>
<td>1</td>
<td>lithic tools</td>
<td>human remains</td>
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<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>lithic delitage</td>
<td>floral remains</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td></td>
<td>bone tools</td>
<td>tephra</td>
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<td></td>
<td>ceramics</td>
<td>soil samples</td>
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<td>........................</td>
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</tr>
<tr>
<td></td>
<td>fire cracked rock</td>
<td>macrofossils</td>
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<tr>
<td></td>
<td>........................</td>
<td></td>
</tr>
<tr>
<td></td>
<td>charcoal</td>
<td>wood</td>
</tr>
</tbody>
</table>

16. Collection Remarks (formed tools, raw materials,)


Dispositions File No.  ........................................

18. Photo/Images Repository  

19. Culture  

- Early Prehistoric  
- Late Prehistoric  
- Middle Prehistoric  
- Fur Trade/Contact  
- Historic  
- Undetermined  

Cultural Affiliation (Complexes, phases, traditions, projectile point types, ethnographic & ethnic groups)

20. Calendar Date (A.D./B.C.)  

21. Radiocarbon Dates
22. Estimated Dimensions N-S 5 m, E-W 5 m, Depth m
23. Means of Estimating Dimensions ☑ surface inspection ☑ erosion exposure
24. Estimated Portion Intact %
25. Disturbance Factors (natural, human, current, potential)
   Will current development impact site ☑ yes ☑ no ☑ unknown
   Type of Disturbance
   ☑ agriculture ☑ road/highway ☑ coal mine ☑ transmission line ☑ industrial area
   ☑ pipeline ☑ gravel/sand pit ☑ oil sands ☑ reservoir ☑ vandalism
   ☑ wellsite ☑ residential area ☑ forestry ☑ recreation area ☑ erosion
26. Researcher/Permit Holder Eric Damkjar Date (Y/M/D) 99/9/17
27. Observed by Eric Damkjar, J. Priegert & Glen Horseman Date (Y/M/D) 99/10/2
28. Surface collected by Eric Damkjar Date (Y/M/D) 99/10/2
29. Tested/assessed by Date (Y/M/D)
30. Excavated/mitigated by Date (Y/M/D)
31. Form completed by Eric Damkjar Date (Y/M/D) 99/12/17
32. Project name/Report Title
33. Site Significance/Recommendations ☑ no additional investigation required (justify):
   ☑ additional investigation required (specify):
   The significance of this site and the location or presence of undisturbed deposits is unknown. However, this terrace received only a cursory examination as it will not be impacted by the proposed development. The presence of a formed tool in one of only two exposures (i.e., road cuts) along this terrace suggests the site area and, indeed, the entire terrace is worth further investigation
34. Additional Remarks
35. Site Map
### Architectural Details

<table>
<thead>
<tr>
<th>Style</th>
<th>[ ]</th>
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<tbody>
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<td>Plan Shape</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
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</tr>
<tr>
<td>Storeys</td>
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<td>[ ]</td>
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</tr>
<tr>
<td>Foundation</td>
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<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Superstructure</td>
<td>[ ]</td>
<td>[ ]</td>
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<td>[ ]</td>
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<tr>
<td>Roof Structure</td>
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<tr>
<td>Superstructure Cover</td>
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<tr>
<td>Exterior Codes</td>
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<td>[ ]</td>
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<td>[ ]</td>
</tr>
</tbody>
</table>

#### Exterior
- 2" x 12" and 4" x 4" lumber

#### Interior

#### Environment
- ca. 35 m above base of slope on north side of Peace River valley

#### Condition
- [ ] Good
- [x] Fair
- [ ] Poor

#### Alterations
1. [ ]
2. [ ]

#### Construction Description
1. [ ]
2. [ ]

#### Usage
- 1. shaft entrance
2. [ ]

#### Owner
1. [ ]
2. [ ]

#### Architect

#### Builder

#### Craftsman

#### History
- Unknown. Condition and building material suggests it is less than 50 years old. May related to mid 1970s investigations into feasibility of a dam near this location on the Peace River.

### Sources

**Form Completed by:** E. Damkjar  
**Date:** 24/01/2000

**Research File**  
**Designation File**

#### Status
- [ ] Active
- [ ] Occasional Use
- [ ] Abandoned
- [ ] Ruins
- [ ] Demolished  
**Status Date:** [ ] [ ] [ ]
LOCATION / IDENTIFICATION

Key

Site Name

Site Type

LSD
Quarter
Section
Township
Range
W M

Metes and Bounds

Address

Number

Street

Avenue

Other

Town

County

Dunvegan

Visual Information

Image 1

Negative/Slide Number: Image 1

Date of Photo

View

Source E. Damkjar

Image 2

Negative/Slide Number: Image 2

Date of Photo

View

Source

Image 3

Negative/Slide Number: Image 3

Date of Photo

View

Source

Image 4

Negative/Slide Number: Image 4

Date of Photo

View

Source
**Environment**
Treed stream ravine. Trail is overgrown.

**Condition**
[X] Good  [ ] Fair  [ ] Poor

**Construction Description**
1. 
2. trail

**Usage**
1. trail
2. 

**Owner**
1. 
2. 

**Architect**

**Builder**

**Craftsman**

**History**
Unknown. This trail is narrower and may predate an adjacent trail which goes up the open slope to the east. The latter is wider and used by vehicles. This trail is narrower and does not seem designed for modern vehicles.
<table>
<thead>
<tr>
<th>Key</th>
<th>Site Name</th>
<th>Site Type</th>
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<table>
<thead>
<tr>
<th>County</th>
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</thead>
</table>

---

**Image 1**
- Date of Photo: 8/1/999
- View: Farm house looking WNW.
- Source: E. Damkjør
- Negative/Slide Number: Image 1

**Image 2**
- Date of Photo: 8/1/999
- View: Farm house interior looking NE. Note squared log walls.
- Source: E. Damkjør
- Negative/Slide Number: Image 2

**Image 3**
- Date of Photo: [Blank]
- View: [Blank]
- Source: [Blank]
- Negative/Slide Number: Image 3

**Image 4**
- Date of Photo: [Blank]
- View: [Blank]
- Source: [Blank]
- Negative/Slide Number: Image 4

---

**Image 2**

**Image 1**
Style
Plan Shape [rectangular]
Storeys 1 1/2
Foundation [none?, there is a trapdoor, presumably to a cellar (not inspected)]
Superstructure [horizontal finished log with dovetailed corners]
Roof Structure [high gable]
Superstructure Cover [stucco]
Roof Cover [rolled asphalt & tar paper]
Exterior Codes
Exterior [Squared logs covered with stucco]
Interior [painted over squared logs]
Environment [Close to Peace River bank on cultivated floodplain. Wood plank shed about 10 m to ESE; log shop (collapsed) about 30 m to the north.]
Condition [X Good  Fair  Poor]
Alterations [Roof appears to have been raised; stucco probably an addition.]
Construction Description
1. ca. 1935 when homesteaded
2.
Usage
1. farm house; now used occasionally by visitors
2.
Owner
1. Bob Smook; Lumley BC 250-547-6782
2.
Architect
Builder [Howard Fraser]
Craftsman
History
Sources [Provincial Archives; written message inside the house.]
Form Completed by: E. Damkjar
Date 21 01 2000
Status [Active  Occasional Use  Abandoned  Ruins  Demolished]
Status Date 21 01 2000