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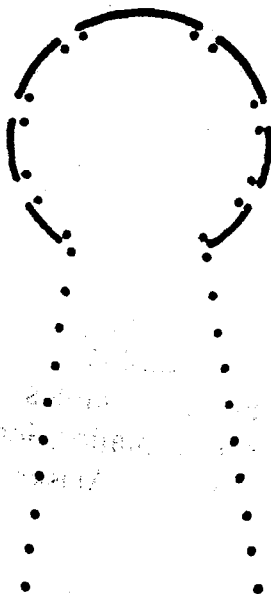
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ARCHAEOLOGICAL SURVEY IN ALASKA

Final Report on the 1980 Archaeological Survey Along the
Northwest Alaskan Pipeline Company Natural Gas Pipeline
Corridor from Prudhoe Bay to Delta Junction, with
Additional Work to the South

Submitted to Fluor Northwest, Inc.
Contract 478085-9-K050
Work Order 8



by

Jean S. Aigner, Principal Investigator
and
Brian L. Gannon

Anthropology Program and Institute of Arctic Biology
University of Alaska, Fairbanks 99701

FLUOR

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ARCHAEOLOGICAL SURVEY IN INTERIOR ALASKA*

Final Report on the 1980 Archaeological Survey Along the Northwest Alaskan Pipeline Company proposed natural gas pipeline corridor from Prudhoe Bay to Delta Junction, with additional work to the south.

By Jean S. Aigner, Principal Investigator
Brian L. Gannon, Research Associate
Anthropology Program & Institute of
Arctic Biology
University of Alaska, Fairbanks 99701
August 26, 1981

Submitted to Fluor Northwest, Inc.
Contract 478085-9-K050
Work Order Eight

*Alaska Archaeology Permit 80-3, State MLUP/NC 80-18, Federal TUP F-65185 (BLM) and HCRS (federal antiquities) permit 79-AK-137 (BLM F-37488).

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ABSTRACT

From June 28 to August 29, 1980, an on-the-ground archaeological survey from Prudhoe Bay to Delta Junction was undertaken under the direction of Dr. Jean S. Aigner, Anthropology Program and Institute of Arctic Biology, University of Alaska, Fairbanks. Research was conducted under the sponsorship of Northwest Alaskan Pipeline (NWA) Company (Master Agreement A78-065) acting through Fluor Northwest, Inc. (Contract No. 478085-9-K050), Work Order No. 8 and amendments.

The 1980 field program included intensive survey of 227 miles of proposed centerline, 4009 acres of EMS's, and some 103.3 acres of ancillary locations (boreholes, trench stability sites, etc). During the course of the 1981 survey, a total of 81 potential cultural resources were identified. These sites are described and recommendations pertaining to management and eligibility for inclusion on the National Register of Historic Places are made.

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MANAGEMENT SUMMARY

Background

From June 28 to August 29, 1980, an on-the-ground archaeological survey from Prudhoe Bay to Delta Junction was undertaken by the University of Alaska, Fairbanks. The work was mandated by the National Historic Preservation Act of 1966 (PL. 89-665), the National Environmental Policy Act of 1969 (PL. 91-190), the Advisory Council's Procedures for the Protection of Historic and Cultural Properties (36 CFR 800), Federal Executive Order 11593, PL. 93-291 (the Moss-Bennett Act of 1974) and the Alaska Historic Preservation Act of 1975.

Research was conducted under the sponsorship of Northwest Alaskan Pipeline (NWA) Company (Master Agreement A78-065) acting through Fluor Norhtwest, Inc. (Contract No. 478085-9-K050), Work Order No. 8 and amendments. Work was undertaken with Alaska Field Archaeology permit 80-3, State Multiple Land Use Permit (MLUP)/NC 80-18, Federal Temporary Use Permit (TUP) F-65185 (Bureau of Land Management case file), and Heritage Conservation and Recreational Service Antiquities Permit 79-AK-137, BLM case file F-37488. Principal investigator responsible for the work and in charge is Dr. Jean S. Aigner, Anthropology Program and Institute of Arctic Biology, University of Alaska, Fairbanks.

This report complies with stipulations in the contract and several permits under which the work was conducted. It is submitted to the following pertinent state and federal agencies and representatives: Heritage Conservation Recreation Service (HCRS), Bureau of Land Management (BLM - state and district offices in Alaska), State Historic Preservation Office (SHPO - Alaska), Bureau of Indian Affairs (BIA), U.S. Fish and Wildlife Service, Advisory Council on Historic Preservation and Office of the Federal Inspector.

Work Undertaken

Work completed includes the survey of 227.1 miles of NWA (proposed) project corridor (discontinuous segments), five borehole localities and their accesses, five trench stability plots and their access, and 4009 acres on 72 exploratory material sites (EMS's). In addition, visual inspection or aerial photographic examination of an additional 67 EMS's was undertaken. Four crews of five to six archaeologists and two backhoe monitors completed the field work between June 28 and August 29, 1980.

One hundred percent coverage of foot surveyed centerline and EMS's was completed with an average intensity of 40 worker days per square mile. Intensity was 33 on centerline, primarily in tundra areas, and 50 on EMS's, largely in tundra. Intensity in forested areas in previous years was 43-46 worker days per square mile. Systematic shovel clearing of vegetation and more intensive probing (shovel clearing, testing) in high probability areas was part of the field methodology.

Cultural Resources Identified

Some 81 potential cultural resources were identified during the course of the field season. These include newly identified cultural resources, several of which are less than 50 years old, finds with dubious or no context, previously reported archaeological sites and several other loci with modern materials or of unknown cultural status. Each of the potential cultural resources was assessed in terms of eligibility for inclusion on the National Register, based upon potential for revealing pertinent scientific information, historic importance and other established criteria.* Based upon this assessment and the potential for adverse impact, as a result of proposed construction and operational activities, recommendations are provided to the sponsor and pertinent agencies. These include requesting a determination of eligibility, further testing and no further action (see Site Report).

Recommendations

Proposed construction activities (as of March 1981) will directly impact 54 of the new and previously reported cultural resources as these lie directly on the NWA route, its proposed EMS's and other ancillary localities. Of these, 8 resources appear to have significant scientific information associated with them** and therefore may be potentially eligible for inclusion on the National Register of Historic Places. It is our recommendation that these resources be considered for a determination of eligibility (see individual discussions and Table 1). In nine cases we believe additional testing or data analysis is required before the resource can be assessed.

A number (37) of the potential resources identified are directly impacted but are not considered to contain sufficient information potential to warrant inclusion on the National Register. In these cases, it is recommended that no further action regarding (remaining) archaeological materials need be undertaken prior to commencement of construction activities (Table 1).*

Indirect impacts will affect 27 cultural resources. These may adversely affect several resources with useful extant information owing to increased foot and vehicular traffic in the area. In seven of 15 cases where the resource lies within 200 feet of the proposed project area, we recommend that the sponsor take responsibility for the resource. We recommend in pertinent cases that a request for determination of eligibility be made (Table 1). The remaining 12 resources are away from the project area and will not suffer adverse impact.

*Criteria "to guide the States, Federal agencies, and the Secretary of the Interior in evaluating potential entires... for the National Register." 36 CFR 800.10, 36 CFR 1202, formerly 36 CFR 60 (see King et al. 1977:235 ff.).

**Recommendation to establish an archaeological district. It would include 12 of the Livengood (LIV-) sites listed, only 5 of which are individually recommended for a request of determination of eligibility.

Table 1. Summary of evaluations and recommendations for cultural resources.

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| Site | Location | Potential Effect by Project | | | Evidence & Condition | | | | | | Recommended Action | Reason (Notes) |
|-------------|-----------|-----------------------------|----------------|--------------|----------------------|-----------------------|-----------|----------------------|-------------------|--------------------------------|--------------------------------------|---------------------------------------|
| | | On | Close <200 ft. | Off >200 ft. | Undisturbed | Partially Undisturbed | Destroyed | Find Without Context | Insufficient Data | Recommended Eligibility Status | | |
| SAG-006 | AS 016 | X | | | | | | | X | ? | Test | Insufficient data |
| SAG-011 | AS 016 | | | X | X | | | | | + | No action | Off project area |
| PSM-060 | EMS 20-3A | X | | | | X | | | | + | Request determination of eligibility | Data directly to be affected |
| PSM-189 | EMS 21-1 | X | | | | X | | | | ? | Test | Insufficient data |
| PSM-057 | AS 021 | | X | | | | X | | | - | No action | Off project area, site destroyed |
| PSM-181 | EMS 26-1 | | X | | X | | | | | ? | Test | Insufficient information |
| PSM-182 | EMS 26-1 | | X | | X | | | | | ? | Test | Insufficient information |
| PSM-183 | EMS 26-1 | | X | | X | | | | | ? | Test | Insufficient information |
| PSM-184 | EMS 26-1 | | X | | X | | | | | ? | Test | Insufficient information |
| PSM-193 | AS 027 | | | X | X | | | | | + | No action | Off project area |
| PSM-192 | AS 027 | X | | | X | | | | | ? | Analyze existing data | Insufficient information |
| PSM-191 | AS 027 | | | X | X | | | | | + | No action | Off project area |
| PSM-190 | EMS 27-18 | X | | | | X | | | | ? | Analyze existing data | Insufficient data |
| PSM-066 | AS 027 | | | X | | | X | | | - | No action | Off project area, no data remains |
| PSM-069 | AS 028 | | X | | | X | | | | + | Test | Insufficient information |
| PSM-092 | AS 028 | | X | | | | X | | | - | No action | Off project area, no data remains |
| PSM-Find #2 | EMS 28-1A | X | | | | | | X | | - | No action | No context, no other data in vicinity |
| PSM-194 | AS 029 | | | X | X | | | | | + | No action | Off project area |
| PSM-185 | AS 029 | | X | | X | | | | | - | No action | No data remains |
| PSM-Find #1 | EMS 30-1 | X | | | | | | X | | - | No action | No context; unlikely artifact |
| PSM-186 | AS 033 | X | | | X | | | | | - | No action | Data completely collected |
| PSM-061 | EMS 33-1 | X | | | | | | X | | - | No action | No data remains |
| PSM-187A | AS 033 | X | | | X | | | | | - | No action | Modern lean-to |

Table 1. Continued.

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| Site | Location | Potential Effect by Project | | Evidence & Condition | | | | | | Recommended Action | Reason (Notes) | |
|-------------|-----------|-----------------------------|----------------|----------------------|-------------|-----------------------|-----------|----------------------|-------------------|--------------------|----------------|-----------------------------------------------------|
| | | On | Close <200 ft. | Off >200 ft. | Undisturbed | Partially Undisturbed | Destroyed | Find Without Context | Insufficient Data | | | Recommended Eligibility Status |
| PSM-187B | AS 033 | | X | | X | | | | | - | No action | Data completely collected |
| PSM-188 | AS 033 | X | | | X | | | | | - | No action | Modern |
| CHN-011 | EMS 35-4 | X | | | X | | | | | - | No action | Data completely collected |
| CHN-012 | EMS 36-3 | X | | | | | | X | ? | - | Test | Insufficient data |
| CHN-007 | AS 039 | | X | | X | | | | | - | No action | Data completely collected |
| CHN-005 | EMS 39-3 | X | | | | | X | | | - | No action | No data remains |
| CHN-006 | EMS 39-3 | X | | | | | X | | | - | No action | No data remains |
| CHN-010 | EMS 39-3 | X | | | | | | X | | - | No action | No data remains |
| CHN-008 | EMS 39-3 | X | | | X | | | | | - | No action | Data completely collected |
| CHN-009 | EMS 39-3 | X | | | X | | | | | - | No action | Data completely collected |
| CHN-015 | AS 040 | | | X | X | | | | | + | No action | Out of project area |
| CHN-014 | AS 040 | | | X | X | | | | | + | No action | Out of project area |
| CHN-013 | AS 040 | | | X | X | | | | | - | No action | Out of project area, modern |
| WIS-050 | EMS 41-3 | | | X | X | | | | | + | No action | Out of project area, associated with historic cabin |
| WIS-012 | AS 044 | | X | | | | X | | | - | No action | No data remains |
| WIS-006 | EMS 45-2A | X | | | | | X | | | - | No action | No data remains at the locus |
| WIS-010 | EMS 45-2A | X | | | | | X | | | - | No action | No data remains at the locus |
| WIS-011 | EMS 45-2A | X | | | | | X | | | - | No action | No data remains at the locus |
| WIS-Find #2 | EMS 45-2A | X | | | | | | X | | - | No action | No data remains |
| WIS-051 | EMS 45-3 | X | | | X | | | | | ? | Test | Insufficient data |
| WIS-019 | EMS 46-1 | X | | | | X | | | | ? | Test | Insufficient data |
| WIS-003 | EMS 46-1 | X | | | X | | | | | - | No action | No data remains |
| WIS-Find #1 | EMS 46-1 | X | | | | | X | | | - | No action | No data remains |

Table 1. Continued.

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| Site | Location | Potential Effect by Project | | | Evidence & Condition | | | | | | | Recommended Action | Reason (Notes) |
|------------------------|-----------|-----------------------------|--------------------|------------------|----------------------|--------------------------|-----------|-------------------------|----------------------|--------------------------------------|---|-----------------------------------------|--------------------------------------------|
| | | On | Close ≤ 200 ft. | Off > 200 ft. | Undisturbed | Partially Undisturbed | Destroyed | Find Without Context | Insufficient Data | Recommended Eligibility Status | | | |
| WIS-001 | EMS 46-1 | | | X | | X | | | | | + | No action | Off project area |
| BET-055 | EMS 48-0 | X | | | X | | | | | | + | Request determination of eligibility | Data extant directly impacted |
| BET-123 | EMS 48-0 | X | | | | | | | X | | ? | Test | Insufficient data |
| BET-122 | EMS 48-0 | X | | | | | | | X | | ? | Test | Insufficient data |
| BET-054 | EMS 48-0 | X | | | | | | X | | | - | No action | No data remains |
| BET-042 | EMS 48-2A | | X | | | | | X | | | - | No action | No data remains; indirect impact likely |
| BET-125 | EMS 51-3 | X | | | | X | | | | | - | No action | No useful data remains |
| BET-126 | EMS 51-3 | X | | | | X | | | | | - | No action | No data remains |
| BET-F1nd (BET-082?) | EMS 51-3 | X | | | | | | X | | | - | No action | No data remains |
| BET-018 | EMS 51-3 | X | | | | | | X | | | - | No action | No data remains |
| BET-083 | EMS 51-3 | X | | | | | | X | | | - | No action | No data remains |
| BET-006? | EMS 54-1 | X | | | | | | X | | | - | No action | No data remains |
| BET-124 | EMS 60-1 | | X | | | | | | X | | - | No action | No data remains |
| BET-058 | EMS 60-1 | X | | | | | | X | | | - | No action | No data remains |
| BET-068 | EMS 60-1 | X | | | | | | X | | | - | No action | No data remains |
| BET-073 | EMS 60-1 | X | | | | | | X | | | - | No action | No data remains |
| LIV-055 | EMS 69-3B | X | | | | | | X | | | - | No action | No data remains |
| LIV-F1nd #1 | EMS 71-0A | X | | | | | | | X | | - | No action | No data remains |
| LIV-F1nd #2 | EMS 71-0A | X | | | | | | | X | | - | No action | No data remains |
| LIV-032 | EMS 71-0A | | | X | | | | | | ? | - | No action | Off project area |
| LIV-039 | AS 071 | | | X | X | | | | | | + | No action | Off project area |
| LIV-103* | EMS 71-3A | X | | | X | | | | | | + | Request determination of eligibility | Data extant directly impacted |
| LIV-107 | EMS 71-3A | X | | | X | | | | | | + | Request determination of eligibility | Data extant directly impacted |

Table 1. Continued.

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| Site | Location | Potential Effect by Project | | | Evidence & Condition | | | | | | | Recommended Action | Reason (Notes) | |
|-----------|---------------|-----------------------------|-----------------|---------------|----------------------|-----------------------|-----------|----------------------|-------------------|--------------------------------|--|--------------------|--------------------------------------|-------------------------------|
| | | On | Close < 200 ft. | Off > 200 ft. | Undisturbed | Partially Undisturbed | Destroyed | Find Without Context | Insufficient Data | Recommended Eligibility Status | | | | |
| LIV-108 | EMS 71-3A | X | | | X | | | | | | | + | Request determination of eligibility | Data extant directly impacted |
| LIV-047 | EMS 71-3B | X | | | | X | | | | | | + | Request determination of eligibility | Data extant directly impacted |
| LIV-104 | EMS 71-3B | X | | | | | | X | | | | - | No action | No data |
| LIV-106 | EMS 71-3B | X | | | X | | | | | | | + | Request determination of eligibility | Data extant directly impacted |
| LIV-050 ? | EMS 71-3B | X | | | | | | | X | | | - | No action | No data |
| LIV-046 ? | EMS 71-3B | | X | | X | | | | | | | - | No action | Few data remains |
| LIV-105 | EMS 71-3B | | X | | X | | | | | | | - | No action | Few data remains |
| LIV-030 | EMS 71-3B | X | | | | X | | | | | | + | Request determination of eligibility | Data extant directly impacted |
| LIV-040 | EMS 71-3B | X | | | | | | X | | | | - | No action | No data remains |
| LIV-043 | EMS 71-3B | X | | | | X | | | | | | - | No action | Few data remains |
| XBD-042 | AS 092 | X | | | ? | | | | | | | - | No action | No additional data |
| TNX-Find | T-8 AS 118 | X | | | | | | X | | | | - | No action | No data remains |

*See footnote page 4 for this and subsequent LIV sites.

BACKGROUND

Introduction

Archaeological survey was conducted from June 28 to August 29, 1980, by the University of Alaska along the Northwest Alaskan Pipeline Company (NWA) proposed route from Prudhoe Bay, Alaska to Delta Junction, Alaska, with additional work added subsequently south of Delta Junction. The work was executed under contract between the University of Alaska (IAB 78-42) under Master Agreement A78-065 with NWA acting through Fluor Northwest, Inc. (Contract No. 478085-9-K050), and in accordance with Federal Temporary Use Permit (TUP) F-65185, Antiquities Permit 79-AK-137 (Heritage Conservation and Recreational Service; BLM case file F-37488), Alaska State Multiple Land Use Permit (MLUP) NC/80-18, and Alaska Field Archaeology Permit 80-3. An extensive literature search was also conducted during 1980 to produce an inventory and analysis of known cultural resources in the area (Aigner and Gannon 1980). The report is briefly summarized below. Results of the archaeological survey of more than 227 miles of proposed alignment and more than 4000 acres of ancillary locations (material sites, etc.) are the subject of this report.

The field research was undertaken with a basic premise in mind. While the area of survey was defined by management needs of Northwest Alaskan Pipeline Company, namely to comply with federal and state stipulations which set forth the limits of the investigations, it is still possible to gather and analyze data which will contribute to our knowledge of human habitation and land use in the area, thereby contributing to the field of archaeology. The concerns of the sponsor, mandated by the National Environmental Policy Act of 1969 (PL 91-190), the National Historic Preservation Act of 1966 (PL 89-665) as amended, the Advisory Council's Procedures for the Protection of Historic and Cultural Properties (36 CFR 800), and the Alaska Historic Preservation Act of 1975, can be met and the data can contribute to Alaska's inventory of cultural resources, required by the Federal Preservation Act of 1966, as amended (cited above), and Federal Executive Order 11593. This premise reflects the philosophy of conservation archaeology and applied not only to work traditionally classified as salvage archaeology but to archaeology in general.

Conservation archaeology as a label underscores that the emphasis is not on simply excavating [or surveying] to "save" sites, but rather on protecting and utilizing the cultural remains to their fullest scientific and historic extent. (Schiffer and Gumerman 1977:xix)

This implies that all archaeological work should be problem oriented and focus on gathering data from potentially threatened sites in attempts to answer scientific questions. At the same time, non-threatened sites should be avoided in the collection of data. Lipe (1974) has noted that the health of the discipline of archaeology today depends very much on contributions resulting from contract projects since so much research is being conducted in connection with construction work. Data gathered which are not reported represent data which may as well have not been collected. We consider this to be a serious ethical responsibility and the sponsor has an awareness of this obligation.

Study Area

The general study area for which the 1980 archaeological survey was conducted, extends from Prudhoe Bay south to the Tanana River. Map quadrangles included are Beaver, Beechy Point, Bettles, Chandalar, Circle, Fairbanks, Livengood, Philip Smith Mountains, Sagavanirktok, Tanana and Wiseman (Fig. 1). Additional work was done in Big Delta, Fairbanks, Nabesna and Tanacross quadrangles (see Shinkwin and Aigner 1979; Aigner 1979).

The proposed alignment lies at the margins of the larger regional band areas of the Tuluqmiut band of the Nunamiut Eskimos, the Chandalar or Netsi Kutchin and the Dihai Kutchin bands of the Kutchin Athapaskans, the Todadonten-Kanuti and South Fork bands of the Koyukon Athapaskans, and the Salcha and Minto bands of the Tanana Athapaskans (Fig. 2).

Cultural resource information is provided within an evolutionary and ecological framework. Key are extrapolations from traditional land use models to the past. Parameters affecting site location, resource scheduling and seasonality are related to the settlement/subsistence system of native peoples of the interior and tundra. The focus at the local level is upon the local band and its annual subsistence cycle which involved a central node (village) and outlyers (camps) as well as other functional loci (lookouts, caches). The location of components of the system were controlled by topographic features, resource concentrations and seasonality, and multiple resources in combination. The settlement/subsistence systems of Eskimos and Athapaskans in the study area were those of logistically organized task groups whose annual movements are systematic and planned.

Cultural resources are viewed in terms of their relationships to ecosystems (primary location and distance to adjacent ecosystems), resources (sheep, moose, caribou, migratory waterfowl, whitefish and salmon) and seasonal availability (or relative concentration), and topographic features (rivers, river confluences, lake inlets, lake outlets, lakes, wetlands, coasts, promontories). The age of the cultural resource (prehistoric, historic native, historic non-native) may have some relationship to site location, as well; the resource focus of traditional natives was altered somewhat by involvements in the fur trade and mining activities. The focus of non-natives was not upon the animal resources but upon the mineral resources of Alaska and access to them.

Physiography and Climate

The study area encompasses parts of the Interior Plains physiographic division, the Rocky Mountain System physiographic division, and the Intermontane Plateau physiographic division (Fig. 1).

The northermost Arctic Coastal Plain province of the Interior Plains Division is primarily an area of low relief including in some places scattered clusters of low hills. The Plain is 1-600 feet above sea level,

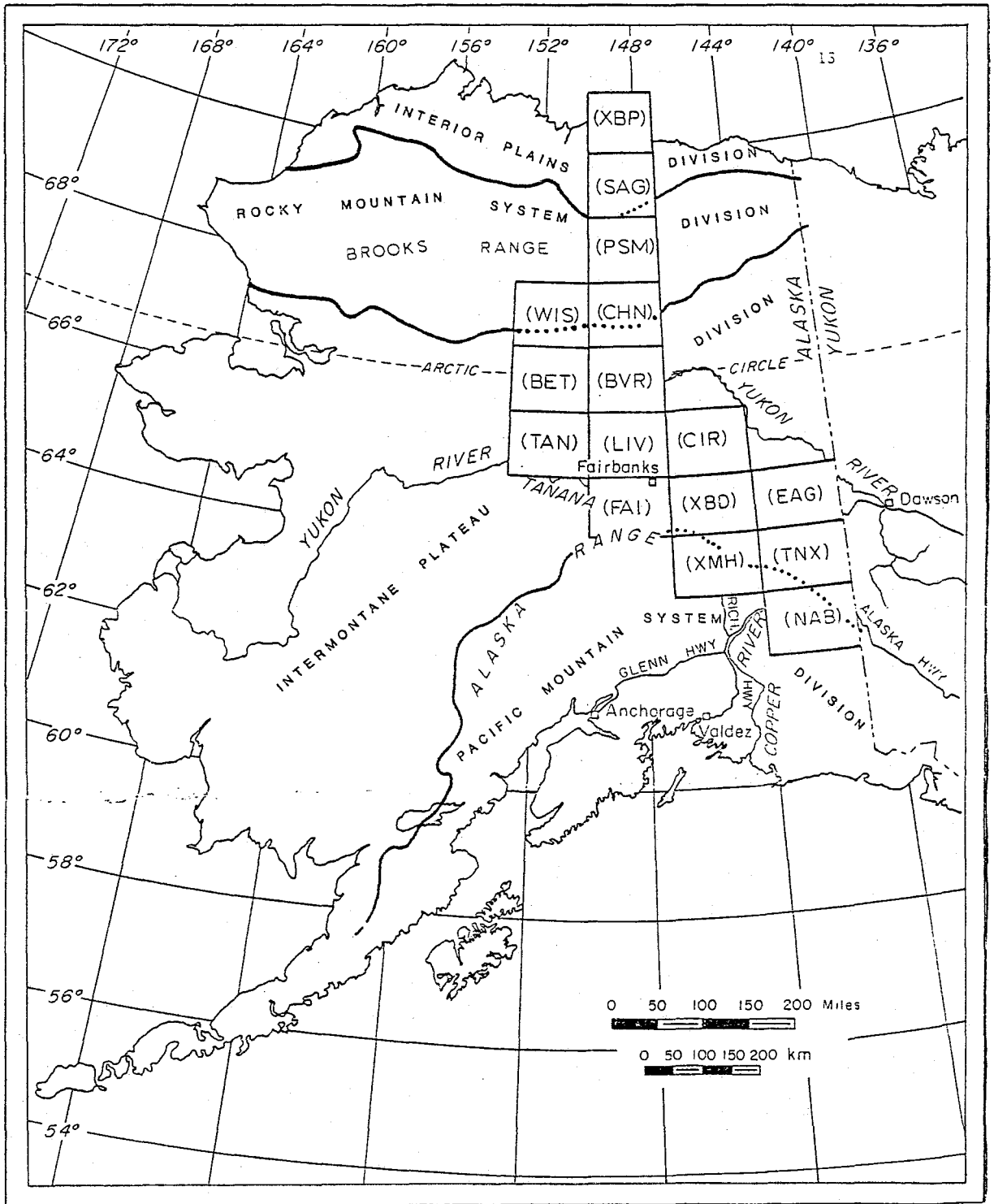


Figure 1.

wet and marshy. It is underlain by permafrost, with a surficial network of ice-wedge polygons.

The provinces of the Rocky Mountain System Division begin with the Arctic Foothills in the north, an area up to 3,500 feet above sea level characterized by irregular buttes, knobs, east-trending ridges and intervening tundra plains. The NWA Route follows the Sagavanirktok River through this province. To the south the alignment runs through the Central and Eastern Brooks Range section of the Arctic Mountains province. This wilderness of rugged east-trending ridges rises to 8,000 feet. The NWA route runs along the Dietrich River, crosses the Continental Divide at Atigun Pass, and then to the Galbraith Lake area. To the south the Ambler-Chandalar Ridge and Lowland Section is drained by rivers originating in the Brooks Range, to the west by tributaries of the Kobuk, in the center by the Koyukuk and its tributaries, and in the east by the Chandalar River. The NWA Route here runs along the Middle Fork of the Koyukuk.

The Kokrine-Hodzana Highlands section of the Intermontane Plateau Division consists of rounded ridges 2,000-4,000 feet with local areas of more rugged mountains. This area includes the drainage between the Yukon and Koyukuk Rivers. The Rampart Trough section is 500-2,500 feet below the highlands on either side (Kokrine-Hodzana Highlands to the north, Yukon Flats to the east, Yukon-Tanana Upland to the south, Nawitna Lowland to the west) and is a gently rolling area. The NWA Route runs across the northeastern part of the trough.

Two climatic zones are represented, the Arctic Zone and the Continental Zone. Climatically, the Arctic Zone extends from the north coast to the central ridgeline of the Brooks Range. Temperature, wind, and precipitation vary somewhat, owing to the ocean in the north and mountains to the south. Extremes are more common in the south while the north tends to more moderate temperatures. Nonetheless, in summer minimum temperatures are often below freezing, and the wind chill factor reduces considerably the effective temperature. Precipitation also varies - it is heaviest high in the Brooks Range but there are also very arid parts; the coast is considered a desert.

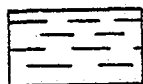
The interior, south of the crest of the Brooks Range, is the Continental Zone. The annual range here is over 100°F. The variation in precipitation is comparable to the Arctic Zone but most falls as rain in late summer and early fall. Winter is dry and winds are nearly calm (in marked contrast to the north).

Vegetation and Resources

The region north of the mountains and the mountains themselves are dominated by alpine, moist and wet tundra. High brush also occurs along watercourses flowing from the Brooks Range to the coast. South of the Brooks Range vegetation is dominated by bottomland spruce-poplar forest, upland spruce-hardwood forest, and lowland spruce-hardwood forest (Fig. 3).

Figure 3. MAP OF MAJOR ECOSYSTEMS: NORTH-CENTRAL ALASKA

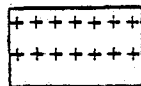
EXPLANATION



Wet Tundra



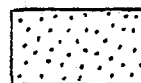
Moist Tundra



Alpine Tundra



High Brush



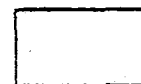
Low Brush, Muskeg-Bog



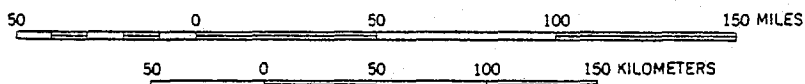
Upland Spruce-Hardwood Forest



Lowland Spruce-Hardwood Forest

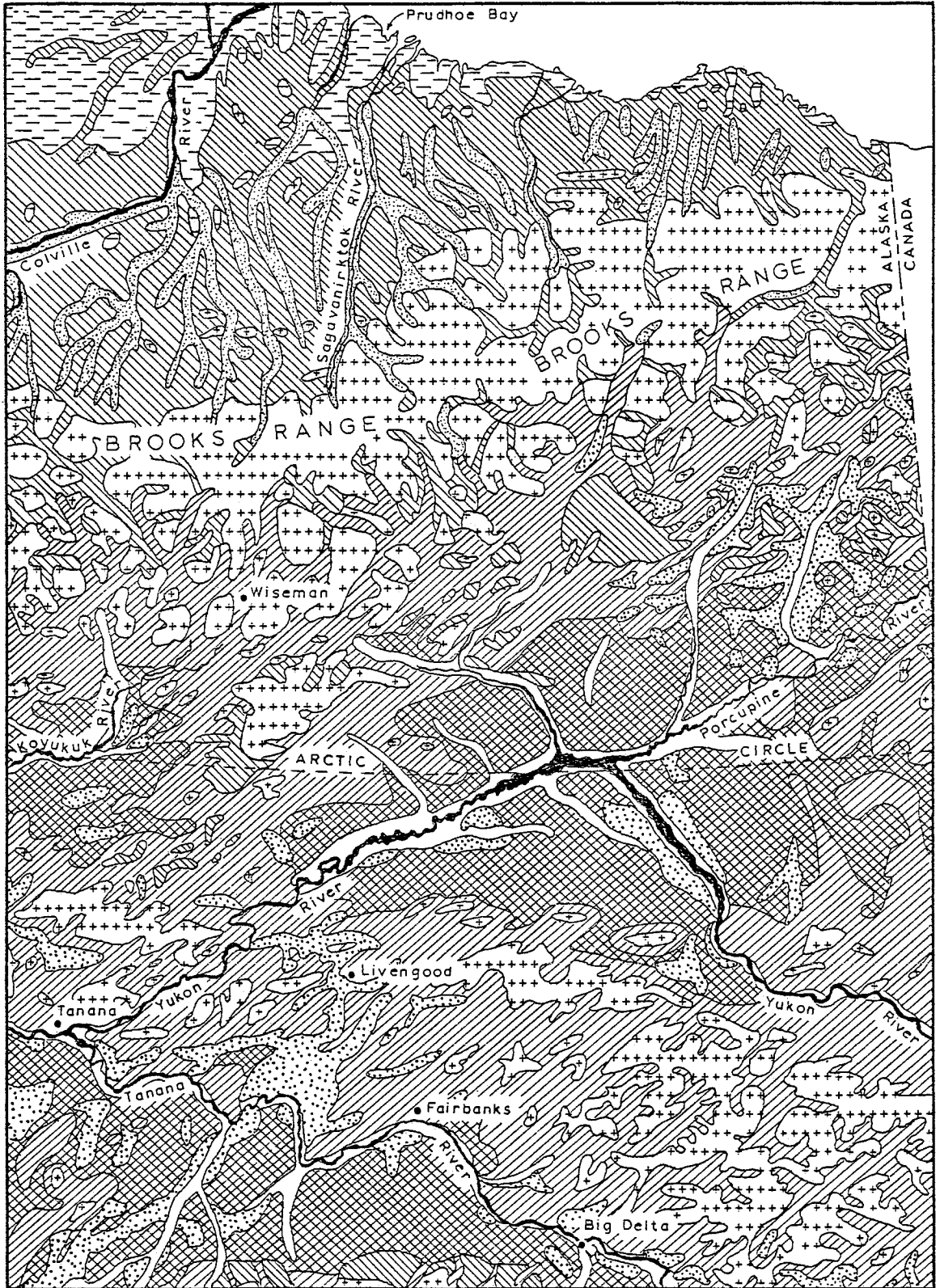


Bottomland Spruce-Poplar Forest



BASE MAP FROM UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY, ALASKA MAP E, 1954

From Major Ecosystems of Alaska (map), Joint Federal-State Land Use Planning Commission for Alaska, July 1973.



Wet tundra covers the arctic coastal plain. Associated freshwater and brackish habitats support migratory waterfowl. Moist tundra, widespread in the northern part of the study area, is commonly associated with waterfowl and fur bearer habitat. Caribou may also find favorable forage. Alpine tundra in the mountains provides food for caribou. Other animals of interest to humans are Dall sheep, ptarmigan, snowshoe hare, pika, arctic ground squirrel, and bear (Table 2).

High brush along the rivers running north from the Brooks Range provides browse for moose. Low brush is common in the Minto area and along the Tolovana River and Hess Creek. Caribou and rich waterfowl resources were available to humans in this ecosystem.

The upland spruce-hardwood forest predominates in the southern half of the study area. Caribou, fur bearers, bear, snowshoe hare, waterfowl, spruce grouse and willow ptarmigan are resources of interest to humans. Lowland spruce-hardwood forest is more common in intermontane basins. Poor drainage accounts for the many small lakes associated with this ecosystem. Migratory waterfowl are seasonally prominent while moose, fur bearers, small carnivores, bears, whitefish, grayling, and northern pike are present and of interest to human exploiters. Bottomland spruce-poplar forest is associated with major salmon rivers of the interior. Also present are certain fur bearers, bear, moose, snowshoe hare, porcupine, grouse and several migratory duck species.

Archaeological Background

Systematic archaeological investigations have been rare in the interior of Alaska. Indeed, until recently, despite the fact that the discovery of the Campus Site (College, Alaska) focused attention upon possible early relationships with Siberia, interior Alaska received little serious archaeological attention. Most recently, with the construction of the oil pipeline and haul road, a survey did focus upon a narrow strip running from Delta Junction north to Prudhoe Bay. Several hundred archaeological sites from the early Holocene to modern times were recorded (Cook 1970, 1971, 1976, 1977).

In the late 1950's and early 1960's the southern part of the study area received archaeological attention from D. W. Clark, A. McF. Clark, and F. West, while in the 1970's work was done by E. Hall, R. McKennan and by C. Holmes (Andrews 1977). In the north Campbell collected and excavated at Anaktuvuk Pass. Giddings and Irving preceded Hoffman and colleagues in the area of the lower Colville River (Hoffman et al. n.d.). The land use study of the Nuiqsut area by Hoffman, Libbey and Spearman included excavation of several localities. Most were historic (or late prehistoric) and it seems clear that erosion by the Colville is destroying sites rapidly (just as erosion of the Beaufort Sea is destroying older coastal sites) (Hoffman et al. n.d.).

Ethnographic information, offering excellent data on traditional and post contact native land use is also provided by Amsden (1977) and

TABLE 2. IMPORTANT ANIMALS BY VEGETATION COMMUNITY.

| Animal | BS-PF | US-HF | LS-HF | AT | LB-MB | MT | HB | WT | Animal | M | F |
|------------------------|-------|-------|-------|----|-------|----|----|----|-----------------|---|---|
| Tundra hare | | | | | | X | X | | Chum salmon | X | X |
| Snowshoe hare | X | X | X | | X | | X | | Pink salmon | X | X |
| Pika | | | | X | | | | | King salmon | | X |
| Hoary marmot | | | | X | | | | | Capelin | X | |
| Arctic ground squirrel | | | | X | | X | | | Arctic cod | X | |
| Porcupine | X | X | X | | | | | | Arctic char | | X |
| Coyote | X | X | X | | X | | X | | Lake trout | | X |
| Gray wolf | X | X | X | X | X | X | X | X | Arctic grayling | | X |
| Red fox | X | X | X | | | X | X | X | Northern pike | | X |
| Black bear | X | X | X | X | X | | X | | Whitefish | | X |
| Grizzly bear | X | X | X | X | X | X | X | X | Burbot | | X |
| Pine marten | X | X | X | | | | | | Polar bear | X | |
| Ermine | X | X | X | X | X | X | X | | Walrus | X | |
| Least weasel | | X | | | | X | X | X | Ringed seal | X | |
| Wolverine | X | X | X | X | X | X | X | X | Bearded seal | X | |
| Lynx | X | X | X | | X | | X | | Whales | X | |
| Moose | X | X | X | X | | X | X | | | | |
| Caribou | | X | | X | X | X | | X | | | |
| Dall sheep | | | | X | | | | | | | |
| ----- | | | | | | | | | | | |
| Whistling Swan | | | X | X | X | | | X | | | X |
| Trumpeter Swan | | | X | | X | | | | | | |
| Canada Goose | | | X | | X | X | | | | | X |
| Mallard | | | X | | X | X | | | | | |
| Pintail | | | X | | X | X | | X | | | X |
| American Widgeon | | | X | | X | X | | | | | |
| Shoveler | | | X | | X | X | | | | | |
| Green-winged Teal | | | X | | X | X | | | | | X |
| Canvasback | | | X | | X | | | | | | |
| Lesser Scaup | | | X | | X | X | | | | | |
| Greater Scaup | | | | | | X | | | | | |
| Common Goldeneye | X | X | X | | | | | | | | |
| Barrow's Goldeneye | X | X | | | | | | | | | |
| Oldsquaw | | | X | | X | X | | X | | X | |
| White-winged Scoter | | | X | | X | | | | | | |
| Common Scoter | | | X | | | X | | | | | |
| Bufflehead | X | X | | | | | | | | | |
| Harlequin Duck | | X | | | | | | | | | |
| Red-breasted Merganser | | | | | | X | | | | | |
| Spruce Grouse | X | X | X | | | | | | | | |
| Ruffed Grouse | X | | | | | | | | | | |
| Willow Ptarmigan | | X | | | | | X | | | | |
| Rock Ptarmigan | | | | X | | | X | | | | |
| Lesser Sandhill Crane | | | X | | | | X | | | | |
| White-fronted Goose | | | | | | | X | | | | X |
| Eider Ducks | | | | | | | | | | X | |

Adapted from Alaska Regional Profiles: Yukon Region n.d.

BS-PF: Bottomland spruce-poplar forest

US-HF: Upland spruce-hardwood forest

LS-HF: Lowland spruce-hardwood forest

AT: Alpine tundra

LB-MB: Low brush, muskeg-bog

MT: Moist tundra

HB: High brush; Arctic region n.d.

WT: Wet-tundra

M: Marine

F: Freshwater

Binford (1978, 1980) for the Anaktuvik Pass and Nuiqsut areas. Andrews (1977) has compiled the most useful synthesis and listing for the Doyon Region. For non-native land use, Smith (1974) reviews roadhouses and related structures, trails, etc. Heiner (1977) focuses upon locations related to mining activities, principally early camps, but also supply points and trading posts. Orth (1967) remains a valuable source for the background of the state in terms of historic place names; his work has contributed valuably to the AHRS files of cultural resources in the state.

Despite the very large listing of cultural resources pertaining to the study area, except for some non-native sites, historic and prehistoric sites are known only in terms of their time-space coordinates and "diagnostic" (for taxonomic purposes) traits. We know little empirically about the human adaptations they represent through time in Alaska. Only with difficulty may we relate the myriad of sites used by a generation of band members to a land use model (Shinkwin and Aigner 1979:86-7).

Mid-Holocene Interior Extensions of Coastal Groups

In the modern Brooks Range and coastal tundra plain of the northern part of the study area, there are taxa represented which pertain to "Eskimo" traditions. References appear to Denbigh or Arctic Small Tool tradition (ASTt), Choris, Norton and Ipiutak. Other terms in use are Natvarkruak, Kayuk and Kavik (the last is generally considered to be late prehistoric Athapaskan). Numamiut refers to proto-historic and later Eskimos of the northern part of the study region.

Denbigh on the west coast was the type-site for the so-called Arctic Small Tool tradition. The tradition is defined by the presence of a weapons system which focuses upon tiny bifacial insets. Common tools include end blades, (often bipointed) side blades, burins on small bifaces, microblades, shaped scrapers and occasional bifacial knives. Interior facies of ASTt are commonly found along streams and suggest ephemeral tent camps (Dumond 1977: 82-3). Constructed houses, probably reflecting different seasonal and/or exploitational aspects of the adaptations of people bearing these technological systems, are also known from a few areas, including the Colville drainage. Typologically speaking, ASTt remains are sometimes found in the same northern areas as notched points. A common interpretation sees ASTt as an Eskimo variant which displaces an Indian variant (identified by notched points) completely back into the boreal forest. Hence, a priori notched points in these circumstances are judged to be at least several millennia old. In the absence of controlled dating and an understanding of the full range of variation within and between assemblages in the interior, such a facile dichotomy and dating is premature.

Choris is considered by many to post-date ASTt and derive from it; therefore, it is commonly viewed as an Eskimo variant (Dumond 1977). The age is cited as first millennium B.C. based on rather few dated sites. Choris is best known from north of Bering Strait. At the type

site on the coast large elliptical houses, fiber tempered pottery with linear stamping, lack of microblades, large projectile points, chipped adze blades and the oil lamp are found. Elsewhere, remains are less rich. Campsites may be identified by workers on the basis of rather fewer diagnostics; pottery is prominent among these. One camp reportedly produced a large cache of lanceolate points (Dumond 1977: 104-5). Sites which are clearly Choris are "few" (Ibid). The Kayuk materials from Anaktuvuk Pass are sometimes classified with Choris on the basis of similarities to some Choris points. Inferences drawn from statements that materials in the study area are Choris or Choris-like should be considered in this light.

Norton is thought by many, on the basis of pottery and oil lamps, to derive from Choris; similarly, some areas produced points similar to some from sites considered Choris (Dumond 1977: 110-114). Norton is very widespread geographically, as defined by a few diagnostic traits. With north coast, southwest coast and northern interior facies represented, the taxon should be considered as highly heterogenous in terms of actual human adaptations. Sites considered Norton typologically are dated from the late first millennium B.C. to 1000 A.D. in some (but not all) areas.

Finally, the term Ipiutak has been used for some remains in the study area, including some adjacent to the haul road and oil pipeline. This is understood by some workers to refer to a derivative of Norton; it shares some types of stone tools although pottery and oil lamps are absent. At Point Hope, Ipiutak is highly developed in terms of social organization and crafts; inland facies (from the Koyukuk and north slope) are indicative of generally simpler adaptations to poorer resource areas. Again, adaptational variations subsumed under the name Ipiutak are considerable.

Pleistocene-Early Holocene Remains of the Interior

On the basis of diagnostic traits, a portion of the native cultural resources listed are attributed to taxonomic categories, in several different systems of culture-historic reconstruction. These categories are reviewed briefly here for informational purposes only; their use in the discipline does not necessarily mean that they are endorsed by us as useful or even as valid. We begin our survey with a consideration of the Dry Creek site, outstanding in the state from the point of view of problem oriented research. The site lies to the south and west of Fairbanks, just outside the southern part of the study area. Powers and Guthrie (1979) treat Dry Creek, a multicomponent site, in terms of the human adaptation to terminal Pleistocene steppe-tundra. Thus, the economic focus of the early components I and II and the weapons systems which characterize each are considered. Guthrie has cogently argued that Dry Creek offers a basis for generalizing to Beringia at this time, and offers insights into earlier late Pleistocene economic systems in Beringia.

Guthrie has determined that Dry Creek components I and II, based upon remains of mammal bones and teeth, avian gastroliths and fossilized ground squirrel nests, represent fall-early winter camps. Fowl were

sought but the principal game species sought include bison, wapiti and sheep. Both components are seen as "spike camps" (field camps) for local bands of terminal Pleistocene people.

Powers interprets the technological remains in terms of the weapons systems employed by these people. Importantly, materials at Dry Creek have not been subjected to creep or cryoturbation (as is the case for Healy Lake, for example). Both the "composite microblade inset" and "bifacial stone projectile point" technologies are represented at Dry Creek. Component I, as presently understood, is characterized solely by the bifacial projectile point technology. Component II contains both technologies. They are spatially distinct at the site; however, they are best seen as directly associated (Müller-Beck, oral communication, 1980).

In a typological sense, component I is represented by bifacial knives and projectile points, side, transverse and end scrapers, burins, flake tools, cobble tools and cobble cores. Butchering was the main activity represented, with some weapons maintenance as well. One cluster of materials in component II contains crude bifacial implements, shaped scrapers and projectile point bases; microblades are absent. The second cluster is characterized by microblades, microcores, spalls, etc., by bifacial knives (but not points), core scrapers, burins, etc.

Powers interprets component I as premicroblade inset technology, noting the similar absence of microblades at the newly discovered Moose Creek site in the Nenana Valley dating to $11,730 \pm 250$ years ago. (The microblade aspect of the total system, may, of course, simply not be represented). Moose Creek in the Nenana Valley contains bifacial projectile points and/or knives and an associated flake industry. Elsewhere in the interior, only the basal levels at Healy Lake in the Tanana Valley may be comparable temporally and formally (Shinkwin and Aigner 1979); however, points in this Chindadn complex may be associated with a microblade inset technology. Powers suggests that the finds of fluted points in Alaska, while not chronometrically dated, may similarly represent this pre-microblade manifestation. If so, he notes, there would be two point styles in the interior in terminal Pleistocene times, fluted north of the Yukon primarily, and small, triangular south.

Component II of Dry Creek is dominated by the composite microblade inset technology and dated 10,690 years ago; the bifacial points here occur in a mutually exclusive cluster from that with microblades. It is in essence a Denali Complex as defined by West (1967), according to Powers. Denali has not, however, been securely dated (some accept the 2000 year dates but many, including West, opt for an early Holocene dating). The Dry Creek date is highly suggestive. Contemporary, and possibly related to the Denali Complex are materials from Carlo Creek which Powers cites as 8400-8600 years old. Denali remains are also present in tests at Little Panguingue Creek and at Panguingue Creek. Both are undated although the latter has a minimum age of 5600 according to Powers (oral communication).

Dry Creek component III is dated between 8000 and 9000 years ago and as presently known lacks a microblade inset technology. This absence is surprising since there are a number of shallow sites in the interior with microblades dated to the late Holocene. Furthermore, microblades evidently associated with Tuktu points (notched) are dated 4000-5000 years ago from Anaktuvuk Pass and greater antiquity is presumed for the Campus site which apparently has several point forms as well as typical Denali Complex material. A number of sites with Denali-like remains (cores, microblades) occur with notched points during the period 1000-3000 years ago. These variations in the archaeological record suggest that statements in the literature which refer to scanty interior remains as Denali or Denali-like must be taken in the broadest technological/typological sense only and not in any chronological sense other than "prehistoric" time (Shinkwin and Aigner 1979).

Mid-Late Holocene Interior

This brings us to the late microblade materials from the interior. Reference to materials as Denali-like cannot, at this stage of our knowledge of interior technological developments and variations during the Holocene, be taken to mean 8000-10,000 years. Microblades are dated at Dixthada at 2500 years ago and at Gerstle River Quarry 4000 years ago (Shinkwin and Aigner 1979). A date of 1200 years old was obtained on the Koyukuk River Batza tena Tuktu complex with notched points and microblades. Typological dating, however, suggested an age of 6000 years, since the Tuktu site in the Brooks Range was evidently old. Notched points and microblades are accepted as associated by some and denied by others, usually based upon their associations at a single site from which an entire culture-historic scheme is generalized (see Anderson 1970, Dumond 1977, Cook 1969).

An obvious question raised by variations among assemblages and their use as normative expressions of interior lithic assemblages is the utility of existing taxonomies to effectively organize the data. It would appear that variation in weapons systems occurs in the interior, at least from the time of Dry Creek component II. Powers (Powers and Guthrie 1979), has noted for example, that bifacial projectile points are not diagnostic of assemblages considered related to Denali Complex, such as Akmak; however, there is codominance in these examples of wedge-shape microblade core (microlithic inset) and bifacial (knife) technology. Distinct, in the absence of both a bifacial (knife) component and a microlithic component is Gallagher Flint Station (locality 1) in the northern part of the study area. While a chronometric date of $10,540 \pm 150$ has been obtained, Roger Powers (oral communication, March 1980) notes that this is largely a surface site. Furthermore, a date of only 2000 years also comes from the "intruded" locality A. The absence of bifaces may be a matter of site function (quarry).

Summary

This general review deliberately excludes a consideration of the cultural-historical schemes, internally contradictory in some cases and certainly divergent in significant ways from each other, for reasons cited above. Table 3 suggests the chronologic relations among the taxa (in cases the taxon is a component with a date, in others it is a more inclusive construct on the order "phase" and higher levels of abstraction current in archaeological use).

Review of the Evidence

Intent and Data Sources

The questions arise here as to what kinds of cultural resources may be generally expected to occur along the NWA corridor, and what can be stated about their probable distribution. A third concern involves the 'visibility' of these various sites (i.e., what is preserved): Previously (Aigner and Gannon 1980), three broad categories of cultural resources have been recognized: prehistoric; native historic; and non-native historic.

Any success in attempting to generate predictive models of cultural resource potential for given areas is contingent upon how well particular cultural systems and environmental dynamics (including physical processes, and resource availability and fluctuations) - past and present - are understood. For the purposes of this report, such understanding has been strived for by examining available existing data on pertinent traditional and prehistoric Eskimo and Athapaskan, and historic Euro-American and native sites and cultural patterns.

Information was obtained from four main sources, comprising archaeological studies, ethnographic studies, early incidental historical accounts and ethnoarchaeological studies. Data on historic period sites, both native and non-native, were obtained chiefly through written accounts. By necessity, much of this information has been distilled, but is sufficient to begin formulating a theoretical framework for future study and a stratified sampling methodology for field reconnaissance. As seen in Figure 2, the proposed NWA Route passes through areas whose former occupancy is uncertain, or whose known occupants and settlement patterns are not well-documented. By extrapolation from the more well-documented areas, however, the predictive scheme considered below should be equally applicable to both cases.

Summary of Traditional Native Subsistence and Settlement Patterns

Critical aspects of traditional Eskimo and Athapaskan subsistence and settlement patterns have been presented in Aigner and Gannon (1980) and are overviewed briefly here. Except for certain inter-ethnic variability and variances of region and resources (ecosystem), all the native

TABLE 3. SUMMARY OF DATED INTERIOR PREHISTORIC SITES AND RELATED COMPONENTS*

| | |
|------|------------------------------------------------------------------------------------|
| 2000 | Athapaskan, Nunamiut, non-native |
| | Kavik, Dixthada Upper Component, Dakah de'nin's site, Klokut |
| 1000 | Koyukuk River Batza tena Tuktu complex, Onion Portage Itkillik, Ipiutak, Norton |
| A.D. | |
| B.C. | Dixthada Lower Component, Healy Lake "Campus" (Denali-like), Norton, Choris |
| 1000 | Dry Creek Component IV, Gerstle River Quarry, Fort Greeley Entrance? |
| | Arctic Small Tool tradition |
| 2000 | Onion Portage Portage Complex, Arctic Small Tool tradition |
| 3000 | Healy Lake "Tuktu", Anaktuvuk Tuktu, Onion Portage Palisades Complex |
| | Panguingue Creek (post-dates the occupation) |
| 4000 | |
| 5000 | |
| 6000 | Healy Lake Quartz Horizon, Dry Creek Component III, Denali?, Carlo Creek |
| 7000 | Denali?, Akmak? |
| 8000 | Gallagher Flint Station locality 1? |
| | Dry Creek Component II, Healy Lake Chindadn Complex |
| 9000 | Dry Creek Component I, Moose Creek. |

*From Aigner and Gannon 1980. Note that in the text some carbon-14 dates are given as B.C. and others as B.P. (before present) or "years ago." B.P. projects dates back from A.D. 1950. Given recent recalibrations of C-14 dates, it is known that radiocarbon years are not strictly equivalent to calendrical years. A date accompanied by a + factor is a C-14 date (with its counting error). Others are extrapolations (e.g., 4000 B.P.) and guess dates.

peoples and cultures described, apart from the Tareumiut, have traditionally (and probably prehistorically as well) followed a semi-nomadic existence, subsisting primarily through the hunting of caribou and salmon fishing. Secondary or alternative subsistence resources comprised chiefly various other fish species, waterfowl and game birds, and various other mammals including Dall sheep, bear, hare, and in later times, moose. Availability of all these resources depended mainly upon locality and seasonality, and as Amsden (1979) has pointed out for the Nunamiut - essentially applicable to the Athapaskans as well - periodic major fluctuations in critical resources also occurred with concomitant changes in aboriginal hunting and settlement patterns. Accordingly, band territories were necessarily large and the human population density low, but territorial boundaries were also 'fluid' and the people highly mobile throughout the year, and time in general.

Some aspects of traditional interior Eskimo and Athapaskan subsistence in Alaska differed in details but a basic strategy of logistical deployment of task groups around predicted resource availability and concentration characterized both. All interior groups were highly mobile; those with access to salmon resources (some of the Athapaskans in the study area) less so than those without. All were mobile over large territories, organized into small bands which deployed in family and other units over the year as conditions dictated. Caribou hunting was a significant aspect of all interior peoples' economic systems and salmon where they were present. Summer fish camps were a key settlement type as were the caribou camps (which often brought together one or more bands) and the winter camp/village where food was cached. Other resource components included fishing for whitefish (and other varieties), hunting/collecting waterfowl (some areas were seasonally heavily inundated by migratory birds) and other birds, hunting sheep, collecting berries, moose hunting, and trapping fur bearing animals, especially muskrat (particularly important after Euro-American contact).

Several types of settlement were in use. Residential bases (villages, winter settlements) were used over the winter by several families which constituted the band. Food was cached at these places which tended in some areas to coincide with a summer salmon camp. Summer fish camps, camps near caribou fences, and other locations where resources were extracted or processed over the course of a week or more were more common (numerically speaking) types of settlements. These nodes were preferentially placed within reasonable time/distance from each other and from the winter settlements. Field camps (kill sites, camps for temporary maintenance of one or several people for a day or so) were more common still, and more ephemeral - most were probably not used a second time. Stations where game was observed or hunting strategies planned were even more ephemeral and more common. There were also caches at strategic places in the band territory, sometimes but not necessarily always, associated with other site types.

The maximal socio-political unit was the local band. Low population density and the structure (seasonality and distribution) of resources

made highly fluid units of small size maximally adaptive. Maintenance of ties with adjacent bands permitted changing band composition and membership over the years (and accounts for extreme archaeological heterogeneity of material remains at the settlements). Modern linguistic/regional bands would not have been effective social units as they were too small and/or the distance among local bands was too great to have permitted regional bands to have served as the effective mating group.

Fluidity of local bands insured viability over time and ability to adjust to resource availability. A logistical system (deployment of task groups) was adapted to the low density but seasonally concentrated resources. The archaeological implications of traditional land use systems are lack of continuity in material culture traits so often used by archaeologists to define temporal cultural traditions. More significant for understanding prehistoric cultural resources is knowledge of human adaptation, specifically the subsistence/settlement system and its components.

Binford (1980:10) characterized the Nunamiut as "logistically organized collectors [who] supply themselves with specific resources through specially organized task groups...in specific contexts." Again, while no comprehensive ethnoarchaeological studies have been conducted among the Alaskan Athapaskans, this subsistence strategy appears to generally hold for them too. The distinguishing aspects of this system are 1) "the storage of food for at least part of the year", and 2) "logistically organized food-procurement parties", as opposed to a "foraging" approach where food and other resources are obtained on an encounter basis.

As outlined in Aigner and Gannon (1980), Campbell (1968) defined six basic settlement types for the Tuluqmiut Nunamiut, varying as to complexity, location, time and period of occupation, number of occupants and function throughout the annual cycle. Binford (1980), through his extensive ethnoarchaeological studies among the Nunamiut (Anaktuvuk Pass), improved upon this model, defining five settlement or site types based on logistically organized procurement strategies and function-specificity. These comprise the "residential base", "location" (extractive/processing sites), "field camp" (temporary maintenance camp), "station" (observation/strategy planning site), and "cache." A detailed distribution of these site types is shown in Aigner and Gannon (1980: Fig. 21).

Historical Native Patterns

The impact of the historic period on the native inhabitants has been discussed (Ibid.: 75-82), but certain notable imposed changes bear reiterating. Despite massive reductions in native populations due to disease, and steadily diminishing territories, the Eskimos and Athapaskans attempted to maintain their traditional subsistence and settlement patterns as best they could, even to present times. Modifications, however, were unavoidable.

Early changes came about during the fur trade period as the natives sought and competed for Euro-American trade goods largely through an encouraged increased emphasis on trapping. This eventually led to significant shifts in the economic bases and settlement patterns, decreasing mobility, and changes in inter-ethnic relationships (VanStone 1974:102). Further changes in the economic base occurred as the natives, especially the Nunamiut, began supplying fresh meat to the traders, whalers and other newcomers. No doubt the acquisition of firearms increased hunting efficiency, but as Campbell (1968:19) has suggested, efficient means of hunting were already well established, and probably no more animals were taken by the use of firearms than by the traditional ways. Although the added 'market' possibly did result in slight reductions of the caribou, it is unlikely that the herds were in any way decimated strictly through overhunting (Amsden 1979:402). Natural fluctuations, however, did occur among the caribou herds, forcing the natives (Nunamiut) to seek alternative food sources and settlement patterns (Amsden 1979). At such times one increasingly attractive alternative became food supplied by Euro-Americans. In short, both Eskimos and Athapaskans, with time, acquired, and became more dependent on Euro-American goods and services. The upshot was a reduction in territory size, and a gradual trend towards a somewhat more sedentary village life where, in most cases, trapping supplanted hunting to a high degree. With the onset of the gold rush era, especially, many natives found an additional means of subsistence through wage labor, which generated even more of a departure from the traditional ways, and more dependence upon Euro-American goods.

Historical Euro-American Patterns

'Historic' is defined here generally older than 50 years (ca. 1930) and younger than first direct Euro-American/native contact; variable from place to place but between 1816 (Kotzebue's expedition to the west coast) and the late 1700's (contact in the Cook Inlet region) (Ibid.: 75-82).

Following the period of coastal exploration, Euro-American interests began gravitating towards the interior, chiefly in conjunction with fur trade activities. The principles in this large-scale enterprise were the Russian-American Company, and later (1847), the Hudson Bay Company. By 1867, with the sale of Alaska to the United States, the fur trade had largely waned in terms of major commercial importance, but was soon replaced by the discovery of gold and numerous ensuing stampedes which continued into the early twentieth century.

With Alaska suddenly thrust into a boom state, territorial needs for improved communications, transportation and protection of U.S. interests were soon realized. As a result, a brief but intense period of telegraph line, road and trail, and roadhouse construction was initiated in the late 1800's and early 1900's, and in some localities, persisted into the 1930's. Mercantile enterprises also flourished during this period, providing many needed items for the settlers and miners.

The material by-products of the formative part of the historic era tended to concentrate around certain 'target' areas for economic exploitation, along major transportation routes such as rivers, and later, roads and trails, or in settlements established as support bases. Resultant site types, therefore, include: various dwellings such as houses, cabins and roadhouses; supply buildings and task-oriented structures related to, for example, mining, telegraph system, mercantile and transportation activities; industrial equipment, again related largely to mining, road building and communication system activities; and accumulations of a wide variety of miscellaneous industrial and domestic paraphernalia, associated or not, with the aforementioned features.

Cultural Resources Identified in the Study Area from a Literature Review

While a number of cultural resources were identified in the course of the Alyeska archaeological survey, the available information on most was not collected toward the end of enhancing our understanding of prehistoric and historic land use patterns in the interior. Thus, the remains may be assigned a relative age and affiliation, but the resource is not understood in terms of its settlement/subsistence system.

Along the Alyeska TAPS line most of the reported cultural resources are identified as (lookout) stations, functionally speaking, and field camps. Few examples of locations and residential bases are identified for either the prehistoric or historic period near the alignment. However, in the wider study area a number of historic period locations (camps of various kinds) and residential bases are identified along the major rivers and tributaries of the interior and on lakes with good fishing and trapping potential.

The alignment sample previously known (and correctly anticipated for our 1980-surveys), is heavily biased toward the numerous, simple (behaviorally speaking) overnight camps, lookouts, and stop-over sites of peoples in the interior over the past millennia. Some 341 previously reported prehistoric cultural resources occur on bluffs, kames, promontories, high terraces and the like. They occur in areas with two or less resources available for one or perhaps two seasons during the year. The resources are mainly caribou and moose although sheep and waterfowl, and less commonly salmon, occur in the inventories. For the prehistoric sites which are probably field camps (and, less commonly, locations) we note associations with rivers, river confluences and lakes. Resources more often number three and seasons two for these sites. Most prehistoric sites were identified in the surveys along the Trans Alaska Pipeline from 1970-1975.

In marked contrast with respect to site location, resource availability and site complexity are the historic native sites. These are primarily known through native informants and the bias is heavily toward residential bases and field camps (especially summer fish camps) which were often

used several times and figured prominently in the memory culture of informants.

Some 218 previously reported historic cultural resources may be considered in light of locational and resource data. The majority are on rivers in areas with three or four resources available for two or more seasons of the year. Waterfowl and salmon occur frequently in the resource inventories of these identified fish camps, locations for hunting sheep, etc. Only a few of the sites are identified as lookouts and these are simple in terms of resources.

In the Nunamiut area many or most of the sites relate to late 19th century movements east and north in the study area as a result of involvement with non-native traders and as a result of a decline in the caribou populations. Tent ring and sod house sites are reported. Ephemeral camps, a few lookouts, isolated graves and cellars are listed by informants. A number of coastal locations were utilized during this 1890-1910 period of movement into the study area.

Athapaskan informants list a number of villages and camps (residential bases and locations) for the historic period. Villages are located on rivers, river confluences and lake inlets where salmon are a key resource. Seasonal camps for various resources are reported; a number comprise muskrat trapping localities on lakes. More common are the listed fish camps and trapper's cabins. In addition there are grave sites, wood cutting stations (supplying wood to steamboats), caches and fishing and portage locations.

Previously reported historic non-native cultural resources number 174. Many occur along rivers which were avenues of travel and supply; a number are along established trails to gold fields. Buildings in Fairbanks and at Chatanika Gold Camp, miner's cabins, railroad stations and bridges, and road-houses account for more than half of the sites. A number of former locations of mining camps appear in the inventory; several of these are in the area of the alignment.

Sites on the National Register of Historic Places

While there are a number of sites already previously reported to be Register nominated or eligible in the study area, only three previously reported locations are in danger of being impacted by the NWA route. All three sites are on the National Register of Historic Places. Gallagher Flint Station (PSM-050) lies at the north end of the alignment immediately adjacent to the haul road but at some distance from the NWA route. Chugwater (FAI-035) lies on Moose Creek bluff south of Fairbanks and away from the NWA centerline. Both sites are prehistoric, multi-component archaeological sites with extant materials in situ. If indirect impacts are anticipated at PSM-050 and FAI-035, some measures to lessen them should be undertaken by the sponsor. At the least, an informational program regarding cultural resource management should be initiated and

personnel should avoid any activities on the site. LIV-074, Davidson's Ditch, is crossed by the proposed centerline. The ditch is an historic construction associated with mining activities.

Archaeological Implications

Archaeological Visibility

Campbell (1968), Amsden (1977, 1979), and Binford (1978, 1980), through their studies of the Nunamiut, have shed considerable light on the dynamics underlying the traditional subsistence and settlement patterns of arctic hunters and gatherers. If differences in traditional inter-ethnic patterns and technologies for Alaska native societies can be considered more a matter of degree rather than fundamentally dissimilar, then tentative applicability of the Nunamiut models (discussed below) can be assumed for other inland Eskimo groups and interior Athapaskans as well for purposes of cultural resource location and preliminary evaluation.

Campbell (1968) and Binford (1980) each recognized and defined several discrete settlement or site types traditionally established by the Nunamiut (centering around Anaktuvuk Pass) throughout their annual cycle. While some overlap as well as divergence exists in the two schemes, they are generally comparable. The relevant points to consider with respect to these models are size densities, location and distribution, function specificity, and assemblage contents and variability.

The network of Tuluqmiut settlement types described by Campbell (1968:6) is dense and complex, both within and without the traditional band territory. It should be stressed, however, that this reconstruction is based on an unspecified five-year period prior to 1875, and the actual number of sites used is probably far greater than shown - not only within the specified time frame, but outside it as well (Ibid.:15). This complexity is depicted by Binford (1980:11) to be even greater when viewed in a more abstract manner. The patterns are, however, logistically ordered around strategic resource localities. Of course, through time almost any particular settlement type can evolve into another generally more complex type. For example, a 'station' can become a 'location' depending on circumstances, and a 'cache' may be isolated or occur in association with any other settlement type. The calculated percentages of Campbell's 131 settlements shown in Aigner and Gannon (1980: Fig. 20) are presented here only as an indication of relative abundance of functional types within the system. Certainly, type I sites (headquarters localities) constitute the least frequent settlement mode for a given group, and a high value for type III (hunting/fishing camps) also seems reasonably acceptable. In contrast, the lower value for type IV (overnight camps) is far too conservative, and this type should (along with stations) constitute the majority of all settlement/site types.

The archaeological visibility of these various site types, i.e., where and to what extent is a particular site at a given location manifested, is governed by two main factors: its 'assemblage status' and 'physical integrity.'

An assemblage is a "derivative of some organized series of events characteristic of a system" (Binford 1980:17); i.e., the accumulated products generated through serially differential events, where each event in turn is reflected by assemblage composition. The greater the mobility of a people, the more concisely limited an assemblage will be at a given site, and therefore, the more evident the resolution between material by-products and events. The converse of this also holds: the greater the sedentism of a people (longer residence at a given location), the greater (denser and more variable) will be the resultant assemblage (but also the less resolution between events and associated material by-products). For example, residential base camps/headquarters localities and "trading camps" will generally exhibit fairly rich assemblages whereas those of field/overnight camps will be relatively meager. The other settlement types can vary in their assemblage densities depending upon their functions, duration of occupancy, and the number of occupants (Aigner and Gannon 1980: Table 6).

The physical integrity of a site involves two primary considerations, both related to the preservation status of the site itself and its assemblage. These are 1) what part and to what degree is an assemblage preserved, and 2) to what degree is an assemblage contextually preserved intact with respect to the host site and, in turn, with the surrounding terrain. It should be noted that neither of these points is mutually exclusive from one another.

Content preservation involves consideration of what kinds of materials endure through time and what kind do not. As a general rule, inorganic materials (e.g. stone and metal) endure better and longer than organic materials (e.g., wood, bone and fiber) against mechanical and biochemical degeneration, especially in the generally acidic soils of Alaska.

The second point involves mainly physical erosion generated by running water, wind, periglacial processes such as cryoturbation and solifluction. Any or all of these agencies can displace assemblages (both buried and surficially exposed) thereby disrupting the integrity and contextual aspects of a site. Fire and the activities of animals (bioturbation) - including humans themselves, especially in conjunction with their mechanized activities - also play active roles in the impact of sites. Of course, the more any site undergoes disruption, the greater will be the loss of contextual associations with a comensurate diminishing potential for accurately reconstructing cultural events.

In attempting to locate sites via some sort of survey strategy, and during the later interpretation of the findings, several forms of bias can arise. Primarily, certain settlement site types (such as base camps) will be potentially easier to detect than others insofar as they are larger, have a longer period of occupancy, and a larger variable assemblage. However, these may not always be the most abundantly occurring types, so a fairly high probability exists that they may be missed in the field. On the other hand, site types such as overnight/maintenance camps, which have a greater frequency of occurrence, may

likewise go undetected by virtue of their small size and few or ephemeral cultural remains. As Campbell (1968:18) points out, types III, IV and VI settlements with known locations were difficult to recognize five years after their abandonment, and one type II settlement was difficult to relocate after only thirteen years, despite the presence of "durable" metal artifacts and moss-covered houses. Campbell (Ibid.) rightly stresses that any cultural reconstruction based only on sites with large assemblages will be skewed and incomplete.

Factors other than sheer assemblage size which affect site visibility partly relate back to differential preservation of material items and site disruption. Spearman (1979:90) notes that wooden drying racks and dog tethering stakes at a recent traditional campsite in the Anaktuvuk Pass area remain as little more than "badly weathered stumps barely protruding above the ground surface." In other cases, sites and assemblages become obscured by earth burial or vegetative cover. The same site described above by Spearman (Ibid.) was partially covered with dwarf willow, making location and identification of material remains difficult.

Differential cultural practices can also affect site visibility, and perhaps lead one astray at the interpretive level if not considered. For example, certain structural remains such as rings of stones used to anchor tent bases in the warm months would be substituted by piled snow in the winter (Ibid.:89). Only the stones in the former case would be preserved, bringing about totally disparate configurations in these two seasonally dictated but functionally similar camp types.

Predictive Site Location Potential

From the foregoing discussion, it becomes evident that the location potential of any cultural resource depends on its visibility; a condition involving several variables. The issue to be addressed at this point is the means whereby the detectability potential for cultural resources can be enhanced.

Due to the nomadic settlement patterns of the Alaskan Eskimos and Athapaskans, it might seem as if sites would have a haphazard or ubiquitous distribution. Indeed, such settlements as overnight camps may have an unpremeditated distribution, but the vast majority of site types are strategically situated in areas close to extractable critical resources. These largely comprise: fresh/clearwater lakes and streams harboring favored fish species; caribou migration routes; habitats favorable to moose, sheep, waterfowl and other key animals; lithic resource localities; and critical wood resource localities such as willow stands for fuel and structures. Many sites, no doubt, were situated around multiple adjacent habitats. To simply search for archaeological resources without regard to these catchment areas is neither the most efficient way to achieve success nor the best use of manpower.

In the event of such areas being identified, the problem then becomes one of identifying high potential areas, suitable for some form of settlement or activity area. Aside from function-specific localities

such as lithic quarries, prime geomorphic settings include: relatively flat areas along or near freshwater lakes, especially at inlets or outlets; along clearwater streams, particularly at confluences; areas bordering marshland; and promontories suitable as vantage points. Not forgetting that certain settlement types (or any type for that matter) can possibly occur in other localities, the greatest potential for site presence will be in these settings. However, landscapes and vegetative regimes change through time; streams change their courses, landforms become eroded, and streams and lakes become encroached upon by colluvium and vegetation. Any existing cultural resource will, in accord, be affected in terms of its integrity and context. Any cultural materials present in such environments, unless visibly modern, may therefore be allochthonous, and the likelihood of discovery remote. Also, hardship and potential hazard can be imposed upon field crews in surveying certain terrains such as the interiors of tussock bogs.

Another important consideration in cultural resource location involves the containment/preservation potential of sites within (or on) geologic units, respective to their mutual ages. Such a preservation potential model was devised by James Dixon and George Smith in their cultural resource survey/study of the Fort Wainwright lands. Dixon and Smith divided the archaeological resources into an historic and four prehistoric periods, and categorized the geologic units chiefly (Aigner and Gannon 1980: Table 7; G. Smith 1980, oral communication).

Aside from the advantages of mutual dating, the obvious implication of this model is that no cultural materials can (unless redeposited) occur in a sedimentary geologic unit that is younger in age than the materials themselves.

The basic plan adopted here for locating cultural resources is in keeping with the aforementioned considerations. In summary, these consist of 1) identification of key resource (catchment) areas, 2) identification of stratigraphically placed localities with high settlement potential within these areas, 3) consideration and inspection of geologic units, and 4) detailed field inspection within these identified areas for cultural resources. The last point (4) is partially attendant upon inspection of certain 'anomalies' which can be subdivided into two categories, 'surficial' and 'stratigraphic.' Those surficially manifested include localized irregularities in the ground surface (e.g., benches, depressions, mounds, ridges, breaks-in-slope), atypical lithic accumulations, vegetational changes, and suspicious arboreal configurations. Stratigraphic anomalies apply to atypical features below ground surface such as paleosols, disparate clast sizes (possible manuports), and disrupted stratigraphic units.

One significant outcome of the Fort Wainwright study, attesting to the low visibility of cultural resources, was that, of all the sites located within designated high potential areas, approximately 37% of

them were located by means of systematic sub-surface prospecting techniques (G. Smith, personal communication). It is not known what kind of recovery rate would have been achieved in sampling 'low potential areas.'

Geomorphic Setting of Archaeological Sites

To present an analytical summary of the relationships between archaeological site locations and their geomorphic settings, 183 previously identified sites located along or near the proposed NWA Route were considered. Primary information was gathered from the data supplied by Aigner for the 1980 Level I Environmental Master Guide, of the Alaskan Northwest Natural Gas Transportation Company, Alignment Segments 1-96 (Table 4, from Aigner and Gannon 1980). Additional location data were obtained from various other reports and documents, and are abstracted in Aigner and Gannon 1980: Appendices 1-4. The predominant geomorphic settings noted comprise: stream margins and confluence areas; lake and/or marsh margins; and hilltops and promontories with vantage (Ibid.).

Significant resultant patterns are that the greatest percentage of sites evidently do lie along or near streams and at locations affording some degree of vantage. It is questionable, however, whether the indicated distributions are truly representative or largely reflect a bias in survey methodology (i.e., conjured "high potential" areas are automatically surveyed more intensively, thereby revealing more sites). Other notable patterns which beg the same questions are the significant site clusters within certain areas (e.g., Galbraith Lake, Minnie Creek, Grayling Lake-Jim River, Prospect-Nasty Creek, Old Man Camp, and Livengood) as well as several hiatal stretches (no recorded sites) (Ibid.).

Campbell (1968) and Binford (1980), however, have shown that settlement patterns are indeed logistically dictated. For example, the large site cluster at the northern entrance to the Brooks Range (Ibid.) coincides with a major caribou migration route, and individually as well, settlements are likely to be situated near one or more resource areas. The hiatal areas, too, may be a reflection of resource availability and settlement patterning, but only future survey work will confirm this.

Although the sample of 183 sites represents only a fraction of the total number of sites occurring within the study area, it serves to demonstrate certain environmental conditions sought by early Eskimos and Athapaskans. As such, the patterns indicated will be helpful in developing models of archaeological potential and conducting cultural resource surveys.

1980 and Subsequent Surveys

As a result of our background study, we recommended that in 1980 and future land surveys for cultural resources, a systematic shovel testing/surface clearing method should be adopted at a greater level of intensity than had been formerly practiced. While it was confidently felt that much of the proposed NWA route from Delta Junction, south, passed through areas of relatively low cultural resources potential (prehistoric), and that former (1978-1979) surveys have

TABLE 4. ALIGNMENT SHEET SITE TALLY.

| Alignment Sheet | Number of Sites | |
|-----------------|-----------------|------------------------------|
| 1. | 0 | |
| 2. | 0 | |
| 3. | 0 | |
| 4. | 0 | |
| 5. | 1 | |
| 6. | 0 | |
| 7. | 1 | |
| 8. | 1 | |
| 9. | 1 | |
| 10. | 1 | |
| 11. | 1 | |
| 12. | 3 | Pump Station 2 area |
| 13. | 0 | |
| 14. | 0 | |
| 15. | 0 | |
| 16. | 1 | |
| 17. | 0 | |
| 18. | 0 | |
| 19. | 0 | |
| 20. | 1 | |
| 21. | 5 | Gallagher Flint Station area |
| 22. | 4 | |
| 23. | 0 | |
| 24. | 0 | |
| 25. | 0 | |
| 26. | 2 | Galbraith Lake area |
| 27. | 15 | Entering Brooks Range |
| 28. | 2 | |
| 29. | 1 | |
| 30. | 0 | |
| 31. | 0 | |
| 32. | 1 | |
| 33. | 1 | |
| 34. | 0 | |
| 35. | 0 | |
| 36. | 0 | |
| 37. | 0 | |
| 38. | 0 | |
| 39. | 4 | Linda Creek area |
| 40. | 1 | |
| 41. | 15 | Minnie Creek area |
| 42. | 4 | Sawyer Creek area |
| 43. | 1 | |
| 44. | 1 | |

TABLE 4. CONTINUED

| Alignment Sheet | Number of Sites | |
|--------------------|--------------------|------------------------------|
| 45. | 5 | Lakes 1032, 1068 area |
| 46. | 8 | Chapman Creek |
| 47. | 6 | Grayling Lake area |
| 48. | 10 | Jim River area |
| 49. | 2 | |
| 50. | 3 | Prospect/Pump Station 5 area |
| 51. | 15 | Nasty Creek area |
| 52. | 1 | |
| 53. | 0 | |
| 54. | 23 | Old Man Camp area |
| 55. | 7 | Old Man Camp area |
| 56. | 0 | |
| 57. | 0 | |
| 58. | 0 | |
| 59. | 0 | |
| 60. | 3 | |
| 61. | 0 | |
| 62. | 0 | |
| 63. | 0 | |
| 64. | 2 | Yukon River |
| 65. | 0 | |
| 66. | 0 | |
| 67. | 0 | |
| 68. | 2 | Hess/Fish Creeks area |
| 69. | 3 | Erickson Creek area |
| 70. | 0 | |
| 71. | 16 | Livengood area |
| 72. | 0 | |
| 73. | 1 | |
| 74. | 0 | |
| 75. | 0 | |
| 76. | 0 | |
| 77. | 0 | |
| 78. | 0 | |
| 79. | 1 | Treasure Creek area |
| 80. | 0 | |
| 81. | 0 | |
| 82. | 0 | |
| 83. | 0 | |
| 84. | 1 | Moose Creek Bluff area |
| 85. | 1 | Moose Creek Bluff area |
| 86. | 0 | |
| 87. | 0 | |
| 88. | 0 | |

TABLE 4. CONTINUED

| Alignment Sheet | Number of Sites | |
|-----------------|-----------------|---------------------|
| 89. | 0 | |
| 90. | 0 | |
| 91. | 0 | |
| 92. | 0 | |
| 93. | 3 | Keystone Creek area |
| 94. | 1 | |
| 95. | 1 | Delta Camp area |
| 96. | 0 | |
| | <hr/> N=183 | |

Number of sites on or in close proximity to NWA route = 47 (24%)

been sufficiently intense, the more northerly segments pass through certain higher potential areas. We felt that the planned intensive survey techniques, therefore, should prove fruitful. Testing should be oriented towards the considerations discussed above, in some incremented manner to be determined. In each crew of five proposed surveyors, three to four persons should be responsible for subsurface testing at practicable dimensions limited by ground conditions. The remaining crew member(s) should be responsible for compass navigation. In areas determined in the field to be high potential for revealing cultural remains, more intensive shovel clearing was called for. Each crew member walking the centerline and EMS transects would shovel-clear in high potential areas. In other areas, as the crew chief determined, minimal systematic clearing would be accomplished by at least one person. This exploratory testing is designated here as 'phase I'. 'Phase II' excavations should consist of intensive testing to establish the limits of identified sites and the gathering of preliminary data sufficient to determine Register eligibility. 'Phase III' excavations should constitute scientific data recovery and be oriented towards solving specific problems in a scientific manner.

Summary

Based upon our review of the literature pertaining to traditional land use and post-contact activities along the centerline and areas adjacent, we determined that numerous, small, highly ephemeral to highly productive (workshop) native sites were to be expected in the 1980 survey. Functionally these would include primarily field camps and stations although several locations (major seasonal camps) might also occur. Historic non-native resources would be less common along the corridor but cabins and even substantial (abandoned) mining camps with building remains were expected.

The centerline and material sites south of Prudhoe Bay to Fairbanks were likely to produce large numbers of small prehistoric and historic native sites. Certain areas previously proved particularly productive - those with chert outcrops, isolated promontories in low plains, lake perimeters and river confluences. Alignment sheets with more than 10 listed cultural resources included 27, 41, 48, 51, 54, and 71. In addition, multiple loci were present at a number of locations including the Gallagher Flint Station.

The centerline and material sites south of the Brooks Range and north of Fairbanks were expected to reveal several non-native settlements of considerable extent including the remains of cabins and tents (West Fork, Nolan, Wiseman, etc. may have peripheral buildings involved).

The centerline and material sites from Fairbanks south to Delta Junction were not expected to reveal many or complex sites from the prehistoric and historic periods. Nonetheless, multiple loci were known on AS-85 on Moose Creek Bluff and several roadhouses had been reported.

Known sites on the National Register of Historic Places that might be directly and indirectly impacted by proposed construction include LIV-074, PSM-050, and FAI-035. Other sites which might be in danger of impact which are wholly or partly extant but for which insufficient data exist (prior to the 1980 field season) for an assessment of significance include (but are not limited to) the following:

| | | | |
|----|---------|----|---------|
| AS | AHRS | AS | AHRS |
| 07 | SAG 009 | 48 | BET 026 |
| 21 | PSM 050 | 48 | BET 055 |
| 22 | PSM 051 | 48 | BET 054 |
| 27 | PSM 066 | 48 | BET 052 |
| 27 | PSM 036 | 48 | BET 053 |
| 27 | PSM 049 | 48 | BET 050 |
| | | 51 | BET 061 |
| 28 | PSM 092 | 51 | BET 062 |
| 28 | PSM 069 | 54 | BET 046 |
| 31 | PSM 008 | 54 | BET 043 |
| 39 | CHN 007 | 54 | BET 051 |
| 39 | CHN 006 | 55 | BET N61 |
| 39 | CHN 005 | 56 | BET 009 |
| 41 | WIS N01 | 68 | LIV 037 |
| 41 | WIS 037 | 69 | LIV 055 |
| 41 | WIS 009 | 70 | LIV 032 |
| 41 | WIS 031 | 71 | LIV 052 |
| 41 | WIS 034 | 71 | LIV 054 |
| 42 | WIS 013 | 85 | FAI 035 |
| 42 | WIS 039 | 93 | XBD 013 |
| 42 | WIS 038 | 95 | XBD 072 |
| | | 95 | XBD 017 |
| | | 95 | XBD 059 |
| | | 96 | XBD 057 |

SURVEY METHODOLOGY

Introduction

The summer 1980 NWA archaeological survey was accomplished by four field crews, each comprising (basically) five persons, including a crew chief. This search for cultural resources occurred in three principal modes: 1) intensive (100%) systematic coverage of selected potential exploratory material sites (EMS's); 2) visual inspection of certain material sites in marginal environments and with anticipated negligible cultural resource potential; and 3) intensive (100%) coverage of selected segments of proposed NWA gasline corridor.

Survey methodology was consistent with that employed in previous seasons but modified on the basis of past experience in order to ensure maximum results. Variables dictating these modifications comprised general terrain character, geomorphic features, stratigraphic units, potential subsistence/commercial resource availability and the knowledge of prehistoric and historic land use gleaned through an extensive review of the literature (Aigner and Gannon 1980). The aspect of the survey which varied most in response to these environmental variables was intensity of shovel testing and surface clearing.

The work order for 1980, as in prior years, called for periodic clearing of the ground surface possessing any appreciable vegetative mat. Previous surveys where surface clearing has been conducted have resulted in marked increases in located cultural resources. During the 1980 field season a systematic program of clearing/testing involved removing the vegetative mat (typically 1 ft²), probing several inches to a foot (or more when warranted by circumstances), examining the mat and soil for anomalies (e.g., charcoal, flakes, bone), noting soil characteristics, refilling the hole and replacing the mat. No fewer than three persons were engaged in this activity in areas with considered moderate and high cultural resource potential. The remaining crew members simultaneously scanned the immediate vicinity for surficial anomalies (e.g., structures). Between surface tests, tasks consisted of navigating, visual examination of the ground surface and vicinity and note keeping. In addition to documenting cultural resources, notes were taken regarding such items as the amount of standing water, terrain, and flora and fauna. All crew members maintained independent notes. Despite the fact that 'environment' guided such testing, test pitting and surface clearing were conducted in certain areas considered to be of low site potential, in order to gauge the efficacy of the technique and allow for better evaluation of survey results.

All cultural resources (including evidence of modern activity) encountered during the 1980 field survey were thoroughly photographed, mapped and described in notes and on pre-printed forms. This approach applied to sites formerly worked by Alyeska archaeologists as well. In the case of prehistoric and historic sites, subsurface testing delimited the extent of the activity area within constraints of time, and aimed to provide data adequate for assessment of eligibility for inclusion on the National Register of Historic Places.

EMS Survey

For exploratory material sites requiring intensive coverage, transects were made with an average spacing of 60 feet between surveyors. In most cases each EMS was surveyed by way of a compass-oriented rectilinear grid system superimposed on the locality, using maps prepared by Michael Baker, Jr. as a base. This allowed for controlled 100% coverage of each EMS and its periphery as well. This method was adopted in 1979 as it was found easier to follow compass bearings on large or heavily forested EMS's rather than follow the commonly irregular or unmarked boundaries.

Each EMS was entered at and along a specific bearing (using Brunton-style compasses) with appropriate spacing of crew members. Passes and turns were then made within the EMS using the 'pace and compass' technique. Paced distances were incremented normally at 100 foot intervals with pacing determined by from one to all crew members, depending on the crew chief's decision. At each 100 foot interval surface testing was conducted. A variation on the pacing and testing routine was employed by some crews and consisted of pacing the specified distance, dropping a marker, then wandering back over the area previously covered up to the last station, testing at the individual's discretion. This technique was advantageous by maintaining navigation control yet allowing each crew member to be more attentive to the surroundings rather than preoccupied with pace counting. Variations also occurred on some large EMS's which were not amenable to gridding by surveying in a spiral manner. In high potential areas, surface testing was categorically done at less than 100 foot intervals and commonly left to individual discretion (testing at will). In all cases, bedrock exposures, rodent burrow throwout, frost boils, channel banks, uprooted tree root balls and other areas void of vegetation were examined.

Those EMS's requiring visual inspection were approached on foot as closely as possible, but many would have required helicopter support to actually reach them. Each such EMS was visually scanned by all crew members with the aid of binoculars. In many of these cases, distance, large size of the EMS and frequent inclement weather precluded more than just a fraction of the site from being directly observed. The unobserved portions have subsequently been evaluated with the aid of low altitude (1:24,000) color aerial photographs. All the EMS's specified for visual examination are in geologically active areas such as river channels and modern floodplains, and are considered to have little or no cultural resource potential. The primary intent of this survey mode was to verify their topographic and geologic setting.

Alignment Segments

The bulk of scheduled proposed alignment segments surveyed were adjacent to the Alyeska oil pipeline or the Prudhoe Bay Haul Road, thereby facilitating navigation. Those segments passing 'overland' or adjacent to the Alyeska pipeline were surveyed by transects 500 feet wide, and segments adjacent to the Haul Road by transects 150 feet wide. Spacing between crew members (five) averaged 30 feet on 150 foot transects and 100 feet

on the 500 foot transects. Shovel testing and surface clearing was normally conducted at 100 or 150 foot increments, more rarely at 200 foot increments, or less than 100 feet when cultural resource potential was considered high. In other aspects, survey methodology and documentation was comparable with that employed on the material sites. In both cases, certain settings known to have a higher potential for harboring archaeological materials (e.g., promontories and river confluences) were examined more intensively. For the northern (tundra) segments, five miles of alignment per day per crew was found to be the practical maximum to achieve thorough examination of those segments with even moderate potential. This does not include the time required to document any more than minimal cultural resources. It was found that surveying more than five miles of tundra terrain per day severely impaired the alacrity of most crew members.

Trench Stability Plots and Borehole Locations

Both of these categories of location, akin to small EMS's, were surveyed in the mode described for exploration material sites.

Backhoe Monitoring

The flagged access into each proposed backhoe test site was walked by the archaeologist before the backhoe was driven through the area. A visual, surface clearance was given for fifteen feet on either side of the flagged access. At each proposed backhoe test site a twenty-five foot radius was also surveyed for any visual indication of archaeological remains. If none were encountered the backhoe then proceeded to excavate the trench. The operator initially removed only the sod and the first couple of inches of the soil for close examination by the archaeologist. The sod was thoroughly checked for any archaeological remains. The archaeologist then monitored the excavation for any archaeological evidence and for changes in soil deposition. If the backhoe was exiting along its path of entry (and no clearance was therefore necessary), then the archaeologist followed behind the backhoe checking for any archaeological remains in the areas disturbed by the backhoes tracks.

THEORETICAL AND PRACTICAL PERSPECTIVES IN ARCHAEOLOGICAL ASSESSMENTS

Introduction

As previously reported, the major regulations and legislation influencing cultural resource management are NHPA of 1966, as amended, and its implementing regulation 36 CFR 800, NEPA of 1969, and E.O. 11593 of 1971. E.O. 11593 requires, as a condition of the NWA undertaking, an inventory of sites in the project area and an evaluation of them for eligibility for inclusion on the National Register. If sites listed on or sites eligible for listing on the National Register, based upon an evaluation of significance (36 CFR (formerly 36 CFR 60) 1202 lists criteria), are subject to (potential) impact, then the Advisory Council on Historic Preservation has time to comment on the proposed action before the federal agency adopts the course of action it feels appropriate.

In this report we are advising the sponsor about (1) the cultural resources identified in the project area which may be subject to direct and indirect impacts, (2) the presence of information important in prehistory or history which a cultural resource may reveal (thereby being potentially eligible for inclusion on the Register), and (3) possible management decisions which might be made regarding the cultural resource, depending upon its level of significance. Determination of eligibility requires preparation of documentation by the Federal agency involved. The State Historic Preservation Office of Alaska will evaluate and comment. The ultimate determination is made by the Keeper of the Register. The Advisory Council on Historic Preservation becomes involved only with sites on or eligible for listing on the Register. Similarly, prescribed agencies are responsible for documenting adverse effects and no effects (cf. 36 CFR 800).

Assessments of impacts and recommendations for management require an evaluation of the significance of the endangered cultural resource (site). This is somewhat apart from a determination of eligibility for the National Register. Thus Register eligibility and significance are not strictly synonymous. The appropriate management decision is geared to the level of significance (national, state, local) and its value, not simply to National Register eligibility or listing of the resource.

Site Definition

The basic definition of a site used in this project for purposes of reporting to the state is "a locality with any evidence of past human activity" (Shinkwin and Aigner 1979:90). Thus, a site may be found in primary or in secondary deposits; it may consist of a feature without artifacts or of a cluster of artifacts alone. Operational problems arise in the field with such a general site definition. Indeed, during the 1979 field survey we identified one locality which consisted of a depression with a (probable) hearth and one find of an obsidian artifact in a recent and disturbed context.

During the past several years archaeologists have come to rethink the concept of "site" and some have introduced "non-site" as a unit of consideration, particularly in the context of site survey (c.f. Shinkwin and Aigner 1979:90-91). Plog et al. (1979) note that professionals working in areas like interior Alaska, where humans leave a diffuse trail of past activities for us to follow, are increasingly cognizant of the value of loci of cultural material which are both sparse and diffuse. Furthermore, they argue for the retention of both the concept of "site" and of "non-site" (p. 388). In order to avoid confusion (Sharrock 1980) regarding our definition of "site," we eschew further use of the term "non-site" in this study.

In this project the site concept has been operationalized for analytical purposes as a potentially interpretable locus of cultural materials. Following Plog et al. (1979) interpretable means materials of sufficient quality and/or quantity to permit behavioral inferences. Cultural materials include artifacts, ecofacts and features. The materials may be discrete (spatially bounded with those boundaries marked by at least relative changes in artifact densities) or diffuse.

Determining Effects and Impacts

Information about impacts is extremely important for management purposes. Responsible proposals for management rest upon the reliable predictions of impacts. Impacts may be direct or indirect: "Direct impacts occur from the immediate physical consequences of a project's planning, construction, or use, while indirect impacts are those that are not directly caused by the project's activities but that would not occur otherwise" (Schiffer and Gumerman 1977:291; McGimsey and Davis 1977:111; Lipe and Lindsay 1974). It is not the concern of this report to draw a strict distinction between direct and indirect impact. Due to advisory regulations, because an impact is indirect does not relieve the sponsor of developing a viable mitigation plan.

Assessment of impacts is predicated upon evidence which indicates that damage to the archaeological resource base can "reasonably be predicted as a result of some activity or process set in motion or accelerated by the land modification project being considered" (Schiffer and Gumerman 1977: 291-292). In order to assess impacts, it is necessary to delineate the effects of all activities that occur during a project's planning, construction, and operation, to have knowledge of the nature and significance of the archaeological resources in the affected area, and to understand the relationships between the resources and expected effects.

Since it is agreed that archaeological clearance is required preparatory to engineering studies which may impinge upon archaeological resources (such as tree clearance, core drilling, track vehicles on the tundra), planning stage effects upon the archaeological resource base are being taken into account by project management. The analysis of effects may, therefore, be considered within the same framework as that occurring in the construction stage of the project.

Primary, secondary, and tertiary effects (not to be confused with impacts) are recognized as potentially having adverse impacts on archaeological resources. Primary effects include obvious activities such as bulldozing, coring, digging, operation of track vehicles over the land surface, and removal of material from a borrow area. Secondary effects are associated with support activities such as construction of access roads, establishment of control centers, and the like. Both directly impact the cultural resource. Tertiary effects are not the direct result of construction or support activities; for example, artifact collecting by construction personnel would constitute an indirect impact (Schiffer and Gumerman 1977:294). Direct and indirect impacts also must be considered when the construction is completed and the operational phase of the pipeline is begun. Additional indirect impacts would include project-induced changes in demography and land use, including opening the haul road to commercial traffic.

Significance

Assessment of impacts and recommendations for scientific data recovery or mitigation require an evaluation of the significance of the endangered archaeological resource. This is somewhat apart from a determination of eligibility for the National Register. Under 36 CFR 1202 (formerly 36 CFR 60) criteria for evaluation for possible inclusion in the National Register state that the quality of significance:

"...is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and (a) that they are associated with events that have made a significant contribution to the broad patterns of our history; or (b) that they are associated with the lives of persons significant in our past; or (c) that they embody the distinctive characteristics of a type, period, or method of construction, or that they represent the work of a master, or that they possess high artistic values, or that they represent a significant and distinguishable entity whose components may lack individual distinction; or (d) that they yield, or may be likely to yield, information important in prehistory or history."

"Criteria considerations. Ordinarily cemeteries, birthplaces, or graves of historical figures...properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register [unless] they are integral parts of districts that do meet the criteria..."

Register eligibility and significance are not strictly synonymous:

"Adverse impacts to the archaeological resource base are not simply land disturbance or even modifications of cultural deposits; instead they are losses of values related to significance" (Schiffer and Gumerman 1977:299).

With regard to kinds of significance which relate to Register eligibility, "the assessment of significance is central to archaeological research and management planning" (Moratto and Kelly 1979:1). Significance may be arrayed within a hierarchy of cultural phenomena (intrasite, site and intersite levels are commonly recognized). But it may be interpreted only in relation to a frame of reference. The types of significance commonly recognized include scientific, historical, ethnic, public and legal (Schiffer and Gumerman 1977:249-257; King, Hickman and Berg 1977:95-104; Moratto and Kelly 1979:1-24).

In 1976 the Society for American Archaeology prepared an informational paper on determinations of eligibility to the National Register of Historic Places: "Any archaeological resource is potentially eligible if it can legitimately be argued that it is associated with a cultural pattern, process, or activity important to the history or prehistory of its locality, the United States, or humanity as a whole, provided its study can contribute to the understanding of that pattern, process, or activity" (Society for American Archaeology 1976:1). Furthermore, some properties which cannot be shown to be significant individually "may be eligible as segments of archaeological districts" (Society for American Archaeology 1976:1).

Resources should be evaluated in relation to a regional or areal research design. It is not a priori acceptable to judge a small, surface site insignificant - it must be a decision made in light of the regional, cultural historical frameworks. At the same time, the Society suggests that "properties that have lost their integrity by being completely excavated or otherwise totally disturbed do not normally quality[sic], unless they are of particularly noteworthy historical significance for the data they have yielded" (Ibid., p. 1). They are not excluded categorically. A statement of significance must be based upon adequate data from and information about a site. "It is not sufficient to simply assert one's professional opinion that the property does or does not contain information important to history or prehistory" (Ibid., p. 3).

Mitigation

For each cultural resource in or eligible for inclusion in the National Register, we assess the effect of the project upon it. The effect may be adverse or not. Adverse effect, as discussed earlier, is any non-beneficial change in the quality of the resource that qualifies it under National Register criteria. "The Agency Official, in consultation with the State Historic Preservation Officer, shall apply the Criteria of Effect, set forth in Section 800.8, to determine whether the undertaking has an effect upon the property. Upon applying the criteria and finding no effect, the undertaking may proceed" (36 CFR 800.4). Upon finding an adverse effect, the Agency Official will obtain the information required for properly evaluating alternative courses of action.

Mitigation is the alleviation of adverse impacts (McGimsey and Davis 1977:111; Schiffer and Gumerman 1977:321). The aim of conservation archaeology

is to explore possible ways to preserve or avoid destruction of archaeological resources deemed eligible for nomination to the National Register. This will depend upon the scope of the project, its current stage, and predicted impacts on and significance of the archaeological resource. However, as Schiffer and Gumerman note, when factors of significance and on-going destructive processes (including impacts) are considered, the conservation model becomes complicated. Planned data recovery (excavation) is a mitigation alternative which may be most viable in some cases.

It should be emphasized that care alone, or negative sanctions against off-road activities, do not protect eligible sites. Active preservation of sites along the gasline is also another possible mitigative alternative. However, it should be noted that most arctic sites lack the materials which mark them for "public use" (through development of parks and the like). Stockpiling sites by burying them under fill, similarly, is sometimes recommended. In the arctic, however, burial under yards of gravel (to make sites inaccessible) will change the environment of the sites and thus the geomorphic processes affecting them. The potential impact of these newly created effects may be highly adverse in themselves. Altering the landscape may damage the integrity of the site as well as the environmental context.

Movement of the centerline to avoid impact of a known archaeological resource may result in greater site destruction than some other mitigation alternative. This is because impacts include those resulting from secondary and tertiary effects and because in avoiding one known site there is no guarantee that two new sites will not be potentially impacted. On the other hand, while mitigation of adverse impacts by excavation may be advised, it will require not only money, but more important from a sponsor's management consideration, time. The management decision must be based on a consideration of both the cost of moving the line (far more expensive than excavation) versus the time lost in construction along the preferred route while mitigation is carried out.

This brings us finally to excavation as an alternative. If and only if avoidance and active preservation alternatives cannot guarantee the integrity of the eligible archaeological resource, then scientific archaeological data recovery, that is, multistage research, problem oriented research design, rigorous sampling programs, multidisciplinary cooperation, rapid publication and wide dissemination of results, may be a viable alternative for mitigating adverse impacts. Excavation is justifiable, however, only if it makes a solid research contribution: salvage work as formerly undertaken does not constitute a viable mitigation alternative. Thus, when we suggest multistage mitigative excavation, we have in mind exploratory testing, literature review, and the like first, then development of the research program which warrants intensive excavation. Where cultural resources do not meet the criteria of eligibility or there is no adverse impact, the undertaking may proceed.

SCOPE OF 1980 WORK AND WORK COMPLETED

Introduction

Work Order No. 8 from Northwest Alaskan Pipeline Company, acting through Fluor Northwest, Inc. originally outlined work consisting of survey along 231 miles of centerline in discontinuous segments, one borehole location (and access) covering an area 260 x 200 feet (plus 30 ft access), and 67 EMS's totalling approximately 3,959 acres, and field monitoring of 28 EMS's during backhoe trenching activities. In addition there were 64 proposed EMS's designated for visual examination.

Programmatic changes occurred during the course of the field season. Except for a series of EMS's south of Livengood (to the border) all were accommodated within existing W.O. No. 8 (the southern work was handled as an amendment). Changes included the addition of 26 EMS's (and 79 trenches) requiring backhoe monitoring (constituting the only work carried out south of Delta Junction), additions and deletions from the remainder of the backhoe program resulting in a total of 58 (rather than 28) EMS's (and 223 trenches) requiring backhoe monitoring, the addition of five trench stability and four borehole sites (103.3 acres) needing on-the-ground survey, changes in the EMS survey including the deletion of some EMS's (and acres) and the addition of other EMS's (and acres) for a total of 4009 acres surveyed, and changes in the centerline survey segments resulting in 0.4 miles of (completed) additions for a total of 227.1 miles. Changes in the EMS survey schedule included deletions of inaccessible sites and sites in active stream channels.

Four crews averaging 5-6 persons each completed the survey of 227.1 miles of centerline, 4009 acres on 72 EMS's, 5 boreholes and 5 trench stability plots totalling 103.3 acres between June 28 and August 12, 1980 (Appendices 1-4). Two backhoe monitors oversaw the excavation of 390 trenches on 84 EMS's between July 30 and August 29, 1980 (Appendix 6). The latter worked the same schedule as the backhoe program, namely ten hours per day, seven days per week, for a total of 27 field days. Survey crews averaged 5.5, 8-10 hour field days per week with a minimum of one day per week devoted to preparation of notes and maps, equipment maintenance, and housekeeping. Crew chiefs (Gannon, Fetter, Cannon, Leitgeb) worked slightly longer daily hours and took more responsibility for mapping, scheduling, decision making and the like. Visual inspection on 52 EMS's was made and aerial photo inspection of 15 others completed during the field season.

Centerline Segments Completed

Some 227.1 miles of centerline segments (discontinuous) were foot surveyed between Delta Junction and Prudhoe Bay. The sponsor assigned 231 miles in Work Order No. 8 and 0.4 miles were added in the field. Owing to permitting problems which precluded flagging by surveyors, or to access problems on short segments, 4.3 miles were deleted in the field as per verbal instructions (NWA MP 247.7-248.5, 528-525.5, 537-539.3). All other segments were surveyed by field crews during the course of the

1980 season (Appendix 2). It is estimated that some 285 worker days were required to complete the 8.7 square miles of segments for an intensity of 33 worker days per square mile. This compares with slightly more than 40 worker days per square mile along 1978 and 1979 segments which were all located in forested areas. Open terrain characterized much of the northern centerline and contributed to more rapid survey there using the same methodology employed in previous seasons. In fact, spacing of field personnel was similar, for the most part, during the 1980 season as previously, and shovel probing was at least as frequent.

In the section which follows, the cultural resources identified along the centerline segments in 1980 are summarized. Information relevant to the significance of these resources, potential impacts from proposed construction and associated activities, and mitigation alternatives are also provided.

Exploratory Material Sites: Survey

Work Order No. 8 outlined the intensive on-the-ground survey of some 67 EMS's totalling approximately 3959 acres, plus their accesses. Prior to the start of the field season, it was agreed to delete several EMS's which were not readily accessible (parts of EMS 16-1, all of 16-2, 19-2A, 30-3, and 33-1). In the field conditions permitted access to several of these (19-2A and 33-1) and they were reincorporated into the program. In addition, we field examined several unscheduled EMS's which were part of the visual program* (but accessible and with archaeological potential) and several viable alternative EMS's to others with known associated cultural resources (1-4*, 12-2A, 12-2B, 20-3B*, 45-1*, 60-1.1). Parts of several EMS's scheduled for intensive survey were partially inaccessible and therefore partially visually examined (29-1C, 32-1, 32-3).

Prior to commencement of the 1980 field season an in-depth background review of previously recorded cultural resources in the vicinity of EMS's alerted field crews to high probability areas and to EMS's which might contain extant materials of known sites. In most cases reported sites did produce additional materials during our reassessments of them (even in cases where total excavation was reported in the literature). Several of the known resources are judged to contain significant information and are treated below in our assessments of data relating to eligibility for inclusion on the National Register. In all but a few cases, owing to poor or inaccurate locational information in the literature, we were able to assign the state AHRS number to these resources.

We identified a number of new cultural resources on or immediately adjacent to the EMS's surveyed during 1980 (see below). In all but the few cases indicated sufficient information was obtained during our limited field testing to provide the basis for recommendation to the sponsor and agencies of significance (and potential eligibility for inclusion on the Register as outlined in 36 CFR 1202, formerly 36 CFR 60, and 36 CFR 800.10). Detailed site maps and descriptions will appear in the Site Report section which follows.

Exploratory Material Sites: Visual Examination

Work Order No. 8 listed some 64 EMS's (the actual number is larger as adjacent EMS's bear the same numbers and are differentiated by letter), mainly inaccessible from the haul road or in active stream channels, for visual examination and determination of potential for revealing cultural resources. We visually examined 52 EMS's in the field and interpreted aerial photos for an additional 15 EMS's (Appendix 3). As noted above, several of the EMS's were intensively surveyed since they were accessible and had some potential for revealing cultural resources. The 67 EMS's were all found to be in active stream channels and/or to have little or no potential for revealing cultural resources. We recommend no further survey activity at these locations prior to construction.

Borehole Locations and Trench Stability Plots

Work Order No. 8 marked one borehole location and its access for intensive survey. During the course of the field season four additional locations and five trench stability plots were added to the program. Borehole locations varied in size from 150 x 150 ft to 260 x 200 ft plus accesses and totalled 4.6 acres. Five trench stability plots were added to the program; they were the size of small EMS's and totalled 98.7 acres (Appendix 4).

Backhoe Program: Archaeological Monitoring of Trenching

Work Order No. 8 outlined archaeological monitoring of approximately 28 EMS's which were to be trenched during the course of the field season. Two archaeologists were assigned as monitors, one with each of the two backhoes. They were responsible for examining the access routes and areas to be disturbed by backhoe activities. During the course of the program a number of field deletions and additions were made (Appendix 5, end) and a number of EMS's were added to the field program north of Delta Junction. South of Delta Junction an amendment to Work Order No. 8 expanded the original number of EMS's to be monitored to 84 and the number of trenches to be examined to 302 (see Appendix 5).

As noted above, several EMS's were both intensively surveyed and monitored as part of the backhoe program. In only two cases where cultural resources were identified (EMS 21-1 and 27-1) was there danger that the backhoe would adversely impact a newly reported resource. In these examples indistinct or confused* flagging of cultural resources by survey crews was compensated for by field notes supplied the monitor which allowed the backhoe to avoid the known site area both during access and trenching activities. The backhoe program did reveal several cultural resources and find areas reported in a later section.

*Flagging by several NWA programs and flagging remaining from Alyeska archaeological surveys posed interpretive problems for the backhoe operator.

Summary

The 1980 archaeological field work consisted of intensive on-the-ground and visual survey of selected portions of the proposed NWA route between Prudhoe Bay and the Yukon Border, selected exploration material sites (EMS's) and accesses, selected centerline borehole locations and their over-land accesses, and the locations of backhoe trenches in selected EMS's and their over-land access routes. The processes of compliance with the legislative and regulatory base for cultural resources management led to professional opinions of further management considerations necessary or no further management considerations. These are the subject of this report. In the field, forms summarizing the survey investigations were provided to the sponsor for its management considerations. Forms abbreviated our preliminary findings as follows. Clearance (or non-clearance) for construction was provided for the intensively surveyed alignment segments and EMS's (and for certain added localities described below). Clearance (or non-clearance) for backhoe trenches only, for borehole drilling only or for EMS sampling and drilling only was provided in those other cases.

We completed 227.1 miles of centerline segments, 46 acres of borehole locations and trench stability plots, 4009 acres of EMS's, and monitoring of 302 trenches on 84 EMS's. One hundred percent coverage of foot surveyed areas was completed with an average intensity of 40 worker days per square mile. Intensity on centerline was 33, and 50 on EMS's. Most work was done in tundra areas (previous years, survey intensity in the forest was 43-46 worker days per square mile).

RESULTS OF THE INVESTIGATIONS

Land Use Along the Survey Corridor

Intensive on-foot survey and visual inspection of contracted centerline segments and land parcels, despite their inferred cultural resource potential, substantiated the general site distribution patterns presented in Aigner and Gannon 1980: Table 8. Prior to the 1980 field season, it remained uncertain whether this distribution had basis in reality or whether it reflected bias in earlier survey methodology (Ibid.:148). By walking and testing for cultural resources in all encountered terrain types with approximately equal intensity in 1980, a good quantifiable test of the presently employed land use and settlement pattern model (Ibid.:145-146) was accomplished. For example, it has long been 'known' that cultural resources are rare (or at least not haphazardly distributed) on the flat northern (arctic) tundra, but this contention has not been previously well documented. Indeed, most of the 'knowing' has apparently been generated by intuition rather than by any hard, systematic reconnaissance of this particular terrain type. Conversely, it is well established that arctic prehistoric sites do occur with predictable regularity in certain other terrain types such as on knolls and promontories.

Table 5 presents an itemization of 38 newly identified cultural resource sites (both prehistoric and historic) with respect to geomorphic setting. As can be seen, most of the prehistoric/aboriginal sites are located in settings that provide vantage and water; in short, resource-providing localities (compare with Aigner and Gannon 1980: Table 9). It is noteworthy that of the 12 historic sites located in 1980, all were located along or close to streams.

It is this orientation towards subsistence resources that ultimately determines all site settings, and in turn, gives rise to the observed areal clustering of sites such as, in regard to prehistoric sites, the Galbraith/Mosquito Lakes, Olson Lake and Rosebud Knob areas. Such determinants included caribou and their migration routes, fish and various other key animal habitats (including Dall sheep), floral resources, and in the case of Rosebud Knob, lithic resources. While several such catchment areas are now documented, many more no doubt remain to be identified, and all need to be studied more in depth.

One problem that arises, particularly, it seems, in the arctic, is the tendency to over-simplify or gratuitously ascribe site function by superficial regard to geomorphic setting or artifact assemblage. All too often, for example, a site that is located on a knoll and manifested by scattered lithic 'waste' is casually dismissed/labelled as a 'lookout site' or 'flaking station.' Certainly, such function-specific labels are valid with proper scrutiny, but while such a site may well have served such a function, it may not necessarily be the only function nor even the primary one. Again, such situations as this plead for more careful studies in the future. The artifacts collected and observed during the 1980 survey (Fig. 5, Appendix 6) attest to a broad spectrum of activities and site functions.

Another problem, related to present site designations (i.e., assignment of state site numbers), focuses on cultural resource sites encountered in 1980 which were formerly investigated by Alyeska archaeologists. A number of these

sites were originally recorded before there were modern landmarks in the area and these sites are characterized by imprecise geographic locations. Several site numbering systems have been used in the past, and many sites and/or excavations have not yet been reported - leading to a general inability to correlate these loci with what was observed in 1980 with much surety. A case in point is the Rosebud Knob lithic complex near Livengood. Although considerable work was conducted here during the Alyeska era, most of the presently ascribed site designations are tentative. Hopefully, this problem will one day be resolved.

TABLE 5. GEOMORPHIC SETTING OF NEWLY IDENTIFIED CULTURAL RESOURCE SITES*

| Geomorphic Setting | Number Prehistoric Sites | % | Number Historic Sites | % | Number Unknown Affiliation | % | Total Number | Total % N | % All Prehistoric Sites | % All Historic Sites |
|--------------------------------------------------------|--------------------------|-----|-----------------------|----|----------------------------|---|--------------|-----------|-------------------------|----------------------|
| Along or near streams | 16 | 55 | 12 | 41 | 1 | 4 | 29 | 76 | 64 | 100 |
| At or near stream confluences | 4 | 36 | 6 | 55 | 1 | 9 | 11 | 29 | 16 | 50 |
| Along or near lakes and/or marshland | 13 | 100 | 0 | 0 | 0 | 0 | 13 | 34 | 52 | 0 |
| On hilltops or promontories | 19 | 100 | 0 | 0 | 0 | 0 | 19 | 50 | 76 | 0 |
| Vantage | 18 | 95 | 0 | 0 | 1 | 5 | 19 | 50 | 72 | 0 |
| At or near streams and/or lakes with vantage potential | 15 | 94 | 0 | 0 | 1 | 6 | 16 | 42 | 60 | 0 |

N = 38: 25 prehistoric (66%)
 12 historic (32%)
 1 unknown (2%)

Notes:*

- 1) Any one particular site may be represented repeatedly between the different geomorphic categories.
- 2) Except for the inclusion of CHN-010, this table does not include finds. CHN-010 may have vague site attributes in conjunction with finds CHN-005 and CHN-006 (see text).

Summary and Recommendations

The 1980 archaeology survey along the proposed NWA gasline corridor, EMS's and ancillary lands yielded 81 cultural resource locations comprising both newly identified sites and finds, and sites previously identified by Alyeska archaeologists (Table 6). All areas surveyed are listed in Appendices 2-5.

Centerline Segment

Some 227.1 miles of discontinuous centerline segments were foot surveyed. They were located between Prudhoe Bay in the north and Delta Junction in the south. Segments intensively surveyed are listed in Appendix 2. We recommend no further action is needed prior to construction on any of the segments except those upon which cultural resources were located. The following Alignment Sheets contain cultural resources which require management (for exact locations, see below). Management includes testing/analysis as well as recommendations for a request for determination of eligibility for inclusion on the National Register of Historic Places.

| | |
|--------|------------|
| AS-016 | (SAG-006*) |
| AS-027 | (PSM-192*) |
| AS-028 | (PSM-069) |

Exploratory Material Sites: Survey

Some 4009 acres were surveyed on 72 EMS's located between Prudhoe Bay in the north and Delta Junction in the south. Most lay north of the Yukon River and most north of tree line. The following EMS's which were foot surveyed (in addition, several of these were monitored during backhoe operations) revealed extant cultural resources:

| | |
|-----------|-------------------------------------------------|
| EMS-20-3A | (PSM-060) |
| EMS-21-1 | (PSM-189*) |
| EMS-26-1 | (PSM-181*, PSM-182*, PSM-183*, PSM-184*) |
| EMS-27-1B | (PSM-190*) |
| EMS-36-3 | (CHN-012*) |
| EMS-45-3 | (WIS-051*) |
| EMS-46-1 | (WIS-019*) |
| EMS-48-0 | (BET-055, BET-123*, BET-122*) |
| EMS-71-3A | (LIV-103, LIV-107, LIV-108, LIV-046*, LIV-105*) |
| EMS-71-3B | (LIV-047, LIV-106, LIV-030) |

The remainder (see Appendix 3) do not, in our judgement, require further examination prior to construction.

*Additional testing or data analysis is recommended.

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Exploratory Material Sites: Visual Examination

Visual examination of 52 EMS's and aerial photographic examination of 15 EMS's located north of the Yukon River confirmed their location in disturbed areas unlikely to produce historic or prehistoric information. Based upon our study, we recommend no further action is required with regard to these 67 EMS's prior to construction (see Appendix 3).

Backhoe Program

A monitor oversaw the backhoe trenching program between Prudhoe Bay in the north and the international border in the south. A total of 302 trenches was excavated on 84 EMS's. In addition to examining the access routes taken by the backhoe to the trench location, the monitor tested and surveyed an area larger than the backhoe excavation. We do not recommend that further foot survey is omitted in any of these EMS's. In several instances the monitor was on an EMS which was foot surveyed and revealed a cultural resource; these resources are listed above. Several modern or equivocal finds were made, in addition, and are listed on the following table.

Borehole Locations and Trench Stability Plots

Intensive survey on 103.3 acres of trench stability plots and borehole locations (and accesses) revealed no extant cultural resources. We recommend no further action need be taken prior to commencement of construction at these locations.

Cultural Resources Identified During the 1980 Survey

Table 6 summarizes the data on cultural resources identified during the 1980 survey along the NWA route. A total of 81 (potential) resources are listed by general location (Alignment Sheet, EMS). Potential impact is indicated in terms of direct/adverse impact (on the centerline corridor, on an EMS), indirect adverse impact (within 200 feet of the corridor or EMS boundary), and indirect impact, unlikely to be adverse (off the project area by at least 200 feet). The nature of material present is also indicated. In some instances an undisturbed locality is reported, in others undisturbed material remains at a known location. Some sites have no potential for revealing information about historic and prehistoric lifeway in the interior: these are destroyed sites, isolated finds with no context, modern debris and non-artifactual remains. In several instances we have insufficient information to make an assessment at this time.

In our judgment, we have sufficient information from a number of sites to recommend an eligibility status (eligible, not eligible). In several cases the data are too limited at this time for such an assessment.

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4680-9-KU00-8-4

Table 6. Summary of evaluations and recommendations for cultural resources.

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4680-9-KU-0-8-4

| Site | Location | Potential Effect by Project | | | Evidence & Condition | | | | | | | Recommended Action | Reason (Notes) |
|-------------|-----------|-----------------------------|--------------------|------------------|----------------------|--------------------------|-----------|-------------------------|----------------------|--------------------------------------|-----------------------------------------|---------------------------------------|----------------|
| | | On | Close ≤ 200 ft. | Off > 200 ft. | Undisturbed | Partially Undisturbed | Destroyed | Find Without Context | Insufficient Data | Recommended Eligibility Status | | | |
| SAG-006 | AS 016 | X | | | | | | | X | ? | Test | Insufficient data | |
| SAG-011 | AS 016 | | | X | X | | | | | + | No action | Off project area | |
| PSM-060 | EMS 20-3A | X | | | X | | | | | + | Request determination of eligibility | Data directly to be affected | |
| PSM-189 | EMS 21-1 | X | | | X | | | | | ? | Test | Insufficient data | |
| PSM-057 | AS 021 | | X | | | | X | | | - | No action | Off project area, site destroyed | |
| PSM-181 | EMS 26-1 | | X | | X | | | | | ? | Test | Insufficient information | |
| PSM-182 | EMS 26-1 | | X | | X | | | | | ? | Test | Insufficient information | |
| PSM-183 | EMS 26-1 | | X | | X | | | | | ? | Test | Insufficient information | |
| PSM-184 | EMS 26-1 | | X | | X | | | | | ? | Test | Insufficient information | |
| PSM-193 | AS 027 | | | X | X | | | | | + | No action | Off project area | |
| PSM-192 | AS 027 | X | | | X | | | | | ? | Analyze existing data | Insufficient information | |
| PSM-191 | AS 027 | | | X | X | | | | | + | No action | Off project area | |
| PSM-190 | EMS 27-18 | X | | | X | | | | | ? | Analyze existing data | Insufficient data | |
| PSM-066 | AS 027 | | | X | | | X | | | - | No action | Off project area, no data remains | |
| PSM-069 | AS 028 | | X | | X | | | | | + | Test | Insufficient information | |
| PSM-092 | AS 028 | | X | | | | X | | | - | No action | Off project area, no data remains | |
| PSM-Find #2 | EMS 28-1A | X | | | | | | X | | - | No action | No context, no other data in vicinity | |
| PSM-194 | AS 029 | | | X | X | | | | | + | No action | Off project area | |
| PSM-185 | AS 029 | | X | | X | | | | | - | No action | No data remains | |
| PSM-Find #1 | EMS 30-1 | X | | | | | | X | | - | No action | No context; unlikely artifact | |
| PSM-186 | AS 033 | X | | | X | | | | | - | No action | Data completely collected | |
| PSM-061 | EMS 33-1 | X | | | | | | X | | - | No action | No data remains | |
| PSM-187A | AS 033 | X | | | X | | | | | - | No action | Modern lean-to | |

Table 6. Continued.

FLUOR

468U-9-KU;0-8-41

| Site | Location | Potential Effect by Project | | Evidence & Condition | | | | | | Recommended Action | Reason (Notes) |
|-------------|-----------|-----------------------------|---------------|----------------------|-----------------------|--------------------------------|-------------------|--------------------------------|---|--------------------|-----------------------------------------------------|
| | | On Close < 200 ft. | Off > 200 ft. | Undisturbed | Partially Undisturbed | Destroyed Find Without Context | Insufficient Data | Recommended Eligibility Status | | | |
| PSM-187B | AS 033 | X | | X | | | | | - | No action | Data completely collected |
| PSM-188 | AS 033 | X | | X | | | | | - | No action | Modern |
| CHN-011 | EMS 35-4 | X | | X | | | | | - | No action | Data completely collected |
| CHN-012 | EMS 36-3 | X | | | | | X | | ? | Test | Insufficient data |
| CHN-007 | AS 039 | | X | X | | | | | - | No action | Data completely collected |
| CHN-005 | EMS 39-3 | X | | | | X | | | - | No action | No data remains |
| CHN-006 | EMS 39-3 | X | | | | X | | | - | No action | No data remains |
| CHN-010 | EMS 39-3 | X | | | | | X | | - | No action | No data remains |
| CHN-008 | EMS 39-3 | X | | X | | | | | - | No action | Data completely collected |
| CHN-009 | EMS 39-3 | X | | X | | | | | - | No action | Data completely collected |
| CHN-015 | AS 040 | | X | X | | | | | + | No action | Out of project area |
| CHN-014 | AS 040 | | X | X | | | | | + | No action | Out of project area |
| CHN-013 | AS 040 | | X | X | | | | | - | No action | Out of project area, modern |
| WIS-050 | EMS 41-3 | | X | X | | | | | + | No action | Out of project area, associated with historic cabin |
| WIS-012 | AS 044 | | X | | | X | | | - | No action | No data remains |
| WIS-006 | EMS 45-2A | X | | | | X | | | - | No action | No data remains at the locus |
| WIS-010 | EMS 45-2A | X | | | | X | | | - | No action | No data remains at the locus |
| WIS-011 | EMS 45-2A | X | | | | X | | | - | No action | No data remains at the locus |
| WIS-Find #2 | EMS 45-2A | X | | | | | X | | - | No action | No data remains |
| WIS-051 | EMS 45-3 | X | | X | | | | | ? | Test | Insufficient data |
| WIS-019 | EMS 46-1 | X | | | X | | | | ? | Test | Insufficient data |
| WIS-003 | EMS 46-1 | X | | | X | | | | - | No action | No data remains |
| WIS-Find #1 | EMS 46-1 | X | | | | X | | | - | No action | No data remains |

Table 6. Continued.

FLUOR

4680-9-KU50-84

| Site | Location | Potential Effect by Project | | | Evidence & Condition | | | | | | | Recommended Action | Reason (Notes) |
|---------------------|-----------|-----------------------------|-----------------|---------------|----------------------|-----------------------|-----------|----------------------|-------------------|--------------------------------|---|--------------------------------------|-----------------------------------------|
| | | On | Close < 200 ft. | Off > 200 ft. | Undisturbed | Partially Undisturbed | Destroyed | Find Without Context | Insufficient Data | Recommended Eligibility Status | | | |
| WIS-001 | EMS 46-1 | | | X | | X | | | | | + | No action | Off project area |
| BET-055 | EMS 48-0 | X | | | X | | | | | | + | Request determination of eligibility | Data extant directly impacted |
| BET-123 | EMS 48-0 | X | | | | | | | X | | ? | Test | Insufficient data |
| BET-122 | EMS 48-0 | X | | | | | | | X | | ? | Test | Insufficient data |
| BET-054 | EMS 48-0 | X | | | | | X | | | | - | No action | No data remains |
| BET-042 | EMS 48-2A | | X | | | | X | | | | - | No action | No data remains; indirect impact likely |
| BET-125 | EMS 51-3 | X | | | | X | | | | | - | No action | No useful data remains |
| BET-126 | EMS 51-3 | X | | | | X | | | | | - | No action | No data remains |
| BET-Find (BET-082?) | EMS 51-3 | X | | | | | X | | | | - | No action | No data remains |
| BET-018 | EMS 51-3 | X | | | | | X | | | | - | No action | No data remains |
| BET-083 | EMS 51-3 | X | | | | | X | | | | - | No action | No data remains |
| BET-006? | EMS 54-1 | X | | | | | X | | | | - | No action | No data remains |
| BET-124 | EMS 60-1 | | X | | | | | X | | | - | No action | No data remains |
| BET-058 | EMS 60-1 | X | | | | | X | | | | - | No action | No data remains |
| BET-068 | EMS 60-1 | X | | | | | X | | | | - | No action | No data remains |
| BET-073 | EMS 60-1 | X | | | | | X | | | | - | No action | No data remains |
| LIV-055 | EMS 69-3B | X | | | | | X | | | | - | No action | No data remains |
| LIV-Find #1 | EMS 71-0A | X | | | | | | X | | | - | No action | No data remains |
| LIV-Find #2 | EMS 71-0A | X | | | | | | X | | | - | No action | No data remains |
| LIV-032 | EMS 71-0A | | | X | | | | | ? | | - | No action | Off project area |
| LIV-039 | AS 071 | | | X | X | | | | | | + | No action | Off project area |
| LIV-103* | EMS 71-3A | X | | | X | | | | | | + | Request determination of eligibility | Data extant directly impacted |
| LIV-107 | EMS 71-3A | X | | | X | | | | | | + | Request determination of eligibility | Data extant directly impacted |

Table 6. Continued.

FLUOR

4680-9-KU50-8-4

| Site | Location | Potential Effect by Project | | | Evidence & Condition | | | | | | | Recommended Action | Reason (Notes) |
|-----------|---------------|-----------------------------|----------------|--------------|----------------------|-----------------------|-----------|----------------------|-------------------|--------------------------------|---|--------------------------------------|-------------------------------|
| | | On | Close <200 ft. | Off >200 ft. | Undisturbed | Partially Undisturbed | Destroyed | Find Without Context | Insufficient Data | Recommended Eligibility Status | | | |
| LIV-108 | EMS 71-3A | X | | | X | | | | | | + | Request determination of eligibility | Data extant directly impacted |
| LIV-047 | EMS 71-3B | X | | | | X | | | | | + | Request determination of eligibility | Data extant directly impacted |
| LIV-104 | EMS 71-3B | X | | | | | X | | | | - | No action | No data |
| LIV-106 | EMS 71-3B | X | | | X | | | | | | + | Request determination of eligibility | Data extant directly impacted |
| LIV-050 ? | EMS 71-3B | X | | | | | | X | | | - | No action | No data |
| LIV-046 ? | EMS 71-3B | | X | | X | | | | | | - | No action | Few data remains |
| LIV-105 | EMS 71-3B | | X | | X | | | | | | - | No action | Few data remains |
| LIV-030 | EMS 71-3B | X | | | | X | | | | | + | Request determination of eligibility | Data extant directly impacted |
| LIV-040 | EMS 71-3B | X | | | | | X | | | | - | No action | No data remains |
| LIV-043 | EMS 71-3B | X | | | | X | | | | | - | No action | Few data remains |
| XBD-042 | AS 092 | X | | | ? | | | | | | - | No action | No additional data |
| TNX-Find | T-8 AS 118 | X | | | | | X | | | | - | No action | No data remains |

*See footnote page 4 for this and subsequent LIV sites.

We recommend a consideration of several alternatives in the case of each potential resource: test in order to collect additional information (where insufficient data exist and the resource is deemed likely to suffer from adverse impacts during construction); no action when the resource is not eligible or lies outside the project boundaries; and request a determination of eligibility when data are present at the locality and the locality is likely to suffer adversely during proposed construction. Precise locational information and details of the cultural resource are provided below, in the section Site Reports.

Scientific Data Recovery

In our study of 81 cultural resources along the proposed NWA route in 1980, we had the opportunity to examine the archaeological sites and structures first-hand. Samples of artifacts were returned for study as well, as was map information on the areal extent of the cultural resources. Based upon our field information, we have made preliminary estimations of time required for scientific data recovery at the 9 sites which are endangered by proposed construction activities and which contain useful archaeological information pertaining to traditional land use in the study area. These preliminary estimations are provided in the table below, based upon our professional judgement of the extent and depth of cultural materials (or complexity of structural remains) and time required to recover information adequate to understanding the patterned human behavior remaining at the site.

| <u>Site Number</u> | <u>Worker Days Estimated</u> |
|--------------------|----------------------------------|
| PSM-060 | 110 |
| BET-055 | 70 |
| LIV-107 | 25 |
| LIV-108 | 70 |
| LIV-103 | 25 |
| LIV-047 | 70 |
| LIV-106 | 55 |
| LIV-030 | 25 |

The estimated worker days for scientific data recover total 450, or two crews of five persons each working for 45 days, roughly the length of the field season (July-August). Testing and analysis recommended at twelve localities will take additional worker days.

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4680-9-KU-0-8-4

Site Reports

In the reports which follow, 81 cultural resources (archaeological sites from the prehistoric and historic periods, including structures and isolated finds) are discussed (Fig. 4).

The reports describe cultural resources newly identified in 1980 and resources previously identified which were discovered and assessed with respect to their condition and amount of material, if any, remaining. Detailed locational information, environmental settings, survey methodology are given along with specific details of site character (e.g., topography, cultural materials, previous investigations, and stratigraphy). Where certain sites were sampled for representative artifact collections, University of Alaska Museum accession numbers have been assigned. Accession numbers from former investigations are included as well whenever possible. In several cases where former site designations are uncertain due to poor documentation, the site numbers are queried.

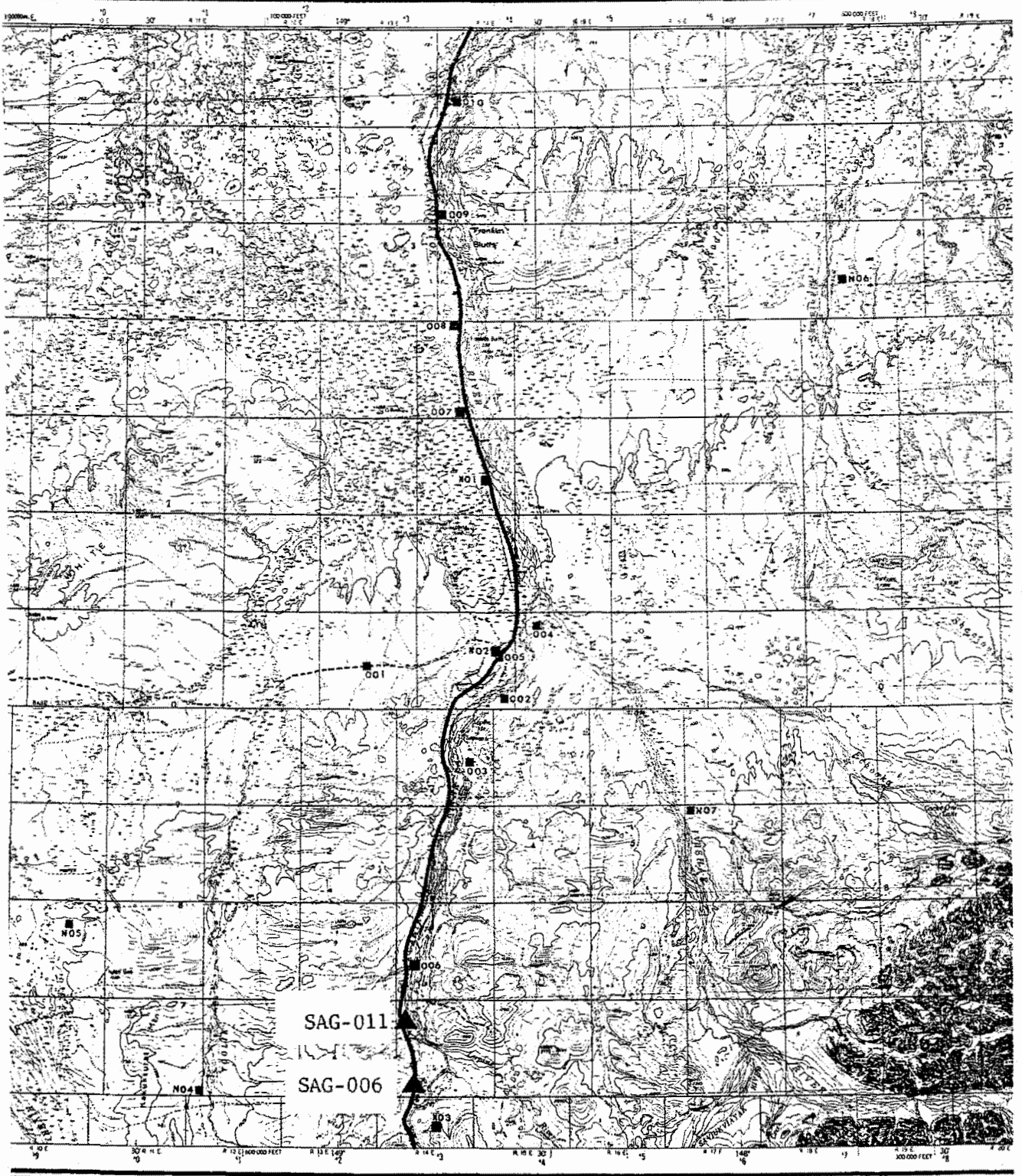
Factors which have affected or may affect the cultural resources are addressed under Impact. This includes remarks on previous excavations and testing, erosion and proposed NWA project activities. Impact is evaluated as: direct and adverse; indirect but likely to be adverse; and indirect with unlikely adverse effects.

In the section titled Significance, an assessment of cultural value is provided. Finally, professional recommendations to the sponsor and permitting agencies regarding the cultural resources in question are given under Recommendations. These recommendations are based upon current or likely impact and the nature of the resource with respect to its potential for yielding useful information on interior history and prehistory. In cases where sites are felt to have such value, suggestions are given regarding their National Register eligibility, and requests made for eligibility determination.

In cases where insufficient data exists to evaluate certain cultural resources, a recommendation for 'further testing' is given. In cases where a site has been properly mitigated previously, destroyed, or lies well-away from the project area, a recommendation for 'no action' is usually given.

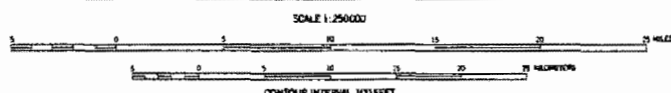
Field sampling procedures for cultural materials were not rigidly fixed. Artifacts from most sites were collected insofar as to yield a representative sample, both above and below surface, suitable for analysis, and to determine the limits of the sites. However, a general rule for sampling was to collect conservatively under the assumption that further, more controlled work would follow. In many cases, it would have been possible, if not easy, to inadvertently exhaust a site of its cultural materials through sampling.

In all cases, proveniences of lithic, faunal and other samples were carefully noted and mapped so that they could be fitted into future investigative activities.



SAG-011

SAG-006



NATIONAL GEODETIC VERTICAL DATUM OF 1929

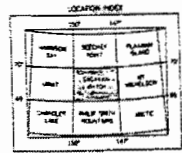


Figure 4. Sagavanirktok Quadrangle

(Sheet 1 of 6)

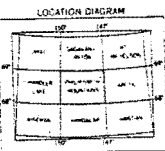
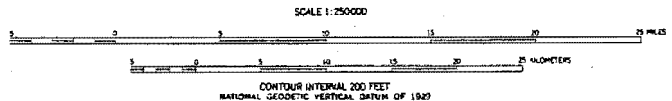
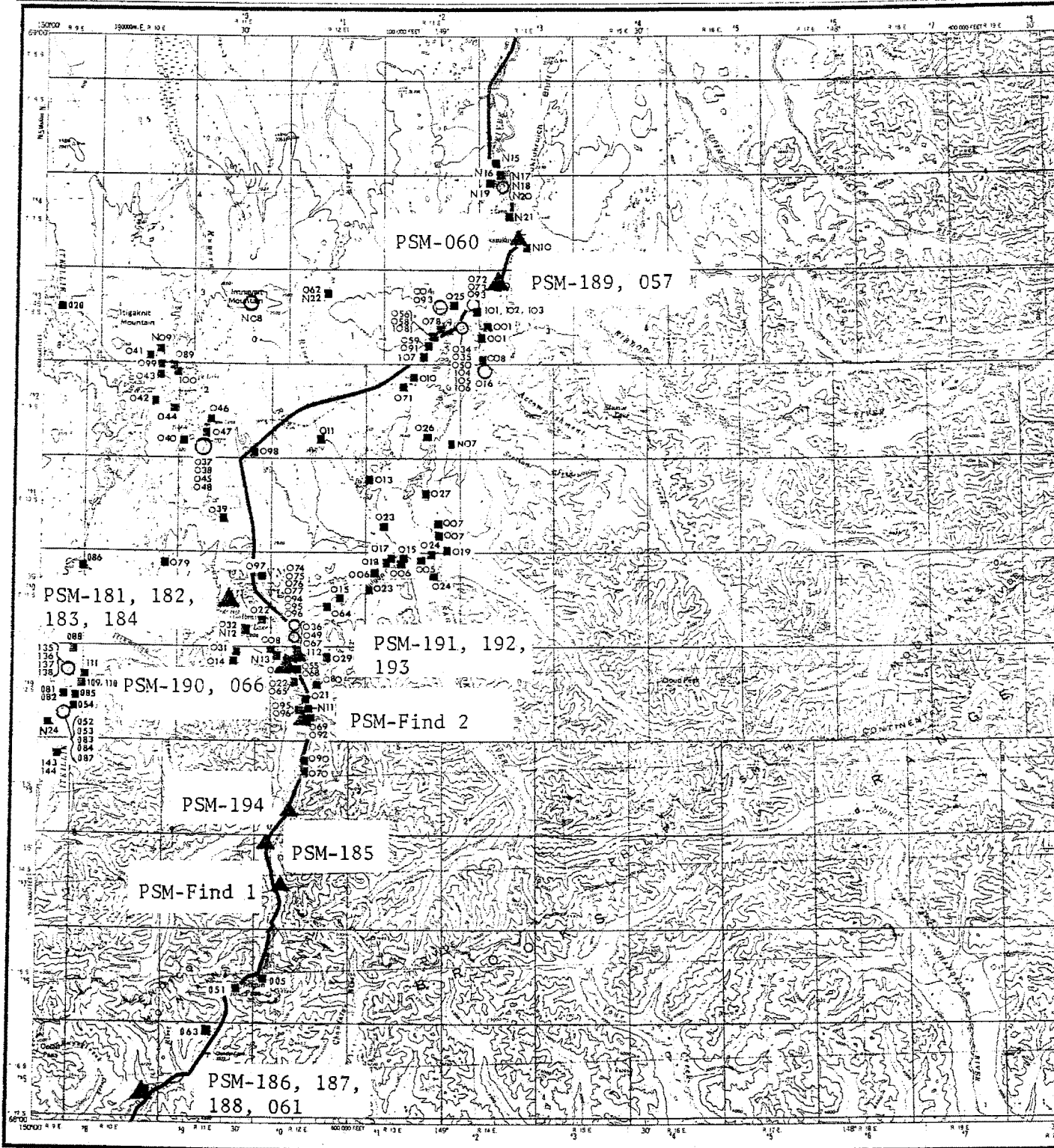


Figure 4. Philip Smith Mountains Quadrangle (Sheet 2 of 6)

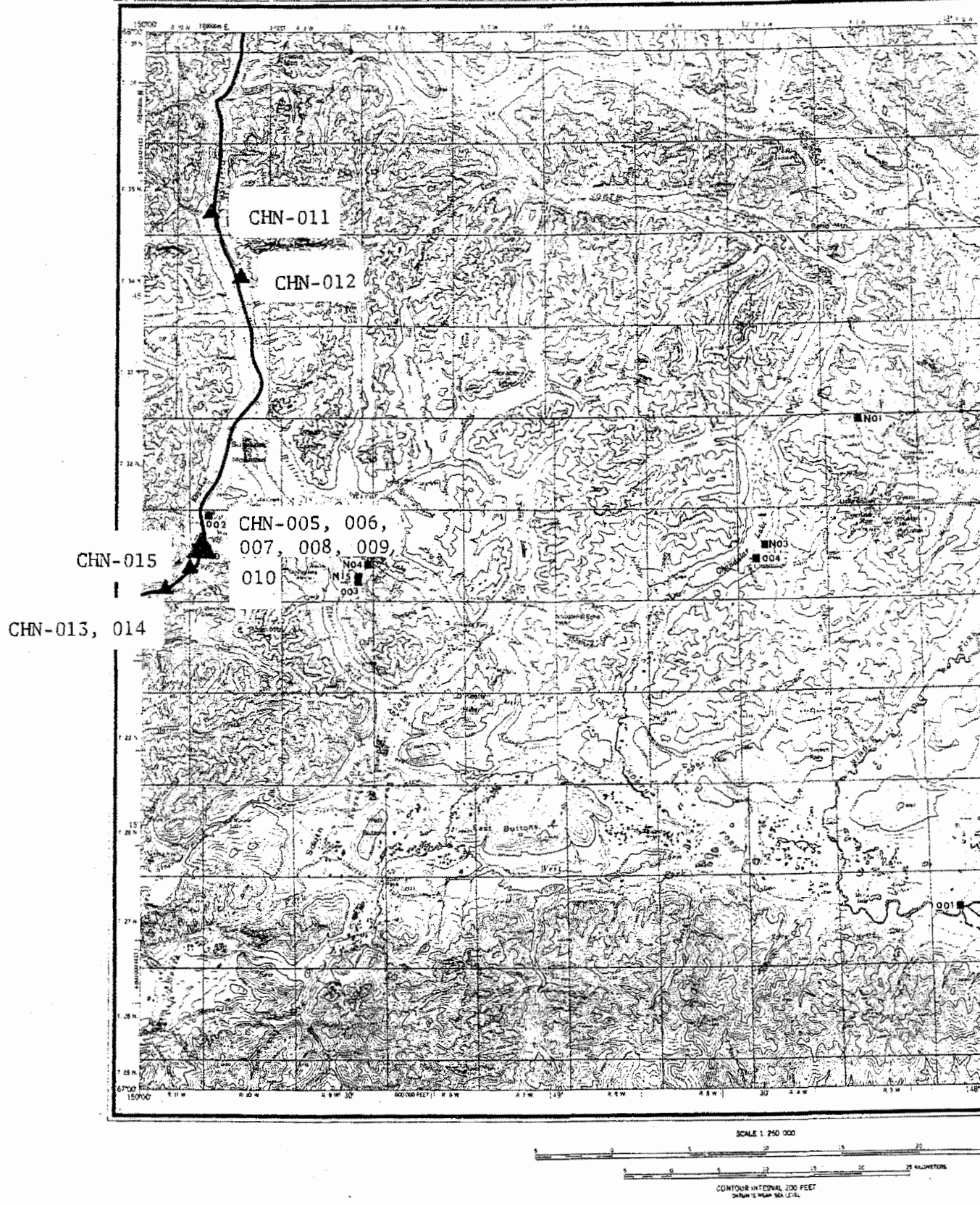


Figure 4. Chandalar Quadrangle
(Sheet 3 of 6)

WISEMAN WIS

ALASKA TOPOGRAPHIC SERIES

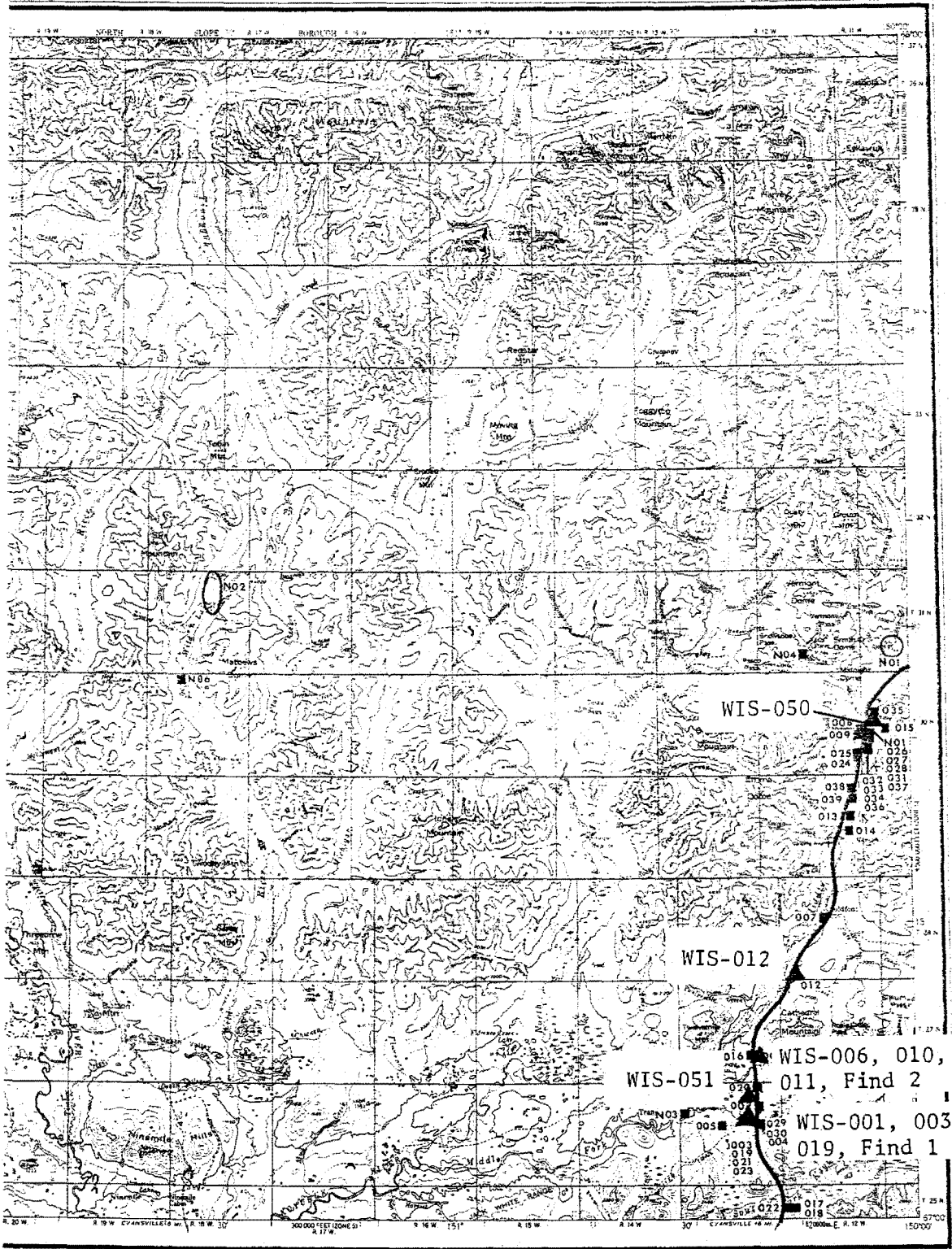


Figure 4. Wiseman Quadrangle (Sheet 4 of 6)

BETTLES BET

ALASKA
TOPOGRAPHIC SERIES
FOURTH JUDICIAL DIVISION

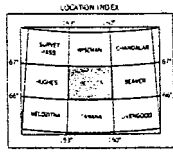
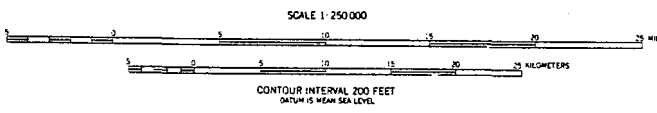
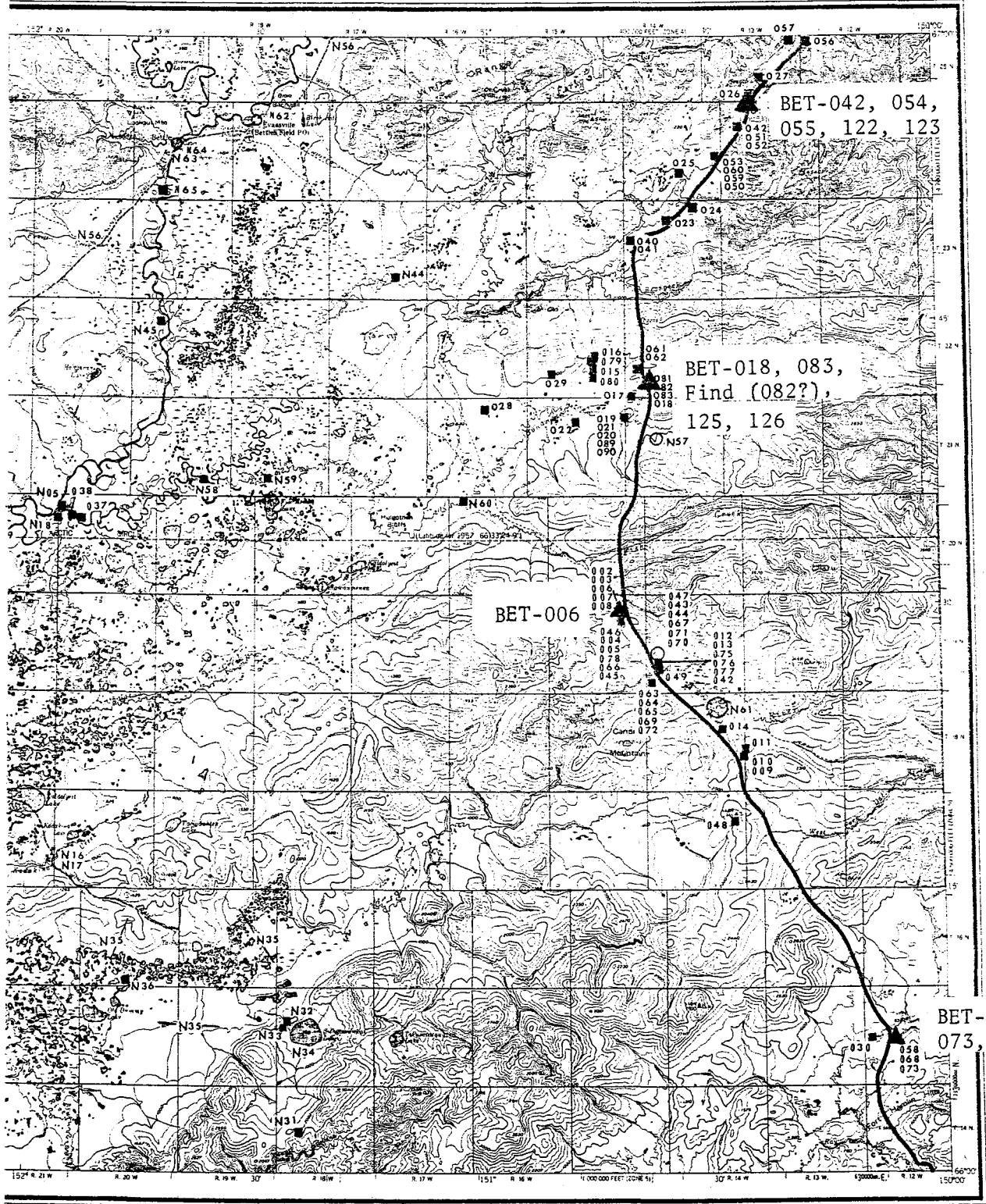
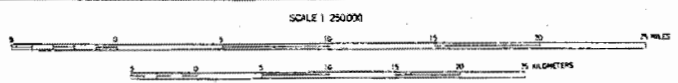
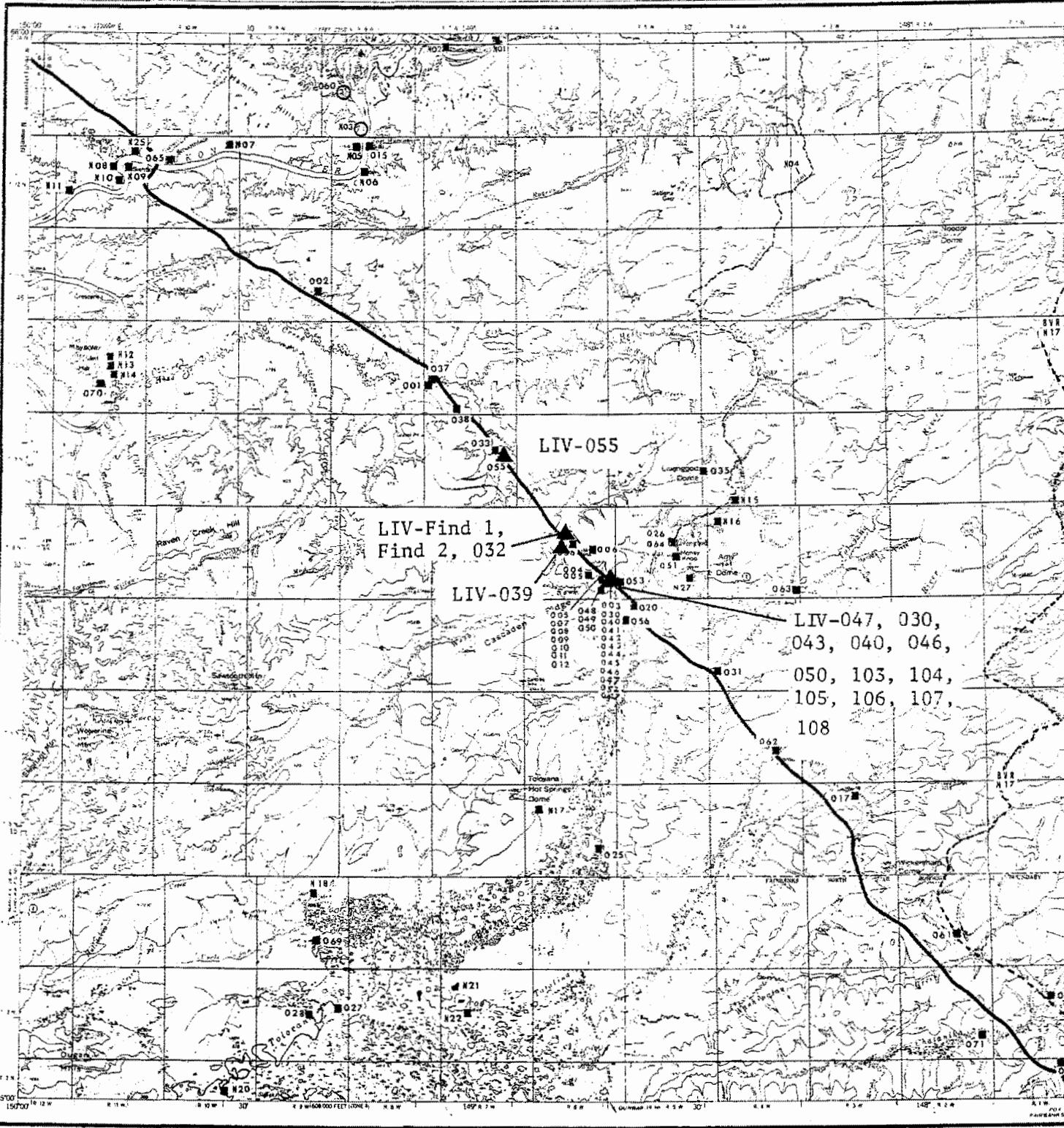


Figure 4. Bettles Quadrangle (Sheet 5 of 6)



SCALE 1:250,000
 CONTIGUOUS INTERNAL 200 FEET
 SPACES 4-1/2 INCHES; 1:250,000 CONTOUR
 DESIGN IS NEAR 100-100.

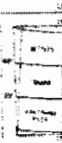


Figure 4. Livengood Quadrangle
 (Sheet 6 of 6)

Of the lithic materials, a broad spectrum of styles and material was collected and observed (Appendix 6). Objects relegated to the class of 'waste flakes' are the most commonly occurring form, but many of these comprise blades or blade-like specimens. Sizes of the latter range from less than 0.4 inches to over 3 inches long. Core fragments, chunks, and some indeterminate pieces make up the remaining portion. A number of specimens can be considered implements, comprising chiefly bifaces (including projectile points), preforms and blanks, utilized flakes and blades, possible burins, and unifacially flaked objects with probable scraper-like functions. A number of the other specimens appear to be naturally formed (e.g., frost shattered or hydraulically spalled). Preliminary inspection of the various collections reveals percussion flaking, pressure flaking manifested in primary and secondary retouch, and suggestive of both 'hard' and 'soft' hammer production. Unifacial flaking is also fairly common. The vast majority of lithic materials are composed of various types (colors and grades) of chert, varying broadly as to their isomorphism and flaking quality. A small number of pieces are obsidian. Figure 5 illustrates and describes the majority of the more diagnostic specimens collected in 1980.



Figure 5. Selected diagnostic artifacts (actual size).

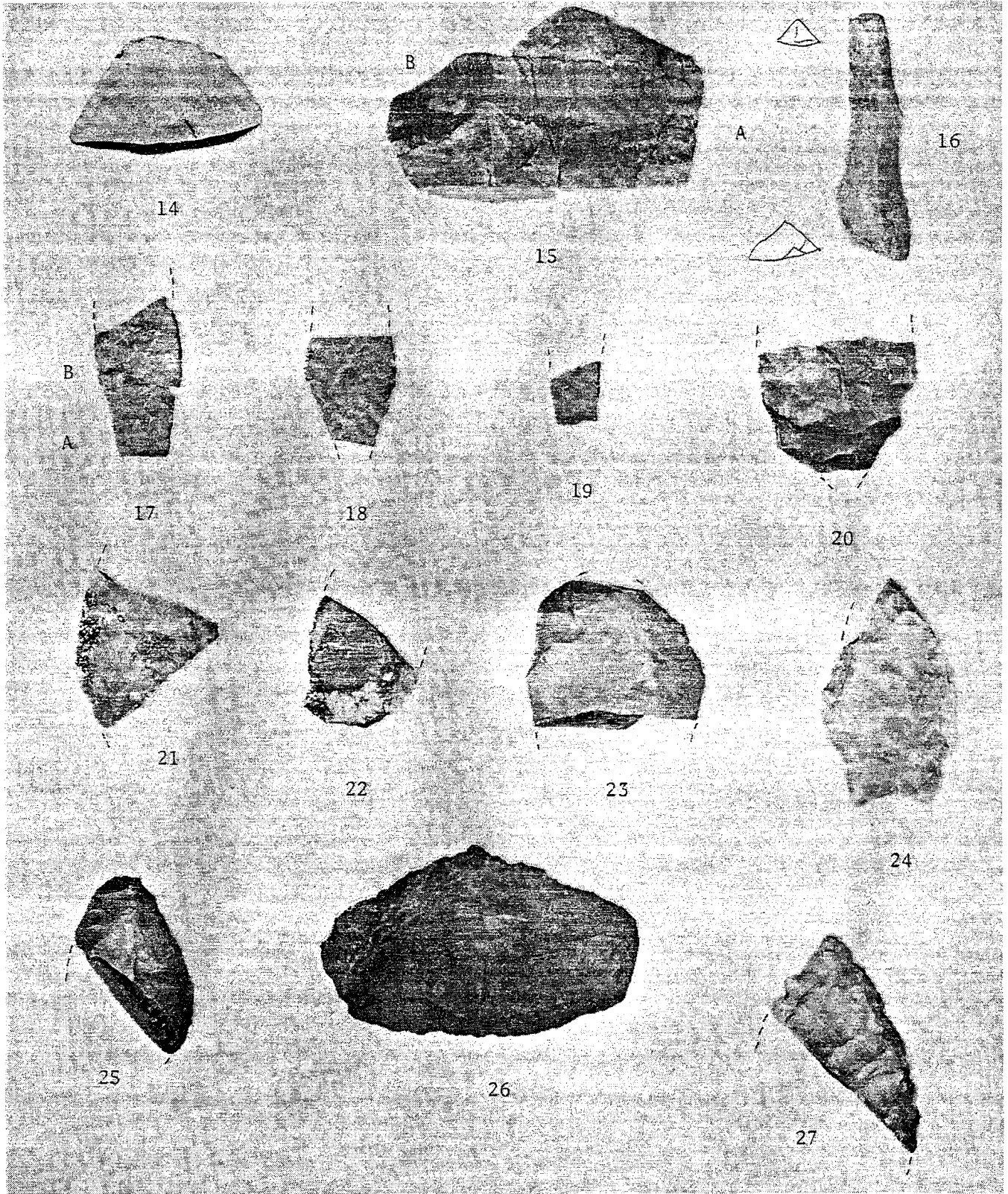
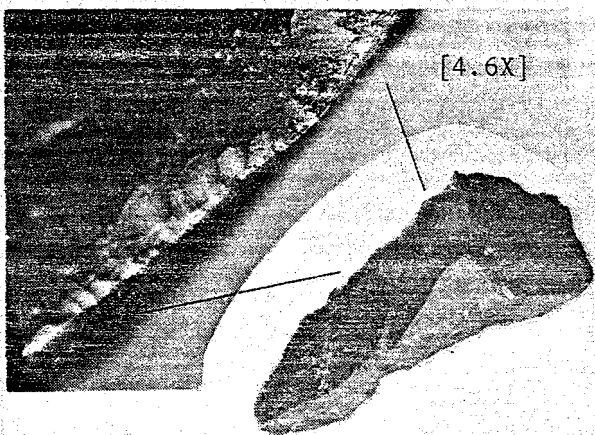


Figure 5 (cont'd.).



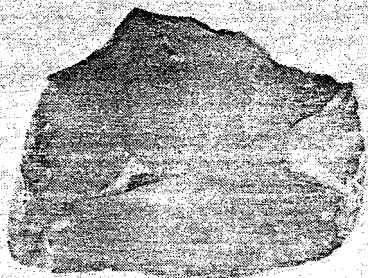
Figure 5 (cont'd.).



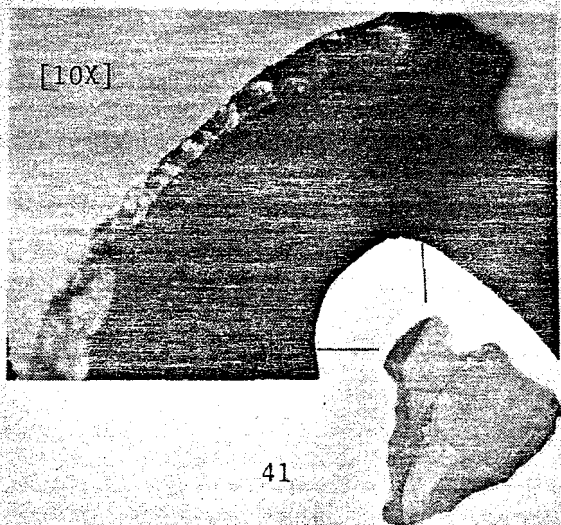
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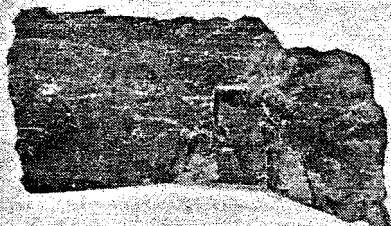
39



40



41



42



43

Figure 5 (cont'd.).

Figure 5. (Continued). Description of selected diagnostic artifacts.

- 1) UA80-236-1 (SAG-011): Thick black chert flake fragment showing possible burin facet and marginal utilization scars.
- 2) UA80-234-32A, B. C (PSM-060): Large black chert unifacially retouched blade implement in three pieces (found in situ in contiguous association). Retouch on both margins. Proximal ventral surface shows prominent lip and diffuse bulb suggesting soft hammer or pressure mode of detachment. Considered a blade due to evidence of platform preparation and arris. Transverse snap break between two proximal fragments longitudinally traversed by 4 cm - long thinning flake down midline. An incongruous scar appears on ventral side of middle fragment between the two proximal fragments suggesting retouch after breakage. Break between proximal fragments indicates hinging away from ventral surface. Distal end of middle fragment shows a hinge fracture extending onto distal fragment, indicating two breaking events.
- 3) UA80-222-4 (PSM-181): Grey chert fragment with percussion flaked retouching along margin. Fragment has a termination apparently caused by end shock, creating an excessively long lip. A corresponding negative bulb occurring on the opposing face probably indicates the impact site responsible for the observed amputation.
- 4) UA80-222-24 (PSM-181): Greenish grey chert, bifacially flaked implement lateral midsection.
- 5) UA80-222-25 (PSM-183): Greyish green chert, bifacially flaked and unifacially retouched implement fragment showing possible Levallois-like manufacturing. Striking platform remains (lower left in figure).
- 6) UA80-222-26 (PSM-181): Bluish grey chert, bifacially flaked fragment with pressure flaked scars up to 1 cm long. Fragment is truncated by a perverse fracture.
- 7) UA80-222-37 (PSM-181): Greenish grey flake terminated by a heavily-lipped perverse fracture showing utilization scars (top edge in figure). Bottom edge (in figure) show some retouch and/or utility scars distributed unifacially. Bulb has a prominent erailure scar.
- 8) UA80-222-38 (PSM-181): Greenish grey exterior flake showing feather termination and some marginal preforming. Bulb of percussion is pronounced with an erailure scar, and dorsal/proximal end shows platform preparation scars. Some evidence of marginal utilization.
- 9) UA80-222-47 (PSM-181): Grey chert interior blade. Bulb of percussion has pronounced erailure, and termination and previously detached flake scars show hinge fractures. Blade has a pronounced longitudinal arris.

Figure 5. Continued.

- 10) UA80-222-48 (PSM-181): Greenish grey interior blade. Bulb of percussion has a small possible erailure, and dorsal/proximal side shows platform preparation scars. Distal end of blade is partly broken but intact part shows feather termination. Cross section is triangular, and blade has a distinct longitudinal arris.
- 11) UA80-224-1 (PSM-182): Greenish grey chert burin? spall with triangular cross section and helical twist.
- 12) UA80-224-4 (PSM-182): Light grey chert flake showing some preforming but with a hinge termination and amputation. Left and bottom edges (in figure) show utilization scars.
- 13) UA80-224-5 (PSM-182): Whitish grey flake with platform remnant (lower margin in figure) and unifacial edge nibbling along lower left margin (in figure).
- 14) UA80-224-6 (PSM-182): Light grey chert flake with unifacial retouch on margins. Flake is terminated by a lateral snap apparently due to end shock. Part of resultant lip is edge-nibbled.
- 15) UA80-224-7A, B (PSM-182): Brown and black striped, angular chert flake with transverse break. Upper central to right margins (in figure) are feather terminated and show unifacial utilization scars.
- 16) UA80-225-7 (PSM-183): Greenish grey chert flake with triangular cross section. Possible burin spall.
- 17) UA80-225-266A, B (PSM-183): Black chert base and midsection of projectile point showing transverse and collateral percussion flaking. Edges are locally retouched, and cross section is biconvex.
- 18) UA80-225-267 (PSM-183): Blackish chert 'projectile point' midsection, convex borders, biconvex cross section. Some of retouching is diagonal parallel.
- 19) UA80-225-268 (PSM-183): Black chert projectile point stem showing diagonal, collateral percussion flaking. Cross section is vaguely biconvex.
- 20) UA80-223-5 (PSM-184): Grey chert biface fragment (preform?) with transverse perverse fracture and missing tip on opposite end. Most of flaking appears to be percussive and object appears utilized.
- 21) UA80-223-6 (PSM-184): Variegated grey, percussion flake biface fragment.

Figure 5. Continued.

- 22) UA80-223-7 (PSM-184): Dark grey chert implement fragment with a penetrative whitish zone. Unifacial edge-nibbling occurs on dorsal side margin (left in figure).
- 23) UA80-223-9 (PSM-184): Greenish grey implement base? showing possible Levallois-like manufacture. Flaking scars on ventral side show hinge fracturing. The specimen is terminated by a snap break.
- 24) UA80-239-3 (PSM-193): Grey green chert projectile point with missing lateral tip, broad stemmed and corner notched. Cortex present on one face. Flaking is irregular and basal thinning is crude. Biconvex cross section.
- 25) UA80-239-4 (PSM-193): Greenish grey chert biface fragment (tip or butt) with termination missing, and showing primary and secondary retouch. Diagonal helical perverse fracture is present. Some primary retouch is crudely parallel.
- 26) UA80-238-7 (PSM-192): Bluish black interior flake (blade?) blank: has dorsal arris and evidence of platform preparation. Some localized preliminary marginal nibbling present (through retouch or use). 33 x 55 mm.
- 27) UA80-237-4 (PSM-191): Grey chert bifacially flaked implement 'tip' with diagonal perverse fracture (snap break). Shows preform with primary retouch and some marginal secondary retouch (probably percussive). Vague evidence of thermal alteration (pottid and differential luster) shows on surface. Plano-convex cross section.
- 28) UA80-235-1 (PSM-190): Stemmed projectile point, black chert. Bifacially flaked with primary and secondary retouch. Barbs and stem created by corner notching. One barb and tip missing. Some secondary retouch is parallel diagonal. Crude diamond cross section.
- 29) UA80-226-1 (CHN-010): Variegated and veined, grey chert biface implement midsection.
- 30) UA80-207-1 (WIS-003): Black chert, unifacially retouched implement (scraper?) fragment.
- 31) UA80-207-2 (WIS-003): Black chert interior distal fragment of flake with peripheral unifacial edge retouch. Object has transverse snap break. One larger primary retouch scar has hinge fracture. Possible 'scraper.'

Figure 5. Continued.

- 32) UA80-207-5 (WIS-003): Black chert flake with crude bulb and step fractured scar on opposite side possibly formed as a result of platform preparation (left in figure). Unifacially positioned utilization scars occur on dorsal surface margins (upper left and right in figure).
- 33) UA80-227-1 (BET-123): Black chert interior flake fragment (implement), unifacially retouched along margins. Ends terminated by snap break and hinge fracture.
- 34) UA80-229-1A, B, C (BET-122): Black chert flake with a diminutive graver bit produced by unifacial microflaking. Fracture of item possibly due to cryostatic or thermal processes as suggested by warped interfaces and tiny localized pits common to breaklines.
- 35) UA80-231-3 (BET-042): Obsidian biface fragment with some edge retouch. Transverse snap break and small termination break present.
- 36) UA80-212-1 (BET-126): Whitish grey, translucent chalcedony. Implement lateral midsection. Finely edge-retouched bifacially.
- 37) UA80-214-2 (LIV-047): Greyish black, variegated, exterior flake with pronounced helical twist (clockwise). Bulb has an erailure, and utilization scars occur on both margins.
- 38) UA80-214-3 (LIV- 047): Black chert angular flake with pronounced dorsal-ventral curvature. Triangular cross section. One margin shows unifacial edge-nibbling and utilization scars on ventral surface.
- 39) UA80-214-29 (LIV-047): Black chert angular flake with utilization scars along margin. Flake exhibits several marginal hinge fractures.
- 40) UA80-214-42 (LIV-047): Black chert flake with very pronounced bulb and erailure. Termination appears to be caused by end shock and hinge fracturing. Flake has a distinct longitudinal arris, and shows utilization scars along bottom edge (in figure).
- 41) UA80-214-44 (LIV-047): Black chert flake with marginal, unifacial 'micronibbling' on protruberance resulting in a bevelled edge; function is probably that of a scraper.
- 42) UA80-215-1 (LIV-106): Black, angular chert flake with pronounced bulb of percussion and platform preparation scars. Upper margin (in figure) shows probable utilization scars.
- 43) UA80-210-7 (LIV-046?): Greyish black, veined chert interior flake with a fairly pronounced bulb and platform preparation scars. Left margin (in figure) shows possible utilization scarring.

Alaska State Site No.: SAG-006 (addendum)

Formerly known (in part) as Alyeska archaeology site S-9.

University of Alaska Museum Accession No.: UA80-242

Location:

Latitude: 69° 09' 20"

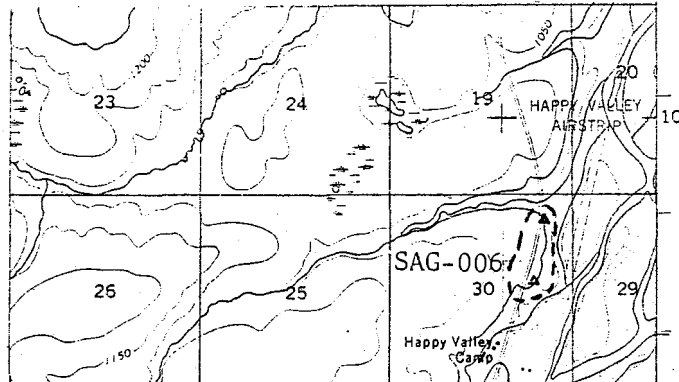
Longitude: 148° 49' 35"

Alaska Coordinate System: 5,542,400 ft N; 653,200 ft E (Zone 4),
SAG A-4 quadrangle

Section, Township, Range: W/2 of E/2 of NE/4, Sec. 30, T3S, R14E
(center of site) (Umiat Meridian)

General: The site lies along a 2900 ft-long, 50 ft-high terrace remnant of the Sagavanirktok River, immediately north of Happy Valley Camp. The haul road passes through the observed limits of the site.

The original location of the site (S-9) is described as "...located on a small gravel till knoll roughly one-half mile north of the (Happy Valley Camp)," (Derry in Cook 1970: 95). This knoll is the dominant high near the southern end of the terrace.



Environmental Setting

The terrace upon which the site is located marks the contact between the Sagavanirktok River floodplain to the east of the piedmont region of frozen upland silts overlying older till deposits to the west. The terrace is 1250 ft west of the present Sagavanirktok River, and is bordered to the north by Milke Creek and the south and east by Happy Valley Camp Creek. Numerous, low relief knobs (a few feet high) occur along the terrace edge which are void of any significant vegetation

and veneered with abundant frost-shattered rock debris. A lower, secondary terrace lies 20 ft below (to the east) of the main terrace. In both locales, an excellent vista of the Sagavanirktok River floodplain is available.

Vegetation in the area comprises cotton grass, cloud berry, bear berry, purple plume, narrow leaf saussurea, labrador tea, yellow dryas, kinnikinnik, tall Jacobs ladder, large flowered wintergreen, monks hood, Alp lily, arctic bell heather, bog rosemary, reindeer moss (lichen), arctic dock, fireweed and dwarf fireweed. Tussocks are locally common.

Animal life observed comprise owl, ptarmigan and jaegers, and sign of caribou, wolf and bear is present.

Survey Methodology

The site area was routinely surveyed in conjunction with archaeological survey along a segment of the proposed NWA gasline in 1980. At this time, thirty test pits were placed in various localities along the terrace with negative results.

A few days later, with the impression that the area had moderate cultural resource potential, the terrace was re-visited, and an additional twenty test pits were placed, primarily at the southern and northern ends, yielding two flakes of black chert. The northern flake was found 125 ft from the terrace's northern edge above Milke Creek and 220 ft east of the haul road. The other flake was found 187 ft south of the northern edge and 125 ft east of the haul road. Although sparse, the occurrence of these lithic remains encouraged yet another visit while doing other work in the vicinity. Twenty additional test pits were placed in the more southerly find area with an additional flake located 1500 ft south of the northern edge and 200 ft east of the haul road. All three flakes were found 2-3 inches below the surface in a rich, very dark brown organic zone underlying the sod.

Site Description

The site is on a gently rolling terrace, and has been described above. It has vague limits, but the main apparent focus seems to occur around the knoll originally described as SAG-006 (S-9). The haul road now effectively bisects this knoll.

Cultural materials. The 1980 cultural materials have been discussed above. Derry (Cook 1970:95) found one piece of possibly sawn bone from the knoll locality and was inferred to be the work of "very recent hunters." At this time, no other cultural material was recovered from testing in the area.

Stratigraphy. A generalized stratigraphic format along the terrace consists of a 2-5 inch vegetation/sod layer overlying a 3-4 inch thick, dark humic silt ("cultural zone") which in turn overlies a yellowish 'clay' of indeterminate thickness with scattered sub-rounded pebbles. Frozen ground appears locally at depths of 6-10 inches.

Impact

The haul road presently cuts the site or at least comes very close to it. The proposed NWA gasline route lies adjacent to the haul road on its eastern site. Thereby creating further direct impact. As the limits of the site are as yet still ill-defined, however, it is difficult to accurately assess potential damage through gasline construction activities. Cultural materials appear to be sparse, and except for potential terrain surface damage, non-construction related activities pose little immediate threat to any cultural resource.

Significance

Because of the scant observed artifacts and their wide dispersal, it is difficult to assess the significance of SAG-006. The terrace and its setting are considered as high potential for cultural resources, but further testing is required to establish the limits, intensity and types of activity that occurred here.

Recommendation

SAG-006 may contain archaeological information but we lack adequate information at this time to assess the location. We recommend further testing be done.

Alaska State Site No. SAG-011

University of Alaska Museum Accession No. UA80-236

Location

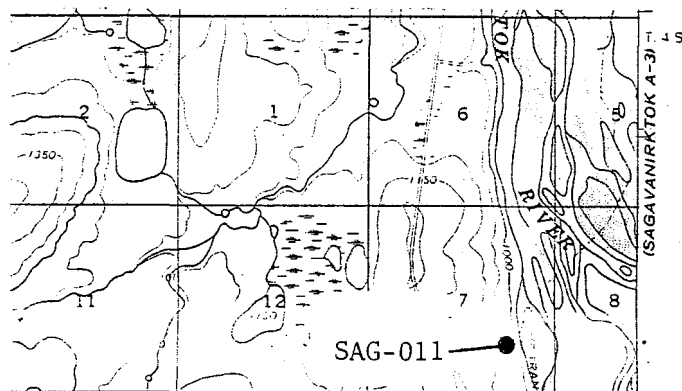
Latitude: 69° 06' 24"

Longitude: 148° 49' 45"

Alaska Coordinate System: 5,524,172 ft N; 652,818 ft E (Zone 4),
SAG A-4 quadrangle.

Section, Township, Range: SE/4 of SE/4 of NW/4 of SE/4, Sec. 7, T4S,
R14E (Umiat Meridian).

General: The site is 0.54 mi north of Charlotte Creek, 2.75 mi south
of Happy Valley Camp and 0.24 mi east of the Haul Road.



Environmental Setting

The site is located on an irregular arcuate till deposit rising above the surrounding gently rolling frozen upland silts. The 'arc' trends north-northwest, rising to the northwest, but sharply dropping off in all other directions (Fig. 6). The site affords a very good view of the Sagavanirktok River floodplain to the east, with visibility extending at least one half mile north and south. To the west and northwest, the gradually rising piedmont hills obscure any view greater than a quarter of a mile. The 'arc' has other smaller knolls extending along the spine with lower non-vegetated tracts in-between covered with frost-shattered rock exposures.

Vegetation on and around the site comprises dwarf birch, scrub willow, blue berries, kinnikinnik, reindeer moss, pink plume/bistort, labrador tea, bear berry, yellow dryas, mountain avens, moss campion, dwarf fireweed, arctic bell heather, mountain arnica, mourning ragwort, purple aster, alp lily, narrow leaf saussurea, tundra rose/shrubby cinquefoil, monks hood, glacier avens, camas wand lily, four parted gentian, lupine, stiff stem/rusty saxifrage.

With exception of many of the aforementioned, tussocks, horsetail, Alaska poppy, large flowered wintergreen and cotton grass occur mainly away from the site.

The faunal inventory consists of fox, caribou, and ptarmigan sign. Parka squirrel burrows are plentiful on the site. In addition, the Sagavanirktok River and its vicinity supports fish, gulls and other waterfowl. Moose, too, are present.

Water resources include the Sagavanirktok River 0.32 mi to the east, Charlotte Creek 0.5 mi to the south, Happy Valley Camp Creek 1.3 mi to the northwest and two small ponds 0.85 mi to the west-northwest.

Survey Methodology

Twenty-one test pits, each measuring approximately 8x8 inches, were placed around the site in areas considered to have both high and low cultural potential in order to define site limits (Fig. 6). Depth of test pits averaged 8 to 9 inches where the rocky matrix precluded further testing or where the pit was determined to be culturally sterile. An intensive visual search was also conducted.

The site was contour mapped by inspection using a central datum and a few control points. All collected artifacts were cataloged in the field. Photographs were taken of the site from four directions in order to show topographic relationships. On-site photos were also taken.

Site Description

The site dimensions, determined by the artifact scatter, are approximately 200 ft (north-southeast) x 90 ft (northeast-southwest). The lower (eastern) shelf of the 'arc' (Fig. 6) provides a good wind break and a possible site for shelter. However, this area is not as well drained as the spine.

Cultural materials. Testing showed the lithic assemblage to be distributed across the entire spine with a slight concentration near the southeastern-most knoll (Fig. 6). Very few artifacts were found on the slopes of the 'arc'.

The artifacts are of black chert, and show secondary and tertiary stages of reduction. They are found primarily in the sod layer. A few flakes occurred as deep as 8 inches, but may be associated with rodent disturbances. A total of twenty-nine flakes were found, two of which occurred on the surface. Two cores were also found. Specific information on these artifacts is given in the artifact catalog (Appendix 6). One artifact with a possible burin facet (UA80-236/1) is shown in Figure 5.

Some charcoal flecks were observed in the test pits at depths of 4 and 8 inches, but cultural implications are inconclusive.

Stratigraphy. The basic stratigraphic profile at the site consists of a thin vegetative mat overlying a thin humic layer which in turn overlies a thick brown sandy zone containing abundant pebbles and cobbles. A yellow 'clay' is seen below in some cases.

Impact

Heavy rodent disturbance is seen on the northern and southern-most knolls (artifacts recovered from these areas cannot be securely placed into any particular stratigraphic layer). The artifacts themselves, and their general distribution, appear to be in relatively good shape. No previous archaeological work has been conducted at this site.

The proposed NWA pipeline lies 1200 ft to the west and poses little threat of impact except perhaps by relic hunters.

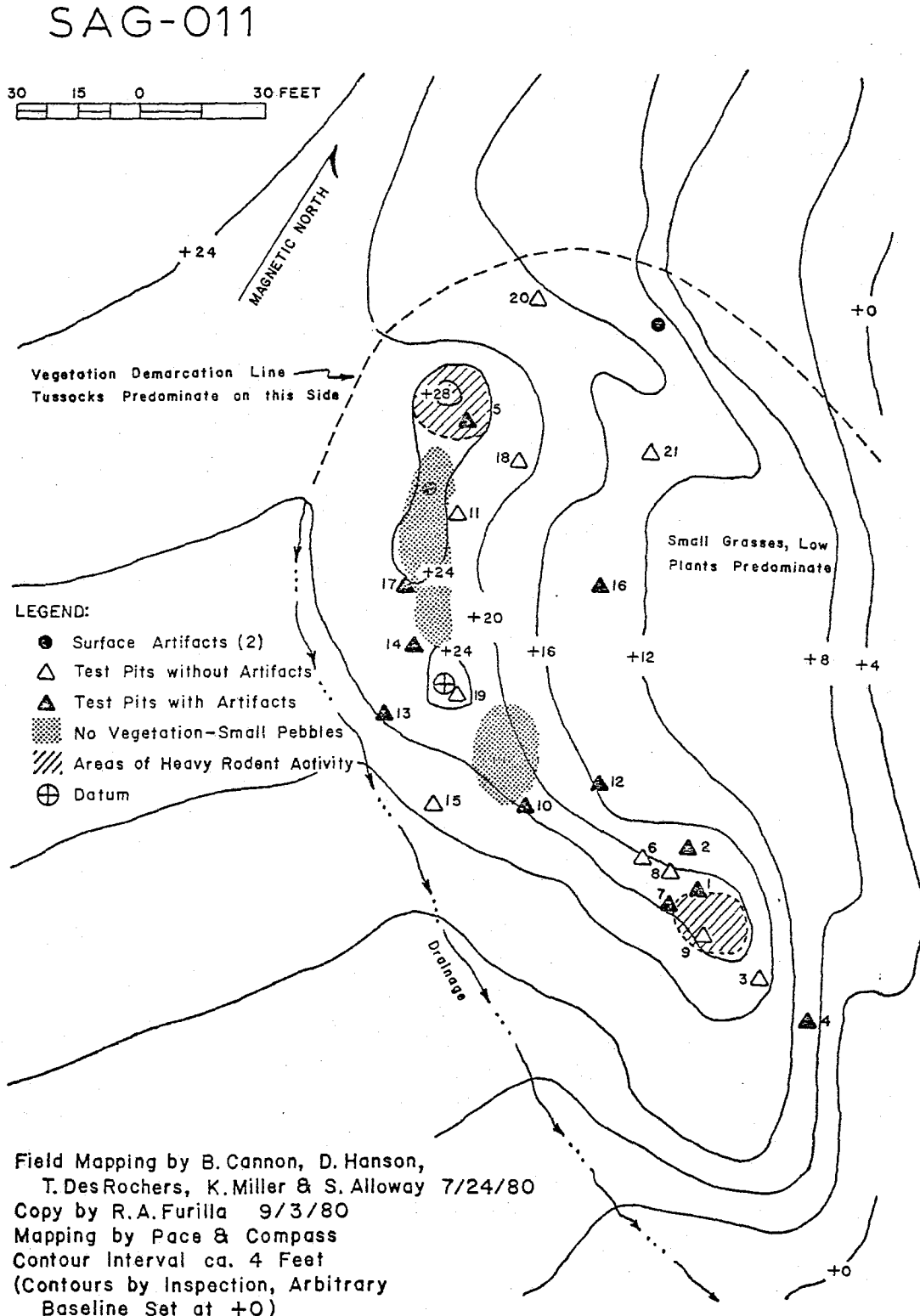
Significance

The comparatively undisturbed nature of the site along with its evidently abundant and varied artifact inventory promises to reveal much about site-specific, prehistoric, activities relevant to knoll sites.

Recommendation

SAG-011 contains archaeological information but lies well away from the project area. No adverse impacts are likely and we recommend no further action.

Figure 6.



Alaska State Site No.: PSM-060 (addendum)

Also known as the "Ribdon Site," BLM site 166, TAPS S-91, S-46.

University of Alaska Museum Accession No.: UA74-43, UA75-132, UA80-234

Location:

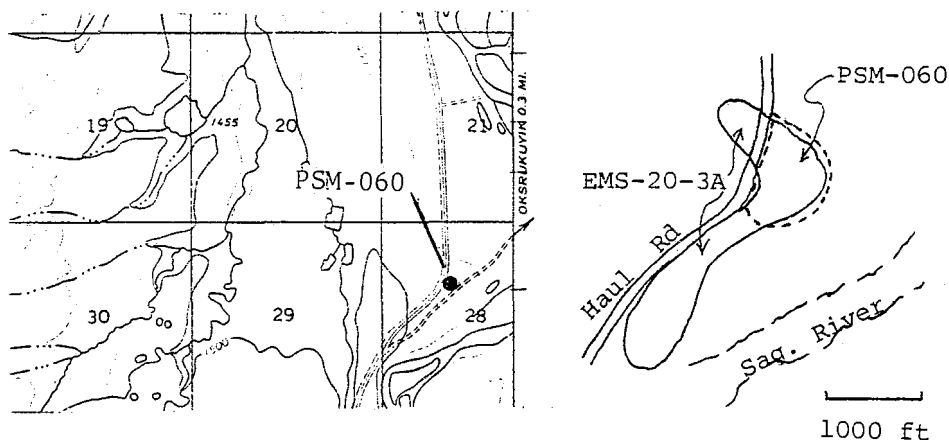
Latitude: 68° 45' 35"

Longitude: 148° 48' 40"

Alaska Coordinate System: 5,415,450 ft N; 657,250 ft E (Zone 4),
PSM D-4 quadrangle

Section, Township, Range: NE/4 of SE/4 of NW/4, Sec. 28, T7S, R14E
(Umiat Meridian)

General: The site is located on the northern and eastern ends of a triangular shaped, easterly projecting terrace remnant immediately north of Alyeska material site access road EXP-120, just east of and adjacent to the haul road, and 2.1 mi south of Alyeska Pump Station 3. The site is also within the northeastern portion of currently proposed EMS-20-3A.



Environmental Setting:

The site is set primarily on the northern edge of an old terrace remnant of the Sagavanirktok River which rises abruptly 30-40 ft above the current floodplain. The terrace surface is generally flat but locally undulatory. A low mound, a few stepped benches, two small ephemeral lakes and some marshy swales characterize the site location (Fig. 8). The higher, more well-drained areas are more scantily vegetated and have a pebbly surface.

Dominant vegetation on-site consists of scattered grasses and locally dense scrub willow. Some scattered tussocks occur in the marshy areas. The floodplain below (easterly) is primarily a marshy tussock habitat with thick grasses and scrub willow.

Moose were observed in the area, and signs of caribou, fox, and ptarmigan were plentiful. Numerous parka squirrel dens were noted on and around the site.

The view afforded of the Sagavanirktok River floodplain from the site is excellent. The river, itself, makes its closest approach to the site 1600 ft to the southeast.

Survey Methodology

The site was located during routine archaeological survey of EMS-20-3A in 1980. Due to the complex nature of the site, it was visited several times in order to test, map and record the information felt to be important for assessment.

The site has formerly been partially excavated by Alyeska archaeologists and over 200 related test pits are still evident (Fig. 7). During the 1980 survey, the site was systematically mapped showing topography, cultural features, and both old and new archaeological excavations and test pits.

Preliminary testing was conducted on a minor scale via seven small test pits (1-7) in 1980, extending the southwest corners of Alyeska Excavations I and II (Figs. 7, 8) in order to verify presence of cultural materials. Sixteen additional test pits were later placed around the central part of the site in an attempt to establish some limits of artifact distribution. These pits were mapped (A-0; Fig. 8). Several other test pits (unmapped) were placed around other features of possible cultural origin.

A 1 x 9.6 ft test trench (test trench 1) was placed in 'house pit'-d in Area 1 (Figs. 7, 9) to a maximum depth of 15 inches. This trench trended N21°E, and extended from the pit's center to its rim. Features within the trench along with stratigraphic details were mapped, and the trench was subsequently flagged and backfilled.

Site Description

PSM-060 is a multi-component prehistoric site, both spatially and probably temporally. The terrace projection upon which the site is located measures 850 ft (east-west) x 1000 ft (north-south), an area of approximately 20 acres. The site, itself (at least the remaining portion) occupies only the northern and eastern parts of the terrace (Fig. 7).

The site has four areas of apparent cultural activity or foci of previous archaeological work. Area 1 (Fig. 7) lies on an elevated bench adjacent to the haul road on the northwest part of the terrace. This area consists of seven distinct depressions (a-g) clustered together, each showing a roughly circular or polygonal configuration (Figs. 7, 10). The depressions are probably house pits (semi-subterranean dwellings). They are presently filled with dense scrub willow.

Area 2 (Fig. 7) consists of an elongate knoll in the west-central part of the terrace. Several anomalously located cobbles are placed in a roughly circular configuration in the north central part of the knoll top. Though the cobbles appear disturbed and somewhat recently placed, they may represent a tent ring.

Area 3 (Fig. 7) evidently was an area of moderately intensive stone working activities judging by the fairly dense accumulation of lithic flakes and implements. No surface features are discernable, but many other kinds of prehistoric activity no doubt took place here. It is also the area where most of the archaeological investigations were conducted during the Alyeska pipeline era. Five excavation plots totalling 51.5 m² are scattered about in this area with an approximate magnetic north grid orientation (Figs. 7, 8). Depth of these excavations range up to 6 inches.

Area 4 is located on the eastern tip of the terrace (Figs. 7, 8). Here four more excavations are present totalling at least 15 m². The presence of lithic flakes in the area suggests a separate focus of prehistoric activity.

Former investigations. Concise documentation is not readily available for this site, and such information that is available is internally inconsistent.

The Ribdon Site is reported as originally having seventeen locales reported or excavated. If "locales" are interpreted as excavation areas, then only seven presently remain. It is likely that some were obliterated by expansion of the adjacent Alyeska material source.

Certain other 'reports' suggest the presence of two "Ribdon Sites": A tent ring and sod house found (1970) at the confluence of the Sagavanirktok and Ribdon Rivers, and 'another' at the presently described location of EMS-20-3A (M. Kunz, personal communication, Sept. 1980). The latter was confirmed as "the one and only" Ribdon site by J. Cook (personal communication, Oct. 1980). The configuration of cobbles in Area 2 (Fig. 7) may be the tent ring alluded to by Kunz but no sign of a sod house was seen.

A summary of documentation concerning earlier work at the Ribdon site is as follows:

The location is given on Alyeska Alignment Sheet 20 within material source 120-AD (AS?). The site is also described as being located within Alyeska Material Source 120-0 and was excavated in 1974 and 1975 (seventeen different locales, all but one being "Palisades/Tuktu" affiliated). The remaining locale produced a single artifact indicating ties with the Denbigh Flint Complex. The 1974 work was supervised by G. Bacon and the crew comprised P. Bowers, E. Richardson, K. Kirby, A. Frizzera, K. Andrasko and B. Allen-Schuster and J. Dixon.

Work was evidently completed at this site in 1975 under the supervision of D. Slaughter (Nat'l Gas Routes, v. 1, p. 65, unpublished notes) which state: "this site consists of four localities on the northwest end of M.S. 119-0 on a terrace on the bank of the Sagavanirktok River near its confluence with [the] Ribdon River. Chert flakes, large notched points and tool biface fragments have been recovered from this site dating to 4000 B.C." However, archaeological site notes, Sec. 5/6, 1975 of the Alyeska project indicate the Ribdon site excavated at MS 120-0. The field crew at this time comprised D. Slaughter, G. Spearman, A. Barstow, B. Gal, P. Ivie, R. Stern, M. Yarborough, A. Dekin, M. Kunz, W. Weirsum and R. Newell.

Cultural materials. The earlier excavated materials are presumably housed in the University of Alaska Museum (Accession No. UA74-43 and UA75-132), but these assemblages have not been examined as yet.

Most of the materials collected in 1980 were recovered from Area 3. This area is still rich with in situ lithic material mainly of multi-colored chert. In light of the fairly extensive earlier testing and excavations, 1980 testing was conducted on a conservative level (localities described above).

A total of 76 lithic artifacts were recovered from this testing most of which comprised chert trimming flakes reflecting predominantly primary percussion techniques. Several flakes have features suggesting 'soft hammer' percussion. Alyeska excavation Area I (Figs. 7, 8) produced 47 flakes, 27 of which came from test pits 1, 2, 3 and 7. The remaining 20 were found on and around the formerly excavated surface. Sixteen flakes were recovered from test pits 4, 5 and 6 at Alyeska excavation Unit II (Figs. 7, 8), thirteen of which came from test pit 5. Only one flake was found on the already excavated surface. One unfacially flaked implement of black chert was found in three closely associated pieces (UA80-234/32A, B, C; Fig. 5; Appendix 6) also in test pit 5. The location of this implement and its broken character suggest a cultural activity, and the clustering of other lithic materials around the site suggests discrete activity areas. Despite the former 'work' at this site, much potential remains for future investigations, especially in regard to activity areas.

Of the remaining test pits (A-0) placed in 1980, only E, H, K and O had positive yields: 1, 2, 1 and 2 flakes, respectively.

Stratigraphy. The gross stratigraphy of the terrace comprises fluvial deposits of poorly sorted and crudely stratified silt, sand and pebbles and cobbles. On a finer scale, in Area 3, the general stratigraphy consists of a thin, discontinuous sod or pebbly surface armor overlying a brownish silt or silty sand locally admixed with subrounded or subangular pebbles. Larger cobbles lie below in a crudely graded manner. Most of the subsurface cultural remains appear in the silty zone to a depth of 6 inches.

The stratigraphy of test trench-1 in 'house pit'-d (Area 1) is presented in Figure 9. Preliminarily, there is strong evidence for a deliberate excavation (cobble rim) and some evidence for occupation (soil staining).

Impact

The Ribdon site has already been impacted to a degree by former archaeological excavations and testing. On a greater scale, an untold portion of the site has been lost by expansion of the Alyeska material source. Current plans entail further potential expansion of this material source (EMS-20-3A) for NWA gasline construction, which would no doubt obliterate all parts of the site remaining.

Potential impact on a more indirect level constitutes possible relic hunting by haul road travellers.

Significance

PSM-060 is a complex, multi-component, prehistoric site displaying numerous activities. Although the site has been partially excavated, there is no apparent published or final documentation available. Further, there is considerable potential remaining that will reveal much about past land and resource use, settlement patterns, and intra-site activities.

The site evidently has manifestations of both Palisades/Tuktu and Denbigh Flint Complex industries. While only one artifact recovered during the Alyeska era represented the Denbigh Flint Complex, the single radiocarbon date (1780 \pm 150 B.P.) obtained from the Ribdon site did not support the association (Cook 1976:106, 1977:63).

Recommendation

PSM-060 contains archaeological information and is directly impacted by proposed construction activities. We recommend a request for determination of eligibility.

Figure 8. PSM-060 detail of excavations.

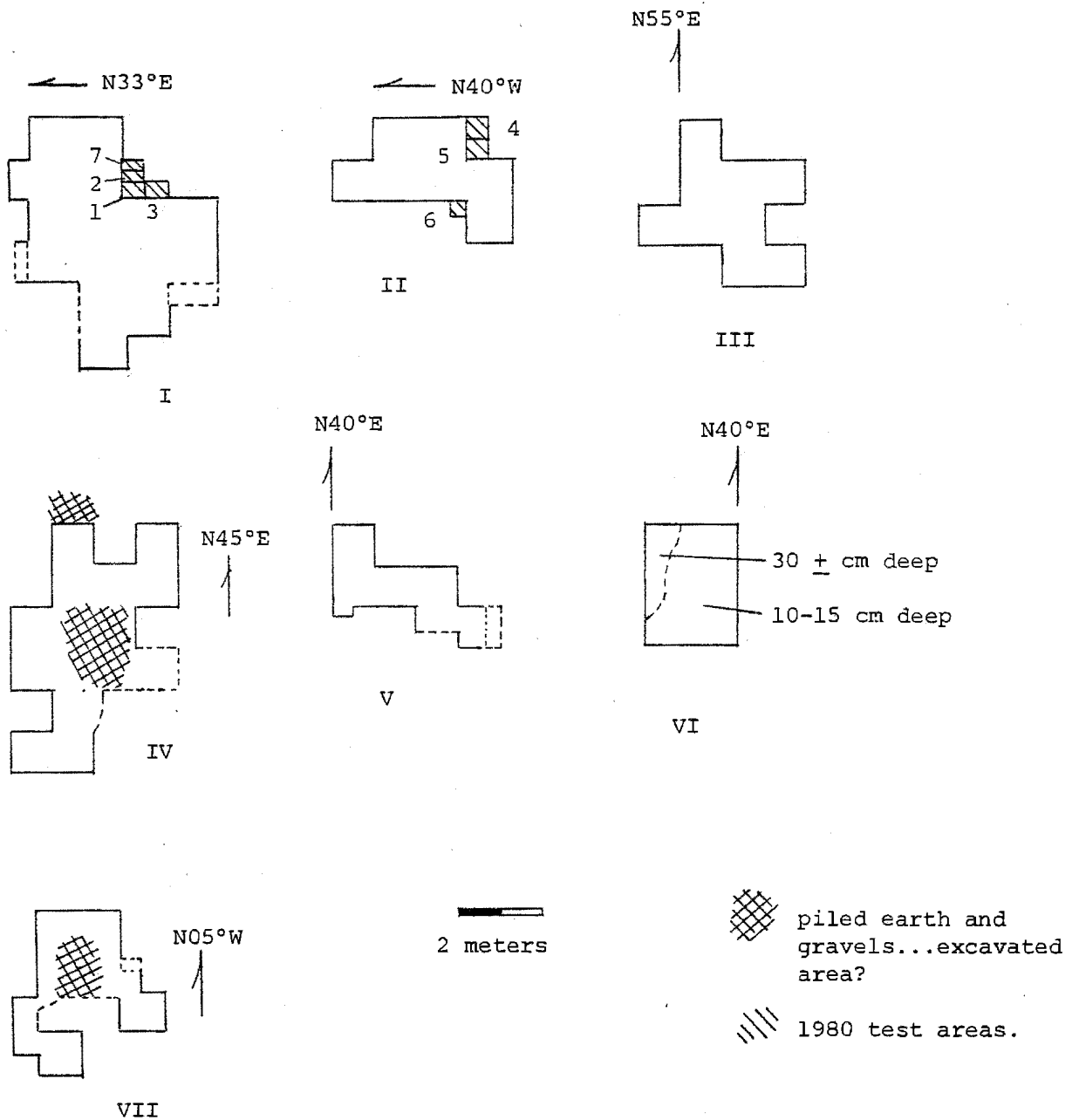
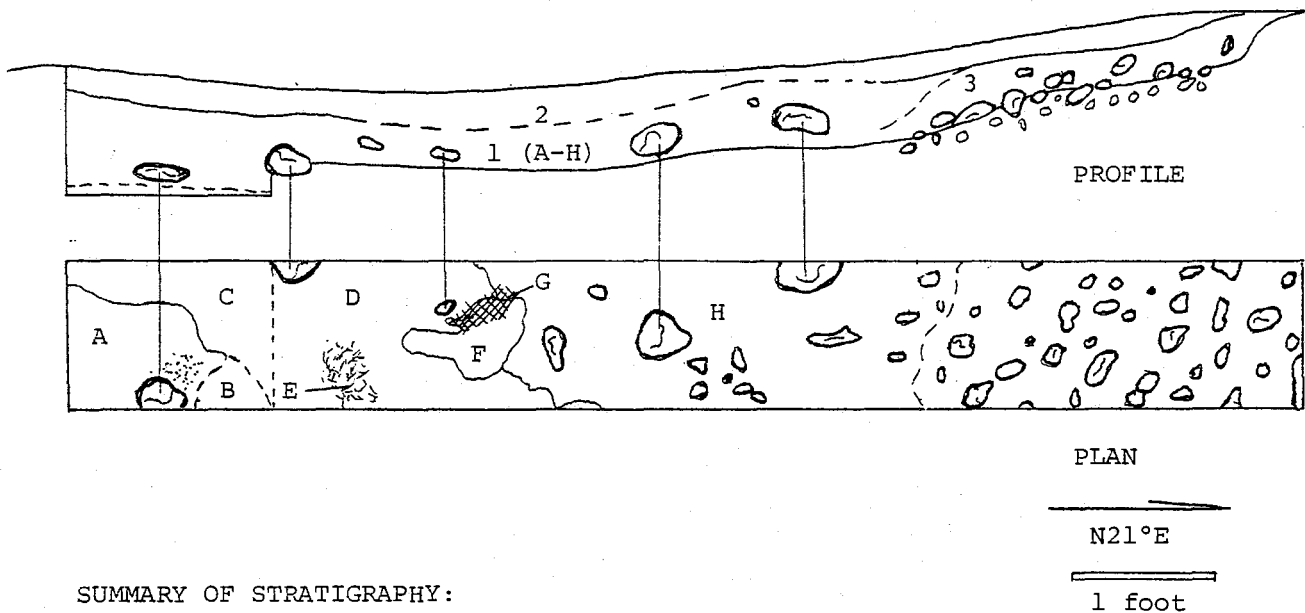


Figure 9. PSM-060 detail of house pit 'D' profile.



SUMMARY OF STRATIGRAPHY:

Unit 1. Dark brown, sandy silt, clayey in places and mottled throughout. Incorporated blackish, charcoal? stained patches with a greasy texture appear middenous. Some areas appear to be intrusive (zones B, F and G, e.g.) due to plants and rodent activity. Unit contains scattered small pebbles to cobbles (subrounded) occurring in non-uniform clusters such as occurs in more densely cobble-laden Unit 3. Area near center appears darker mottled and charcoal? stained, and some 'stains' have a brownish, sandy center. Localized patches of fine gravel and light brown clayey silt also occur. A mossy mat is inter-stratified near the center of the depression.

Description of Unit 1 zones. A. dark mottled brown and blackish silt with black patches; B. similar to A but less dark (intrusive?); C. brownish, moderately homogeneous silt; D. dark blackish, mottled silt with black streaks and greasy texture; E. black streaky zone with orange periphery (fired?); F. light brown, clayey silt; G. mottled orange silt; H. medium to dark brownish silty and fine sandy matrix with blackish mottling and orange patches.

Unit 2. Sod.

Unit 3. Poorly sorted unit of pebbles and small cobbles in a matrix of light brown sand, silt and clayey silt (throwout?).

CONCLUSIONS: Staining, cobble distribution, vegetative mat(s), rim and general topographic configuration suggest this depression is a cultural feature (house pit) despite no discrete artifacts found in the vicinity.

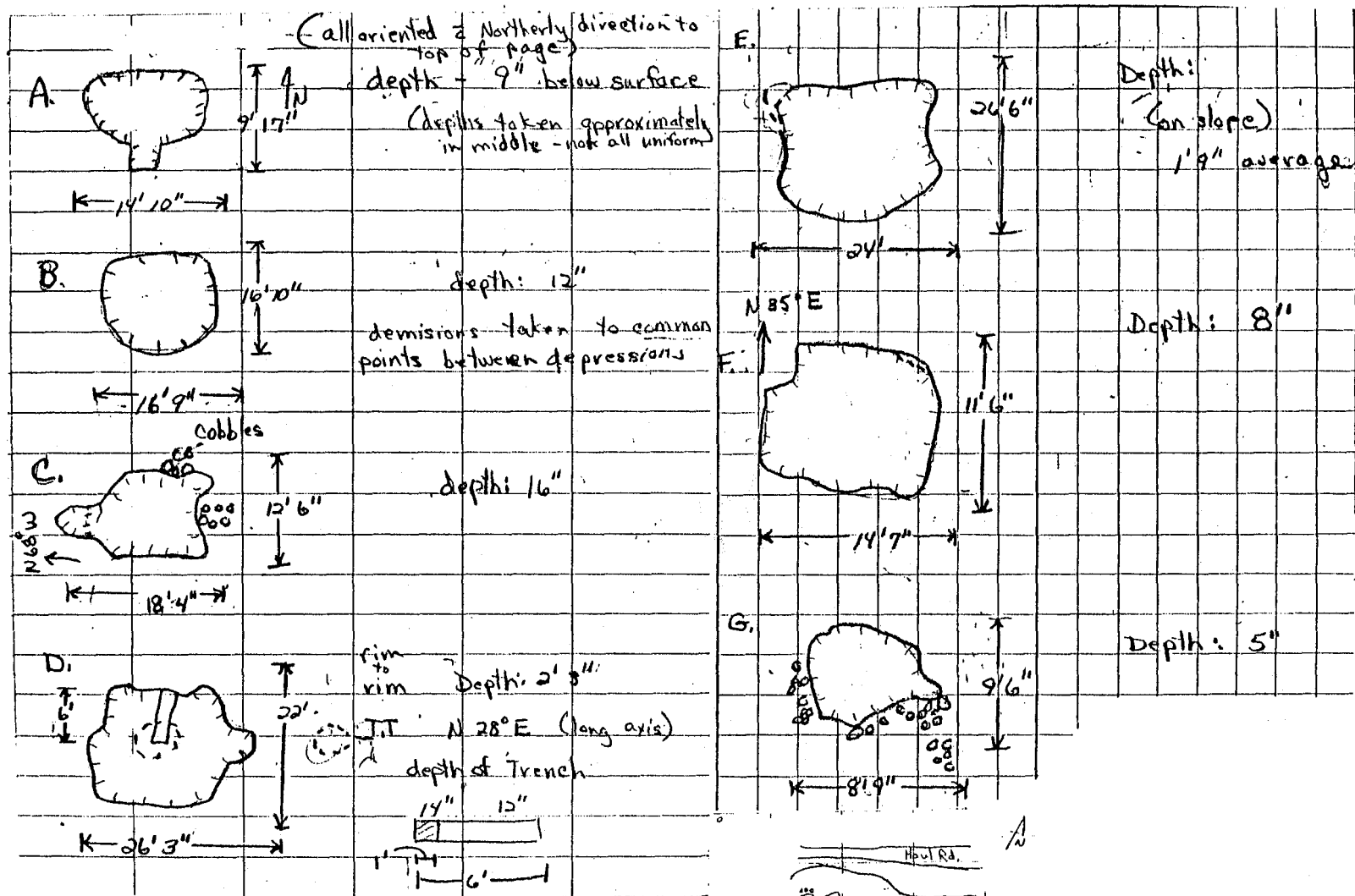
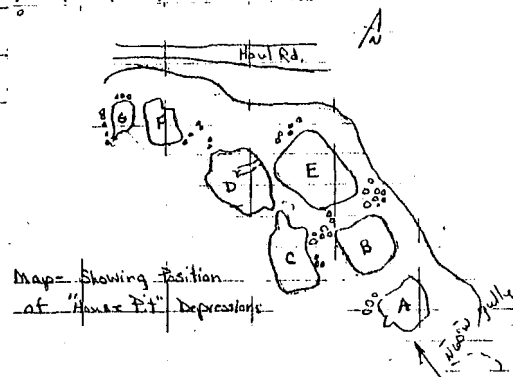


Figure 10. Configurations and dimensions of 'house pits', PSM-060.



Alaska State Site No.: PSM-189, PSM-057 (addendum)

University of Alaska Museum Accession No.: UA80-233

Location:

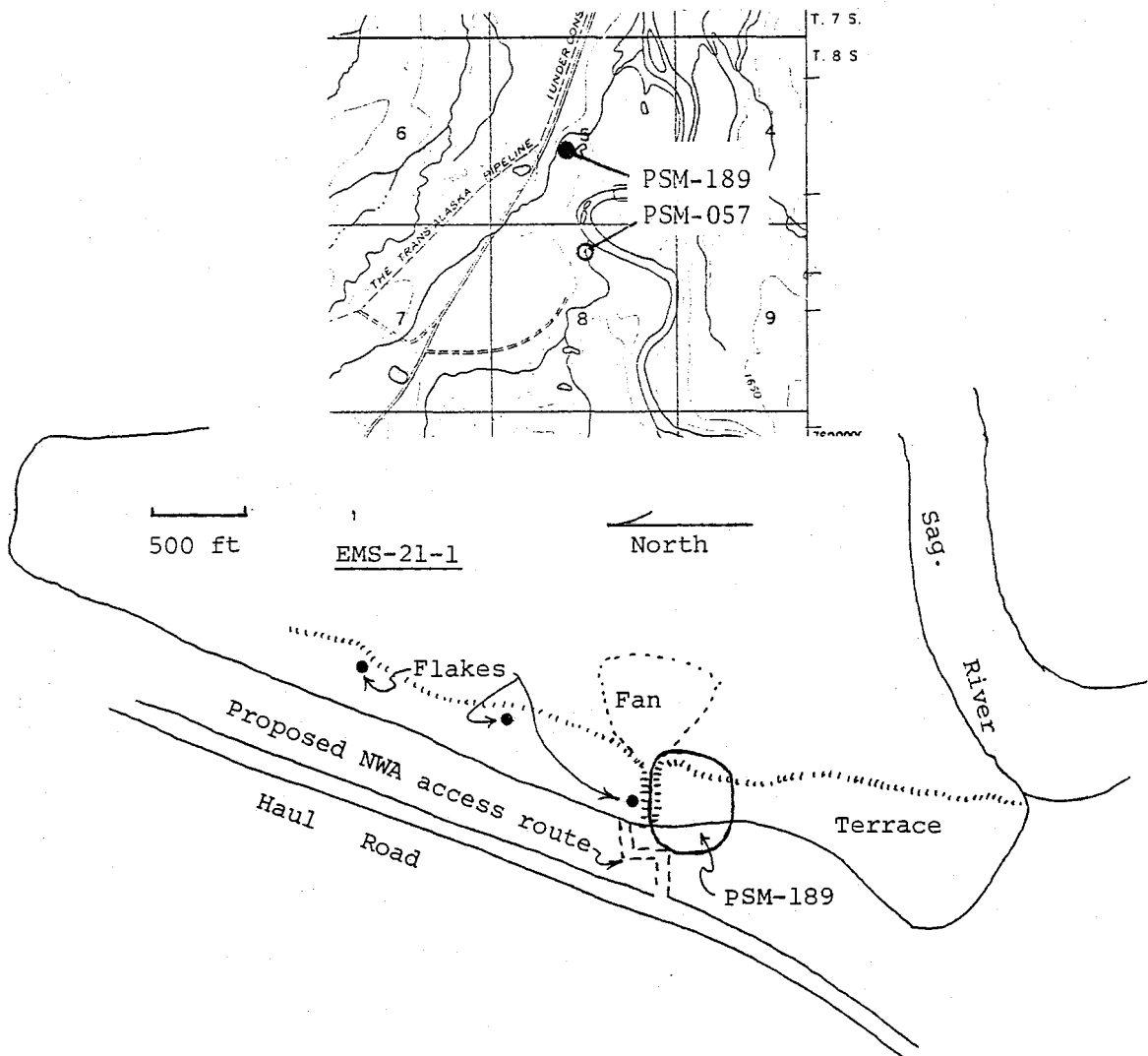
Latitude: 68° 46' 38"

Longitude: 148° 51' 00"

Alaska Coordinate System: 5,403,750 ft N; 652,500 ft E (Zone 4),
PSM D-4 quadrangle

Section, Township, Range: NE/4 of NE/4 of SW/4, Sec. 5, T8S, R14E
(Umia Meridian)

General: The site is 1.42 mi north of the NWA camp 119.4 access road, and 5 mi south of Alyeska Pump Station 3, and 300-500 ft east of the haul road. It is also within the currently proposed material site 21-1; along its southwest edge.



Environmental Setting

The site is located on the edge of a 30 ft-high terrace remnant of the Sagavanirktok River. A prominent active stream channel cuts the terrace forming the northern and western boundaries of the site, and forming a north-trending projection. An erosional remnant, termed "the Island" (Fig. 11) lies just to the west of the projected terrace remnant. The terrace surface is flat, and sparsely covered with grass and locally dense scrub willow. Thick grass, willow and tussocks occupy the channel bottom and the broad Sagavanirktok River floodplain to the east. The floodplain is marshy and one small lake occurs a few hundred feet to the southeast. An excellent view of the floodplain is afforded from the site, and several moose were observed during the survey work. The stream channel provides an easy access route from the floodplain to the terrace, and may, along with the available water and view, be the primary determining factors in the site's location. The Sagavanirktok River makes its closest approach to the site 1600 ft to the southeast. Caribou and parka squirrels are also plentiful in the area.

Survey Methodology

The site was found during routine archaeological survey of EMS 21-1 in 1980. Both the site and selected other areas of the upper terrace edge, notably to the south, had been formerly tested by Alyeska archaeologists. The most intensive survey of this period appears focused on the northeastern tip of the terrace projection (Fig. 11). No documentation of the findings have been located.

In 1980, the northern end of the terrace (south of the gully) was methodically surface inspected, test pitted and mapped. The same procedure was applied to "The Island."

Site Description

No discrete surface features were located to sufficiently yield any specific site description. There appears to be a concentration (albeit light) of artifacts, however, in the northeastern corner of the 'southern terrace.'

Cultural materials are also scattered around over a 4000 ft² area in the northern part of the southern terrace, and thinly dispersed along parts of the southern edge of the northern terrace, across the channel. Surprisingly, nothing was noted on top "The Island."

Two rectilinear areas lie on the terrace projection which are filled with cobbles and re-seeded with grass (Fig. 11). These may be former Alyeska material source test sites or re-filled archaeological excavations. If the latter case is true, then it is not clear from available records which archaeological site this would be. The nearest known archaeological site to PSM-189 is the 'Ipnaq site' (PSM-057)

located 0.75 mi south-southeast from PSM-189, on former Alyeska material site 119-4, located on the terrace edge near the end of the access road leading into NWA camp 119.4 (Cook 1976:108). M. Kunz (personal communication) thought that PSM-189 may have been included with the Ipnaq site. PSM-057 does not appear to exist any longer.

Cultural materials. A total of seventeen black cryptocrystalline flakes were collected at PSM-189, most of which came from the northeast corner of the terrace projection, in a disturbed context. Other scattered flakes and cobbles showing some evidence of use occur around other parts of the site.

Stratigraphy. The terrace is composed of discontinuous, crudely stratified fluvial silt, sand, pebbles and cobbles. More specifically, a thin sod layer overlies brown to grey sand and silt up to 10 inches deep, with cobbles and pebbles becoming more abundant with depth.

Impact

The site has been tested by former Alyeska archaeologists, and two moderately large areas have been excavated for some unknown purpose and rehabilitated. Otherwise, the site is fairly well preserved. The major threat of direct impact is posed by the sites' location on proposed EMS-21-1.

Significance

The cultural materials collected at PSM-189 were not sufficiently conclusive to determine precise site function, but what artifacts were noted and the setting suggests a prehistoric camp site. PSM-189 may have National Register eligibility.

The artifacts collected at PSM-057 (Ipnaq site) appeared representative of the Choris/Norton 'culture.' The site, no longer extant, evidently served as a briefly occupied campsite, tentatively dating to about 4000 B.C. (Cook 1976:108). Two charcoal samples recovered at the Ipnaq site, however, yielded dates ranging from less than 200 to 270 ± 140 years B.P. (Cook 1977:63).

Recommendation

PSM-189 contains archaeological information. If it is to be directly impacted by proposed construction activities, we recommend that the site be tested to gather sufficient data to assess significance.

PSM-057 contains no remaining archaeological information and lies well outside the project. We recommend no further action.

PSM-189

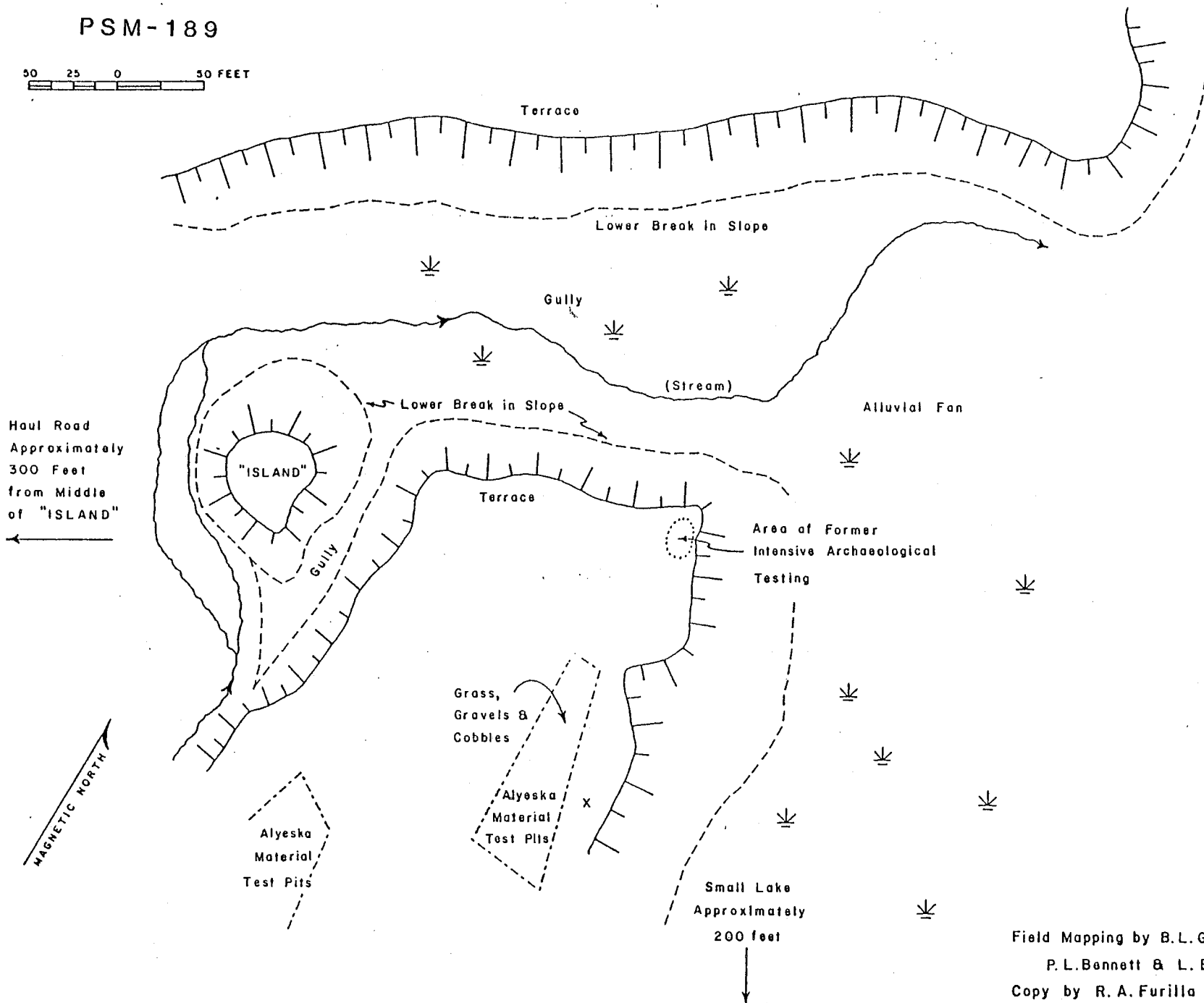
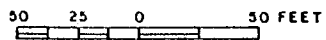


Figure 11.

Field Mapping by B.L. Gannon,
P.L. Bennett & L. Boring 7/29/80
Copy by R. A. Furilla 8/18/80

Alaska State Site No.: PSM-181, PSM-182, PSM-183, PSM-184

University of Alaska Museum Accession No.:

UA80-222 (PSM-181)
 UA80-223 (PSM-184)
 UA80-224 (PSM-182)
 UA80-225 (PSM-183)

Location

| | <u>Latitude</u> | <u>Longitude</u> |
|---------|-----------------|------------------|
| PSM-181 | 68° 29' 10" | 149° 32' 40" |
| PSM-182 | 68° 30' 02" | 149° 31' 00" |
| PSM-183 | 68° 30' 02" | 149° 31' 02" |
| PSM-184 | 68° 29' 25" | 149° 31' 52" |

Alaska Coordinate System: (Zone 4), PSM B-5 quadrangle;
 PSM-181: 5,289,500 ft N; 561,250 ft E
 PSM-182: 5,294,750 ft N; 564,900 ft E
 PSM-183: 5,294,750 ft N; 564,850 ft E
 PSM-184: 5,291,250 ft N; 652,850 ft E

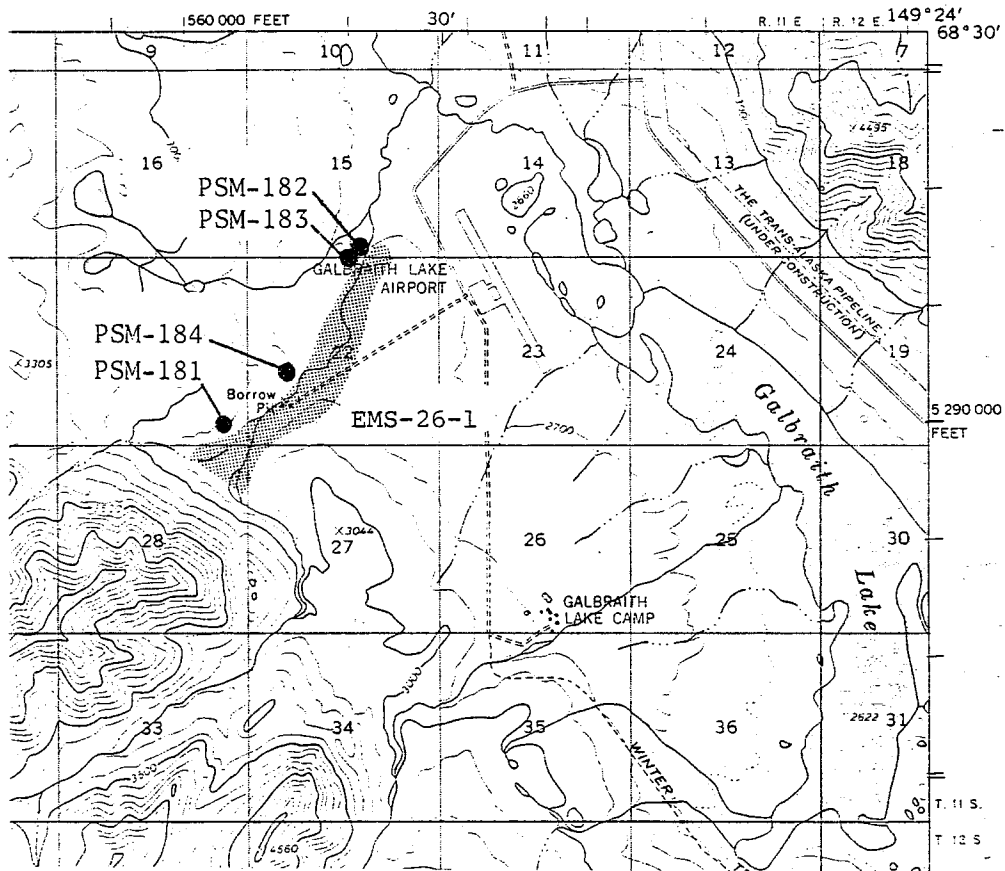
Section, Township, Range: (Umiat Meridian)

PSM-181: N/2 of S/2 of SE/4 of SE/4, Sec. 21, T11S, R11E
 PSM-182: SW/4 of SW/4 of SE/4, Sec. 15, T11S, R11E
 PSM-183: SW/4 of SW/4 of SE/4, Sec. 15, T11S, R11E
 PSM-184: NE/4 of NW/4 of SW/4, Sec. 22, T11S, R11E

General: On the map, PSM-181, 182, 183 and 184 are located southwest from the northwestern end of the Galbraith Lake airstrip and north of hill 3044 (1.5 mi southwest of the airstrip), respectively:

PSM-181: 1.6 mi/0.8 mi
 PSM-182, 183: 0.58 mi/1.65 mi
 PSM-184: 1.2 mi/0.95 mi

They lie adjacent to proposed EMS-26-1, accessible from an access road departing southwesterly from the Galbraith Lake airstrip road.



Environmental Setting

These four sites are located on a series of small bench-like knolls situated on the southeastern side of an eroded alluvial fan, just west of the Galbraith Lake airstrip. An unnamed stream lies immediately below the site location, and its deposits, locally, constitute EMS-26-1. Galbraith Lake lies within 1.5 mi to the east.

Galbraith Lake, the largest in the region, occupies a lowland basin of rolling tundra, and surrounded by the Philip Smith Mountains which rise locally 4000 ft above. Many smaller subsidiary lakes occupy the basin.

Local vegetation is generally sparse and treeless. Mountain avens is the most dominant plant, along with low grasses. Also present are bear berry, mosses, lichens, and crow berry. Some of the grasses may be invaders from reclamation, and scrub willow and alder locally border the streams.

Few animals were observed directly but sign exists for moose, caribou, bear and squirrels. Dall sheep are also seasonally present in the area. Galbraith Lake probably contains fish and supports waterfowl.

Conglomerate float is a common rock type in the area, and contain inclusions of chert which may have been utilized, too, as a resource by aboriginal inhabitants.

The view from the knolls is good, especially to the east, overlooking Galbraith Lake.

Survey Methodology

The sites were found while conducting routine archaeological reconnaissance of EMS-26-1 in 1980. While the EMS itself had little in the way of cultural resource potential (active fluvial deposits), the adjacent terrain did.

All sites were intensively inspected visually, and, with the exception of PSM-184, all were then surface tested to determine the extent and distribution of cultural materials. The test pits, overall, averaged 1 ft², and depth of testing was determined by stratigraphy or terminated at an arbitrary depth. All test pits were subsequently backfilled and flagged for later relocation. PSM-184 was not surface tested due to a snow-cover. The sites were all sketch mapped, and artifacts were collected with provenience data in order to assess site significance.

Site Description

PSM-181 is the southwestern-most site, located on a subdued knoll on a small bench, approximately 150 ft northwest from, and above the lower break-in slope (and EMS-26-1). The knoll is roughly pear-shaped in plan (Fig. 12), and measures roughly 45 x 56 ft. Artifacts were recovered from a 500 ft² area on the eastern part of the knoll (Fig. 12).

Cultural materials were present both surficially and below surface. The surface material was found near test pits 3, 4, 6, and 7, with two main concentrations (S-1, S-2) near test pits 3 and 7 (Fig. 12). Most of the subsurface materials collected originated from test pits 1 and 7.

PSM-182 rests on the end of a north-projecting, lobe-shaped bench (Fig. 13), within 100 ft of the northern end of proposed EMS-26-1. An existing borrow pit lies nearby to the southwest. A stream, originating to the southeast, flows within 300 ft of the site to the east. A smaller, secondary knoll is situated on the western edge of the site, and both surfaces display exposed conglomerates.

Minimum total area of the site is 5000 ft². The only in-situ subsurface cultural materials, however, were noted on the southern crest of the smaller knoll, and the remaining materials were found surficially on the adjacent bench to the east. Artifacts at PSM-182 appear generally sparse, and may be originating from the smaller knoll.

PSM-183 lies 150 ft (datum to datum) north-northwest of PSM-182, on a low flat bench knoll. A low swale separates the two localities. Due to the location, vantage to the south is restricted, but a good view is afforded of the flatter areas and stream to the east. Like PSM-182, the surface exhibits several conglomeritic boulders with chert inclusions.

The dimensions of PSM-183 are at least 40 x 100 ft, and artifacts were found both surficially and below the surface, particularly along the eastern side (Fig. 13).

PSM-184 lies on the flat portion of a terrace remnant situated between another terrace bench below, and a higher peaked knoll to the west from which the site is separated by a shallow swale. A viable stream lies at the bottom of the slope 400 ft to the southeast. The site knoll is locally traversed by shallow gullies, and no large conglomeritic rocks are present.

The site limits are not well established due to an existing snow cover at the time of survey. However, some cultural materials were noted and collected. These areas are shown in Figure 14 along with other materials noted. Most of these materials lie in the southeastern and south-central part of the locality which in terms of cultural potential, covers about 125 ft (north-south) x at least 140 ft (east-west).

Cultural materials. Overall, the cultural assemblages present at these four sites are abundant and varied (Appendix 6). A total of 214 artifacts were collected from PSM-181, both surficially and from below surface. The vast majority of these artifacts are waste flakes of grey and greenish chert, most of which appear to have been percussion-struck. Maximum flake size approaches 1 inch². Most are interior flakes, but a few do show cortex remnants. A number also show blade-like attributes.

Two blade-like flakes (UA80-222-38 and 222-48; Fig. 5) are somewhat unique, and the former shows signs of utilization (edge-nibbling). Three biface fragments (UA80-222-24, 222-25 and 222-26; Fig. 5) were also noted. All of the diagnostic specimens were collected from test pit-7 near surface scatter-2 (Fig. 12). Overall, the site appears rich. Much more material still remains, especially in the vicinity of test pit-7, and cultural material is present to a depth of at least 2-5 inches.

PSM-182 has the most apparently sparse assemblage of the four sites. Only eight artifacts were observed (and collected) and most specimens were of grey-green or white-grey chert. Significantly, six of the eight specimens are diagnostic artifacts, comparatively. UA80-224-1 is a probable burin spall, and UA80-224-3, 224-4, 224-5, 224-6 and 224-7 (Fig. 5) show unifacial retouch and/or utilization nibbling. All but two specimens were found surficially. One flake and a large flake scraper (UA80-224-7A, 7B) were found below surface in test pit-1.

PSM-183 also displayed a rich lithic artifact assemblage of which 303 specimens were collected. The assemblage superficially resembles that of PSM-181, exhibiting a rich flake scatter. The materials are predominantly chert, but colors are more varied than those of PSM-181, comprising black, green, brown and grey materials. Again, most of the specimens are waste flakes predominantly percussion-struck, and range in size from large chunks and flakes over 1 inch² to small trimming flakes less than 0.1 inch².

Diagnostic artifacts comprise a projectile point base and midsection (UA80-225-266A and 266B; Fig. 5), found in broken association in test pit-c (Fig. 13). Another point base (UA80-225-268), similar to 266A, and a point midsection (UA80-225-267; Fig. 13) were also found in test pit-c. All are of black chert, and exhibit parallel transverse or diagonal flaking. A large possible burin spall (UA80-225-7) was recovered from the same spot. Due to snow cover, most of the observed cultural material is located on the east-central margin of the site, and test pit-c lies on the lower slope. Considerably more material was present within the concentration than is indicated in Figure 13, and PSM-183 promises to be a productive site.

Nineteen artifacts were collected from the surface of PSM-184. Inclement weather precluded any subsurface testing. Of these, four specimens were comparatively diagnostic. UA80-223-5 and 223-6 are biface fragments of grey-green chert (Fig. 5) found at locality E (Fig. 14). Another biface fragment of similar material (UA80-223-9; Fig. 5) was found at locality F, and a unifacially flaked and edge-retouched implement fragment of black chert (UA80-223-7; Fig. 5) was found at locality D. The remaining specimens comprise medium and small trimming flakes of grey-green and translucent chert, all probably struck by percussion.

Stratigraphy. The basic upper stratigraphy at PSM-181 consists of a thin vegetative mat with a dark humic layer overlying 2.5 inches brown silt with some 'gravel,' grading downward to a lighter brown.

PSM-182 has a similar format but the matrix is more fine-grained (silty-clay). PSM-183 displays a 0-2 inch tan silt which increases in admixed pebble content with depth. Little stratigraphic information is available for PSM-184, but it apparently resembles PSM-183.

Impact

PSM-181, 182, 183 and 184 all lie adjacent to and, in close proximity to proposed EMS-26-1 (off Alignment Sheet 026). Under existing mining plans, the sites should not be threatened by direct impact. If for any reason, however, the EMS should be expanded north-westward, then most of the sites will be in jeopardy. The greatest threat is in the nature of secondary (indirect) impact posed by construction personnel, either through trampling or possibly looting activities. The site locations are attractively situated so that they might lure persons to them during work breaks.

FLUOR

4680-9-KU50-8-4

The sites are all basically undisturbed at present, despite a moderate amount of localized downslope soil creep at PSM-181, 182 and 183. A pit of unknown function, measuring 20 inches x 4.5 ft and 16 inches deep, occurs on the crest (smaller knoll) of PSM-182, and some modern food containers and a metal spike, driven into the ground at the east end of the knoll, are also present.

Organic preservation is apparently non-existent at the sites.

Significance

Collectively, these four sites offer the potential for gathering valuable information on prehistoric land use and function-specific tasks. The Galbraith Lake area is an important prehistoric district, especially in conjunction with the Mosquito Lake area to the south.

All sites exhibit waste flake concentrations of varying intensity, but finished and preparatory implements are also present, thereby presenting the probability of multiple functions at each site. Their ages and contemporaneity are unknown at present.

Possibilities also occur for extracting good data on activity separation at these sites (taken as a whole), both through the evident clustering of artifacts, and the close mutual proximity of the sites. Previous archaeological survey work has been done in this area during the Alyeska era, but little information is available. Cook (1970:120) reported several flakes of blue-grey chert located on knolls just west of Galbraith Lake and was designated as PSM-022. However, the mapped location suggests a different knoll than any of the ones discussed here.

Recommendation

PSM-181 contains potentially significant archaeological information and is so close to project activities that adverse impact (indirect) is likely. We would recommend testing.

PSM-182 contains potentially significant archaeological information and is so close to project activities that adverse impact (indirect) is likely. We would recommend testing.

PSM-183 contains potentially significant archaeological information and is so close to project activities that adverse impact (indirect) is likely. We would recommend testing.

PSM-184 contains archaeological information and is close enough to project activities as to invite adverse effects. We recommend testing.

FLUOR

4680-9-K000-8-4

Figure 12. PSM-181 site map.

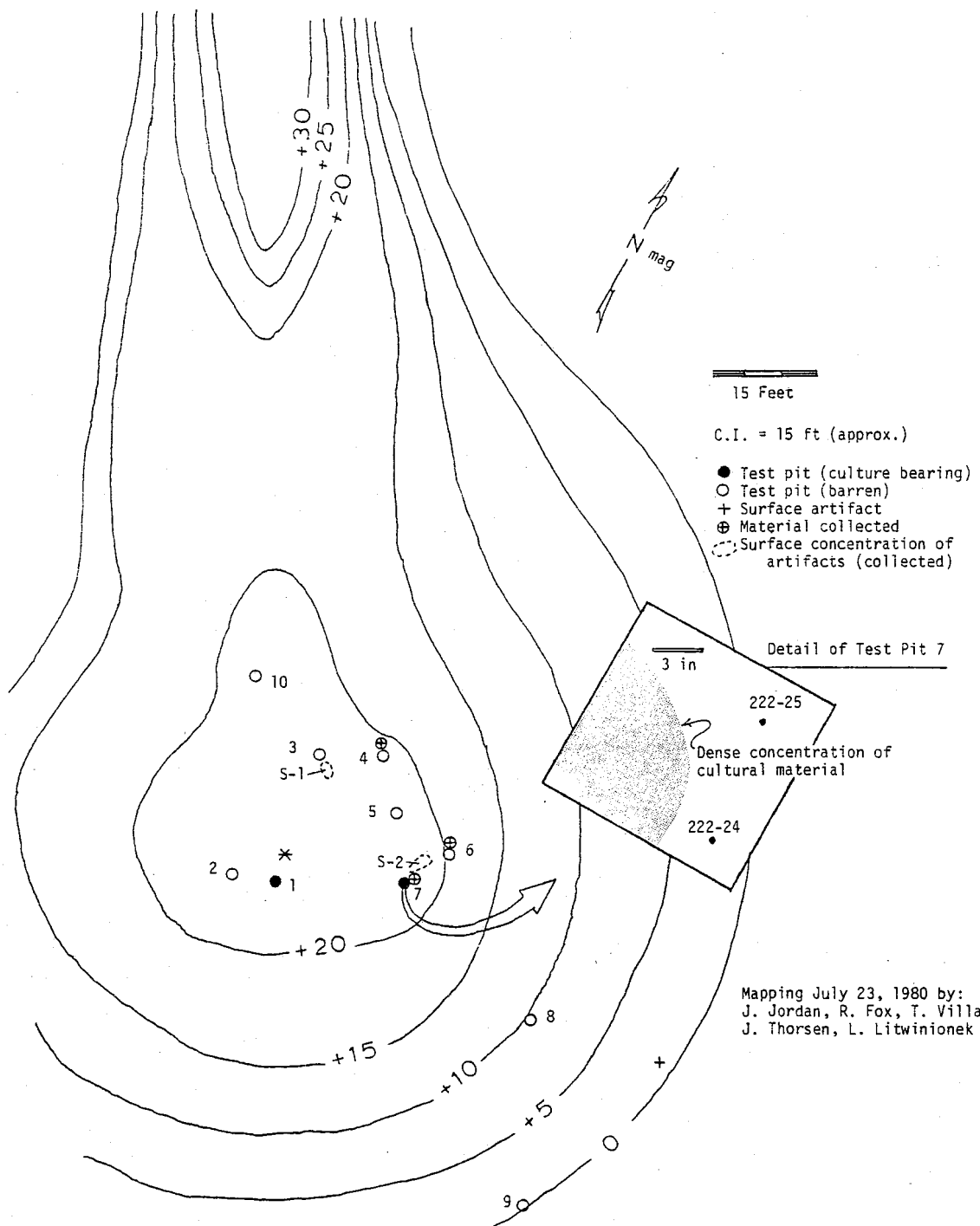
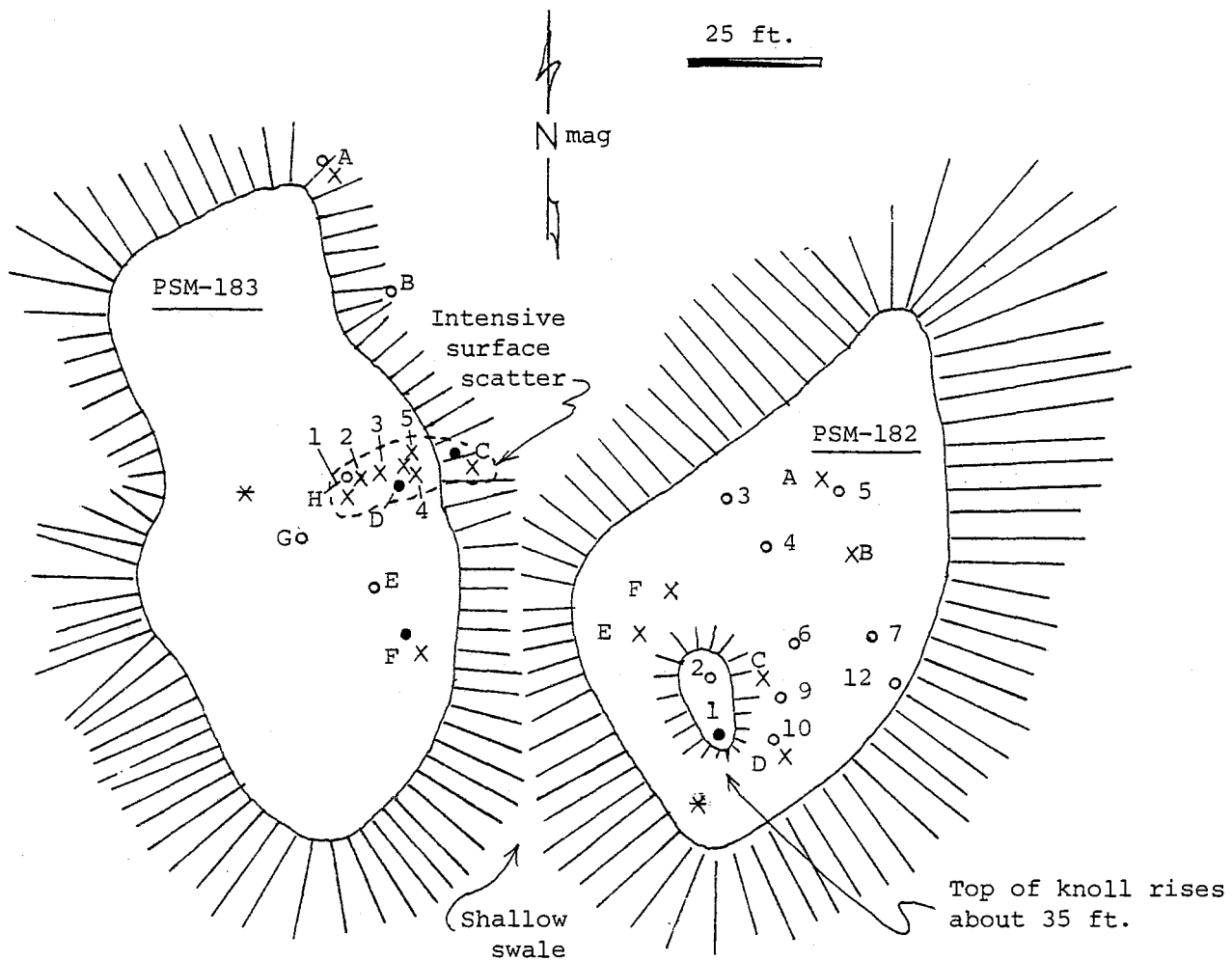
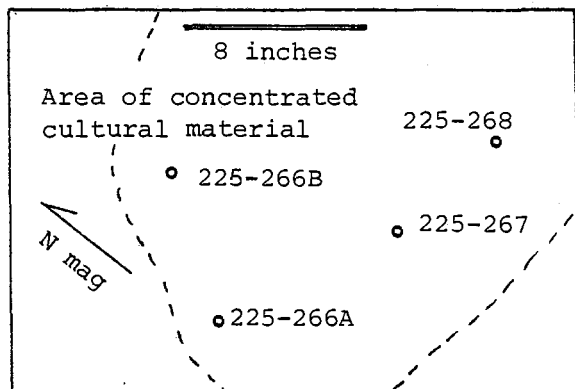


Figure 13. PSM-182, 183 site map.



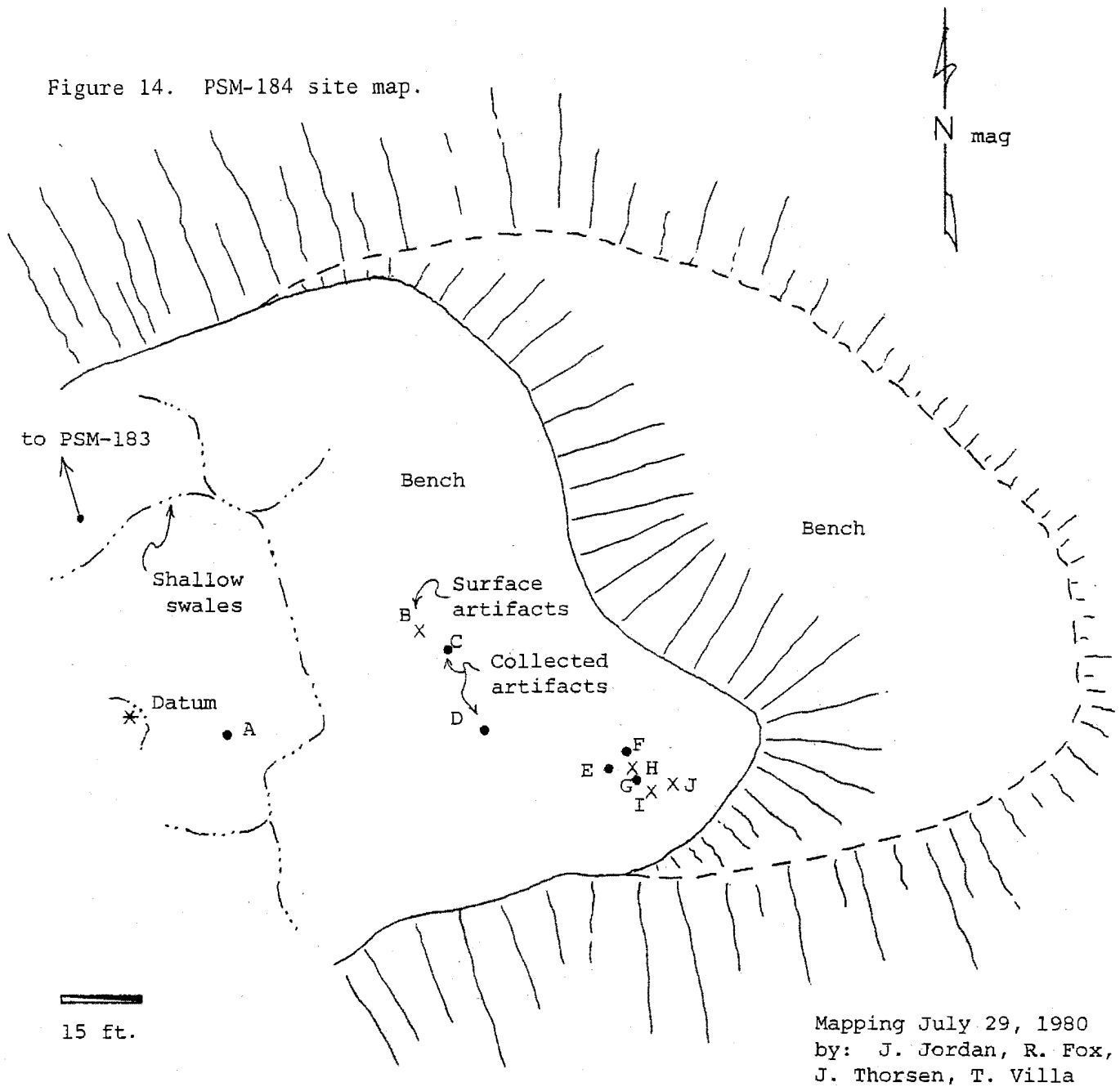
Detail of Test pit C (PSM-183)



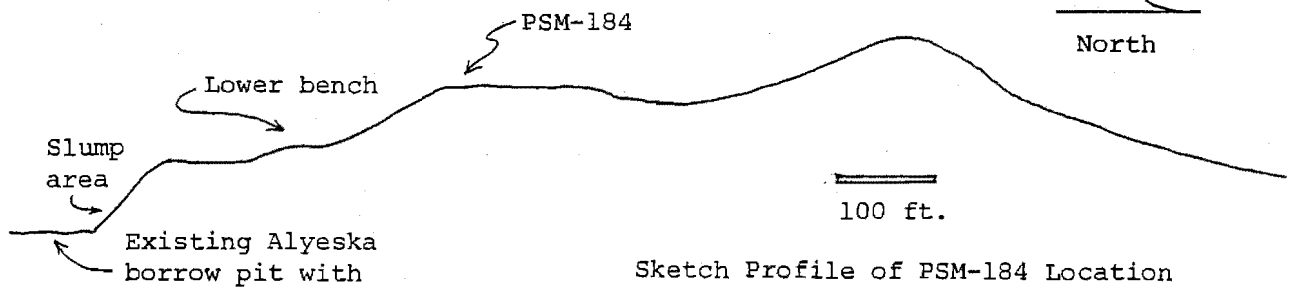
- * Datum point
- X Artifact (collected)
- Test pit (culture bearing)
- Test pit (barren)

Mapping July 23-24, 1980 by:
 J. Jordan, L. Litwinionek,
 J. Thorsen, R. Fox, T. Villa

Figure 14. PSM-184 site map.



Mapping July 29, 1980
by: J. Jordan, R. Fox,
J. Thorsen, T. Villa



Sketch Profile of PSM-184 Location

Alaska State Site No.: PSM-193

University of Alaska Museum Accession No.: UA80-239

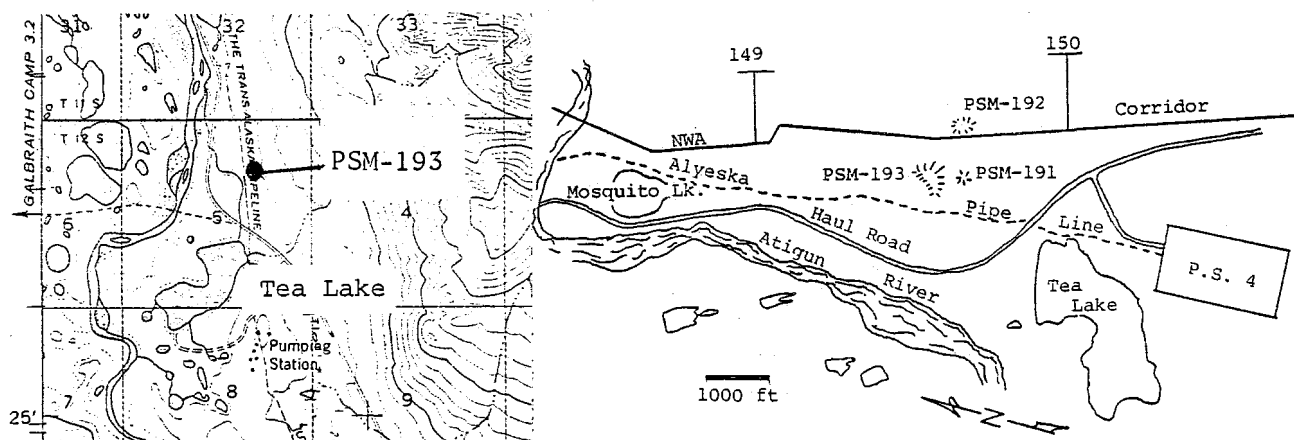
Location:

Latitude: 68° 26' 07" Longitude: 149° 21' 30"

Alaska Coordinate System: 5,277,382 ft N; 586,843 ft E (Zone 4),
PSM B-4 quadrangle

Section, Township, Range: NE/4 of NE/4 of SW/4 of NE/4, Sec. 5, T12S,
R12E (Umiat Meridian)

General: The site is located 0.83 mi N01°W from the large oil reservoir tank at Alyeska Pump Station 4, 0.79 mi S17°E from Mosquito Lake, and approximately 560 ft due east of the Alyeska pipeline.



Environmental Setting

This site is the northwestern member of three closely associated pre-historic knoll sites: PSM-191 to the south-southeast and PSM-192 to the southeast. The site is located on a relatively flat portion of a colluvial debris 'flow' originating from the Philip Smith Mountains to the east. This flow rises about 30 ft above till deposits to the south, and overlies older fluvial deposits of the Atigun River. The Alyeska work pad presently inhibits drainage to where these fluvial deposits are continually saturated.

The site itself is on a triangular shaped, well-drained 12 ft-high knoll, sloping slightly towards the west (Fig.15). There is good vantage of the Atigun River due to the height above the surrounding plain and its proximity to the Atigun River 1900 ft to the west.

The floral regime is like that observed at nearby PSM-192. Mountain areas (*Dryas* sp.) is the dominant on-site summer plant, and a tussock habitat is dominant off-site.

Faunal evidence on-site comprises ground (parka) squirrels, caribou, and moose. Bear, fox, ptarmigan, gulls and fish are also present in the vicinity.

Several lakes including some of fair size (e.g., Mosquito and Tea Lakes) are relatively close to the site.

Survey Methodology

The site was located during routine survey along the proposed NWA gasline corridor. Although the site is situated approximately 340 ft west of the corridor ("Revision 3") it was considered to have high enough cultural potential to investigate.

Intensive visual survey was conducted initially followed by mapping of individual artifacts (made feasible by the low artifact density), topography, vegetative zones and disturbed areas. Seven artifacts were collected for evaluation.

Five test pits were placed to determine the nature, extent and density of cultural material, and photographs were taken of the site to show its environmental context.

Site Description

The site occupies the flat 'summit' portion of the knoll over an area of at least 13,000 ft². Two different types of surface are manifested: 1) a thickly vegetated area to the east (about 10,000 ft²) where ground surface visibility is poor; 2) a very thinly scattered, patchy area of grasses in a matrix of gravel occupying the central area (5400 ft²). Artifacts are highly visible in the latter. To the west, coinciding with the break-in-slope, the thickly vegetated mode resumes.

Cultural materials. The lithic artifact assemblage appears primarily distributed around the contact between the vegetated and gravelly areas (21 ft N30°E from the datum; Fig. 15). Here, a concentration of 25 to 30 gray chert flakes were found in an area of 8 ft². The remaining observed artifacts (about ten) extend generally westward in a more diffuse manner over an area of 140 ft². Aside from the flakes, two bifacial implements were recovered. One (UA80-239/3; Fig. 5) is a nearly complete projectile point, and the other is a tip/butt fragment (UA80-239/4; Fig. 5). These are mapped on Figure 15 as '4' and '3', respectively. A few isolated items were noted both east and west outside the main site area. Only one of the five test pits yielded any cultural material: a flake at a depth of 1.5 inches. It is felt, however, that considerable subsurface material is present.

Two caribou antlers with no apparent cultural modification were found on the northern fringe of the site and about 60 ft east of the lithic concentration.

Stratigraphy. A typical profile consists of a thin upper sod layer, an underlying 1 to 2 inch thick zone of dark brown sandy-silt containing matted Dryas roots (and probably harboring the cultural material as well), and a basal zone of undetermined thickness of reddish brown sandy silt with scattered small pebbles.

Impact

The site is in a fairly good state of preservation with only some light disturbance due to squirrel activity in the southern part. No previous archaeological work has been done.

The most serious threat to the site is created by the proximity of the proposed NWA gasline approximately 800 ft to the west. While direct impact through construction is not likely, relic hunting and disturbances caused by construction personnel may constitute an indirect threat.

Significance

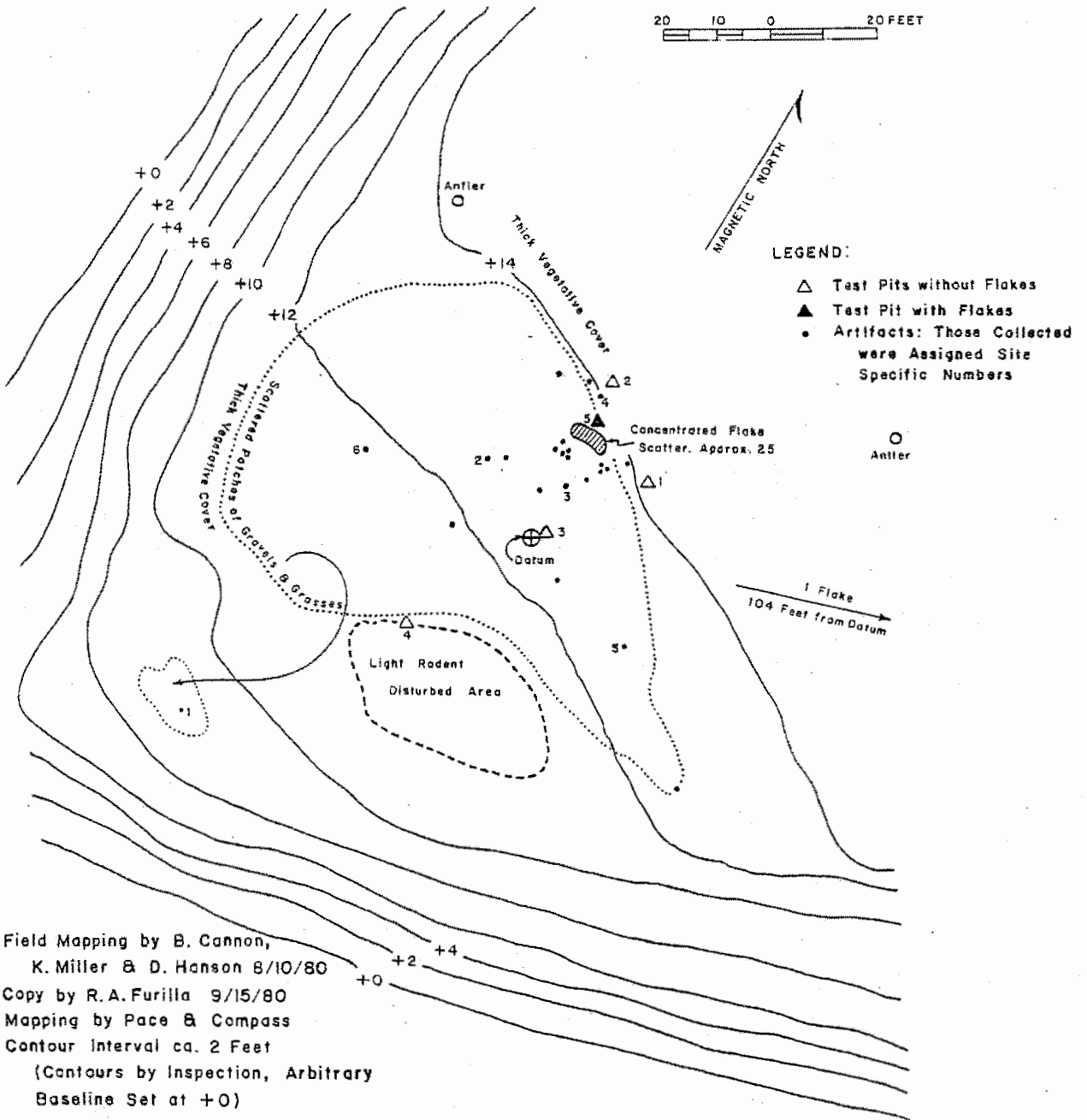
PSM-193 is undisturbed and contains in-situ cultural materials which will contribute to the understanding of regional prehistoric land and resource use, settlement patterns and site-specific activities. Additional value is ascribed by the site's proximity to PSM-191 and 192, among which intra-site relationships may be studied.

Recommendation

PSM-193 contains archaeological information but lies well off the project area. We recommend no further action.

Figure 15.

PSM-193



Field Mapping by B. Cannon,
 K. Miller & D. Hanson 8/10/80
 Copy by R.A. Furilla 9/15/80
 Mapping by Pace & Compass
 Contour Interval ca. 2 Feet
 (Contours by Inspection, Arbitrary
 Baseline Set at +0)

Alaska State Site No.: PSM-192

University of Alaska Museum Accession No.: UA80-238

Location:

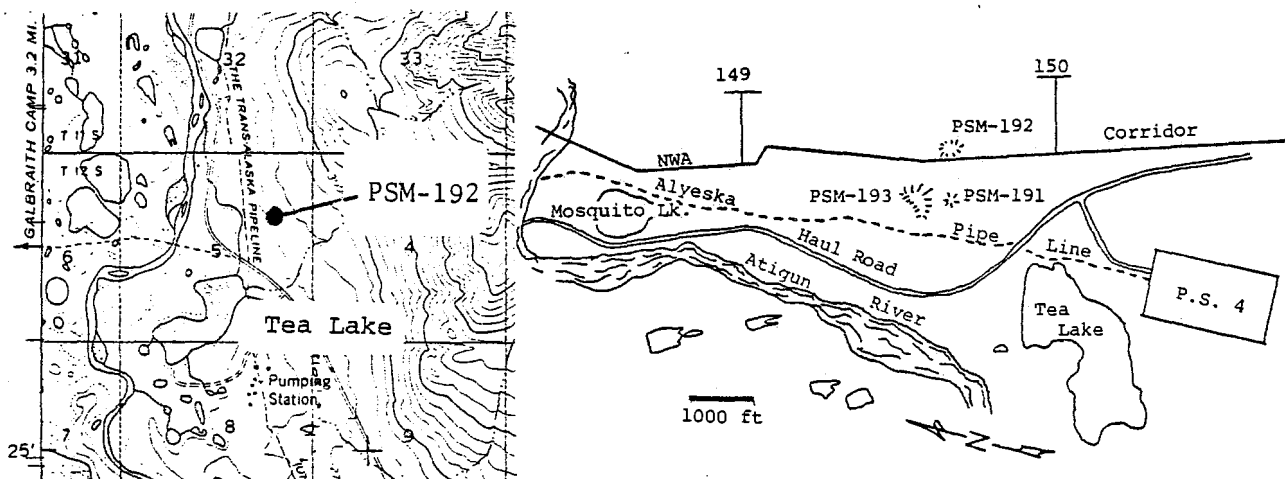
Latitude: 68° 26' 05"

Longitude: 149° 21' 14"

Alaska Coordinate System: 5,277, 104 ft N; 587,750 ft E (Zone 4),
PSM B-4 quadrangle

Section, Township, Range: SW/4 of NE/4 of SE/4 of NE/4, Sec. 5, T12S,
R12E (Umiat Meridian)

General: The site is located 0.79 mi N11°E from the larger oil reservoir tank at Pump Station 4, 0.9 mi S28°E from Mosquito Lake, and 0.47 mi N36°E from the eastern terminus of Tea Lake.



Environmental Setting

This site is the eastern member of three closely associated prehistoric knoll sites; PSM-191 to the west and PSM-193 to the northwest. PSM-192 is on a 15-20 ft-high knoll situated on a colluvial debris flow originating from the northern extension of the Philip Smith Mountains to the east, which locally rises 30 ft above the surrounding till deposits. This till sheet slopes down to the west about 280 ft/mi, and is poorly drained. The site, itself, is well drained.

The site affords a good view of the Atigun River in the vicinity of Alyeska Pump Station 4 north to Mosquito Lake. An excellent view of the other two adjacent sites (PSM-191 and 193) is also provided.

The dominant on-site flora is mountain avens. Bear berries, dwarf birch, pink plume/bistort, kinnikinnik, arctic bell heather, scrub willow, mosses and lichens, blue berries, mushrooms, crow berries, glacier avens, narrow leaf saussurea, labrador tea and dwarf fireweed are also present.

Tussocks are dominant in the surrounding vicinity with accompanying horsetail, yellow marsh saxifrage, woolly lousewort, moss campion, bear flower (*Boykinia*) and cotton grass. Several of the plants found on-site are present as well.

Ground (parka) squirrels and caribou are the most prevalent local fauna. Several caribou bones and bone concentrations lie on and around the site (see cultural materials).

Several lakes are present in the area (e.g., Tea and Mosquito Lakes) and the Atigun River lies approximately 2000 ft to the west.

Survey Methodology

The site was located while conducting routine survey along the proposed NWA gasline route. As the 500 ft-wide corridor bordered this high potential locality, it was intensively surveyed [note: the "Revision 3" placement of the gasline corridor now incorporates most of the knoll; see Impact].

A surface reconnaissance was conducted to locate cultural materials. All individual artifacts or concentrations and other features of possible archaeological significance were mapped (Fig. 16). Contour intervals were set at 6 ft, and photographs were taken from various positions to show both inter- and intra-site relationships.

Only a few representative 'diagnostic' artifacts were collected in order to evaluate the significance of the site (Fig. 5; Appendix 6). No test excavations were placed due to limited time. However, adequate surficial material existed to make evaluation possible.

Site Description

The summit area of the knoll covers roughly 13,000 ft² and is irregular in shape (Fig. 16). A large rounded area lies to the southeast, and to the northwest the central part widens, then narrows into a small projection. The surface is very irregular with many small, shallow undulations filled with mountain avens and bear berries. The slopes and some areas on the summit have gravel patches or thinly vegetated areas in which the bulk of cultural materials were located (suggestive of subsurface materials).

Cultural materials. Four lithic concentrations were noted as well as two bone concentrations (Fig. 16). Scattered individual items are also present.

Lithic concentrations 1 and 2, of grey chert flakes, are contiguous, and lie on the southeastern edge of the summit area. Concentration 1 covers an area of 22 ft² and concentration 2 is about 36 ft². The two scatters may be essentially one. Lithic concentration 3 on the southern tip of the knoll is a sparse scatter of light grey chert flakes covering 80 ft². Concentration 4, lying to the east, is the largest and contains two heavier sub-concentrations. The overall area is 300 ft² while the smaller scatters within measure approximately 40 ft² each. These concentrations contain the widest diversity of chert material on the site. Both microflakes and a

unifacially flaked implement (No. 7 on Fig. 16); UA80-238/7; Fig. 15) were recovered. An obsidian flake (No. 6 on map; UA80-238/6) was also found. In addition to these concentrations, another, more dispersed clustering of eight lithic artifacts was noted 76 ft N65°W of the site datum (Fig. 16), measuring 260 ft². A possible core and a microblade were included.

Two concentrations of bone are found on the site. The first is 17 ft S22°W from the datum and covers 15 ft². All the fragments are in a poor state of preservation but appear to be from a large animal. These were left in-situ. The second concentration is located 50 ft N50°W from the datum, comprises numerous skull fragments, a phalanx and a caribou antler fragment. This area measures 130 ft². These, too, are poorly preserved. There is also a concentration of whole caribou bones found at the western base of the knoll, and an apparently cut/sawed long bone was found 49 ft S15°E from the site datum, and may reflect more recent human activity.

Many of the flakes and bone found in all the concentrations have lichen growth, perhaps indicating a relatively greater antiquity than those without.

Stratigraphy. No test pitting was conducted, but the basic stratigraphic regime is probably similar to that of PSM-191.

Impact

The site inherently is in a good state of preservation, but "Revision 3" of the proposed NWA gasline corridor poses a direct threat to at least one-half of the site. In addition, due to this proximity, serious additional impact is posed by potential relic hunting and trampling by pipeline personnel.

No previous archaeological studies have been conducted.

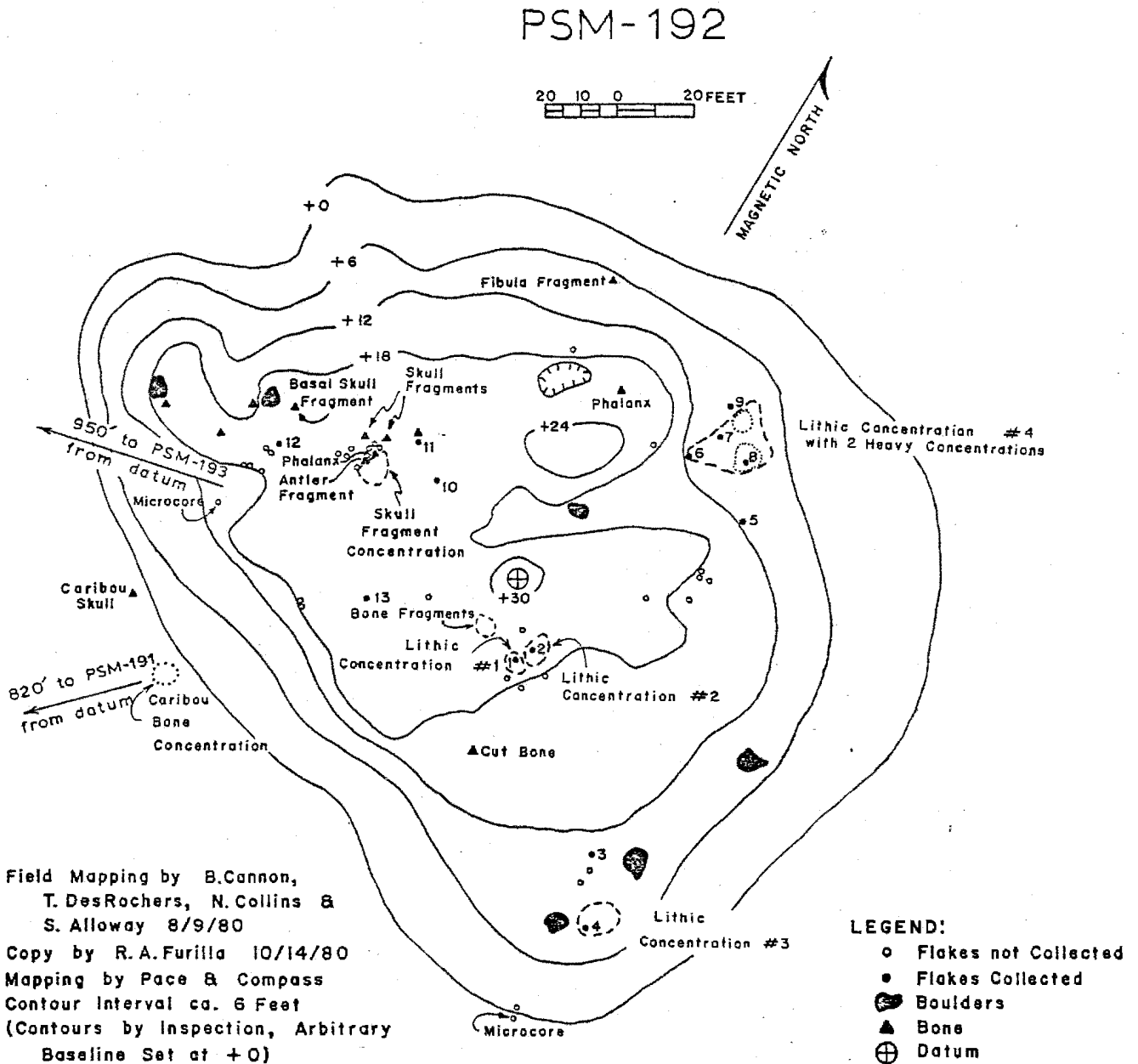
Significance

PSM-192 is intact and contains in-situ lithic artifacts and bone which will contribute to better understanding of regional prehistoric land and resource use, settlement patterns, and site-specific activities. Additional value is ascribed through the site's proximity to PSM-191 and PSM-193 among which intra-site relationships may be studied.

Recommendation

PSM-192 contains potentially significant archaeological information and is directly impacted by proposed construction activity. We recommend analysis of existing data.

Figure 16.



Field Mapping by B.Cannon,
T. DesRochers, N. Collins &
S. Alloway 8/9/80

Copy by R.A. Furilla 10/14/80

Mapping by Pace & Compass

Contour Interval ca. 6 Feet

(Contours by Inspection, Arbitrary
Baseline Set at +0)

Alaska State Site No.: PSM-191

University of Alaska Museum Accession No.: UA80-237

Location:

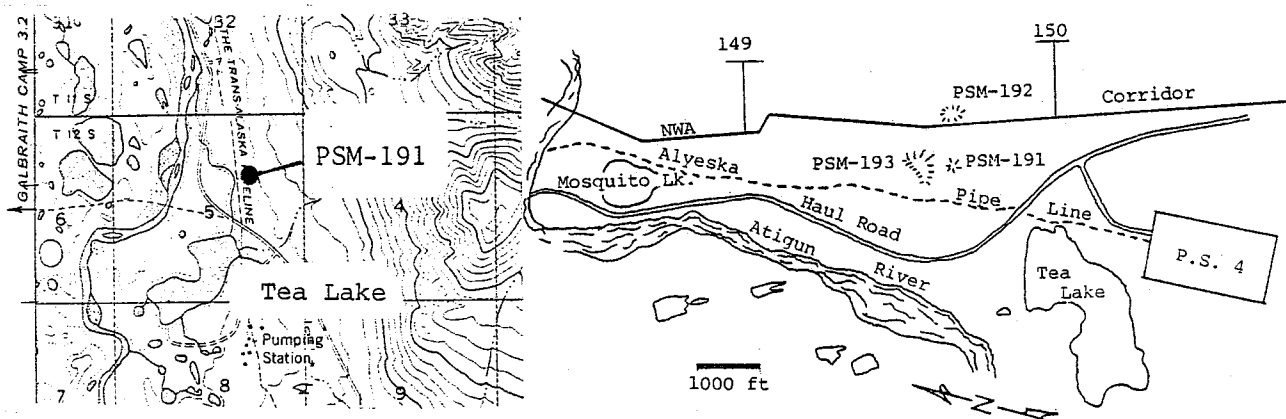
Latitude: 68° 26' 05"

Longitude: 149° 21' 25"

Alaska Coordinate System: 5,276,909 ft N; 586,977 ft E. (Zone 4),
PSM B-4 quadrangle

Section, Township, Range: SW/4 of NW/4 of SE/4 of NE/4 Sec 5, T12S,
R12E (Umiat Meridian)

General: The site is located 0.73 mi due north from the large oil reservoir tank at Alyeska Pump Station 4, and 0.87 mi S16°E from Mosquito Lake.



Environmental Setting

This site is the southwestern member of three closely associated pre-historic knoll sites; PSM-192 to the east and PSM-193 to the north-northwest. PSM-191 is on a 6 to 8 ft-high knoll composed of poorly sorted colluvial debris or till. With the exception of the northern side, the surface is abundantly cobble-strewn. Four hundred ft westward, old fluvial deposits of the Atigun River floodplain predominate.

An excellent view of the eastern terminus of Tea Lake is afforded from this site. Also, due to the broadening of the Atigun River Valley to the west and the lack of obstructions, the surrounding terrain is clearly visible from Tea Lake north to Mosquito Lake.

On-site flora comprises primarily mountain avens, mosses and lichens. Small scrub willow (north slope), dwarf birch, rock jasmine, bear berry, labrador tea, moss campion, arctic bell heather, blue berries, horsetail (around perimeter), pink plume/bistort, kinnikinnik and crow berries also occur. Dominant off-site vegetation not found on the knoll consists of tussocks, yellow marsh saxifrage, wooly lousewort, Alaska poppy, narrow leaf saussurea, dwarf fireweed and cotton grass.

The dominant animal present on the site appears to be ground (parka) squirrel. A large 5 x 2.5 ft irregularly shaped depression located on the western side of the knoll may be a grizzly bear foraging pit (Fig. 17). Migratory waterfowl as well as game birds also appear to be present. Several lakes lie fairly close to the site (e.g., Tea and Mosquito Lakes), and the Atigun River lies 0.4 mi to the west.

Survey Methodology

The site was found during NWA gasline centerline archaeological investigations. The site actually lies 140 ft west of centerline, but was felt to have high potential. It was preliminarily surveyed visually to determine density, extent and character of the cultural materials and to formulate a sampling strategy. A central datum was established and a site map was prepared showing relief, cultural materials and certain environmental features (Fig. 17).

Of a total of 56 flakes observed on the site surface, every third flake was collected in order to provide a representation sample and still leave the essential distribution intact.

Four test pits were placed to determine depth, density and limits of the lithic scatters (Fig. 17). Three pits (1, 2, 4) were placed on the summit. Two of these (1 and 2) were placed between the lithic scatters and the rodent disturbed area, and pit 4 borders the rodent area on its southern margin. Pit 3 was placed downslope to the east of the scatter.

The site was photographed from various positions to show its relationship to the other nearby sites and local geographic/cultural features.

Site Description

The flat summit area of the knoll covers approximately 1250 ft² of which about one quarter is disturbed by rodent activity.

Cultural materials. The site has two nearly contiguous lithic concentrations on the knoll's northeastern edge (Fig. 17). The larger, and more southerly, measures 48 ft² and had 27 chert flakes. The smaller one to the north had 10 flakes and measured about 18 ft². Both scatters are situated in gravel patches, and very little dispersion downslope has occurred. Another thin pebble patch lies on the southern slope of the knoll where two other chert flakes were found. Four additional flakes were located within the rodent disturbed area, and fifteen others were found primarily in the eastern half of the site. One grey chert biface fragment (UA80-237/4) was found 13.5 ft N40°E of the central datum (Fig. 5). Test pits 3 and 4 were culturally sterile, whereas pit 1 contained three flakes 1 inch below sod level. Pit 2 contained five flakes at a depth of 2 to 3 inches.

Three bone fragments were found on the surface: two in the center of the rodent disturbance, and the third on the knoll's southeastern slope. Their state of preservation does not allow accurate identification, but they are from comparatively large animals.

A 3 ft-diameter depression is found 15 ft east of the lithic scatters (Fig. 17), but no cultural significance has been determined.

Stratigraphy. A thick vegetative mat overlies a dark brown homogeneous 'soil' to about 5 inches (probably the main culture bearing layer). Beneath this lies a reddish sandy/silty 'soil' containing pebbles and cobbles. The western, eastern and southern slopes of the knoll have a thinner vegetation mat (mosses and lichens), and cobbles are encountered 2 inches below surface. There are several frost-heaved gravel patches scattered around on the surface.

Impact

Except for rodent disturbance, very little disturbance is seen on the site.

The proposed gasline (Rev. 3) passes within 500 ft east of PSM-191. While this does not pose strictly a direct impact, the activity associated with construction in this proximity may, especially with regard to the two other adjacent sites. PSM-192, in particular, is presently threatened with near-direct impact by construction. Serious threat to all three sites is posed by relic hunting and human trampling.

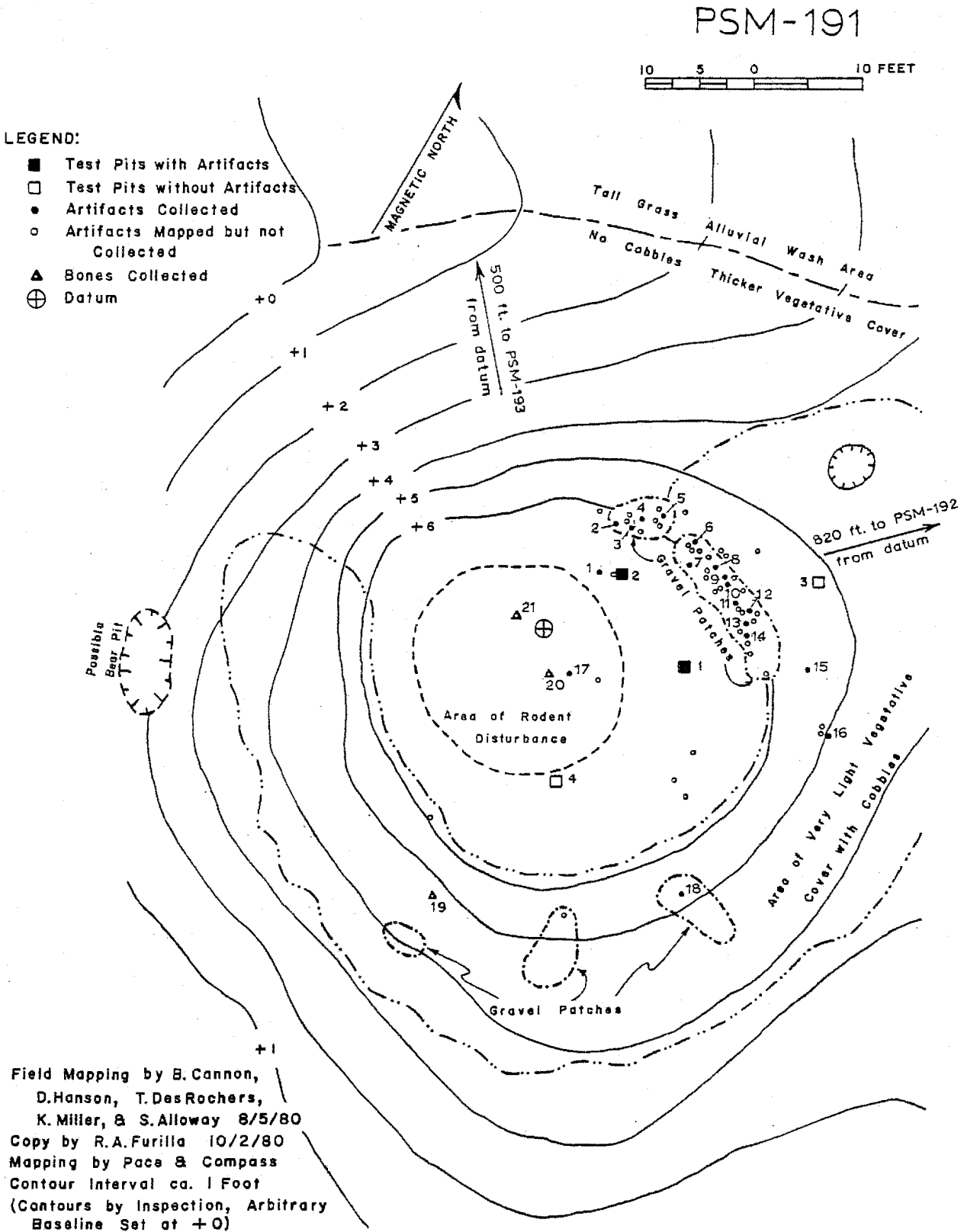
Significance

PSM-191 is intact and contains in-situ cultural materials which can contribute to better understanding of local and regional prehistoric land and resource use, settlement patterns and site-specific activities. Additional value is ascribed through the site's proximity to PSM-192 and PSM-193 among which intra-site relationships may be studied.

Recommendation

PSM-191 contains archaeological information but lies well off the project area. We recommend no further action.

Figure 17.



Alaska State Site No.: PSM-190, PSM-066

Probably the same site as Alyeska site B-16, and possibly the same as PSM-066 (Reject site).

University of Alaska Museum Accession No.: UA80-235

Location:

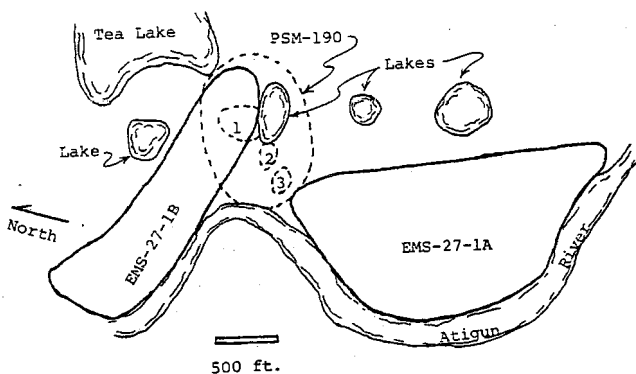
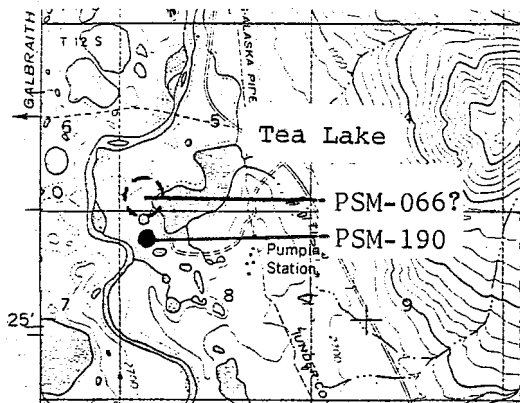
Latitude: 68° 25' 25"

Longitude: 149° 22' 45"

Alaska Coordinate System: 5,272,500 ft N; 584,000 ft E (Zone 4),
PSM B-4 quadrangle

Section, Township, Range: SE/4 of NW/4 of NW/4, Sec. 8, T12S, R12E
(Umiat Meridian)

General: The site lies between 350 and 700 ft due west of the Tea Lake access road pump house, approximately 3100 ft west of Alyeska Pump Station 4. The site consists of two major components, one on the eroded southeastern end of a sand dune near the southwest corner of the lake, and the other to the south (approximately 400 ft), between the southwestern edge of a small lake and an eroded stream bank draining into the Atigun River (Fig.18). Both components are incorporated within or close to the currently proposed EMS 27-1B.



Environmental Setting

Geologically, the area within which the site lies is a complex of fluvial deposits of the Atigun River, overlain by local aeolian sand dunes, both overlying older glacial till deposits.

The Philip Smith Mountains rise abruptly on either side of Atigun River valley. The valley floor is characterized by a gently rolling topography of low hills, and many small lakes dot the region. Tea Lake, adjacent to the site, is the largest in the immediate vicinity. The view from the site is moderately good only from the top of the sand dune. The Atigun River lies a few hundred feet to the west.

The 'microenvironment' of the site is varied. Part of the site occupies the southeastern end of a northwest-southeast trending sand dune, and the other part (to the south) lies on or within intertonguing, fine grained fluvial lacustrine and secondarily deposited aeolian deposits, along the edge of a small lake (Fig.18). The outlet of the lake exits to the southwest around this site component, then swings northwest towards the Atigun River.

The area is rich in wildlife of which caribou, fox, hare and parka squirrel are the most evident. The dominant vegetation comprises grass and scrub willow which range from sparse to locally dense. Tussocks and boggy areas occur in places along the lake.

Survey Methodology

The site was found during routine archaeological survey of EMS 27-1B in 1980. The site was subsequently mapped, tested and photographed. As most of the cultural materials were exposed on the surface, test pitting was localized and kept to a minimal level. The chief purpose of this testing was to verify presence of in-situ subsurface materials and to establish some rough site limits. A total of thirty-one test pits were placed; twenty-eight in the northern component, and three in the southern component. In addition, one test trench (test trench 1) was placed in the side of the bank in the southern component. Results of these tests are given below. Only selected materials were collected which are representative and suitable for preliminary analysis. All these are keyed into prepared site and feature maps.

Site Description

The site, as mentioned, consists of two major components, and appear to have substantially different functions. Also, no necessary contemporaneity is evident, although both are probably late prehistoric in age.

The northern component (Area 1; Fig.18) covers about 1900 ft² and is entirely manifested as eroded surface finds in north-south trending sandy swales formed by slumping of the headward part of the dune.

The southern component (overall, about 25,000 ft²) has been subdivided into Area 2 and Area 3 (Fig. 18). Area 2 (4400 ft²) is a series of three associated bone scatters (Beds 1, 2 and 3; Fig. 18) near the outlet channel of the lake. Area 3 (Fig. 18) covers 1800 ft² and lies approximately 50 ft to the southwest, mainly along the eroded northern bank of the drainage channel. In-situ subsurface artifacts still exist in both Areas 2 and 3. Except for minor disturbance through natural processes (bioturbation and deflation), Area 2 is relatively undisturbed. Area 3 has been impacted by relic hunters.

A fourth component of this site was reported by an informant (identity unknown), located at or near the confluence of the small gully (lake outlet) with the Atigun River, below Area 3. This component was not found, but it was reported as being plundered by relic hunters.

There is some indication that PSM-190 may be the same site (No. B-16) as reported by Alexander in 1969 (p. 197 of unspecified notes) according to BLM survey notes (1980, Site 112) which describes the site as a "campsite...in a sand deposit 40 yards west of the southwest corner of Tea Lake. A few flakes and fire cracked rock were exposed in a wind cut trench extending north-south through the deposit."

There is also a possibility that it is the same as PSM-066 (the "Reject Site", described as a "...small campsite possibly Kavik or Nunamiut [A.D. 1200]...in a blow-out on a sandy ridge. The 150 sq meter area yielded caribou bone, chert flakes and fire-cracked rock" (Wilson, I., April 27, 1974; Nat'l Gas Route, Vol. 1, p. 69), "400 m west of Pump Station 4" (Cook 1976:120).

The mapped location of the "Reject Site" places it west of Tea Lake. This area was thoroughly explored in 1980, but no such specified locality was found. The discrepancy may be due to inexact original map placement "(latitude 68° 25' 35", longitude 149° 23' 00")."

Cultural materials. With one exception, all artifacts found in Area 1 were disturbed through slumping. Most were found scattered along the sandy swale immediately below the dune summit (Fig. 18). These artifacts comprise several flakes and chunks of variegated chert, fire-altered stones and bone fragments. One nearly complete projectile point (UA80-235/1; Fig. 5, Appendix 6) was collected. The only artifact in this locality which appeared to be in an undisturbed context was a flat-lying, large (8.6 x 7 x 2.3 in) tabular cobble found 16 inches below the top surface of the dune. Only the front portion of the cobble was originally exposed. An area was test excavated around the cobble, but no other associated cultural remains were found.

Area 2 is characterized by three distinct surface scatters of fragmented caribou bones (Beds 1, 2 and 3) which attest to butchering activities (Fig. 18). There has been some minor scattering of these accumulations as shown in Figure 18. No other artifactual remains were found associated.

A blocky boulder was found 25 ft northeast of bone Bed 3 (Fig. 18) which appeared anomolous in its setting. A test pit subsequently placed adjacent to it revealed in-situ caribou bones 5-6 inches below surface, which, too, showed evidence of butchering. These were photographed, mapped (Figs. 18, 19) then re-buried. The boulder is considered to be an 'anvil stone' for processing the bone.

Area 3 (Fig. 18) consisted of a heavy concentration of butchered caribou bones and a number of others from different species scattered and piled along the slumped sandy bank of the drainage channel. This locality had been severely disturbed even more by looting, attested to by the associated presence of a shovel, screen, and home-made hand rake (Fig. 18). The one main concentration of bones (accumulated by the looters) was collected in 1980 for analysis and is itemized in Appendix 6. At least three individual caribou are represented in this accumulation. Immediately downslope from this bone accumulation, four blocky boulders were found associated in two sets, again probably an artifact of looting activities. These stones, too, are probably anvils tied to butchering activities. A disturbed deposit of charcoal and ash was also noted within this area (near the bones), but its nature is difficult to assess. One test pit and a test trench with an extension, placed on the upper surface of the bank (Figs. 18, 20, 21), showed the presence of in-situ butchered bones. These, too, were mapped and re-buried.

Stratigraphy. The matrix of Area 1 is solely a grey-brown, unconsolidated, well sorted, sand. The dominant stratigraphy of Area 2 and 3 is 4-8 inch-thick zone of grey to brown silty sand overlying brown and reddish brown, crudely stratified clayey silts.

Impact

Aside from the disturbances created by natural processes and looting activities (described above), the major threat of impact is posed directly by the site's location on and adjacent to the proposed NWA gasoline material site 27-1B. Potential continued looting activities still exist by personnel from Alyeska Pump Station 4.

Significance

PSM-190 is a multi-component site with in-situ cultural materials of, at least partially, late prehistoric age. Several scatters of butchered caribou bone and associated artifacts promise to yield information concerning land and resource use and, specifically, butchering practices. Additional value is ascribed to the site by virtue of its placement in the important prehistoric Mosquito Lake locus and along a major caribou migration route.

Recommendation

PSM-190 contains archaeological potentially significant information and is directly impacted by proposed construction activities. We recommend analysis of existing data.

PSM-066, as indicated by available locational information, was not found in 1980. Its indicated location places it outside the proposed project area, and we recommend no further action.

Figure 18.

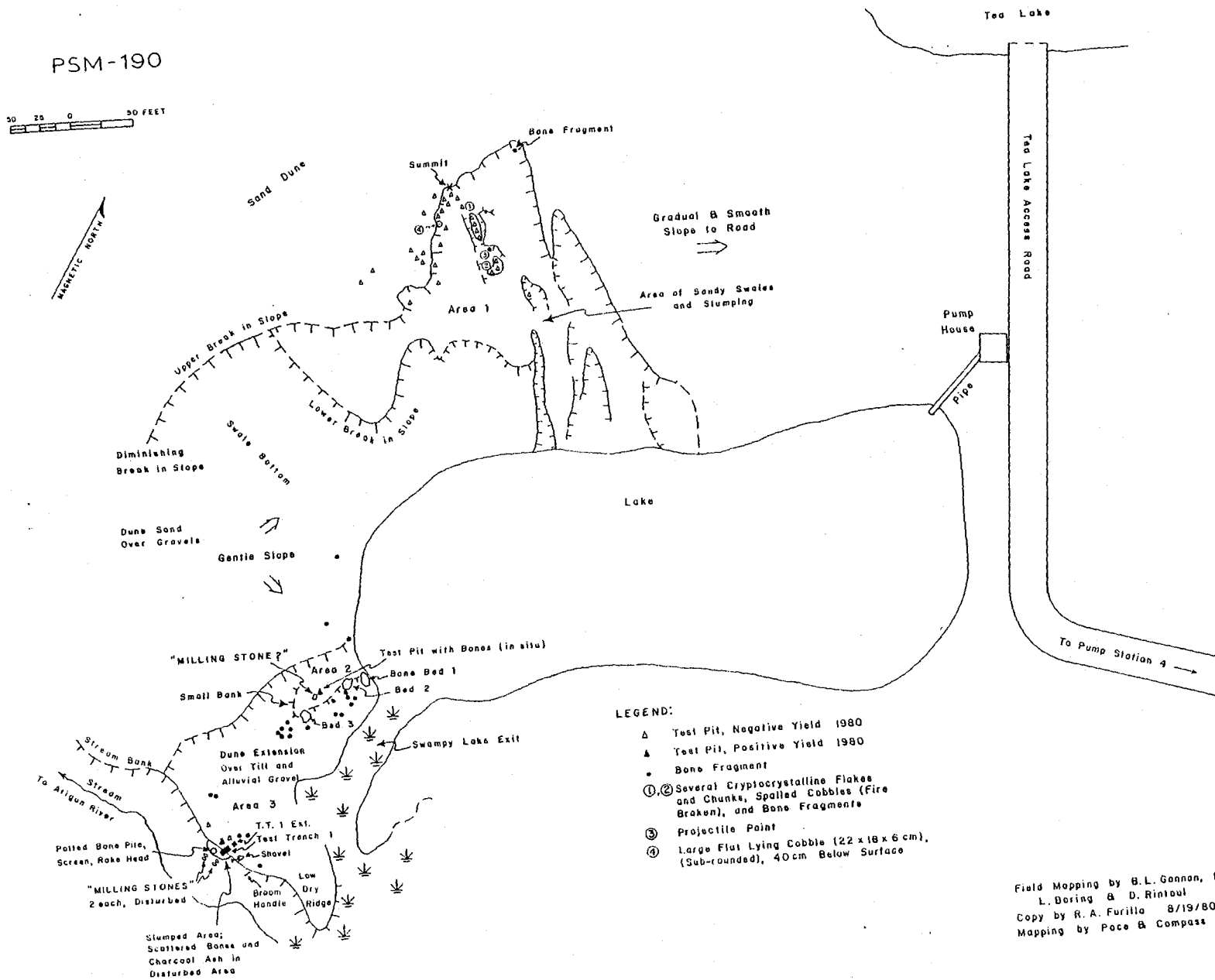


Figure 19. PSM-190 test pit (bones, anvil) feature.

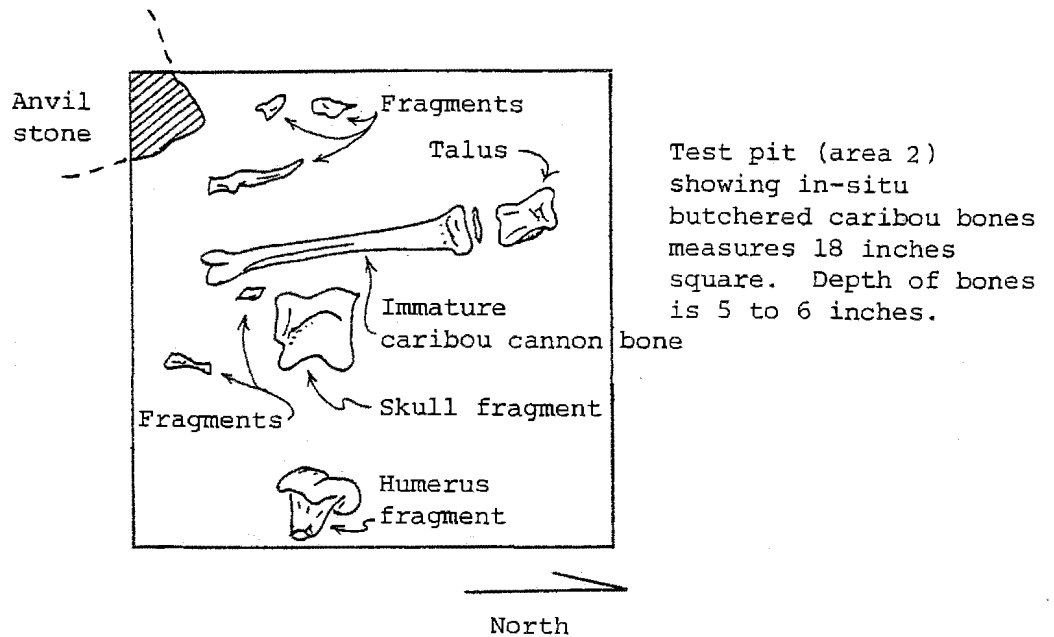
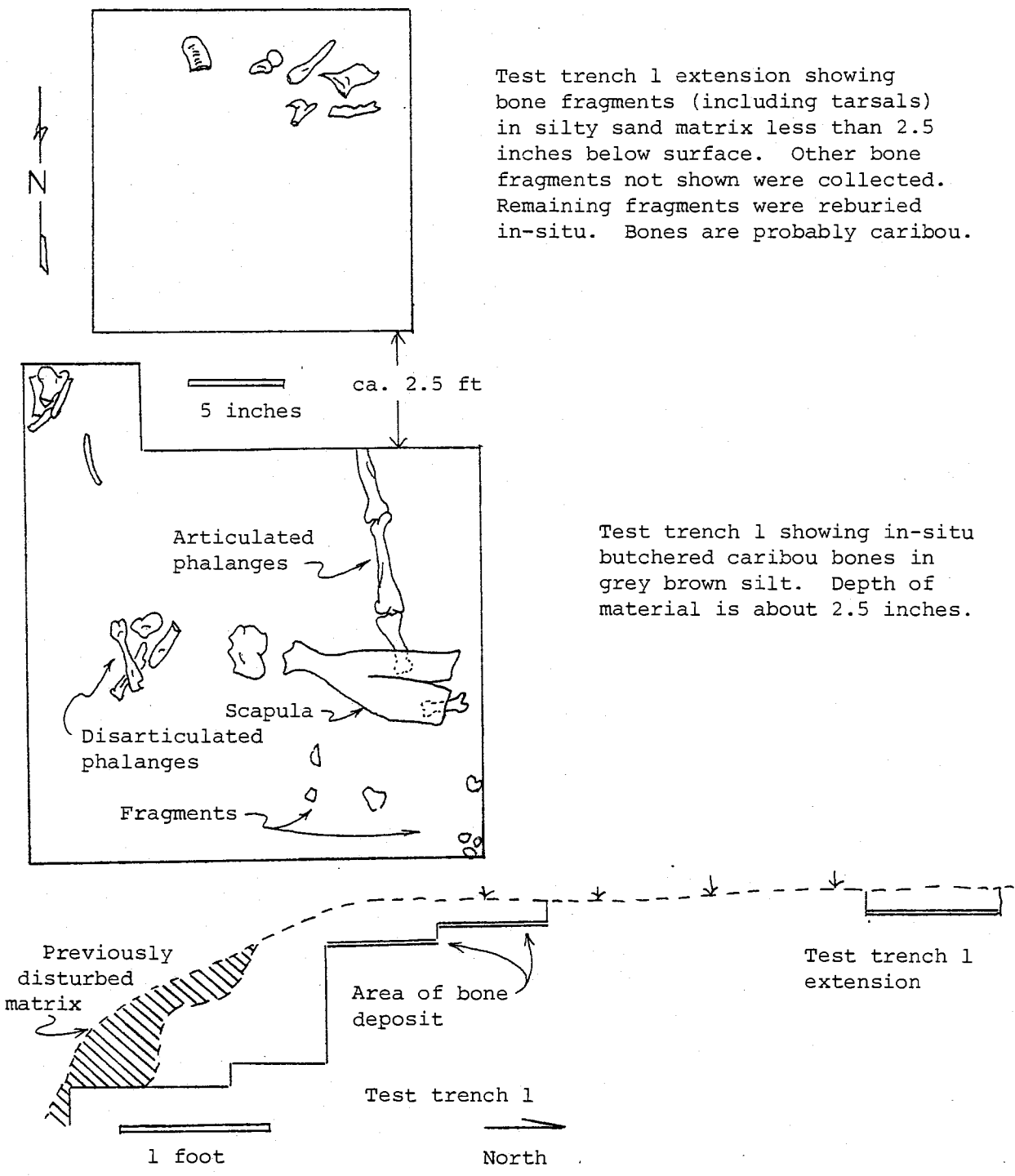


Figure 20. PSM-190 test pit (bones).

DELETED

Figure 21. PSM-190 test trench and extension (+ cross section).



Alaska State Site No.: PSM-069, PSM-092 (addendum)

University of Alaska Museum Accession No.: UA80-240

Location:

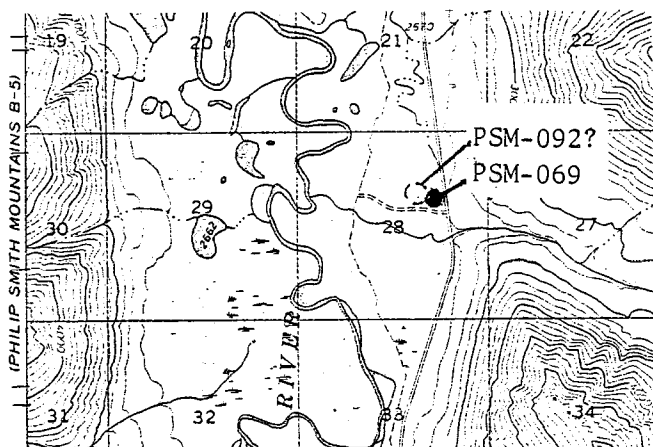
Latitude: 68° 22' 37"

Longitude: 149° 18' 25"

Alaska Coordinate System: 5,255,875 ft N; 592,500 ft E (Zone 4),
PSM B-4 quadrangle

Section, Township, Range: SW/4 of NW/4 of SE/4 of NE/4 extending into
SE/4 of NE/4 of SW/4 of NE/4, Sec. 28,
T12S, R12E (Umiat Meridian)

General: PSM-069 is located 300 ft north of Alyeska material site
access road APL/AMS-2 and 70 ft west of the haul road.
PSM-092 is reported by Cook (1976:102) as being located
on Alyeska Material Source 113-2 Rip Rap, presumably west
of PSM-069.



Environmental Setting

PSM-069 is situated on a gently westward sloping, boulder-strewn alluvial fan originating from a valley to the east. The fan is truncated slightly just west of the site to an approximate height of 6 to 9 ft. This bench is skirted to the west by alluvial deposits of both glacial and fluvial origin. This area is drained northward by "Mainline Spring." A number of shallow drainage swales cut across the fan, but are now inactive due to drainage impediments caused by the haul road.

A fair view of the Atigun River floodplain is afforded from the site, extending from Pump Station 4 to 1 mi south of the site. Only that portion of the Atigun River directly west of the site (about 1 mi), however, is visible due to topographic and vegetal obstructions.

Predominant on-site flora consists of mountain avens. Other plants consist of sparse scrub willow, bear berry, reindeer moss (lichen), dwarf fireweed, moss campion, mountain arnica, glacier avens, dwarf birch, blue berries and four-parted gentian.

Dwarf birch and scrub willow predominate in a tussock habitat off-site. In addition to some of the plants mentioned above, yellow dryas, pink plume, bistort, arctic bell heather, alp lily, labrador tea, horsetail, yellow marsh saxifrage, narrow leaf saussurea, large flowered wintergreen and kinnikinnik are also present.

The chief animals observed comprise ground (parka) squirrel and caribou (abundant scat and bones). Moose, fox and possibly Dall sheep were also seen in the vicinity, and waterfowl are present near the Atigun River.

Survey Methodology

PSM-069 was located in 1980 during routine archaeological survey along the proposed NWA gasline corridor. Preliminary evaluation was conducted during this transect, and all mapping, testing and photography followed a few days later.

PSM-069 was previously recorded by Alyeska archaeologist (Cook 1976:121), and several old test pits were still visible. These, as well as all new test pits were mapped.

The pits represent an aboriginal campsite containing at least three stone structural features classified as 'tent rings.' Subsurface testing was conducted in order to (1) look for subsurface features and establish what, if any, extent they may have been altered by earlier testing, (2) define activity areas, and (3) to obtain stratigraphic profiles. The results of this testing follows below. All stones of large 'cobble' and boulder size in the immediate vicinity of the 'tent rings' were mapped in order to avoid 'creating' features and to see structural patterns. As material culture appeared limited and due to former intensive testing, current testing was kept at a conservative level in order to minimize impact and to gain more controlled information at a later date.

Site Description

PSM-069 lies on the truncated terminus of a very gently sloping, cobble/boulder-strewn alluvial fan, and covers about 20,000 ft². At least three stone 'tent rings' in a state of disrepair characterize the site. All are located within 40 to 60 ft of each other (Fig.22). The 'tent rings' are designated as 'north,' 'southeast' and 'southwest.'

Cultural materials. The 'tent rings' at PSM-069 are composed of large cobbles and boulders forming clustered or circular configurations. The stones are locally derived from the fan. The structures range in diameter from approximately 18 ft (north) to 25 ft (southeast).

A concentration of caribou bones is located on the surface 28 ft north of the southeast tent ring, but it remains uncertain as to whether they are in-situ or were discarded from a number of nearby old Alyeska survey test pits. Some show signs of marrow extraction. Other bones are scattered across the site, and some modified wood fragments are present.

The southwest tent ring has been tested intensively in the past by Alyeska archaeologists with only small patches of sod remaining. The southeast tent ring has been partially tested, and the northern one has not been formerly tested at all.

In 1980 an additional twenty test pits measuring 10 x 10 inches were placed in and around the tent rings. Most yielded negative results with the exception of pit no. 2 located immediately south of the southeast tent ring, and pit no. 9 in the northeastern part of the site. Pit 2 (figs. 22,23) had bone fragments and associated small charcoal fragments at a depth of 1.5 inches. A dark stain and stones were uncovered at 4 inches in pit no. 9 (Figs. 22, 24) which also contained some minor charcoal. Pit no. 2 has definite cultural importance and shows that subsurface material still remains. A small piece of angular lithic material was found in the back dirt of an earlier test pit located just north of the southeast tent ring.

PSM-092 apparently comprised three separate localities, two of which were tentatively identified with the Arctic Small Tool Tradition and Palisades/Tuktu (ca. 3500 B.C.). The site was located on proposed Alyeska MS-113-2 (presumably south and west of PSM-069), and was partially excavated by Alyeska archaeologists (Cook 1976:102). Excavations were terminated when mining plans were abandoned, but post-1976 exploitation of the material source has apparently obliterated the site.

Stratigraphy. From top to bottom, the basic stratigraphic format consists of surface vegetation underlain by a dark humic/rooted mat over a reddish brown sandy silt with rocks occurring at the lower most levels (4 to 6 in).

Impact

The proposed NWA gasline (revision 3) passes near PSM-069 imposing indirect impact. The site is also currently vulnerable to impact from personnel travelling the haul road. The site has been impacted through previous archaeological testing (Cook 1976:121), but little in the way of informative literature exists. PSM-069 has been described as a "Nunamiut" site (Ibid.).

Significance

PSM-069 contains in-situ cultural features and materials, and although extensively tested, stands to provide information on late prehistoric land and resource use and site-specific activities. Due to the time span between initial investigations and modern regulatory procedures, the site has not been assessed for eligibility for inclusion on the National Register of Historic Places.

FLUOR

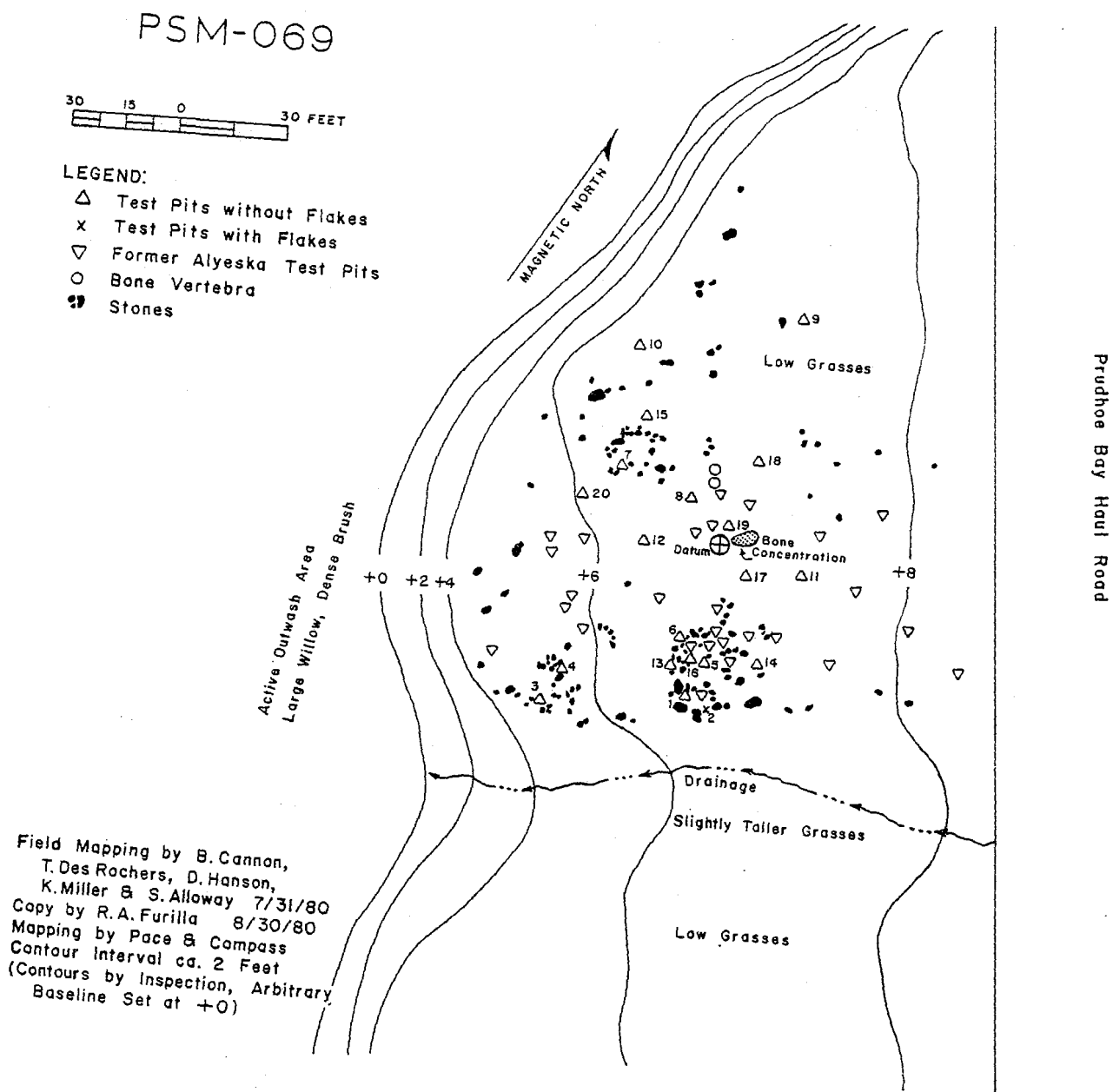
4680-9-KU-0-84

Recommendation

PSM-069 contains some remaining archaeological information and is directly impacted by proposed project activities. We recommend a request for determining eligibility.

PSM-092 lay close to proposed project activities, and presumably was totally destroyed by previous mining activities in the area. No data remain. We recommend no further action.

Figure 22.



ARCHAEOLOGICAL FEATURE FORM

| | |
|----------------------------|--|
| | |
| Pit #2 | |
| C = Charcoal Concentration | |
| B = Bone Concentration | |
| S = Stone Concentration | |

SITE PSM-069 Pit #2

DATE August 3, 1980

SCALE: 1" = 5"

Indicate Magnetic North:

Reported by

Diane Hanson

Notes reference Hanson's

Notebook pp. 152

Photographs None taken

Pit #2 is found Due South, 45'3" from the site datum.

FEATURE DESCRIPTION (Include: contents, type of materials, spatial arrangements, associations, special properties, lichen growth, carbonized materials, matrix, etc.):

Bone- Concentration 1 1/2" below surface. Bone also found throughout the sod and small fragments (indeterminate) in the humus south of the rock. One of the bones were broken with sharp edges. See Lot #1 in artifact catalog. The bones are from a mammal but no positive identification has thus been made.

Charcoal- Concentration consisted of small chunks of charcoal and earth staining. Charcoal was also found in other parts of the pit but not in situ due to the lifting of the sod. Only a small sample was collectable which is found under Lot 62 in the artifact catalog.

Stone- Found just below the vegetation mat. There is no modification visible on the rock surfaces nor does it appear to be part of the tent ring.

Associations- The charcoal was found in association with the bone being 5" from each other. There is an old Alyeska test pit located 13" North of this pit containing charcoal, burnt bone, and modified wooden sticks. It is very difficult to determine the extent of association due to the lack of information flow from the original excavations to the archaeological record.

The sod layer consisted of a Dryas mat which is found generally throughout the site but not in the gully south of pit #2. The pit ranged from 2-2 1/2" in depth depending on the depth of matting.

Figure 23. PSM-069 test pit 2.

ARCHAEOLOGICAL FEATURE FORM

| | |
|----------------------------|--|
| | |
| Pit #9 | |
| C = Charcoal Concentration | |
| B = Bone Concentration | |
| S = Stone Concentration | |

SITE PSM-069 Pit #9

DATE July 30, 1990

SCALE: 1" = 1 feet

Indicate Magnetic North:

Reported by

Katherine S. Miller

Notes reference

Miller p54

Photographs None

- LIGHT BROWN LOOSE SOIL
 DARK, DENSE, STAINED SOIL

FEATURE DESCRIPTION (Include: contents, type of materials, spatial arrangements, associations, special properties, lichen growth, carbonized materials, matrix, etc.):

This feature was first discovered in a 12" X 12" pit which was later expanded to try and understand this dark staining and the extent. The feature consists of a dark stain possibly caused by occupation or to rodent disturbance. The first is favored due to the presence of an arc of stones on the NW, W, SW, and S of the test excavation. Although these stones are smaller than those used in the construction of the two tent rings on the southern end of this site there is a definite absence of other stones in the immediate vicinity. Also, there were two small flecks of charcoal seen. No lithics or bone were found in association with this stain but the stain is believed to be a result of cultural occupation. We have not assigned a specific task to this feature based on the lack of conclusive evidence and since we are not prepared to delve into the feature thereby exposing it in its entirety the feature was covered back over to protect the surface for future investigation.

Pit #9 is found 70', N19E from AAS 028/1/C site datum.

Figure 24. PSM-069 test pit 9.

Alaska State Site No.: PSM-Find 2

University of Alaska Museum Accession No.: UA80-248

Location

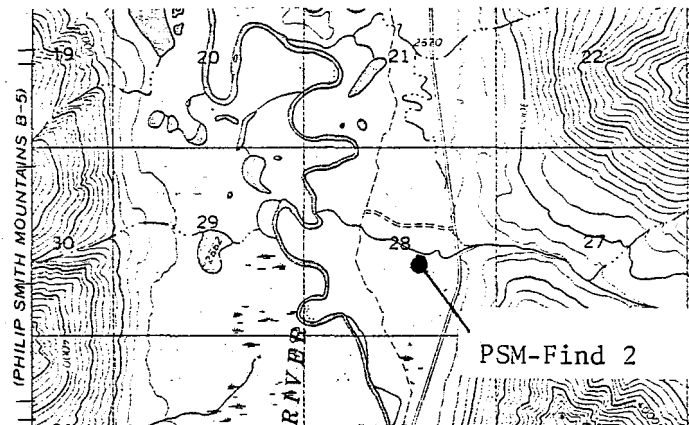
Latitude: 68° 22' 20"

Longitude: 148° 19' 20"

Alaska Coordinate System: 5,254,200 ft N; 591,500 ft E (Zone 4),
PSM B-4 quadrangle

Section, Township, Range: SW/4 of NW/4 of SE/4, Sec. 28, T12S, R12E
(Umiat Meridian)

General: The locality is found on proposed EMS-28-1A, approximately 1250 ft west of the haul road, 1500 ft east of the Alyeska pipeline, and 500 ft south of existing Alyeska borrow pit MS-113-2. Specifically the locality is 5 ft north of NWA backhoe test trench 'B.'



Environmental Setting

The locality is situated on the south central portion of an alluvial fan, east of the Atigun River, specifically on a subdued knoll. The lower part of the fan is surrounded by the floodplain of the Atigun River, but high, rugged peaks of the Philip Smith Mountains rise on both sides. Vegetation on the fan comprises scattered shrub willow, grasses, moss and lichen. Observed animal sign in the area comprises bear, squirrel and caribou.

Survey Methodology

The site was found during archaeological monitoring of the NWA backhoe trenching of EMS-28-1A in 1980. The EMS was also intensively surveyed for cultural resources (separately) in 1980 by five persons.

Site Description

PSM-Find 2 comprises a single tiny flake of grey chert found in the throw-out of a parka squirrel den, 5 ft north of backhoe test trench 'B.' The den is placed on top a very low knoll with a thick cover of shrub willow. The summit area has been severely disturbed by grizzly bear presumably digging for squirrels.

Impact

Aside from the aforementioned disruption by animal activity, the locality is threatened with direct impact by exploitation of proposed EMS-28-1A.

Significance

The flake, while composed of chert and displaying a very crude percussive bulb, may well be naturally formed and placed through fluvial processes. The provenience is therefore dubious and any ancillary materials supporting a cultural resource are not evident.

Recommendation

PSM-Find #2 is isolated and without context. Testing revealed no additional materials. We recommend no further action.

Alaska State Site No.: PSM-194

University of Alaska Museum Accession No.: UA80-241

Location:

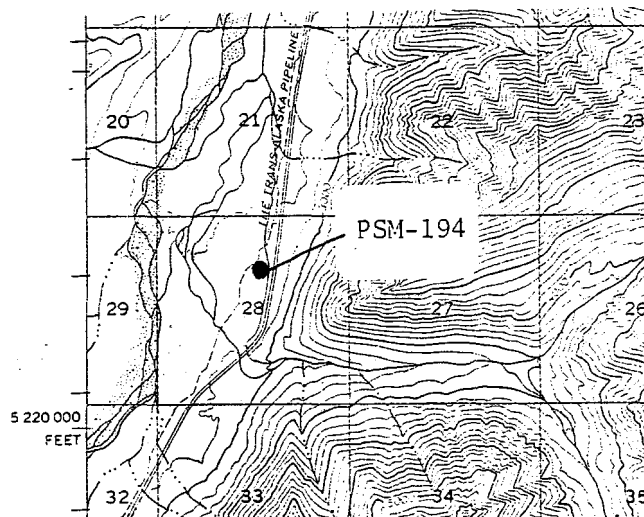
Latitude: 68° 17' 30"

Longitude: 149° 21' 52"

Alaska Coordinate System: 5,224,454 ft N; 585,745 ft E (Zone 4),
PSM B-4 quadrangle

Section, Township, Range: E/2 of NE/4 of SE/4 of NW/4, Sec. 28,
T13S, R12E (Umiat Meridian)

General: The site is located 72 ft S69°E of the Alyeska pipeline VSM No. 286/crossbeam no. 3640607, 1800 ft northeast of the Trevor Creek and 900 ft southwest of where Tyler Creek No. 3 crosses the Alyeska pipeline. Alyeska material site access road 112-AMS-2 is 1700 ft to the south-southwest.



Environmental Setting

The site, containing two tent rings, is located on a very gently northward sloping distal portion of an alluvial fan originating from the southeast. Small ephemeral drainage channels dissect the fan, bordering the structures to the east and west by a few feet (Fig.25). The site affords a good view of the Atigun River 1500 ft to the northwest.

Bear berry, mountain avens, yellow dryas, reindeer moss (lichen), dwarf birch, scrub willow, four-parted gentian, large flowered winter-green and various other mosses, lichens and grasses constitute the primary on-site flora. A similar but less complete floral regime exists off-site.

Ground (parka) squirrels were the only animal observed near the site, but no dens were observed on the site. Caribou, moose, bear, fox, wolf, ptarmigan, migratory waterfowl, and fish are also present in the general area.

Survey Methodology

The site was found during routine archaeological survey along the proposed NWA gasline corridor in 1980. Topography, all visible cultural features and test pits were mapped and recorded, and photographs were taken to show both environmental and cultural relationships.

Sub-surface testing was conducted at a minimum level as the site was totally undisturbed. A total of five test pits were placed. Some were put outside the tent rings in order to locate activity areas and gain some information on stratigraphy. The interior of only one tent ring was tested to establish the presence of any occupational surfaces.

Site Description

This is an aboriginal campsite of probable late prehistoric age characterized by two intact, well-formed tent rings of large cobbles and boulders. The rings are spaced approximately 3 ft apart, and are arranged in a north-south direction. They are designated as No. 1 (south) and No. 2 (north).

Cultural materials. The form of tent ring No. 1 is subrectangular or oval, and there is evidence of an entrance at the southern end (lack of cobbles). It is in pristine condition. The long dimension measures 10 ft and the narrow dimension, 8.5 ft. A rodent mandible and a caribou ulna were found on the surface at the southern interior (Fig.25).

Tent ring No. 2 is roughly circular in plan, and shows some slight disturbance (movement of cobbles). The cobbles appear to be slightly larger in the northern part. The tent ring measures about 7.5 ft in diameter. A lack of stones at the southern end suggests an entrance.

Of the five test pits placed, only pit No. 1 (Figs.25,26), located 7 ft south of tent ring No. 1, yielded cultural materials. In the humic layer, at a depth of 1.5 in, an assemblage of caribou bones consisting of ribs, vertebra, scapula and epiphyses was found. A piece of wood with no sign of modification was also noted. The bones were left in-situ and re-buried. There is a possibility of a third tent ring located 54 ft to the southwest (from site datum).

Stratigraphy. The following profiles show the stratigraphic variability in the five test pits.



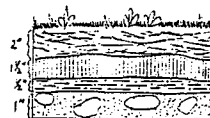
Pit # 1 Location: 19'3" S28E from site datum to Northwestern corner. Southern face.



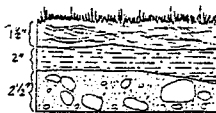
Pit # 2 Location: 2'9" SSE from datum to Northwestern corner. Eastern face.



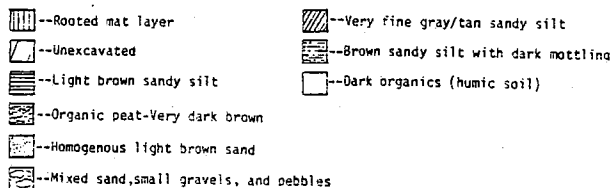
Pit # 3 Location: 6'10" N20E from datum to Northwestern corner. Eastern face.



Pit #4 Location: 10'5" N30E from datum to northwestern corner. Eastern face.



Pit #5 Location: 22'4" N13E from site datum to northwestern corner. Eastern face.



Impact

As of the summer of 1980, the proposed NWA gasoline passed directly through the site, posing a direct impact. However, "Revision 3" of the gasoline corridor (March 14, 1980) now places the centerline approximately 800 ft to the east, thereby posing no direct threat. The greatest potential threat is from personnel working along the Alyeska pipeline work pad.

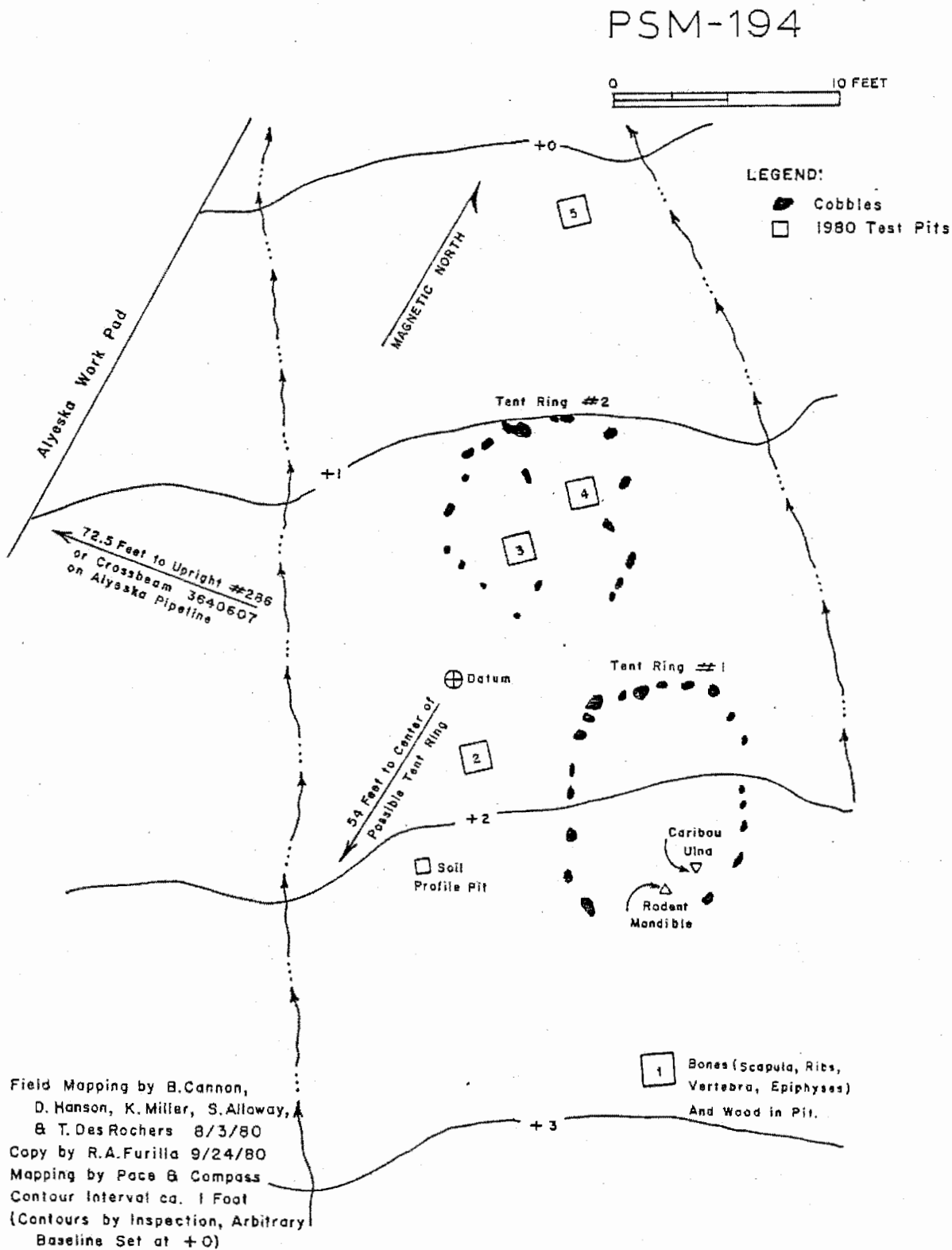
Significance

PSM-194 is intact and has in-situ cultural features and other materials of probable late prehistoric age. The site offers to provide information on aboriginal land and resource use and intra-site activities.

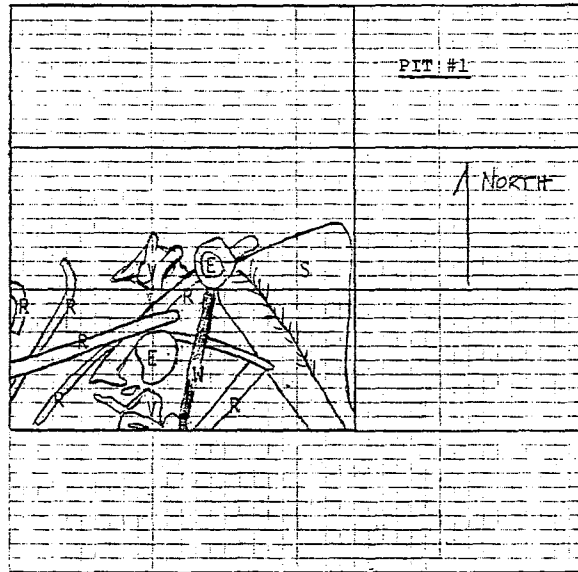
Recommendation

PSM-194 contains archaeological information but lies well outside the project area. We recommend no further action.

Figure 25.



ARCHAEOLOGICAL FEATURE FORM

SITE PSM-194DATE August 3, 1980SCALE: 1" = 5"Indicate Magnetic North!

Reported by

Diane HansonNotes reference see DianeHanson's notes pp.152-153Photographs Roll 1, Frame

FEATURE DESCRIPTION (Include: contents, type of materials, spatial arrangements, associations, special properties, lichen growth, carbonized materials, matrix, etc.):

The feature consists mostly of caribou bone, one piece of wood (not root) laying in the test pit. Undetermined whether or not the wood is culturally modified. The scapula has minor damage when the turf was lifted. The bones are in the humic layer- 1 1/4" below the surface. From the surface the vegetation matting was tough to cut- made up of Dryas, Bear Berry, and mosses. No remains were removed. The feature was described and mapped in situ. The surface matting was replaced to try and protect the bones which are in a good state of preservation. Pit # 1 is located 7 1/4' due south of tent ring # 1 (or N28E 19'3" from site datum).

The contents are itemized as follows:

- R= Ribs (6)
- S= Scapula (1)
- V= Vertebra (2)
- E= Epiphyses (2)
- W= Wood (1)

Figure 26. PSM-194, Test Pit No. 1 detail.

Alaska State Site No.: PSM-185

University of Alaska Museum Accession No.: UA80-232

Location:

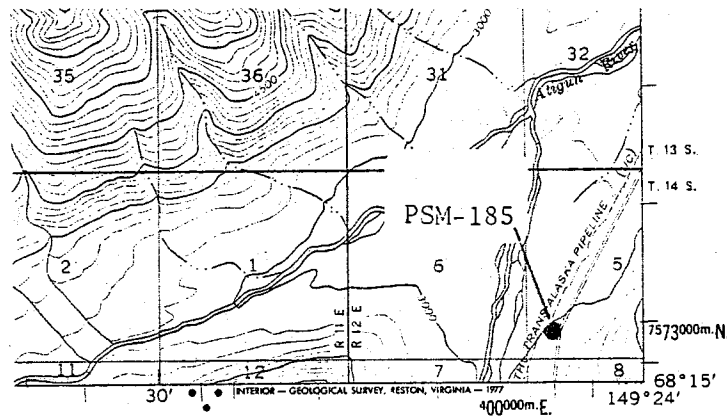
Latitude: 68° 15' 15"

Longitude: 149° 25' 10"

Alaska Coordinate System: 5,211,000 ft N; 579,023 ft E (Zone 4),
PSM B-5 quadrangle

Section, Township, Range: NW/4 of NE/4 of SW/4 of SW/4, Sec. 5,
T14S, R12E (Umiat Meridian)

General: The site is located adjacent to and on the western side of the haul road, 2.5 mi south of Alyeska access road 112 AMS-2.



Environmental Setting

The site incorporates a small knoll formed from a block in a debris flow overlying an alluvial fan. The knoll lies on the north-distal end of the flow. Both the fan and the debris flow originate in the mountains to the southeast. The knoll rises about 18 ft above adjacent floodplain deposits of the Atigun River to the west, and 10 ft above the eastern side (Fig.27). The Atigun River lies 1000 ft to the west. Its surface is sparsely vegetated with mountain avens, grasses, mosses and lichens. The surrounding terrain is a grassy/tussock habitat with scattered scrub willow. The local slope and drainage is to the north-west.

No animals were observed, but sign of ptarmigan and caribou are present, and the knoll has numerous parka squirrel dens.

A good view of the region is afforded from the site, especially to the north and west.

Survey Methodology

The site was located during routine archaeological survey of the proposed NWA gasline corridor in 1980. The site was subsequently re-visited and tested, mapped and photographed.

Site Description

The knoll is slightly elongated in a north-south direction, and covers approximately 33,000 ft². Its surface is sparsely vegetated and covered with patches of angular pebbles on and around the summit. It is in these pebbly areas that the cultural materials are found.

Cultural materials. A total of six small flakes of black chert were found on or near the summit of the knoll in three locations. These are marked as A, B, and C on Figure 27. Four flakes were found close together (A) about 30 ft south of the summit along the crest. The other flakes (B and C) were isolated.

In addition, six scattered bone fragments of uncertain identity and showing evidence of butchering were found along the southern crest in general association with the flakes. It is difficult to demonstrate any positive contemporaneity between the flakes and bones, although the probability exists. No other cultural materials were found either on or below surface despite fairly intensive testing and inspection.

Stratigraphy. The top of the knoll is covered with a very thin, discontinuous sod layer with admixed pebbles, or a pebble 'armor' over a thin silty zone. 'Bedrock' is encountered in many parts at shallow (2-4 in) depths. The knoll is made up of semi-consolidated clastic debris.

Impact

As of the summer 1980, direct impact of the site by the proposed NWA gasline was imminent. In addition, a borehole location (No. 29-37) was placed on the knoll 37 ft southwest of the summit. As of January 1981, the relocated gasline corridor passes along the opposite side of the haul road ("Revision 3") and no longer poses a direct impact. Potential indirect impact still exists, however, from travellers along the haul road and pipeline construction personnel, but it is unlikely that enough cultural materials exist to constitute any serious damage to a cultural resource.

Significance

PSM-185 probably represents a briefly occupied/utilized site devoted primarily to observation and secondarily to tool modification and possible kitchen activities. It has importance in terms of these functions and prehistoric land use.

Recommendation

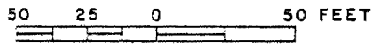
PSM-185 will not be impacted by pipeline construction. Further, it is not likely that additional data exist at the site. We recommend no further action be taken at PSM-185.

FLUOR

4680-9-KU-0-8-4

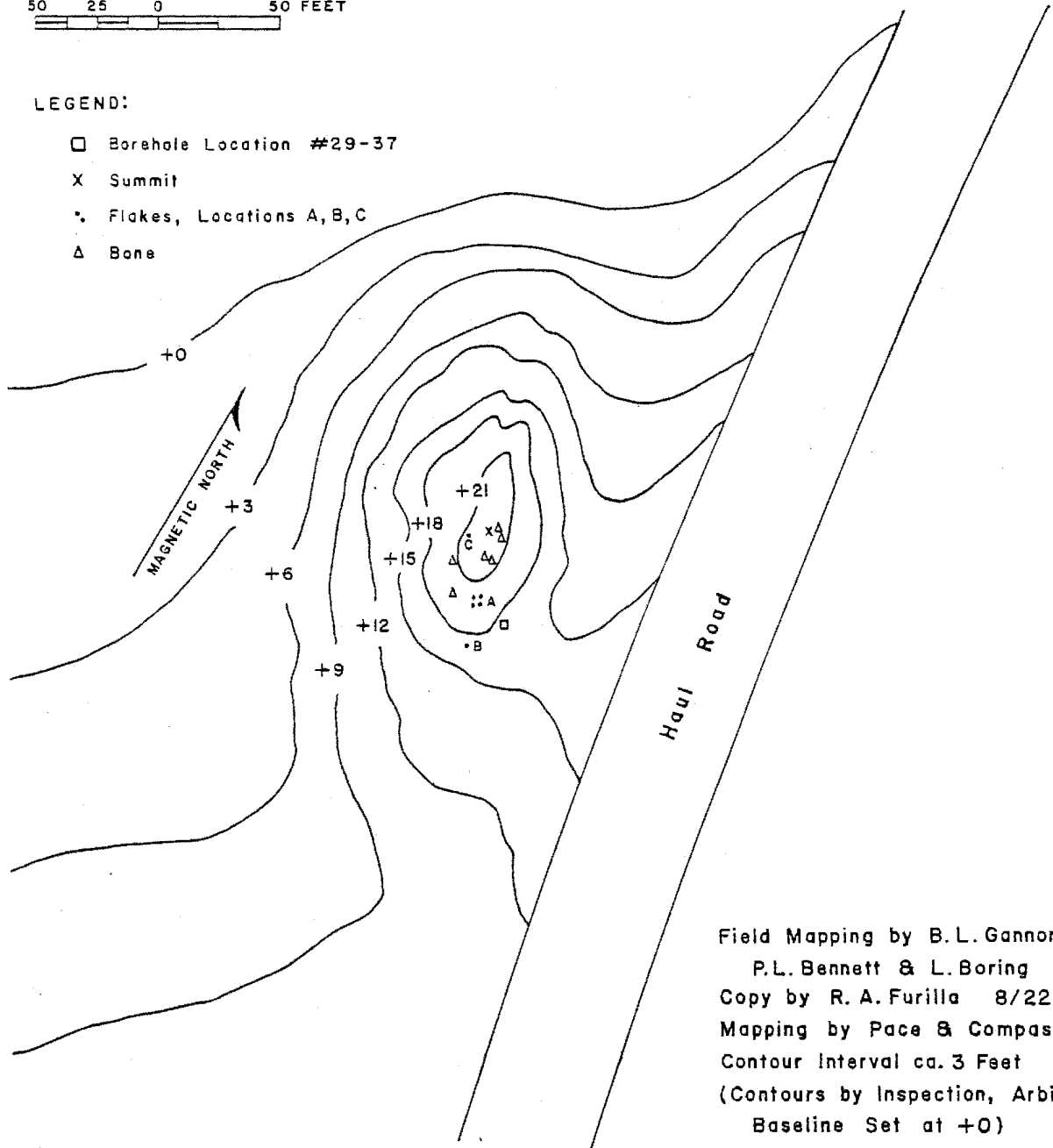
Figure 27.

PSM-185



LEGEND:

- Borehole Location #29-37
- X Summit
- Flakes, Locations A, B, C
- △ Bone



Field Mapping by B.L. Gannon,
 P.L. Bennett & L. Boring 8/5/80
 Copy by R. A. Furilla 8/22/80
 Mapping by Pace & Compass
 Contour Interval ca. 3 Feet
 (Contours by Inspection, Arbitrary
 Baseline Set at +0)

Alaska State Site No.: PSM-Find 1

University of Alaska Museum Accession No.: UA80-249

Location

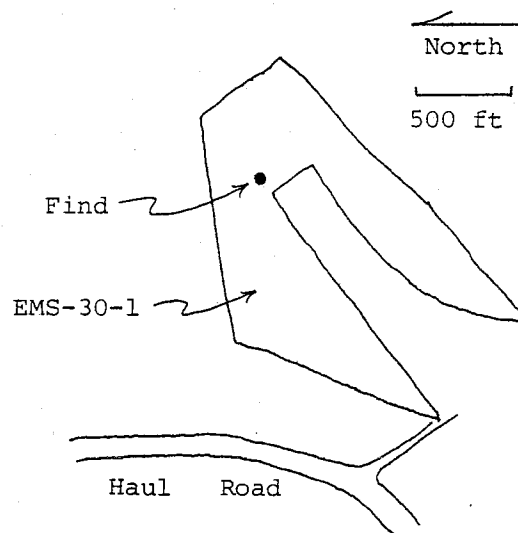
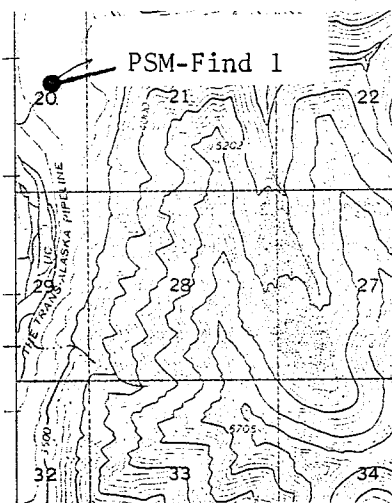
Latitude: 68° 13' 02"

Longitude: 149° 23' 30"

Alaska Coordinate System: 5,197,500 ft N; 582,590 ft E (Zone 4),
PSM A-4 quadrangle

Section, Township, Range: SW/4 of SE/4 of NE/4, Sec. 20, T14S, R12E
(Umiat Meridian)

General: The locality lies within a quarried portion of an active borrow pit of EMS-30-1, 100 ft northeast of the existing borrow stock piles, 25 ft south-southeast of backhoe trench N4(D).



Environmental Setting

The locality is situated upon the southern part of a broad moderately sloping alluvial fan on the east side of the Atigun River Valley. Vegetation comprises mainly moss lichens and grasses.

Survey Methodology

The locality was found during 1980 archaeological monitoring of NWA backhoe trenching within EMS-30-1. This locality and the remainder of the EMS was, in addition, intensively surveyed for cultural resources by five persons in 1980.

Site Description

The locality was characterized by a flat, tabular basaltic cobble displaying crude edge-flaking and battering resulting chiefly from bipolar percussion, tentatively identified as a 'tchi-tho.' However, the object was among other cobbles of the same general size class in deposits of chiefly fluvial origin. The provenience of all materials here, therefore, are questionable.

Impact

The locality has already been impacted by mining and fluvial activity, and is threatened with even more direct impact with expansion of EMS-30-1.

Significance

With consideration of the provenience of the cobble and examination of its flaking, it is concluded to be the result of natural (fluvial) processes; crude bipolar flaking of this kind is often seen in stream bed-load deposits. The locality has no cultural resource significance or potential.

Recommendation

PSM-Find #1 is an isolated, dubious find lacking context. Testing revealed no additional data. We recommend no further action.

Alaska State Site No.: PSM-186

University of Alaska Museum Accession No.: None

Location:

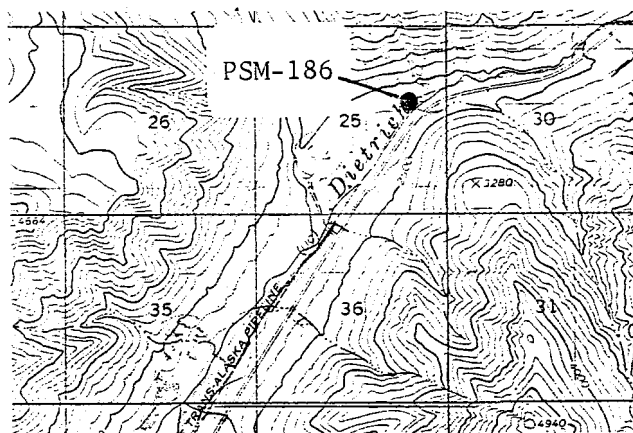
Latitude: 68° 01' 45"

Longitude: 149° 41' 54"

Alaska Coordinate System: 5,128,300 ft N; 541,300 ft E (Zone 4),
PSM A-5 quadrangle

Section, Township, Range: NE/4 of SW/4 of SE/4 of NE/4, Sec. 25,
T16S, R10E (Umiat Meridian)

General: This site is located on the western side of the Dietrich River, 50 ft from the river's edge, 4000 ft north of the confluence of "Wetfoot Creek" and 5750 ft south of the bottom of the Chandalar shelf. The site lies within the proposed NWA gasoline corridor, and centerline P.I. stakes No. 33-10 and 33-11 lie in close proximity to the east.



Environmental Setting

The site is situated on a part of the modern (active) floodplain of the Dietrich River. Relief is locally flat, and the terrace surface ranges from dry to marshy. The river lies 50-60 ft to the east.

The dominant vegetation comprises moderately dense white spruce trees, shrub willow, scrub alder, mosses, grasses, rose, labrador tea, blue berries, cranberries and bear berries.

Bear sign was seen at the site as well as that of moose, and hares, and squirrels were observed.

Survey Methodology

The site was encountered during routine archaeological survey along a portion of the proposed NWA gasline route in 1980. It was subsequently mapped and photographed. No subsurface testing was conducted, and no samples were collected.

Site Description

This is one of three historic/modern sites (PSM-186, 187 and 188) lying along the Dietrich River between NWA centerline stake No. 33-10 and "Wetfoot Creek." PSM-186 consists of two components (A and B; Fig.28), both constituting an early modern or late historic campsite (in-part). Specific antiquity was not established, but A.D. 1930 is probably a realistic minimum date.

Component A is a collapsed and partly decomposed rectangular structure with three 8 ft-high spruce poles, 6-8 inches in diameter standing upright in a square mode. The fourth (southeastern) pole is not present; only a hole exists marking the locality (Fig.28). The dimensions of the structure, defined by the poles, is 12 ft (north-south) x 14 ft (east-west). The total area covered by the remains is 300 ft². Many smaller diameter poles of various length occupy the area between the uprights. These are presumably roof or wall members, and display collectively a general northeast-southwest orientation (Fig.28). The ground surface has a slight depression in the northwest quadrant. A hitching post is constructed approximately 40 ft to the south, along an adjacent path. It consists of a 2 inch pole attached to two spruce trees by machine-cut nails and galvanized wire.

Component B lies 20 ft to the north-northeast, and consists of an approximately 10 x 10 ft rectilinear configuration of small spruce poles lying on the ground (Fig.28). The poles, like structure A, appear both axe and saw-cut, but structure B is more decomposed and moss-covered. Two decomposed sharpened stakes are still in-situ (imbedded) in the northeast and southeast corners. Many axe and saw-cut tree stumps lie in the vicinity of both structures.

Structure B is probably a tent site, but the function of structure A is more problematical. The overall configuration and presence of a stove remnant, consisting of two nested 5 gal cans near the north-western quadrant, and a tin can pail, suggest some kind of habitation; perhaps a 'way station.' Contemporaneity of the structures is difficult to assess.

Culture materials. See site description.

Stratigraphy. No subsurface testing was conducted.

Impact

The site lies within the corridor of the proposed NWA gasline; direct impact is posed.

Significance

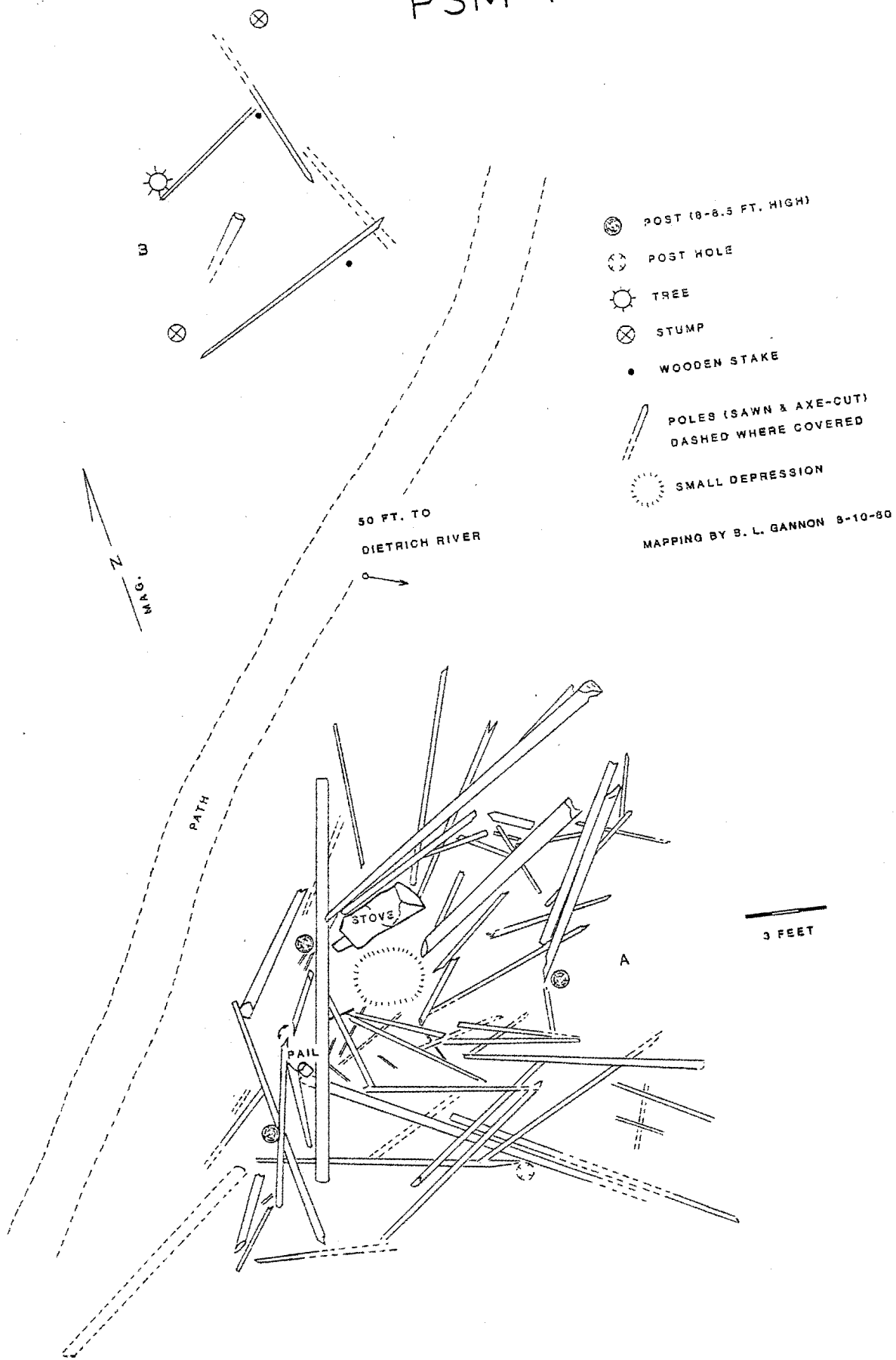
PSM-186 may be a campsite/way station dating to the latter days of the gold rush era. However, the site contains no useful data other than that gathered through photographing and mapping the remains. The site is not considered significant.

Recommendation

No further action is recommended.

Figure 28

PSM-186



Alaska State Site No.: PSM-061

University of Alaska Museum Accession No.: None

Location

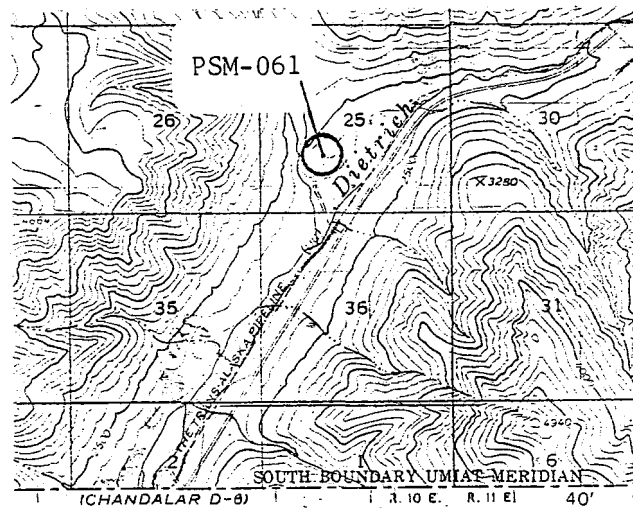
Latitude: 68° 01' 47"

Longitude: 149° 43' 00"

Alaska Coordinate System: Ca. 5,128,750 ft N; 539,000 ft E (Zone 4),
PSM A-5 quadrangle

Section, Township, Range: Center of SE/4 of NW/4, Sec. 25, T16S, R10E
(Umiat Meridian) [reported approximate location]

General: The site was reported as lying within the boundaries of Alyeska MS 108-2, AS-108 (Cook 1976:107). The indicated location is ca. 2250 ft northwest of the haul road and ca. 1100 ft north-east of "Wetfoot Creek."



Environmental Setting

As PSM-061 was not located in 1980, the precise environmental setting is not possible to assess. It is presumed that the site was situated on a high east-sloping hillside above "Wetfoot Creek." The surrounding terrain is moderately rugged, but the local view is good. The nearest water is "Wetfoot Creek" to the south, 50-100 ft below. Local vegetation comprises scrub willow, mosses, grasses and scattered spruce trees. The site may have been obliterated by exploitation of the material source.

Survey Methodology

As an additional request, archaeological survey, of proposed EMS-33-1 was conducted on August 11, 1980 by 5 persons. PSM-061 was noted as lying close to the EMS, but survey did not reveal its location. Extensive testing and intensive ground survey was conducted in the area with negative results.

Site Description

PSM-061 was formerly described by Robert Gal as a probable temporary campsite. The age was undetermined but recovered microblades suggested a pre-Christian era vintage. Approximately thirty 1 m² excavation units were placed (Cook 1976:107), but no results of this work have been seen.

Stratigraphy. Local stratigraphy near ground surface revealed angular and subangular metamorphic pebbles in a silty sand matrix. Cobbles become more common with depth.

Impact

PSM-061 was not located in 1980, and it is presumed to have been obliterated by mining activities, despite the indicated location in the 1980 edition of the NWA Environmental Master Guide. The site has been formerly excavated, probably completely. It is not felt that proposed expansion of the material source will constitute a threat to any cultural resource.

Significance

No data presently appears to exist. Former descriptions of the site indicate significance in terms of prehistoric land use and settlement patterns.

Recommendation

PSM-061 was ostensibly destroyed by previous mining activities, and testing (1980) revealed no extant data. The site, therefore, formerly lay within the current project area (EMS-33-1). We recommend no further action.

Alaska State Site No. PSM-187 (Component A and B)

University of Alaska Museum Accession No.: None

Location:

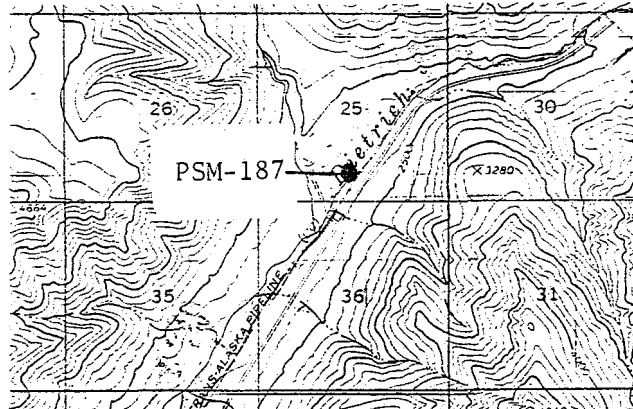
Latitude: 68° 01' 23"

Longitude: 149° 42' 40"

Alaska Coordinate System: 5,126,300 ft N; 539,400 ft E (Zone 4),
PSM A-5 quadrangle

Section, Township, Range: E/2 of NE/4 of SE/4 of SW/4, Sec. 25,
T16S, R10E (Umiat Meridian)

General: The site is located on the western side of the Dietrich River, 175 ft from an overflow channel of the river, 1250 ft north of the confluence of "Wetfoot Creek," and 1.25 mi south of the base of the Chandalar Shelf. PSM-187 lies within or very close to the proposed NWA gasoline corridor, near centerline P.I. stake No. 33-14.



Environmental Setting

The site is situated on a part of the modern (active) floodplain of the Dietrich River. The terrain is locally flat, and the terrace surface ranges from dry to marshy in the general vicinity. The river lies about 200 ft to the east.

Dominant vegetation comprises moderately dense white spruce trees, shrub willow, scrub alder, mosses, grasses, rose, labrador tea, blue berries, cranberries and bear berries. Faunal evidence comprises bear, moose, squirrels, and hare.

Survey Methodology

The site was encountered during routing archaeological survey along a portion of the proposed NWA gasoline route in 1980. It was subsequently mapped and photographed. No subsurface testing was conducted, and no samples were collected.

Site Description

This is one of three historic/modern sites (PSM-186, 187 and 188) lying along the Dietrich River between NWA centerline stake No. 33-10 and "Wetfoot Creek." PSM-187 consists of two components, A and B, of probably modern and late historic vintage, respectively.

Component A comprises a lean-to of spruce poles lodged into three large standing trees (Fig. 29). The interior has a trace of a bough mat. The lean-to is in a state of disrepair. The remnants of a fire place lie just outside the entrance, and camp refuse litters the vicinity; some appears recent. This litter includes food cans, scattered stove pipe fragments, chopped firewood, and metal stove body.

Component B lies 250 ft N22°E of Component A, and consists of a partially collapsed, rectangular log structure (Fig. 30). Parts of the structure are somewhat decomposed and moss covered. It is constructed between two standing spruce trees, and measures 5 x 11 ft. The structure is three logs high on the long side, and two logs high on the short sides. Average log diameter is 10 inches. Axe and cross-cut saw marks are evident on the log ends. Attachment of logs is by way of square-cut notches. No artifacts were found in association.

Cultural materials. See Site Description.

Stratigraphy. No subsurface tests were made.

Impact

Component A (lean-to) lies just within the proposed NWA gasoline corridor; and is subject to direct impact. Component B (log structure) lies outside the proposed corridor, but indirect impact by construction personnel is to be considered possible.

Significance

Component A is a modern campsite of brief occupancy, although it may have been occupied a number of times. The lean-to is probably no older than 10 or 20 years.

Component B has an unknown function, but may be a cache. It does not appear that Components A and B are contemporaneous; the log structure is probably older, perhaps dating to the latter days of the gold rush era. The site is not considered eligible for inclusion on the National Register of Historic Places.

Recommendation

PSM-187 (A) (B), we recommend no further action.

Figure 29. PSM-187 A

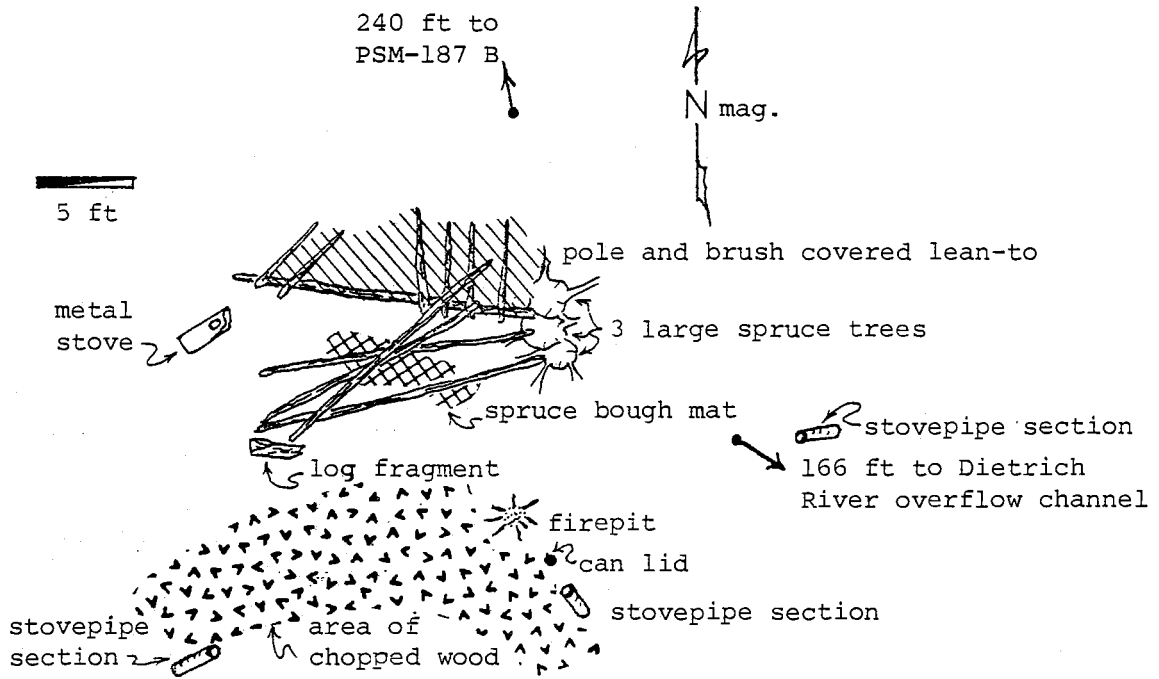
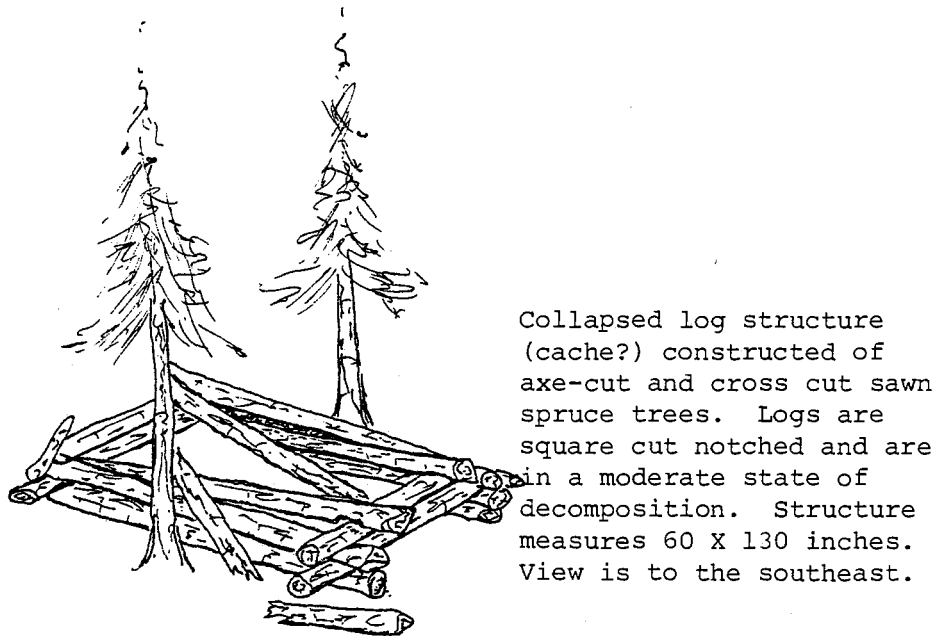


Figure 30. PSM-187 B



Alaska State Site No.: PSM-188

University of Alaska Museum Accession No.: None

Location:

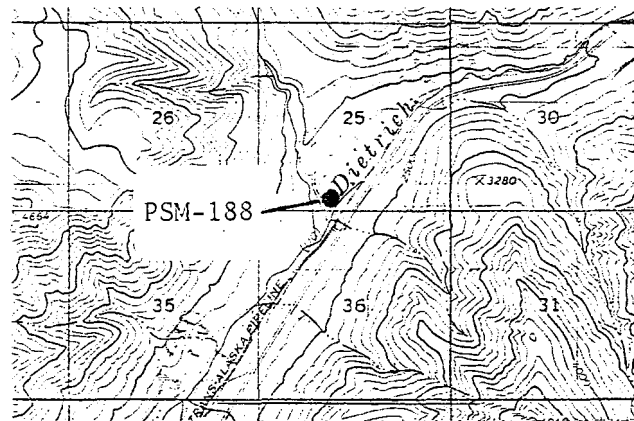
Latitude: 68° 01' 17"

Longitude: 149° 42' 52"

Alaska Coordinate System: 5,126,000 ft N; 539,100 ft E (Zone 4),
PSM A-5 quadrangle

Section, Township, Range: W side of SE/4 of SE/4 of SW/4, Sec. 25,
T16S, R10E

General: The site is located on the western side of the Dietrich River, 100 ft from the river, and 750 ft north of the confluence of "Wetfoot Creek." NWA Borehole No. 33-31 lies 39 ft to the east. The base of the Chandalar Shelf is 1.5 mi to the north.



Environmental Setting

The site is situated on a part of the modern (active) floodplain of the Dietrich River. The terrain is locally flat and the terrace surface ranges from dry to marshy in the general vicinity. The river lies 100 ft to the east.

Dominant vegetation comprises moderately dense white spruce, shrub willow, scrub alder, labrador tea, rose, mosses, lichens, horsetail, and several types of berry. Faunal evidence comprises bear, moose, squirrels and hare.

Survey Methodology

The site was located during routine archaeological survey along a segment of the proposed NWA gasoline corridor in 1980. It was subsequently mapped and photographed. No subsurface tests were made, and no samples were collected.

Site Description

This is one of three modern sites (PSM-186, 187 and 188) lying along the Dietrich River between NWA centerline stake No. 33-10 and "Wetfoot Creek."

PSM-188 consists of a modern rectilinear surface configuration of fallen cut logs and poles (Fig.31). Five cut spruce poles measuring about 6.5 ft x 3 inches in diameter are parallel stacked on a log pallet within the confines of the configuration. One of the logs is notched in the center. The structure measures about 16 x 16 ft, and several apparently purposefully placed large stones lie around the structure. Many buck saw and axe-cut trees lie around the vicinity. No other substantive artifacts were noted. No function or cultural affiliation of the structure is assigned.

Cultural materials. See Site Description

Stratigraphy. No subsurface tests were made.

Impact

The site lies within the corridor of the proposed NWA gasline, and is subject to direct impact.

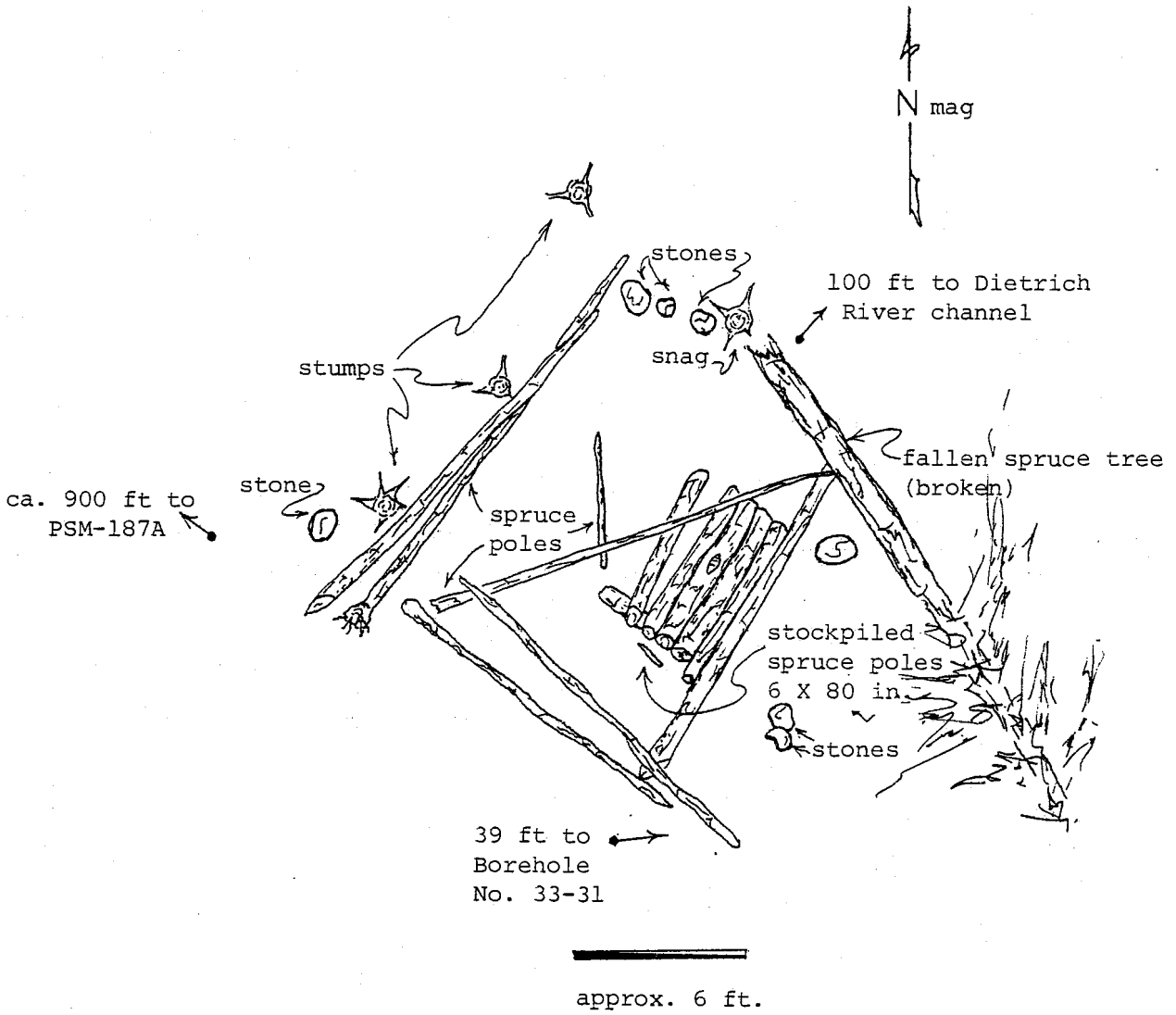
Significance

PSM-188 is a modern site reflecting activities possibly associated with dwelling construction. It has some significance in terms of traditional land and resource utilization, and perhaps settlement patterns, but no cultural affiliation is assigned.

Recommendation

PSM-188 is a modern structure. We recommend no further action.

Figure 31. PSM-188 feature.



Alaska State Site No.: CHN-011

University of Alaska Museum Accession No.: None

Location

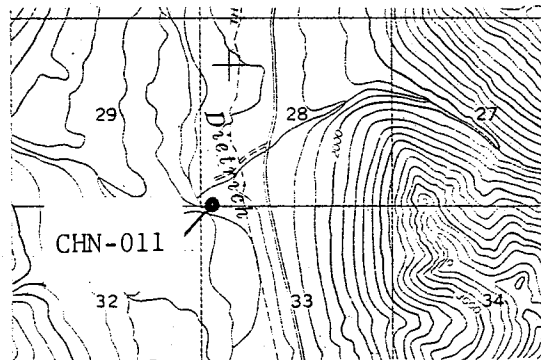
Latitude: 67° 44' 22"

Longitude: 149° 50' 10"

Alaska Coordinate System: 5,052,600 ft N; 522,750 ft E (Zone 4),
CHN D-6 quadrangle

Section, Township, Range: SW/4 of SW/4 of SW/4, Sec. 28, T35N, R10W
(Fairbanks Meridian)

General: The site is located along the eastern bank of the Dietrich River, just within or very closely outside of the proposed limits of EMS-35-4, south of the existing borrow pit.



Environmental Setting

CHN-011 lies on the southern distal part of a Quaternary alluvial fan which has encroached upon the Dietrich River to the west. Big Jim Creek lies directly across the river (west) from the site.

The unaltered part of the fan which hosts the site is covered with moderately dense to locally open spruce forest with scattered willow, alder and a largely mossy and locally shrubby ground cover. The terrain surrounding the Dietrich River valley is rugged with moderately high relief.

Survey Methodology

The site was located during 1980 archaeological monitoring of the NWA backhoe program activity on EMS-35-4. The area was visually inspected by one person, who also inspected/monitored all backhoe pits. No other subsurface testing was conducted. No real intensive survey has been done on the un-impacted portion of the EMS.

Site Description

The site consists of a wooden deadfall (Fig. 32) and associated trapline segment on or near the edge of the Dietrich River, south of an existing borrow pit. The logs comprising the features have been cut by axe, and no nails are evident in the construction. The trees near the deadfall appear to be winter cut as the stumps stand 3-4 ft high. Most of the cut trees are 2-6 inches in diameter, and a number of them are on the actively eroding banks of the river.

The deadfall is approximately 7 ft from the present river bank. It consists of a horizontal support log wedged between two living trees. It was observed that the deadfall would have been supported by a trigger mechanism now lying beneath the main deadfall body. This body is composed of six logs lying across the horizontal support beam.

The entire area (unmined part of EMS-35-4) displays scattered axe, saw and adz-cut trees. The adz-cut trees lie northeast of the deadfall area by about 200 ft. Some scattered old refuse lies within the area as well, and a fairly fresh appearing campfire hearth lies 150 ft to the south of the deadfall.

Impact

The banks of the Dietrich River are steadily being impinged upon by the Dietrich River, and as the deadfall and trapline are close to the edge, they may soon fall to erosion. The logs of the deadfall are beginning to rot, but the overall integrity of the structure is still fairly good.

Some minor primary and secondary impact has transpired within the southern third of EMS-35-4 through tree-cutting and backhoe operations, yet on the whole, the area is relatively intact. With exploration of EMS-35-4, however, all of the described features will probably be obliterated.

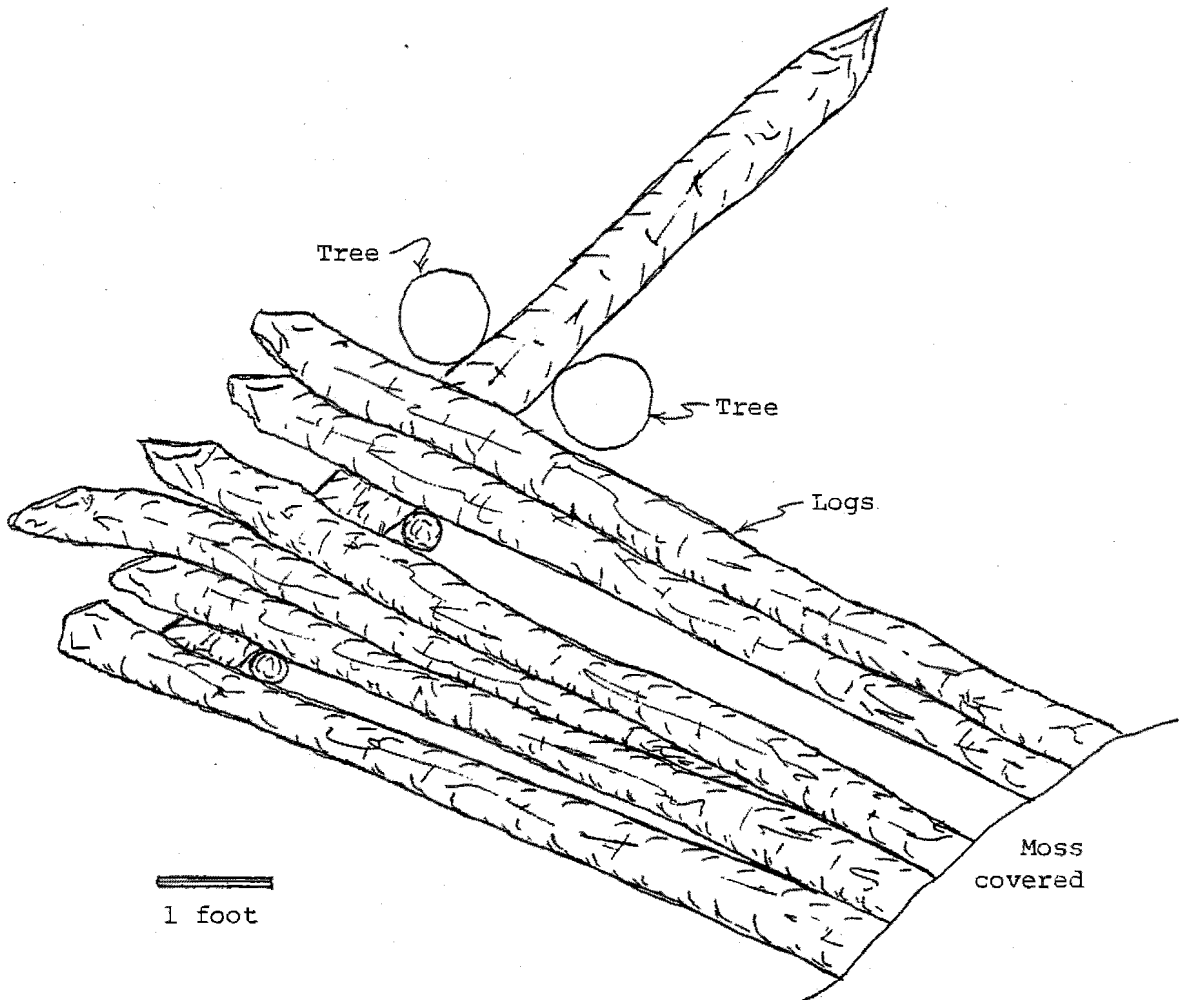
Significance

The southern part of the fan has evidently been an area of moderately intense historic and modern activity, attested to by the deadfall, trapline, and tree-cutting, and more recently, mining activities. The adz-cut trees along with information provided by a Kutchin Indian informant on the nature and age of the deadfall, date from 1900 to 1930. The value of this site is as an example of the traditional (presumably native) construction style of the deadfall, and local historical/traditional land utilization.

Recommendation

The feature has been thoroughly documented and is not considered eligible for inclusion on the National Register of Historic Places. No further action is recommended.

Figure 32. CHN-011 Deadfall.



Alaska State Site No.: CHN-012

University of Alaska Museum Accession No.: UA80-251

Location

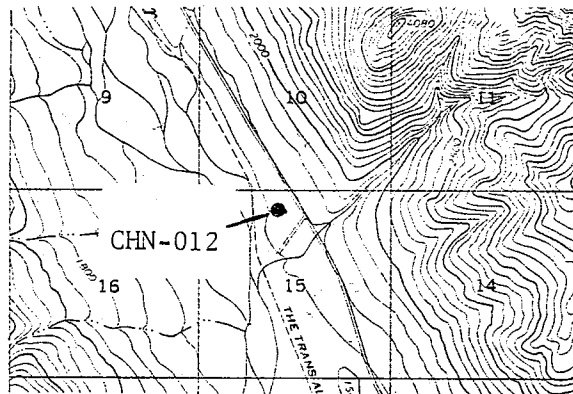
Latitude: 67° 46' 37"

Longitude: 149° 47' 10"

Alaska Coordinate System: 5,035,750 ft N; 530,000 ft E (Zone 4),
CHN D-6 quadrangle

Section, Township, Range: E/2 of NE/4 of NW/4, Sec. 15, T34N, R10W
(Fairbanks Meridian)

General: CHN-012 is located 625 ft along Alyeska access road 105 APL/AMS-3 from where it departs the haul road, and about 125 ft northwest of the access road. The site is within proposed EMS-36-3.



Environmental Setting

The site is set on the southern side of a small knoll which in turn rests on a Quaternary alluvial fan bordered to the west by the Dietrich River. The fan is cut by "Ugh Creek." The vegetation is mainly dense spruce forest with scattered willow and alder, with a mossy and shrubby ground cover. The surrounding terrain is moderately rugged.

Survey Methodology

The site was found during archaeological monitoring of NWA backhoe testing within proposed EMS-36-3 in 1980. Backhoe operations were curtailed at this location and moved upon noting the feature. The remaining scheduled backhoe work was completed, but constitutes only partial archaeological survey of the EMS.

Site Description

CHN-012 constitutes a somewhat enigmatic feature tentatively identified as a possible house pit. The feature was located subsurface (about 1 ft below surface) during backhoe excavation of a gravel test trench (site 'B'). The feature is characterized by three parallel log fragments (horizontally oriented) exposed in the west wall of the trench. One right distal caribou humerus fragment was recovered in association. The logs lie at a depth of about 8 inches in semi-frozen silts and permafrost occurs at 12-15 inches. Both units contain wood fragments.

Impact

The site was undisturbed before backhoe trenching truncated part of the observed feature. The feature is located within proposed EMS-36-3 and is threatened with direct impact if the EMS is exploited. A borrow pit (Alyeska MS-105-3) lies adjacent to the locality to the south.

Significance

It is presently difficult to assess the significance of the observed feature due to the limited testing. Certainly, the three parallel log fragments are curious, but could be explained as well by natural (fluvial/hydraulic) processes as well as cultural. The bone fragment is the only possible ancillary evidence of cultural related material, but it, too, may be a fortuitous occurrence. As wood remains seem to be anything but rare in frozen and semi-frozen silts in this area (and elsewhere), and considering the overall composition of the terrain (alluvial fan), the feature may be natural. If however, it is a buried structure, it could have considerable cultural significance.

Recommendations

CHN-012 does not have enough data available to permit an assessment. It will be directly impacted by proposed project activities. We recommend further testing be undertaken.

Alaska State Site No.: CHN-007 (addendum)

Also known as "Gold Creek Cabin No. 1" (herein), and Alyeska site S4-42.

University of Alaska Museum Accession No.: None

Location

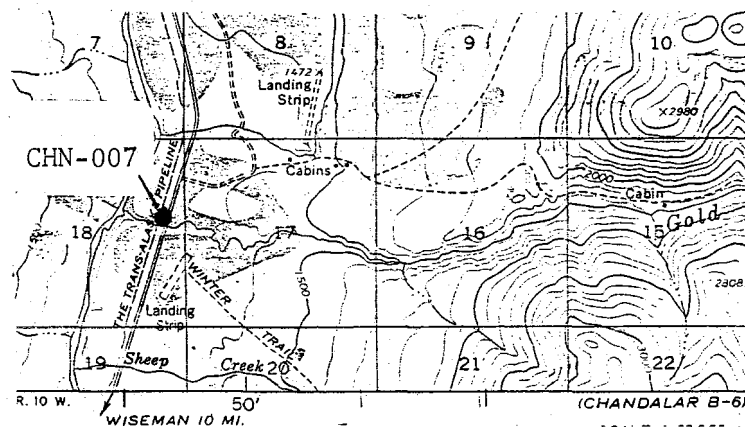
Latitude: 67° 30' 48"

Longitude: 149° 50' 58"

Alaska Coordinate System: 4,939,800 ft N; 520,000 ft E (Zone 4), CHN C-6 quadrangle

Section, Township, Range: Between NW/4 and SW/4 of SE/4 of NE/4, Sec. 18, T31N, R10W

General: The site lies 100 ft north of Gold Creek, and 15 ft west of the haul road on Alignment Sheet 039.



Environmental Setting

The site sits on old alluvial fan, dissected by Gold Creek and truncated to the west by the Middle Fork of the Koyukuk River, 900 ft away. The confluence of Gold Creek with the river is 950 ft to the west, and Gold Creek itself is 100 ft to the south.

Survey Methodology

The site was previously known (Gal 1974: HRS files) and encountered in 1980 during routine archaeological reconnaissance along a segment of the proposed NWA gasline. The site was mapped, described and photographed. No testing was applied.

Site Description

CHN-007 is a log cabin, with sod roofing, located along the east side of the haul road, 100 ft north of Gold Creek (Fig. 33). The cabin interior measures 11 ft x 13.3 ft (N25°E trend), and center ceiling height is 6.5 ft. The door, fastened with large metal butt hinges is on the southwest end and a window occupies the center of the opposite (rear) wall. The roof is sod covered with additional partial covering of metal sheeting and wooden planks. The floor is made of 1 or 2 inch x 8 inch milled wooden planks, and the walls consist of 5.5 inch diameter logs, square-hewn on the interior. The logs are chinked with moss.

The interior has the remains of two pole bed frames, three shelves and a table (Fig. 34). Scattered modern refuse is present (clothing, food and soft beverage containers). A metal stove pipe exits the ceiling on the southwest corner. The cabin displays some graffiti, of which the earliest recorded is: "Reed Kelley, Jan. 19, 1966." An associated refuse dump lies outside and is mostly covered by the haul road.

Impact

The cabin is in a very good state of preservation despite its proximity to the haul road and Alyeska pipeline. It is still structurally sound with only a 4 inch crack present in the roof. The cabin lies within 150 ft of the proposed gasline and if not directly impacted by construction then it is definitely threatened with secondary impact from construction personnel and increased numbers of travellers along the haul road.

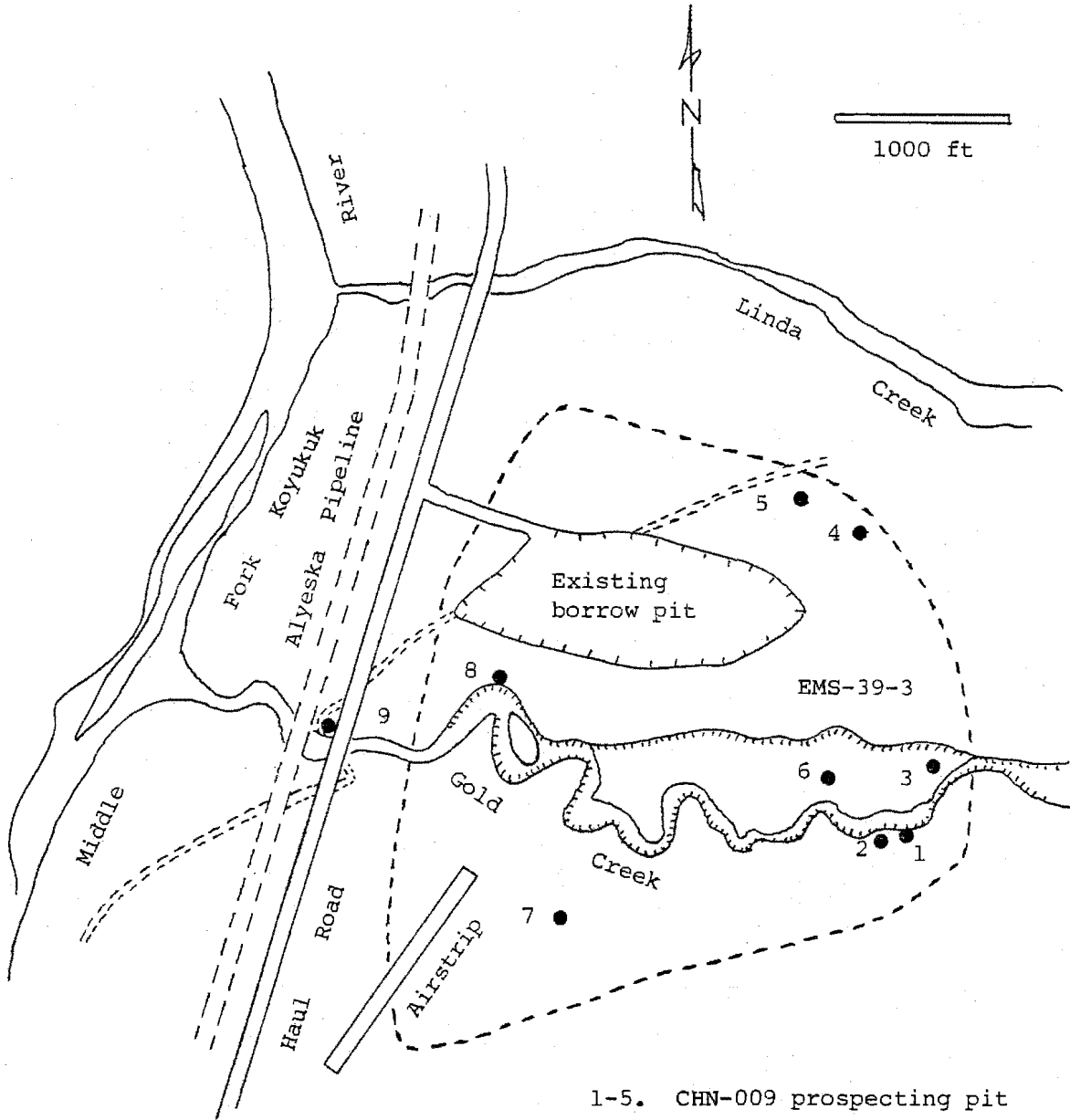
Significance

The cabin is an example of the traditional mode of construction, and is representative of dwelling styles in the earlier part of the twentieth century. It has additional contextual importance in relation to the other historic/early modern features (including CHN-009/Gold Creek Cabin 2) located to the east, and the local gold mining and settlement activities in general. However, the site does not meet the criteria for eligibility for inclusion on the National Register of Historic Places.

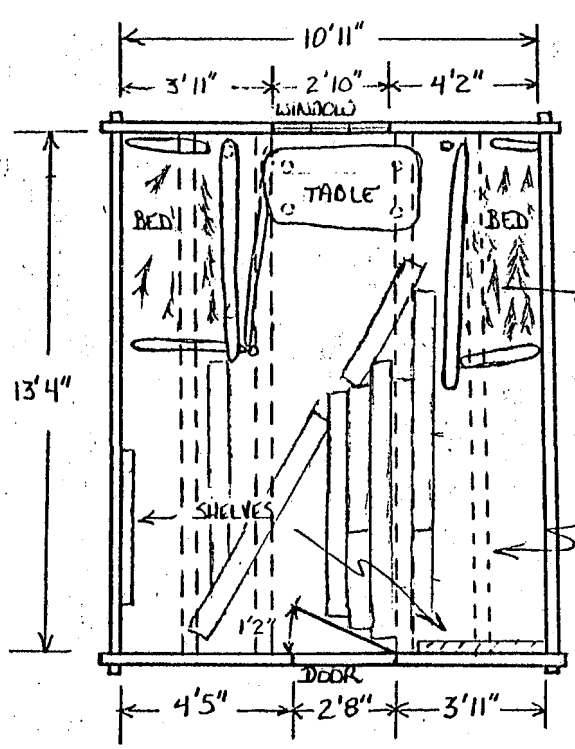
Recommendation

We recommend no further action for CHN-007.

Figure 33. Gold Creek area (sites).



- 1-5. CHN-009 prospecting pit
- 6. CHN-009 cabin
- 7. CHN-008 cache
- 8. CHN-010 biface fragment
- 9. CHN-007 cabin



— PLAN VIEW —

N25E

DIANE HANSON
 THÉRÈSE DES ROCHERS
 BRIAN CANNON
 8-8-80

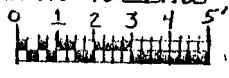
HAUL
 ROAD
 TOP

DRY SPRUCE BOUGHS

NOTES: 1) ALL DIMENSIONS ARE TAKEN FROM THE INSIDE OF THE CABIN

2) THE FLOOR PLANKS SHOWN GIVE AN IDEA OF DOOR MOVEMENT AND LATTER DISPLACEMENT. IN ACTUALITY THE FLOOR BOARDS CONTINUE ACROSS THE CABIN.

3) MAP DRAWN TO SCALE 1" = 5'



GOLD CREEK
 ↓ 100'

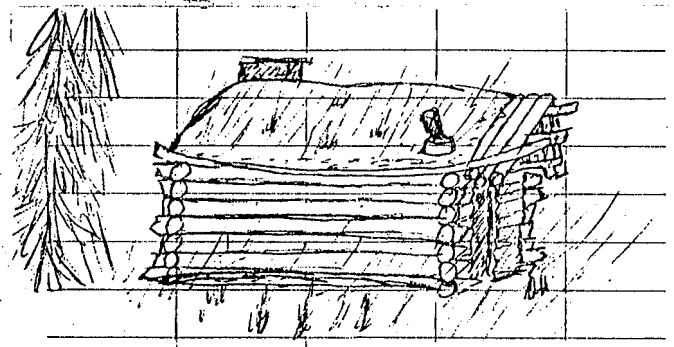


Figure 34. CHN-007 (Gold Creek Cabin No. 1).

Alaska State Site No.: CHN-010 (also CHN-005, CHN-006)

University of Alaska Museum Accession No.: UA80-226

Location

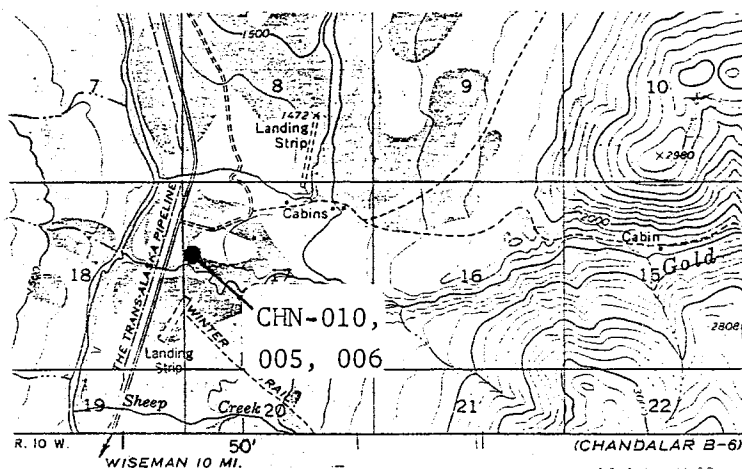
Latitude: 67° 30' 47"

Longitude: 149° 50' 42"

Alaska Coordinate System: 4,939,500 ft N; 521,750 ft E (Zone 4),
CHN C-6 quadrangle

Section, Township, Range: SW/4 of SW/4 of NW/4, Sec. 17, T31N, R10W
(Fairbanks Meridian)

General: CHN-010 lies within the west-central part of proposed EMS-39-3, on the north side of Gold Creek, within 100 ft of the bank, 320 ft south of the southwest corner of an existing borrow pit, and 500 ft east of the haul road.



Environmental Setting

CHN-010 is located on an old alluvial fan dissected by Gold Creek and truncated to the west by the Middle Fork of the Koyukuk River, 1200 ft away. The terrace is covered by moderately dense but discontinuous spruce forest with local willow, alders, and an understory of moss, berries and labrador tea. Fauna includes moose, bear, caribou, hare, and squirrels.

Survey Methodology

The site was located during routine archaeological reconnaissance of proposed EMS-39-3 in 1980. Seven test pits measuring 1 ft² were placed in the locality.

Site Description

CHN-010 comprises a surface 'find' of a single grey banded chert biface fragment (UA80-226-1; Fig. 5). It was apparently situated in fluvial outwash deposits (brownish-orange silt and gravel) on a former terrace of Gold Creek, and as such, its provenience and context are questionable. Testing revealed no other materials, so any site limits are unknown. However, Bob Gal (1974: Alaska Heritage Resources Survey file) located two chert flakes (one in the humic zone) in the same general vicinity (Fig. 33) which he documented as CHN-005 and 006.

Impact

The locality, if only an erratic no longer exists, so there is no threat of impact to a cultural resource through exploitation of EMS-39-3.

Significance

CHN-005 and 006 constituted finds without context, and both were formerly collected; no further data at these locations is known to exist.

CHN-010 is also a find without context, and also was collected in 1980. All three finds were crudely associated in an area of high cultural resource potential, and may reflect the presence of a site, significant in terms of prehistoric land use and settlement patterns.

Recommendations

CHN-005 is an isolated find which was collected. We recommend no further action.

CHN-006 is an isolated find which was collected. We recommend no further action.

CHN-010 is an isolated find which was collected. We recommend no further action.

Alaska State Site No.: CHN-008

University of Alaska Museum Accession No.: None

Location

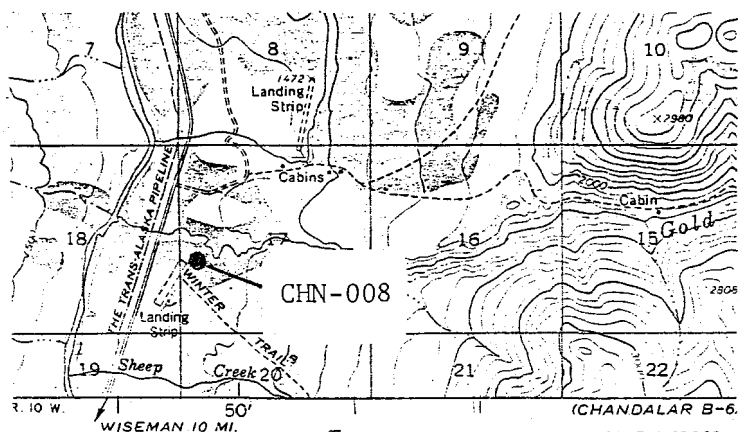
Latitude: 67° 30' 42"

Longitude: 149° 50' 30"

Alaska Coordinate System: 4,939,000 ft N; 522,250 ft E (Zone 4),
CHN C-6 quadrangle

Section, Township, Range: SE/4 of NW/4 of SW/4, Sec. 17, T31N, R10W
(Fairbanks Meridian)

General: This site is located within the boundaries of proposed EMS-39-3, about 700 ft south of Gold Creek, and 1270 ft east of the haul road (Fig. 33).



Environmental Setting

For a general description of the local environment, see CHN-009. CHN-008 sits on the south-central part of an old alluvial fan, truncated to the south by the Middle Fork of the Koyukuk River.

Survey Methodology

The site was located during routine archaeological reconnaissance of proposed EMS-39-3. One test pit (profile cut) was placed along the interior eastern wall of the described feature.

Site Description

CHN-008 is a roughly oval depression, 4 x 6 ft in plan and about 1 ft (?) deep. A buried log was located within the pit, and the pit has a berm around the southeastern edge.

The feature is tentatively interpreted as a cache, but there is little strong evidence for the contention. In light of the many other pits within the EMS (CHN-009), defined as prospecting pits, this feature may, too, be one of these. The berm suggests, however, that this feature is an artifact.

Cultural materials. No cultural materials, except for the remote possibility of the log, were found at the locality.

Stratigraphy. The profile cut made in the eastern wall of the pit revealed a 6 inch black-brown silt with some admixed charcoal overlying gravels. A buried log lies within the upper part of the silt, immediately below the moss mat. The area outside the pit revealed the same format.

Impact

CHN-008 seems to be in an undisturbed state, but exploitation of proposed EMS-39-3 will directly impact the site.

Significance

CHN-008, in conjunction with other similar pits and two log cabins in the vicinity (CHN-007, CHN-009), may have local importance with respect to the gold mining and related settlement activities in interior Alaska. However, the site is not considered eligible for inclusion on the National Register of Historic Places.

Recommendation

We recommend no further action on CHN-008.

Alaska State Site No.: CHN-009 (six components)

University of Alaska Museum Accession No.: None

Location

| | <u>Latitude:</u> | <u>Longitude:</u> |
|---------|------------------|-------------------|
| Comp. 1 | - 67° 30' 43" | 149° 50' 15" |
| 2 | - 67° 30' 39" | 149° 50' 05" |
| 3 | - 67° 30' 40" | 149° 50' 10" |
| 4 | - 67° 30' 44" | 149° 50' 10" |
| 5 | - 67° 30' 52" | 149° 50' 10" |
| 6 | - 67° 30' 52" | 149° 50' 15" |

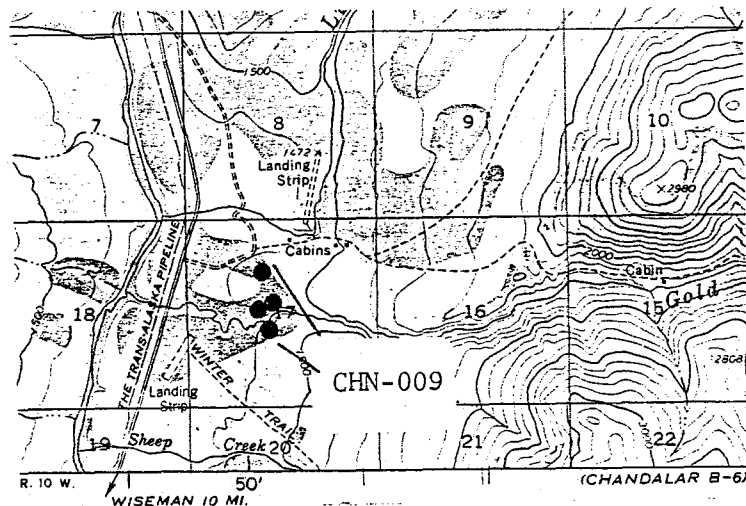
Alaska Coordinate System: Zone 4, CHN C-6 quadrangle;

| | |
|---------|--------------------------------|
| Comp. 1 | - 4,939,000 ft N; 522,750 ft E |
| 2 | - 4,938,750 ft N; 523,200 ft E |
| 3 | - 4,938,800 ft N; 523,000 ft E |
| 4 | - 4,939,250 ft N; 529,000 ft E |
| 5 | - 4,940,500 ft N; 523,000 ft E |
| 6 | - 4,940,500 ft N; 522,900 ft E |

Section, Township, Range: All in Sec. 17, T31N, R10W (Fairbanks Meridian);

| | |
|---------|------------------------|
| Comp. 1 | - SW/4 of SE/4 of NW/4 |
| 2 | - NE/4 of NE/4 of SW/4 |
| 3 | - NE/4 of NE/4 of SW/4 |
| 4 | - SE/4 of SE/4 of NW/4 |
| 5 | - SE/4 of NE/4 of NW/4 |
| 6 | - SW/4 of NE/4 of NW/4 |

General: The six components of CHN-009 lie within the proposed boundaries of EMS-39-3 (approximately 200 acres) on both sides of Gold Creek, and east of the haul road. An existing borrow pit currently occupies part of this same area (Fig. 33).



Environmental Setting

CHN-009 (all components) are set on alluvial fan deeply incised by Gold Creek and truncated on the western end by the Middle Fork of the Koyukuk River. The dominant vegetation is moderately high spruce trees, local alders and willow, and a lichen and moss ground cover. Bear, moose, caribou, wolf, and hare are among the animals present in the area.

Survey Methodology

The components of CHN-009 were located during archaeological survey of proposed EMS-39-3 in 1980. Five persons walked 50 ft apart in a grid traverse, subsurface testing every 100 ft. All exposure, and anomalous features were also intensively inspected. CHN-008 and 010 were located in this same general area.

Site Description

CHN-009 has a visible but scattered historic element comprising one cabin (Gold Creek Cabin 2) and five prospecting pits. The area (EMS) also has a vaguely identified aboriginal/prehistoric element (CHN-005, 006, 010), all comprising single unassociated finds, and a possible historic cache (CHN-008). Another historic structure ('Gold Creek Cabin 1': CHN-007) lies just west of the EMS, across the haul road. All these localities are identified on the above placement map.

The cabin (component 1; Fig.35) is located on the inactive floodplain of Gold Creek, east of the haul road and 80 ft north of the creek. It has four standing walls, and the roof is partially collapsed. That part of the sod roof still remaining is supporting spruce seedlings. Many of the logs had what appeared to be charred edges. One window is set in the south wall, and the door faces east (a characteristic traditional/native? pattern). The cabin is partially set into the ground. The above-ground portion is about 4 ft high, and in plan, the cabin measures about 16 ft on a side (256 ft²). A series of poles occupying the interior northwest corner, nailed to the wall, suggest a bed frame. Wooden pegs are set in each wall. The cabin still retains moss chinking, and machine-cut nails are utilized in parts of the structure.

Several refuse pits are associated with the cabin and incorporate such items as an Edgeworth Tobacco can, sardine tins, Borden's Condensed Milk (canned), and leather remnants. A few bones are also scattered around the cabin's exterior, outside the window. To the north, a jumbled pile of spruce logs may represent an old cache. A cabin-shaped Log Cabin Syrup can modified into a candle holder is present.

Four of the pits (components 2, 3, 5, 6) are all located on the upper terrace of Gold Creek (on both sides of Gold Creek). Pit 4 is located on the inactive floodplain of Gold Creek. These pits averaged 9-12 ft in diameter and 4-6 ft deep. Evidently, these are prospecting pits placed to locate gold seams when gold traces were found in the creek (George Rayburn, pers. comm.).

Impact

EMS-39-3, within which CHN-009 is located, presently contains a borrow pit which may have impacted other historical materials, as well as a part of a vaguely defined prehistoric? locus (CHN-005, 006 and 010). With exploitation of EMS-39-3, all of these sites, along with CHN-008, will be directly impacted.

At present, despite the somewhat deteriorated condition of the cabin, all CHN-009 components are undisturbed (see CHN-008, CHN-007).

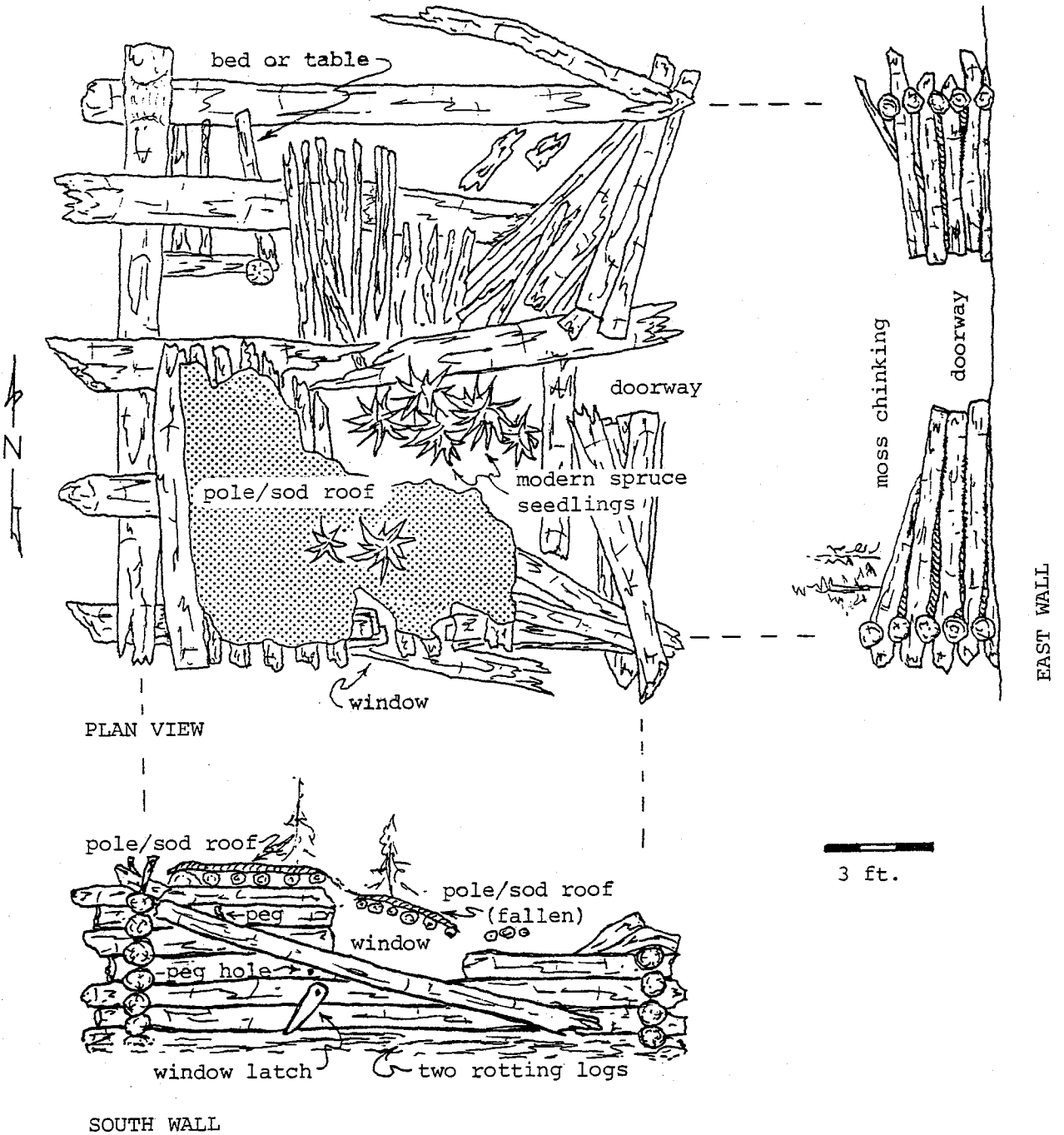
Significance

The cabin, prospecting pits and 'cache' (CHN-008), and another cabin to the west (CHN-007), constitute an historical locus which may be of local importance (especially all in context) with respect to the gold rush heritage of interior Alaska. The vaguely defined prehistoric locus (CHN-005, 006 and 010), defined by two flakes and a biface fragment is not established well enough to assess with any surety. None of the remains are considered eligible for inclusion on the National Register of Historic Places.

Recommendation

We recommend no further action on CHN-009.

Figure 35. CHN-009 Gold Creek Cabin-2.



Alaska State Site No.: CHN-015

"Arctic John Etalook Cabin"

University of Alaska Museum Accession No.: None

Location

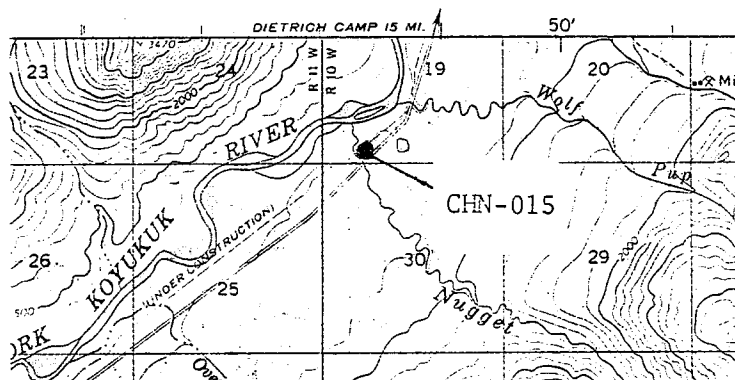
Latitude: 67° 29' 29"

Longitude: 149° 52' 20"

Alaska Coordinate System: 4,931,300 ft N; 517,818 ft E (Zone 4),
CHN B-6 quadrangle

Section, Township, Range: SE/4 of SW/4 of SW/4, Sec. 19, T31N, R10W
(Fairbanks Meridian)

General: The site is located 50 ft west of the haul road, 60 ft north of Nugget Creek, and 500 ft south of the Middle Fork of the Koyukuk River.



Environmental Setting

The site sits on a broad alluvial fan perched above the valley of the Middle Fork of the Koyukuk River, one-quarter mile to the west. The surrounding terrain is rugged with high relief. Vegetation comprises moderately dense, somewhat stunted spruce trees with a ground cover of labrador tea, berries, moss, berry shrubs, moss and some lichen.

Survey Methodology

The site was previously known and was encountered during routine archaeological reconnaissance along a segment of the proposed NWA gasline in 1980. As the locality is under private ownership and posted, only a brief description of the site was attempted. No testing was performed.

Site Description

CHN-015 is a viable sod and log dwelling, and is apparently still occupied occasionally by the owner, John Etalook. Apparently, the ownership is contested. Nevertheless, the cabin bears a sign stating: "No Trespassing" and "Arctic John Etalook F-18270, T31N/R11W, Sec. 24 and 25; T31N/R10W, Sec. 19 and 30. One hundred sixty acres more or less. Native allotment. This site protected under the Antiquities Act, Bureau of Indian Affairs."

Impact

The cabin is no longer directly threatened with primary impact under "Revision 3" of the NWA gasoline corridor which places it on the opposite (south) side of the haul road from the site. However, there is some potential for looting or vandalism from haul road travellers and construction personnel. The cabin is presently in fairly good condition.

Significance

The cabin is important in terms of its traditional mode of construction, and its presence can contribute to the record of traditional native land use in the area. However, it is a modern structure and is not eligible for inclusion on the National Register of Historic Places.

Recommendation

We recommend no further action.

Alaska State Site No.: CHN-014

University of Alaska Museum Accession No.: None

Location

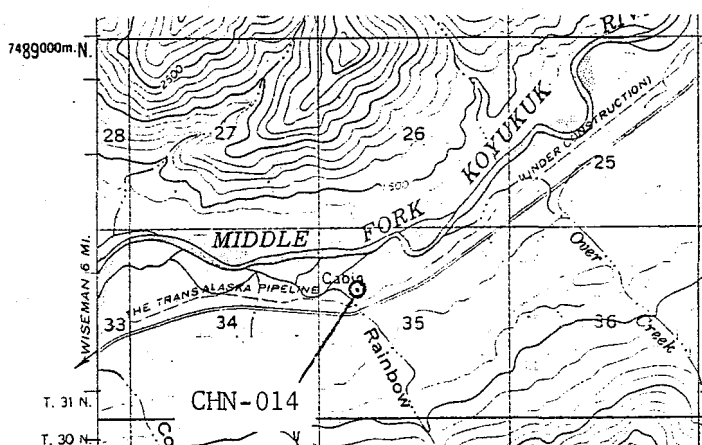
Latitude: 67° 28' 16"

Longitude: 149° 56' 56"

Alaska Coordinate System: 4,924,250 ft N; 507,750 ft E (Zone 4),
CHN B-6 quadrangle

Section, Township, Range: W/2 of NW/4 of SE/4 of NW/4, Sec. 35,
T31N, R11W (Fairbanks Meridian)

General: The site lies on a low bench above a dry creek channel, approximately 650 ft northeast of CHN-013, 100 ft northwest of the Alyeska pipeline and 2560 ft south of Alyeska pipeline road APL-3/101 RGV-40. The Middle Fork of the Koyukuk River lies 900 ft to the northwest.



Environmental Setting

The site is situated on older floodplain deposits of the Middle Fork of the Koyukuk River. Primary vegetation comprises spruce trees, willows and alders with grasses, mosses and lichens.

Survey Methodology

This is an historic log and sod cabin. Two signs (facing Alyeska workpad) states: "Historical Site, No Trespassing." With respect to the site, and the distance from the proposed NWA centerline, the site was not systematically surveyed. The cabin was photographed, however, and minimal notes were taken.

Site Description

The site consists of an historic/modern log and sod cabin in fair condition. The site measures approximately 100 x 175 ft. Much of one wall has fallen away. An outside work bench is present to the west of the cabin, and a wood stove, wooden boxes, kitchen utensils, cans and a sled are strewn about. Several of the cans still retain labels.

Impact

No direct impact is posed by the proposed gasline, 400 ft away to the south-southeast. However, the site may be vulnerable to vandalism.

Significance

Contrary to the posted signs, no records were found on this structure. The cabin may be associated with earlier gold rush activities in the Wiseman area. It is not considered significant.

Recommendation

The cabin lies outside the proposed project area. We recommend no further action.

Alaska State Site No.: CHN-013

University of Alaska Museum Accession No.: None

Location

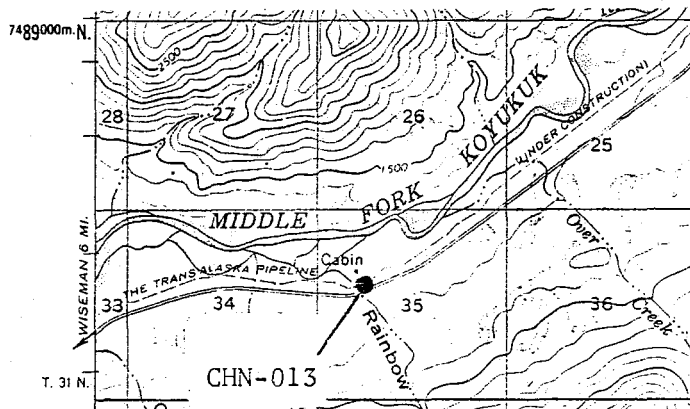
Latitude: 67° 28' 10"

Longitude: 149° 56' 50"

Alaska Coordinate System: 4,923,750 ft N; 507,400 ft E (Zone 4),
CHN B-6 quadrangle

Section, Township, Range: NW/4 of SW/4 of SE/4 of NW/4, Sec. 35,
T31N, R11W (Fairbanks Meridian)

General: The site is located 0.8 mi south of Over Creek, 35 ft north of the haul road and 150 ft south of the Alyeska pipeline.



Environmental Setting

The site is located on the edge of an alluvial fan, truncated immediately to the north. The relief of this truncation is about 10 ft. Below are floodplain deposits of the Middle Fork of the Koyukuk River. Earlier courses of the river also define the western boundary of the site. The terrace edge is well drained whereas the lower floodplain deposits appear constantly saturated (possibly due to a drainage impediment created by the Alyeska workpad). The fan originates from Poss Mountain and Rainbow Gulch at the southeast.

The Middle Fork of the Koyukuk River lies 1500 ft to the north but the view from the site is obscured by thick stands of tall spruce trees.

Aside from the predominant black and white spruce trees, fireweed, tundra rose, shrubby cinquefoil, mushrooms, kinnikinnik, labrador tea, small tussock grasses, mosses and lichens, mountain avens, dwarf birch, scrub willow and bear berries comprise the main vegetation on and around the site.

Rabbit (hare), moose and ground (parka) squirrels constitute the observed animal life in the area.

Survey Methodology

The site was located during routine archaeological survey of the proposed NWA gasline corridor in 1980. A central datum point was established, and followed by establishing the limits of the site, mapping, photography and recording of environmental data. No sub-surface testing was conducted.

Site Description

CHN-013 is a modern campsite probably dating to A.D. 1955-1965. Based on the amount of cultural debris, it was not occupied for very long.

Cultural material. The site consists of a three-sided lean-to structure made of wooden beams 4 inches in diameter. The structure opens to the south, measures 16 ft northwest-southeast and 10.5 ft northeast-southwest. Some of these bark-stripped beams are connected with wire. The roof, which is collapsed, was constructed from deciduous twigs and thin branches trending northeast-southwest. The roof apparently fell intact.

Abundant domestic and industrial refuse lies around the site (Fig. 36). Included are tin cans, some shoes, a Remington UMC 25-20 rifle shell, canvas material, a small battery cluster, and insulators and wire. There are also cut stumps scattered around which are apparently the source of the lean-to beams. A subterranean 'cache' is located 20 ft northwest of the lean-to, and a standing pole structure of uncertain function is located 11 ft due east of the lean-to. The latter structure, too, may be a cache. Two stove pipe segments are located near the cache. There are also two pieces of milled lumber present that possibly served as wall siding, but this remains inconclusive. Small pegs are set within the lean-to that possibly buttressed the basal beams.

Impact

The site as of summer 1980 was directly threatened by impaction by the proposed gasline. As of January 1981, however, the centerline has been re-set ("Revision 3") on the opposite (eastern) side of the haul road, and impact is now indirect. The main threat to the site is posed by travellers along the haul road and construction personnel on the NWA gasline.

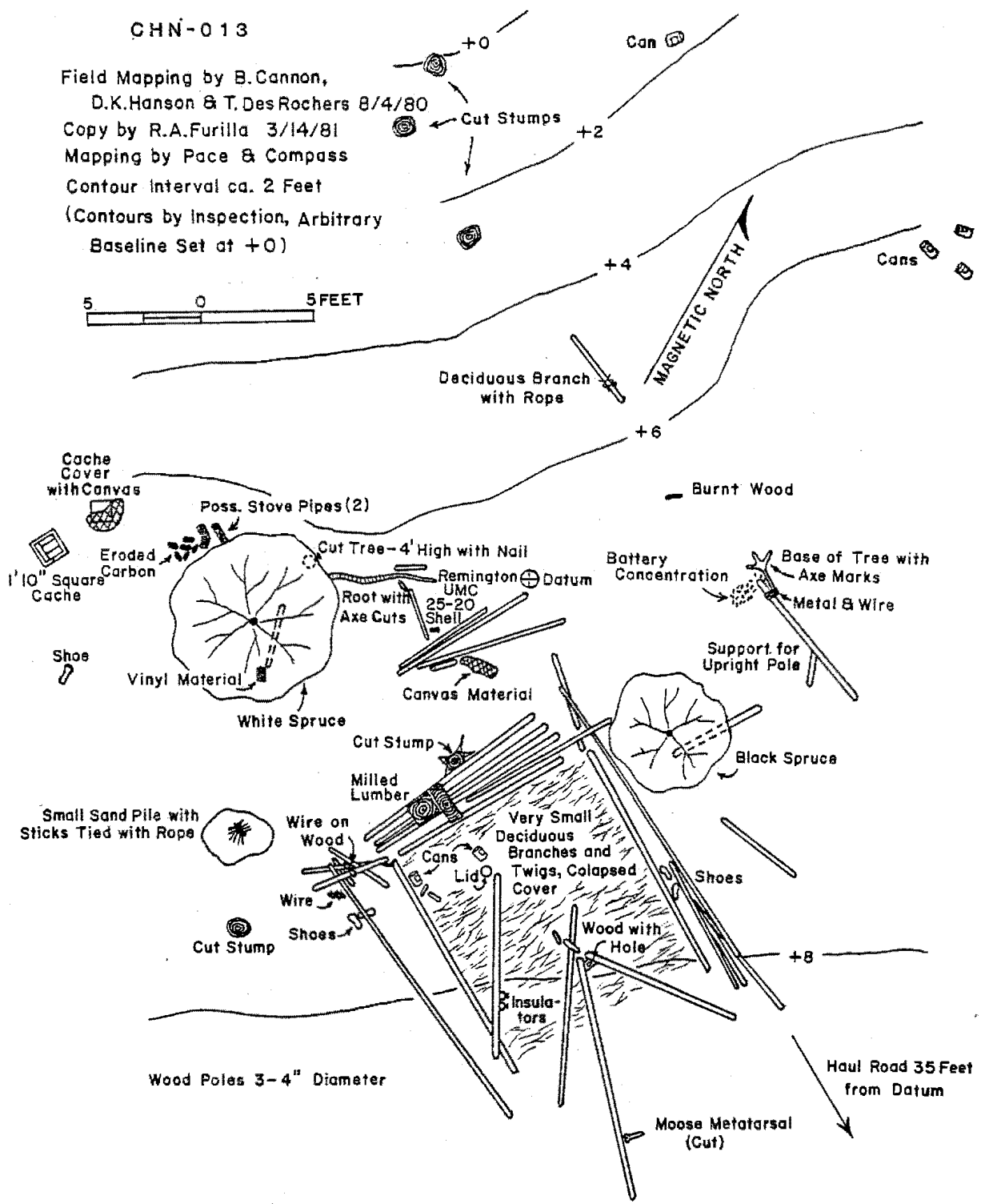
Significance

CHN-013 represents a modern campsite, possibly established in support of some industrial/commercial activity. The site may yield information concerning recent, and possibly traditional, land use in interior Alaska. However, it does not meet the criteria for inclusion on the National Register of Historic Places.

Recommendation

CHN-013 lies well outside the proposed project area. We recommend no further action.

Figure 36.



Alaska State Site No.: WIS-050

University of Alaska Museum Accession No.: None

Location

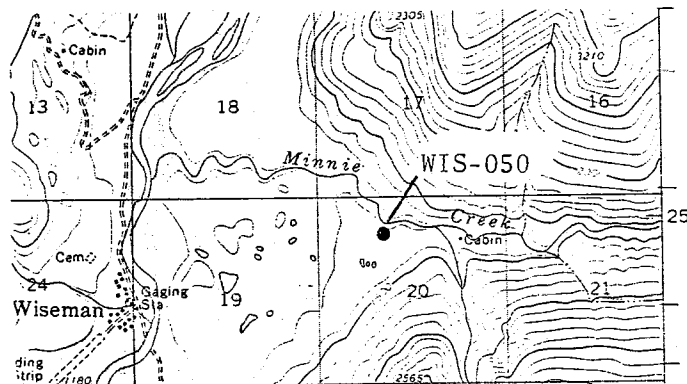
Latitude: 67° 24' 55"

Longitude: 150° 03' 30"

Alaska Coordinate System: 4,903,600 ft N; 492,250 ft E (Zone 4),
WIS B-1 quadrangle

Section, Township, Range: NE/4 of NW/4 of NW/4, Sec 20, T30N, R11W
(Fairbanks Meridian)

General: The site is located 3000 ft along Minnie Creek, east from the haul road; approximately 200 ft southwest from the edge of Minnie Creek, and 600 ft northeast from the edge of an existing borrow pit. This pit is also designated as proposed EMS-41-3.



Environmental Setting

The site is situated in moderately dense to sparse forest of spruce trees, on a former terrace of Minnie Creek. The vegetal understory comprises mainly labrador tea, blueberries and rose. Willow and scrub alder are locally abundant. Traces of moose, bear and rabbits were seen in the vicinity.

Survey Methodology

WIS-050 was located during routine archaeological survey of proposed EMS-41-3 in 1980. The site was described, and no collections were taken.

Site Description

WIS-050 constitutes a presumed gold mining shaft of historic vintage, measuring 5 ft² and 8 ft deep. As far as could be determined, the shaft was lined with logs; the pit was filled with water.

Other than a length of metal binding wire, little else in the way of cultural remains were noted near the shaft. A 5 gal Pearl Oil Kerosene can was located between the shaft and the borrow pit, and may be related, particularly if the shaft was excavated in the winter by thawing the ground.

Other nearby features which may be related to the shaft comprise a cabin located just upstream along Minnie Creek, and many cut birch and spruce trees located 100-200 ft east of the borrow pit, and extending roughly 1000 ft northward to the vicinity of the shaft site.

Impact

Except for some natural deterioration, the shaft is undisturbed and in relatively good condition. It is not endangered by exploitation of the proposed EMS-41-3. The area of cut trees partially lies within the EMS, and would be destroyed, but except for the possibly contextual loss of a use-related area, no significant loss is envisioned. There is also little threat of impact through secondary or indirect modes (e.g., personnel or vehicular traffic).

Significance

The shaft, together perhaps with the nearby cabin, may constitute a related, historic focus associated with the gold rush heritage of the nearby communities of Wiseman and Coldfoot. It is not considered significant.

Recommendation

WIS-050 lies outside the project area. We recommend no further action.

Alaska State Site No.: WIS-012 (addendum)

University of Alaska Museum Accession No.: UA75-45 (former); no 1980 collections

Location

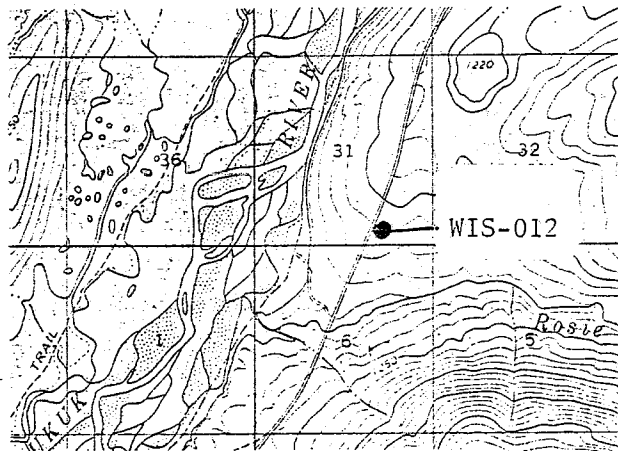
Latitude: 67° 12' 12"

Longitude: 150° 15' 53"

Alaska Coordinate System: 4,826,000 ft N; 462,600 ft E (Zone 4),
WIS A-1 quadrangle

Section, Township, Range: NW/4 of SW/4 of SE/4 of SE/4, Sec. 31,
T28N, R12W (Fairbanks Meridian)

General: The site is located 3,000 ft north of where the haul road crosses Rosie Creek, and 200 ft east of the haul road.



Environmental Setting

WIS-012 is located on a small knob of glacial till which overlooks the Middle Fork of the Koyukuk River and its floodplain to the west (ca. 0.5 mi). A good view is also afforded of Rosie Creek to the south and east. The site is well-drained, but near several water sources, including a lake 0.75 mi to the north, and chert exposures are locally present.

Dominant vegetation in the vicinity includes spruce, aspen and birch trees (forest) with some willow and alder. The understory includes dwarf willow, berries, grasses, rose, and labrador tea. Tussocks are prevalent in the marshy areas. Animals include moose, bear, hares, squirrels, spruce grouse and other birds.

Survey Methodology

The site was found during routine archaeological survey along the proposed NWA gasoline corridor in 1980. The site had previously been

excavated by Alyeska archaeologists in 1974 and a report has been prepared by Gal (in Cook 1977:735-746).

As WIS-012 lies 50 ft outside (east) of the proposed NWA corridor, it was not tested sub-surficially in 1980, but intensive surface inspection was conducted.

Site Description

WIS-012 is a knoll site, measuring at least 50 x 450 ft. Gal (1975), however, defined only two distinct components (localities 1 and 2) within this area (Fig. 37). These were based on spatial separation and differences in raw materials recovered. The excavations comprise 5 ft units covering a total area of 206.25 ft² at locality 1 and 43.75 ft² at locality 2; Fig. 37), and evidently were determined by numerous tests, still evident around the excavations.

Cultural materials. No apparent cultural materials were seen at WIS-012 in 1980. However, the assemblage reported by Gal (in Cook 1977:735) is as follows:

| | <u>Locality 1</u> | <u>Locality 2</u> | <u>Surface Collection</u> |
|----------------|-------------------|-------------------|---------------------------|
| Uniface | - | 1 | - |
| Core | 1 | - | - |
| Microblade | 2 | 1 | 1 |
| Utilized flake | 1 | 1 | - |
| Waste flake | 38 | 33 | 1 |

The distribution of these items is shown in Figure 37 (Gal in Cook 1977: Figs. 12-2, 12-3). The materials are presumably repositated at the University of Alaska Museum.

Stratigraphy. Gal (in Cook 1977:735) describes the stratigraphy of WIS-012 as consisting of a silty A1 horizon over a sandier B horizon, both of which overlie glacial till. Cultural materials came primarily from the surface and the A1 horizon, and just into the B horizon.

Impact

At present, WIS-012 lies 50 ft outside, to the east, of the proposed NWA gasline. Therefore, potential impact to the site is not directly posed by construction activities. However, indirect impact is threatened by construction personnel due to the close proximity.

WIS-012 has previously been excavated, and the excavations have not been backfilled. Consequently they are being affected by erosion to a moderate degree.

Significance

On the basis of his excavations, Gal (in Cook 1977:746) concludes that much of the material items found at WIS-012 were produced on the spot. It is uncertain whether or not the two localities are contemporaneous.

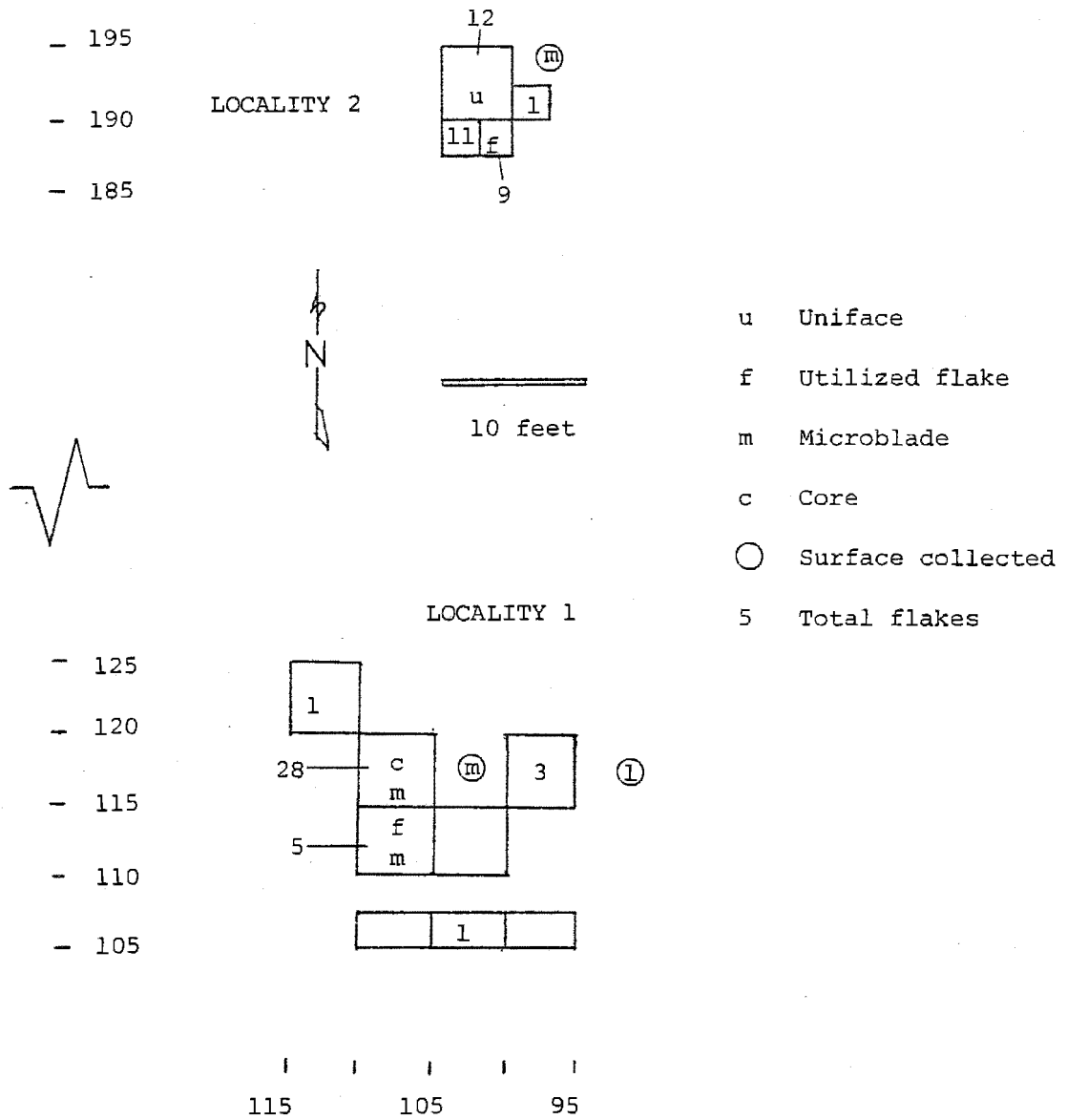
This site may have been used only briefly and witnessed one or two short-lived flaking events.

WIS-012 appears to have no remaining cultural resources. The site, nonetheless, is significant with respect to prehistoric land and resource utilization, settlement patterns and intra-site behavior.

Recommendation

WIS-012 was destroyed by previous activity. It lay just outside the proposed project area. We recommend no further action.

Figure 37. WIS-012 site map (Cook 1977:736-737).



Alaska State Site No.: WIS-Find 2 (WIS-006, WIS-010, WIS-011)

University of Alaska Museum Accession No.: UA80-230 (WIS-Find)

Location (WIS-Find 2)

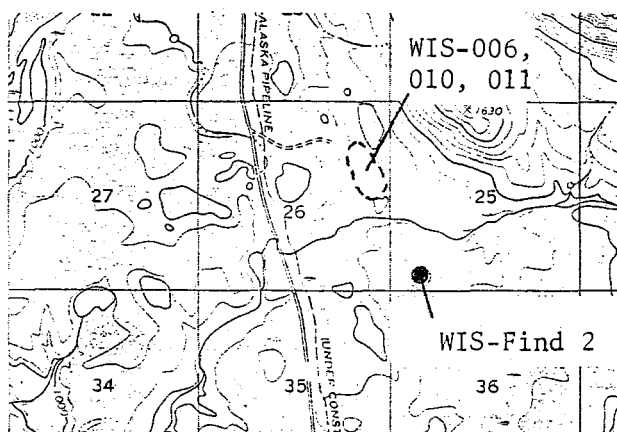
Latitude: 67° 08' 05"

Longitude: 150° 19' 45"

Alaska Coordinate System: 4,801,000 ft N; 453,050 ft E (Zone 4),
WIS A-1 quadrangle

Section, Township, Range: E/2 of SE/4 of NE/4 of SE/4, Sec. 26,
T27N, R13W (Fairbanks Meridian)

General: The locality lies 400 ft south-southeast of the southern-most tip of existing Alyeska borrow pit 96-3, and within the proposed limits of EMS-45-2A.



Environmental Setting

The site is located on a low-lying, irregular shaped moraine measuring 600 x 800 ft. The area is part of a kettle/moraine complex, comprising sinuous and irregular shaped moraines and numerous lakes of kettle origin. Many of these lakes are sizable, measuring at least one-quarter mile in width.

Residual knobs of bedrock lie in the vicinity. These moraines and bedrock knobs are well-drained compared to the marshy surroundings, and provide a good view of the surroundings. The Middle Fork of the Koyukuk River lies within 2 mi of the site (to the northwest).

There are three main vegetative communities present in the area. The moraine crests host scattered spruce and birch trees, with an 'understory' of predominantly scattered shrubs (mainly blueberries), moss and lichen. These areas, overall, are meadow-like. The sides of the moraines are vegetated with stands of black spruce trees varying from scattered to

dense, and the 'understory' is lush, comprising thick moss, labrador tea, several species of berries and various other shrubs. The third community is the surrounding lowlands with mainly grasses and scattered but locally dense stands of willow. Tussocks are common and much of the terrain has standing water.

Animals present in the area comprise moose, bear, probably caribou, wolf, fox, weasels, spruce grouse, Dall sheep (in the Cathedral Mountain area to the north) and several species of rodents and birds. Many game trails traverse the area. It is unknown whether the lakes have any fish, but fish are present in the local creeks. All in all, the area is resource-rich.

Survey Methodology

The locality was found in the course of routine archaeological reconnaissance of EMS-45-2A in 1980. The locality had either been tested or excavated in the past as attested to by the presence of two 5 square foot pits (3 inches deep) on either side of the find locality. 1980 testing consisted of intensive visual ground survey followed by at least twenty sub-surface tests.

Site Description

WIS-Find 2, comprising a single small chunky flake, was located in a game trail on the northeastern side of the irregular moraine, 50 ft from the edge. Two formerly excavated 5 square foot pits bounded the find to the north and south. The find may constitute an erratic, but it may be associated (at least indirectly) with one of three nearby sites on the adjacent moraine to the north (WIS-006, WIS-010 and WIS-011), previously excavated by Alyeska archaeologists and subsequently obliterated by development of the borrow pit.

WIS-006 (K-9), the major known site in the area, is reported as being situated along the southwestern side of the moraine to the north of the find locality. The original excavation took place in 1970 by Charles Holmes (in Cook 1970:29-34). A later examination by Robert Gal on July 18, 1974 revealed WIS-006 to be more extensive than formerly thought, with three concentrations of cultural material extending over an area of 28 x 56 m. Subsequent excavations under Michael Yarborough's supervision comprised 216 one-meter squares in this area (Cook 1976:30). Holmes' preliminary assessment is in Cook 1970:29-34; 1971:378-382. Yarborough's report is not yet complete.

WIS-010 evidently occurred 160 ft south of WIS-006 along the moraine, on a small rise, where cultural materials were distributed over an area of 825 ft².

WIS-011 occurred on the southeastern-most point of the moraine. Cultural materials were distributed over 50 ft².

Cultural materials. Holmes' work at WIS-006 yielded 500 (600?) lithic artifacts, excluding unretouched pieces making up the bulk of the inventory. Holmes tentatively divided the more diagnostic materials into: bifaces, burins, burin spalls, blade cores, discoidal flake cores, ridge flakes, 'skrebla', side scrapers on blades, graters/perforators, and blades and blade-like flakes (Fig.38). The artifacts were evidently present on the ground surface, down through the vegetative mat, and on the surface of the underlying till.

No information is available for the artifacts formerly recovered from WIS-010, and all that is reported from WIS-011 are "several flakes and an occasional microblade" (Cook 1976:30).

Stratigraphy. The basic stratigraphy at the WIS-Find 2 locality consists of a thin lichen and humic zone overlying 2-2.5 inches reddish brown silt, over reddish sandy 'gravel' of indeterminate thickness. The stratigraphy as a whole, is typical of glacial till.

Little information is available on the stratigraphy from WIS-006, 010 and 011. The locality of WIS-006 is described as consisting of glacial till interspaced with small areas of fine (powdery) grey "soil" generally in pockets, with gravels decreasing downhill and giving way to predominantly grey "soil." The regime at WIS-011 is basically the same as WIS-006.

Impact

The WIS-Find 2 locality is relatively undisturbed except for the two unexplained 5 square foot excavations. It is, however, threatened with direct impact from exploitation of EMS-45-2A.

The adjacent moraine to the north has been almost completely obliterated by past mining activities, save a small strip bordering a lake to the east and along with it, all the sites it contained (WIS-006, 010 and 011). This segment, too, will be obliterated under pending mining plans.

Significance

The moraine contained at least three sites of which one (WIS-006) was evidently important. However, there are no reference points available with which to precisely relate WIS-Find with these sites.

Aside from Yarborough's report which may have more information on WIS-006, Holmes (in Cook 1970:32-33) infers (after Hamilton) a base date for the site as around 12,000 years old - the time at which the moraine was formed - but as the site was essentially unstratified, any more reliable date had to rest on 'typological' grounds.

In summary (Ibid.:34), Holmes concluded that WIS-006 was a single component site, occupied for only one or part of one season. The artifacts apparently suggested a "blade/core technology with large bifaces" oriented towards big game hunting. In addition, the occurrence of burins suggested a bone/antler technology.

In retrospect, WIS-006 (in particular), WIS-010 and WIS-011 have significance in terms of prehistoric land and resource utilization, settlement style and inter-site relationships. WIS-Find 2 is an isolated find without context. No additional cultural resources evidently remain within the boundaries of proposed EMS-45-2A.

Recommendation

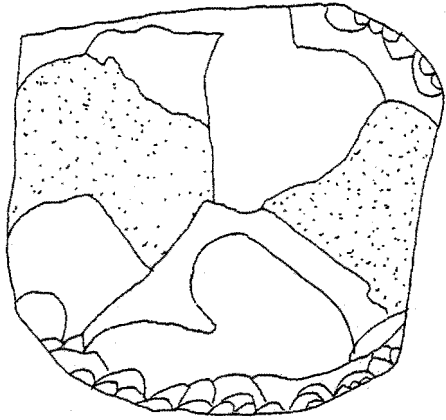
WIS-006 was destroyed by previous activities associated with the oil pipeline. It lay in the proposed project area. Since no data remain we recommend no further action.

WIS-010 was destroyed by previous activities associated with the oil pipeline. It lay in the proposed project area. Since no data remain we recommend no further action.

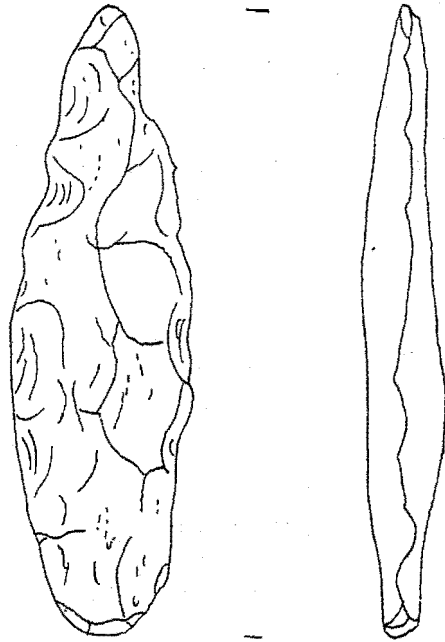
WIS-011 was destroyed by previous activities associated with the oil pipeline. It lay in the proposed project area. Since no data remain we recommend no further action.

WIS-Find #2 is an isolated find without context. Testing revealed no further data. We recommend no additional action.

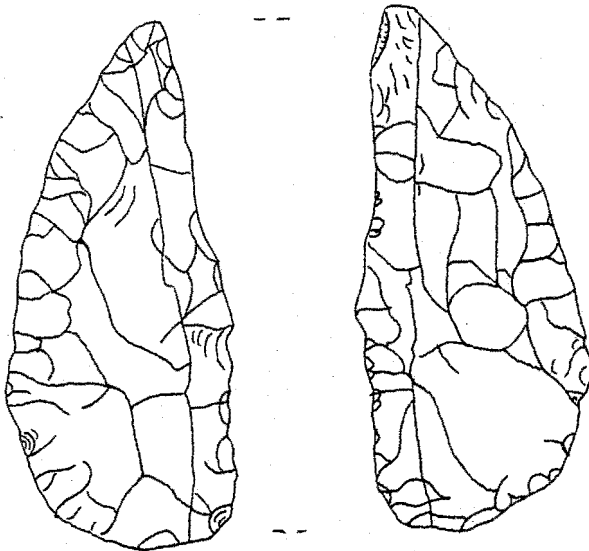
Figure 38. WIS-006 artifacts (Cook 1970: Figs. 15, 16).



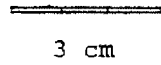
Skreblo



Type I biface



Type II biface



Alaska State Site No.: WIS-051

University of Alaska Museum Accession No.: None

Location

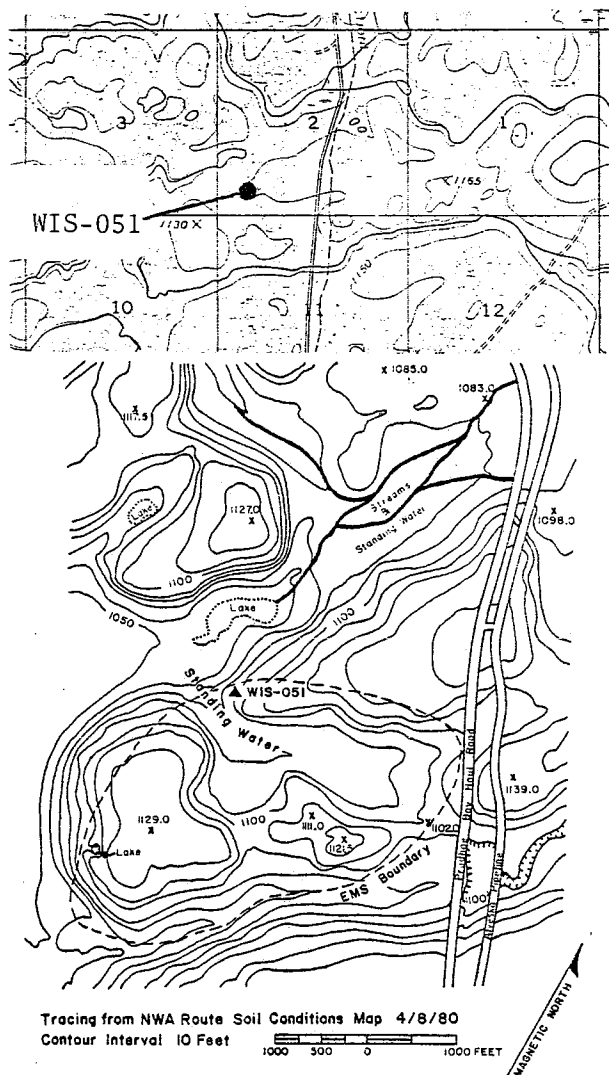
Latitude: 67° 06' 12"

Longitude: 150° 21' 29"

Alaska Coordinate System: 4,789,600 ft N; 449,000 ft E (Zone 4),
WIS A-1 quadrangle

Section, Township, Range: S/2 of NW/4 of SW/4 of SW/4, Sec. 2, T26N,
R13W (Fairbanks Meridian)

General: The site is located 850 ft due south of a small un-named lake which lies about 2200 ft west of the haul road at a point 2000 ft south of the South Fork of "Windy Arm Creek". The site also lies within the north central part of proposed EMS-45-3.



Environmental Setting

The site sits on a gentle northwest facing slope on the western end of an east-west trending moraine. The local terrain consists primarily of rolling hills of moderate relief and the flat floodplain of the Middle Fork of the Koyukuk River. The surficial geologic deposits are predominantly fluvial and glacio-fluvial in origin; many of the low hills in the area are glacially derived. Many small lakes occur in the area and most of these are kettle lakes. Numerous creeks and small streams also occur locally, and many contain fish. Other animal resources include moose, bear, caribou, wolf, ground squirrels, hare, mink, spruce grouse, waterfowl and perhaps Dall sheep (in the Cathedral Mountain area to the north).

Three vegetational habitats occur in the vicinity of the site. On the well-drained moraines, dense black spruce, diamond willow, tall birch with an understory of labrador tea, ferns, rose, lichen, moss, and berries prevail. The 'upland plateau' (surrounding the moraines) hosts dwarf willow, small spruce trees and shrubs. The 'lowlands' have stunted spruce, grasses, berries, dwarf willow, and tussocks in a generally marshy environment. The site feature is set in the midst of dense spruce and a spongy moss ground mat. Overall, it appears to be a resource-rich environment.

Survey Methodology

The site was located during routine archaeological reconnaissance of proposed EMS-45-3 in 1980. The distinguishing site feature was tested sub-surficially, mapped and photographed. The site is feature-specific, and sub-surficial testing within the feature was kept at a minimum level in order to preserve as much as possible for later study. All test pits were backfilled.

Site Description

The distinguishing feature at this site is a roughly polygonal-shaped, shallow depression, 11 ft (at the widest) x 19 ft long. It is interpreted as a house pit (Fig. 39). The feature itself is open and treeless, but possesses a thick moss mat. While perceptible, the actual outline is not quite as sharp nor well-defined as indicated in Figure 39. Testing revealed no artifacts, but distinctive stratigraphy was noted within the feature.

Stratigraphy. The stratigraphic sequences revealed by five test holes and two 1.5 ft² test pits (Fig. 39) are shown in Figure 40. In general, the sequence within the feature's interior (test pit-1) contrasted markedly from the outside pits by the presence of a distinct greasy textured, blackish layer. This unit also had some charcoal accumulation and calcined bone fragments.

Impact

The site was undisturbed when located, and survey impact was minimal. The site is directly threatened with primary impact from development of proposed EMS-45-3.

Significance

Judging by the depression's configuration and interior stratigraphy, which is distinctly anomolous and probably represents an occupational surface, the feature is very likely a house pit. As such, it resembles the houses found at Aniganigurak (PSM-036) near Galbraith Lake, and also the 'L'-type of ivrulik house (iglupiaqtaqlik) reported by Ingstad (1951) at Anaktuvuk Pass. As relatively few housepits are located (known) in the interior, and even less in this region, this feature may be significant in what it can reveal about aboriginal dwellings and related activities. It is entirely possible that other similar features are present on the same moraine, or on others nearby. However, dense tree growth and moss cover makes their detection difficult.

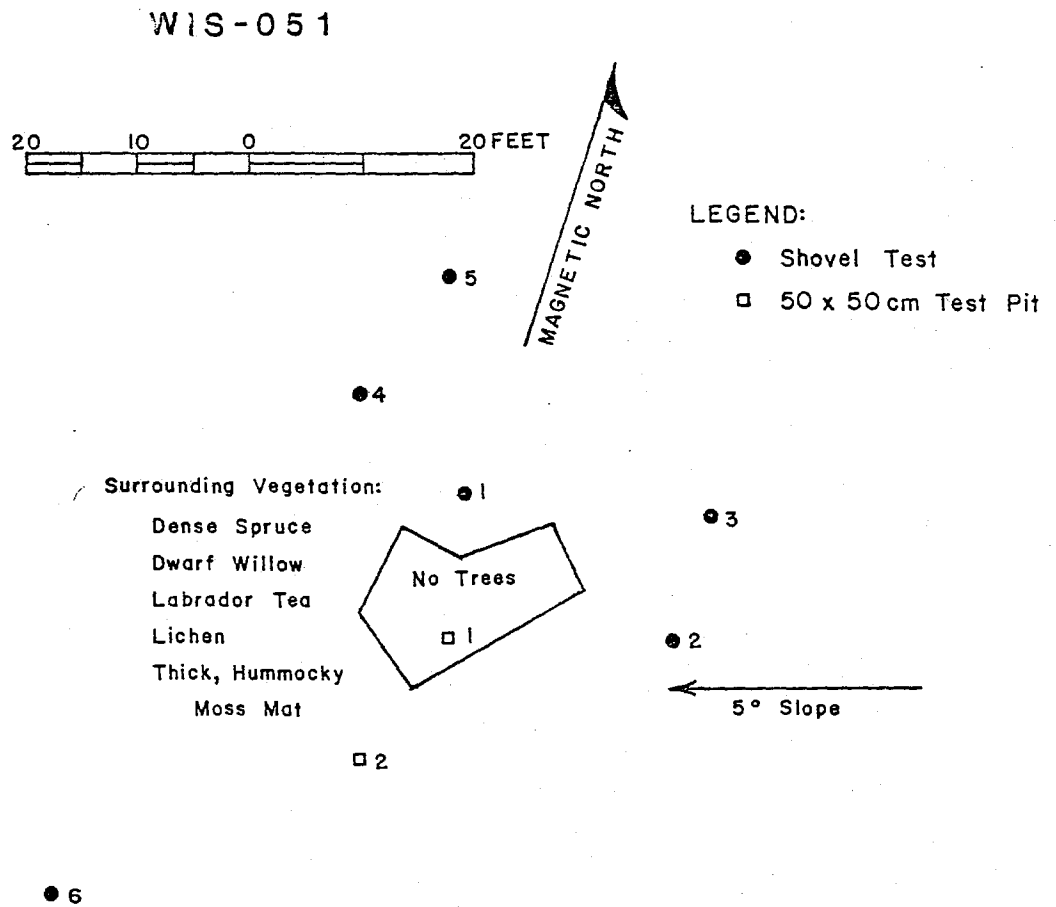
Recommendation

We recommend further testing to confirm whether WIS-051 is an occupational feature and a significant site.

FLUOR

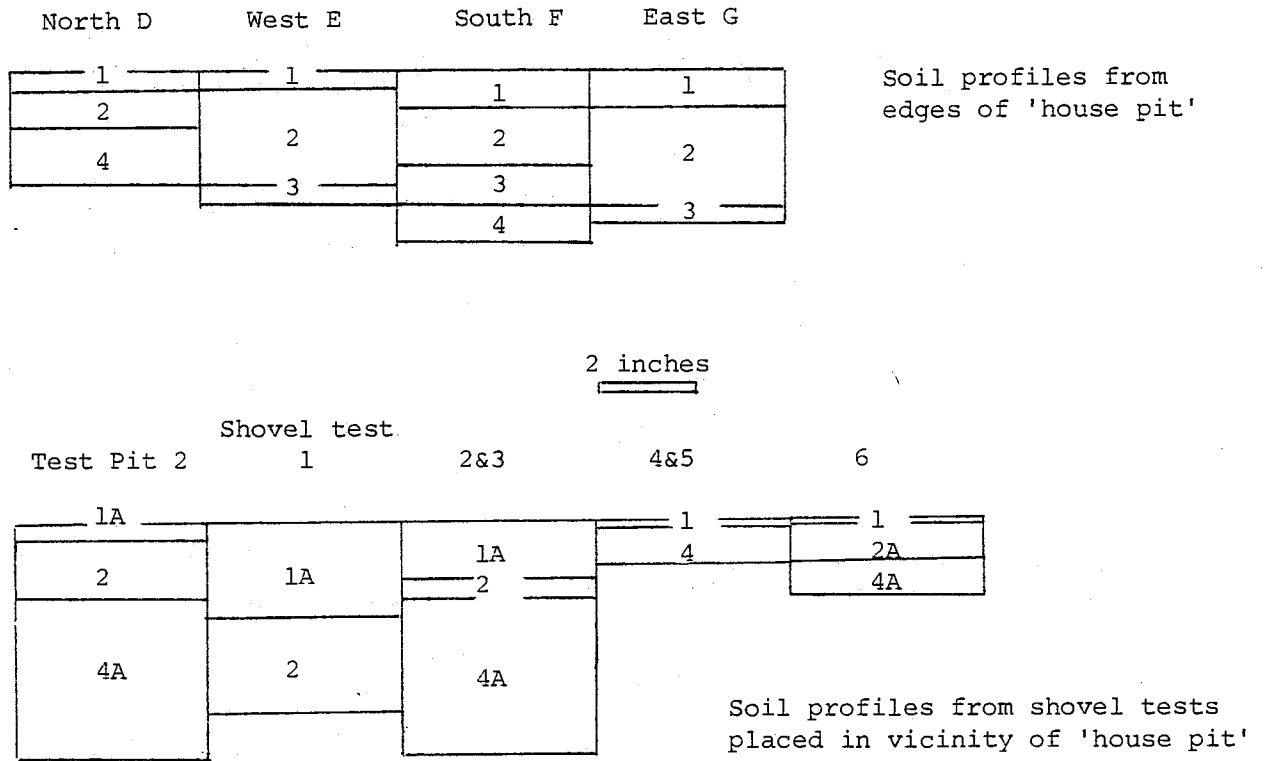
4680-9-KU-84

Figure 39.



Field Mapping by K. Leitgeb &
J. Dale 8/9/80
Copy by R. A. Furilla 2/9/81
Mapping by Tape & Compass

Figure 40. WIS-051 stratigraphy.



- KEY
- 1. Vegetative mat
 - 1A. Moss and moss roots
 - 2. Black organic material
 - 3. Dark, greasy, rich organic soil
 - 4. Orange/light brown silt with small pebbles
 - 4A. Yellowish/brown silt with small pebbles

Alaska State Site No.: WIS-019 (addendum)

Also known as Alyeska site "S4-32".

University of Alaska Museum Accession No.: UA80-209, UA75-152 (former)

Location

Latitude: 67° 05' 20"

Longitude: 150° 21' 05"

Alaska Coordinate System: 4,784,250 ft N; 449,900 ft E (Zone 4),
WIS A-1 quadrangle

Section, Township, Range: N/2 of SE/4 of SW/4, Sec. 11, T26N, R13W
(Fairbanks Meridian)

General: WIS-019 lies 570 ft west of the haul road, 2200 ft north of Alyeska access road 96-APL/AMS-1, in the northeast corner of proposed EMS-46-1 (Fig. 41).

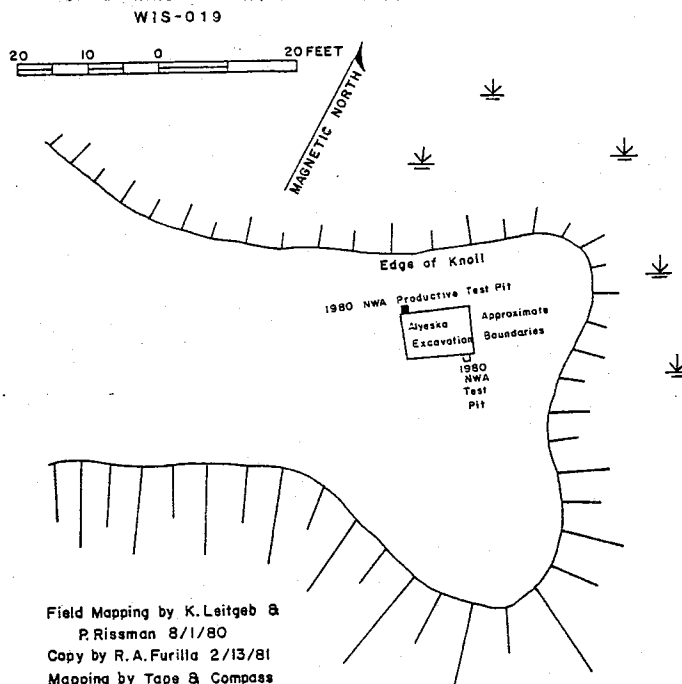
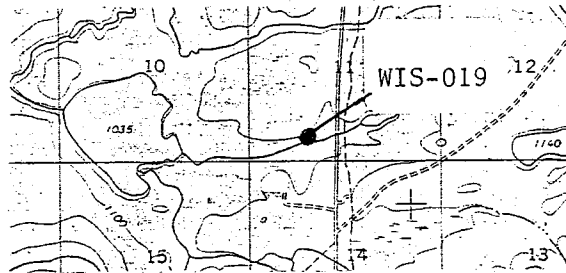
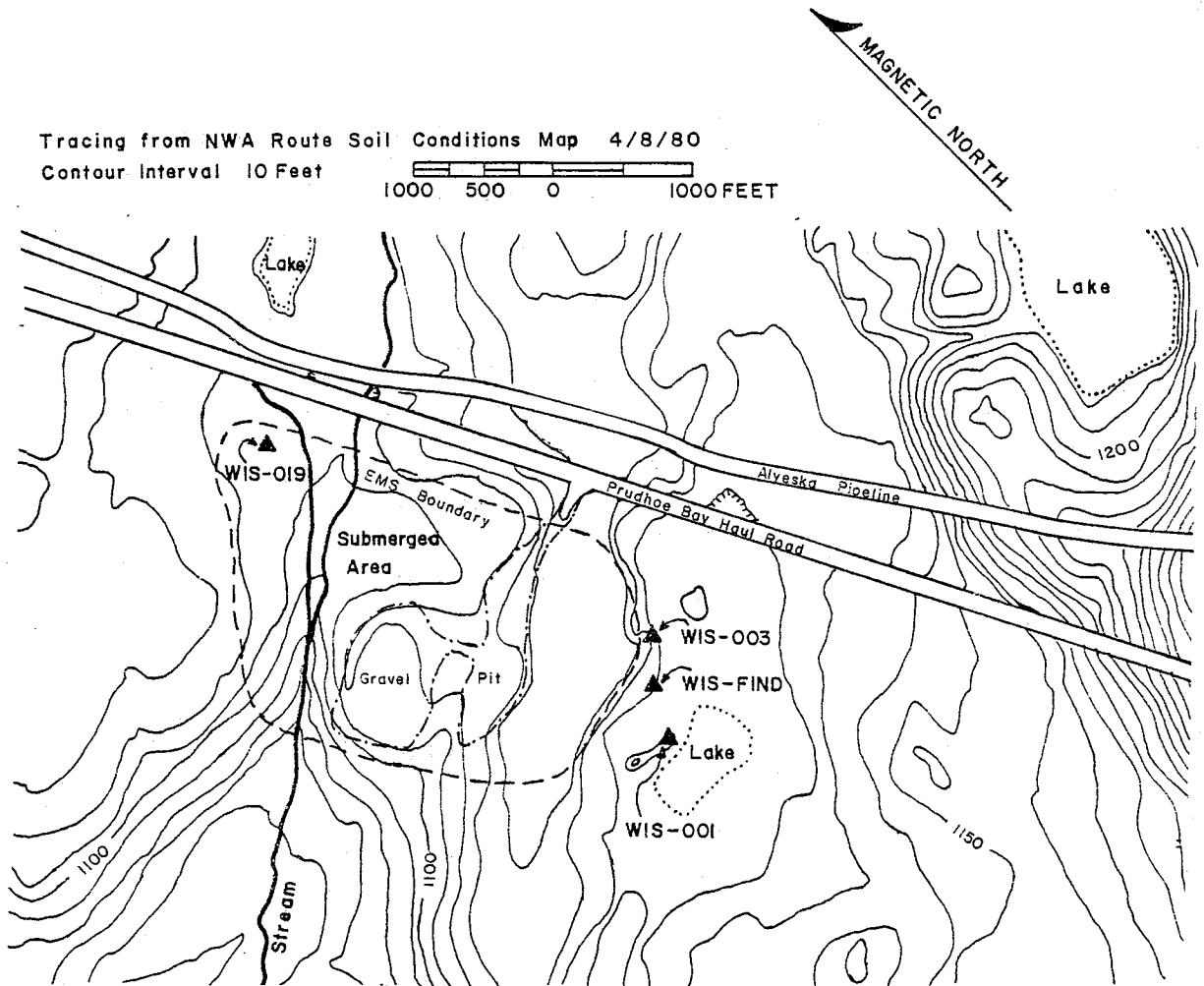


Figure 41. Location map for WIS-019, 001, 003, Find-1.



Environmental Setting

WIS-019 sits on the eastern tip of a small, rounded, 'D'-shaped moraine. A small creek flows below the moraine on the southern side, and most of the surrounding lowlands, especially south, are submerged marshes. A small lake lies 1200 ft to the east. For additional environmental information, see WIS-001.

Survey Methodology

WIS-019 had been excavated in August 1974 by Alyeska archaeologists. These excavations comprised two contiguous 2 m² pits. The site was relocated in 1980 during routine NWA archaeological survey of proposed EMS-46-1.

1980 survey consisted of intensively examining the old excavations, their backdirt areas, and the adjacent undisturbed terrain. Two 1.5 ft² test pits were placed on the northwest and southeast corners of the formerly excavated area. Due to the remaining high cultural potential testing was curtailed at this point. Only enough artifacts necessary to assess the site were collected. Testing was also conducted every 25 ft along the morainal ridge (to the west).

Site Description

WIS-019 is located on the northeastern side of a small moraine, in the northeastern part of proposed EMS-46-1, and just northeast of an existing borrow pit (Alyeska MS-96-1). The site location is elevated about 30 ft above the marshy surroundings. The small knob on which the site is located is formed by a ridge arcing to the west of a slightly lower bench (Fig. 41).

Former work at this site was conducted in August 14-15, 1974 by Michael Yarborough and E. Kinane (Cook 1977:734), and consisted of two 2 m² units being excavated. Additional cultural material was observed in 1980 in the old excavated area, and testing revealed more subsurface materials adjacent to the excavations.

The slope drops within 10 ft of the excavated area to the north, where additional material seems to occur. No cultural material was observed in any other direction, but these observations are based on limited testing in 1980 because of the felt risk in potentially disturbing extant resources. The moraine terminates 15-20 ft to the east where several Alyeska test pits were noted and considerable bedrock is exposed. The site probably does not continue much further in this direction.

Cultural materials. Yarborough and Kinane recovered sixty-four black chert flakes from their work in 1974. One of these was utilized. No provenience data is provided.

In 1980, seventeen additional artifacts were observed in the excavated exposure and backdirt. These comprised mainly chert flakes, but one was a microblade fragment. Of the two test pits placed in 1980 adjacent to the excavated area, only the northwestern one was productive (Fig. 42). A total of eighty-three waste flakes and six small bone fragments were recovered. The second (southeastern) test pit yielded no lithic materials, but did exhibit small charcoal fragments and some reddened silt suggesting scorching.

Stratigraphy. The general stratigraphic makeup of the site is consistent with normal till deposits. The northwestern test pit revealed a thin vegetative mat over 1.5 inches of grey silt, overlying 1 inch orange-brown silt laden gravels, grading downwards into predominantly gravel. Cultural materials lie mainly within the top 2 inches of the moraine surface.

Impact

The former Alyeska excavations were not backfilled and consequently have been subjected to erosion. Otherwise, the site is undisturbed. Proposed development of EMS-46-1 poses threat of direct impact of WIS-019.

Significance

Evidently, considerable undisturbed cultural materials remain at WIS-019, especially to the north of the former excavations. In light of what the site has yielded to date, there is considerable potential for gaining new information on intra-site activities. There is also a possibility that a hearth is present (to the south?) which might yield, at least, a carbon date.

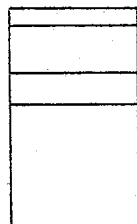
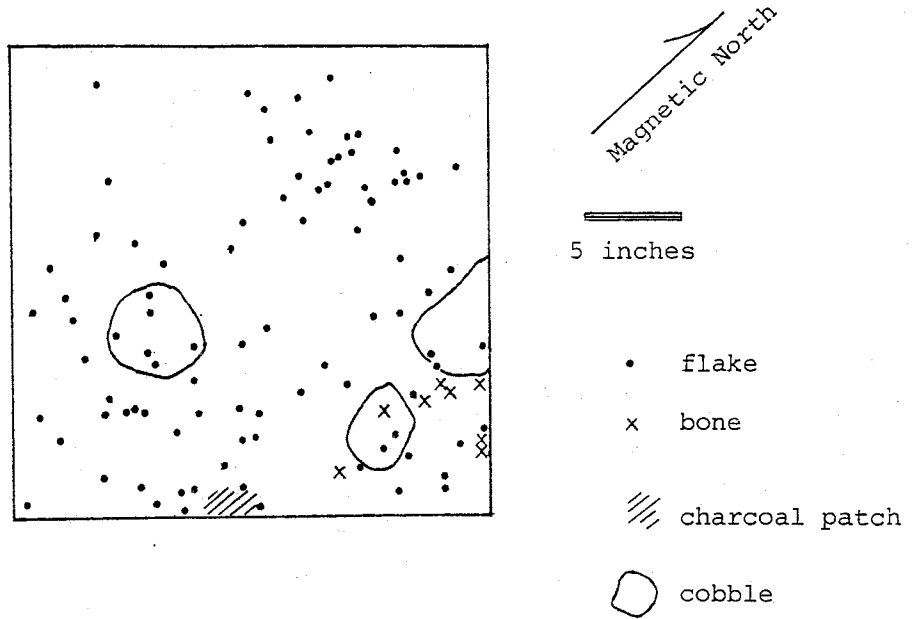
Yarborough's concluding note (in Cook 1977:734) points out that the WIS-019 classification as a "chipping station" is misleading, despite the recovered inventory, and that sites like WIS-019 were likely utilized for purposes other than manufacturing or modifying tools. As Yarborough notes, these "other" activities are not reflected by the site inventory, qualitatively or quantitatively. The conclusion that WIS-019 saw only brief site occupancy may not be justifiable. Certainly, more precise provenience data on artifact distributions at sites like WIS-019 would be profitable.

WIS-019 has regional significance as well, in relation to numerous other nearby sites (see WIS-001, 003), and, if adequate data remains, can contribute towards understanding local prehistoric land/resource utilization and settlement patterns.

Recommendations

We recommend that WIS-019 be tested to determine if it is eligible for inclusion on the National Register of Historic Places.

Figure 42. WIS-019 test pit.



1 in vegetative mat and dried, black organics.
 2 in grey silt (main culture bearing zone).
 1 in orange and brown silt with some gravel.
 gravel.

Stratigraphic format
 of eastern wall

Alaska State Site No.: WIS-003 (addendum), WIS-Find 1

WIS-003 also known as Alyeska site "K-30"

University of Alaska Museum Accession No.: WIS-003: UA80-207, UA75-210 (former)
WIS-Find 1: UA80-208

Location

| | <u>Latitude</u> | <u>Longitude</u> |
|------------|-----------------|------------------|
| WIS-003 | 67° 04' 50" | 150° 21' 29" |
| WIS-Find 1 | 67° 04' 48" | 150° 21' 28" |

Alaska Coordinate System:

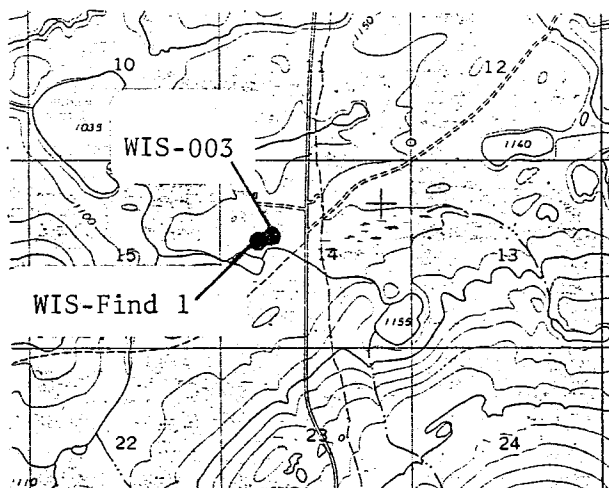
WIS-003: 4,781,400 ft N; 449,400 ft E (Zone 4);
WIS-Find 1: 4,781,000 ft N; 449,000 ft E, WIS A-1 quadrangle

Section, Township, Range:

WIS-003: NW/4 of SW/4 of SE/4 of NW/4, Sec. 14, T26N, R13W;
WIS-Find 1: SE/4 of SE/4 of SW/4 of NW/4, Sec. 14, T26N, R13W
(Fairbanks Meridian)

General: WIS-003 is found 875 ft west of the haul road, 875 ft south of Alyeska access road 96-APL/AMS-1, and 550 ft northeast of a small un-named lake. It lies just to the south of an existing borrow pit (Alyeska MS-96-1), which NWA intends to expand as EMS-46-1. The site is located on the south-central edge of this expansion (see WIS-019; Fig. 41).

WIS-Find 1 is located 300 ft west-southwest of WIS-003, 360 ft north-northeast of the small lake's northeast corner, and 900 ft south of the existing borrow pit.



Environmental Setting

For a general description of the local environmental setting, see WIS-001. WIS-003 lies on a small easterly projecting lobe on the southern side of an east-west trending moraine. The view is good and overlooks a small lake to the southwest.

Survey Methodology

WIS-003 and WIS-Find 1 were located during routine archaeological survey of proposed EMS-46-1 in 1980. WIS-003 was excavated in 1974 by Alyeska archaeologists and most of the 1980 work consisted of re-mapping the excavated areas (Fig. 43), and testing for remaining cultural materials. Most of the inspection was visual and only two subsurface test pits were placed.

Site Description

WIS-003, a prehistoric site, lies on an eastward projecting knob on the southern side of an east-west trending terminal moraine, 80 ft above the surrounding tundra. The site measures about 25 x 80 ft, and the 1980 map of excavations (Fig. 43) closely matches the map produced by Yarborough (in Cook 1977:721). Yarborough reported twenty-nine 1 m^2 units as excavated, but 1980 mapping showed thirty.

WIS-Find 1 comprises a single transparent obsidian flake near the bottom of the slope, and probably represents a float.

Cultural materials. Yarborough (in Cook 1977:720) reported a total of 94 artifacts from WIS-003, comprising a single projectile point base, a retouched flake, and 92 un-utilized and unretouched waste flakes. The majority of this material appeared concentrated in two areas, indicated in Figure 43 (after Yarborough) as Locality 2 (south central part) and "Locality 1." Locality 2 is also the apparent site of hearth (comprising a scattered array of fire cracked rock) located in 1974 (Ibid.: Fig. 44). The only vestige of this feature remaining is one such thermally altered cobble lying southeast of Locality 2.

A total of nine artifacts were noted in 1980 at WIS-003. These comprised mainly chert flakes of varied composition, and two black chert, unifacially retouched implement fragments (UA80-207-1 and 2; Fig. 5), found closely associated, 8 ft south of where the earlier projectile point was located (finds 5 and 6 in Fig. 43). A black chert utilized flake was recovered from below the surface. This scarcity of artifacts led Yarborough to conclude that the site was probably not occupied either frequently or densely.

Stratigraphy. The site is underlain by glacial till. More specifically, a discontinuous 0-4 inch brown silt with further discontinuous small pockets of grey silt and small admixed pebbles overlies culturally sterile gravels of glacio-fluvial origin.

Impact

The former excavations at WIS-003 have not been back-filled, and erosion is affecting adjacent parts of the site. The site lies on the southern edge of proposed EMS-46-1 and is therefore subject to probably direct impact during mining activities. Even if direct impact is avoided, potential exists for secondary impact from personnel and machinery. The WIS-Find 1, while collected, may possibly have associations upslope, which will be subject to the same impact.

Significance

WIS-003 has formerly been excavated. A feature (hearth) existed with an associated flake concentration at Locality 2, and Locality 1 seems to constitute another focus of activity, demonstrated by numerous flakes and most of the diagnostic materials.

Overall, WIS-003 appears to have at least two manifestations as a campsite. It remains possible that more could be learned about site activities and functions by investigating the recovered artifact distributions more carefully. On a broader scale, WIS-003 lies in a resource-rich area, in association with several other known sites (WIS-001, 002, 004, 019, 023, 029 and 030), and has considerable importance in relation to prehistoric land and resource utilization, and settlement patterns. It is doubtful that much cultural information beyond that recovered by Yarborough remains.

WIS-Find 1 probably has little intrinsic research potential and therefore little significance. Its main value lies in its composition and its possible placer potential (an unknown site upslope?).

Recommendation

WIS-003 has been previously excavated. Little additional information is believed to exist at the site. Thus, we recommend no further action.

WIS-Find #1 is isolated and without context. We tested but found no additional materials. We recommend no further action.

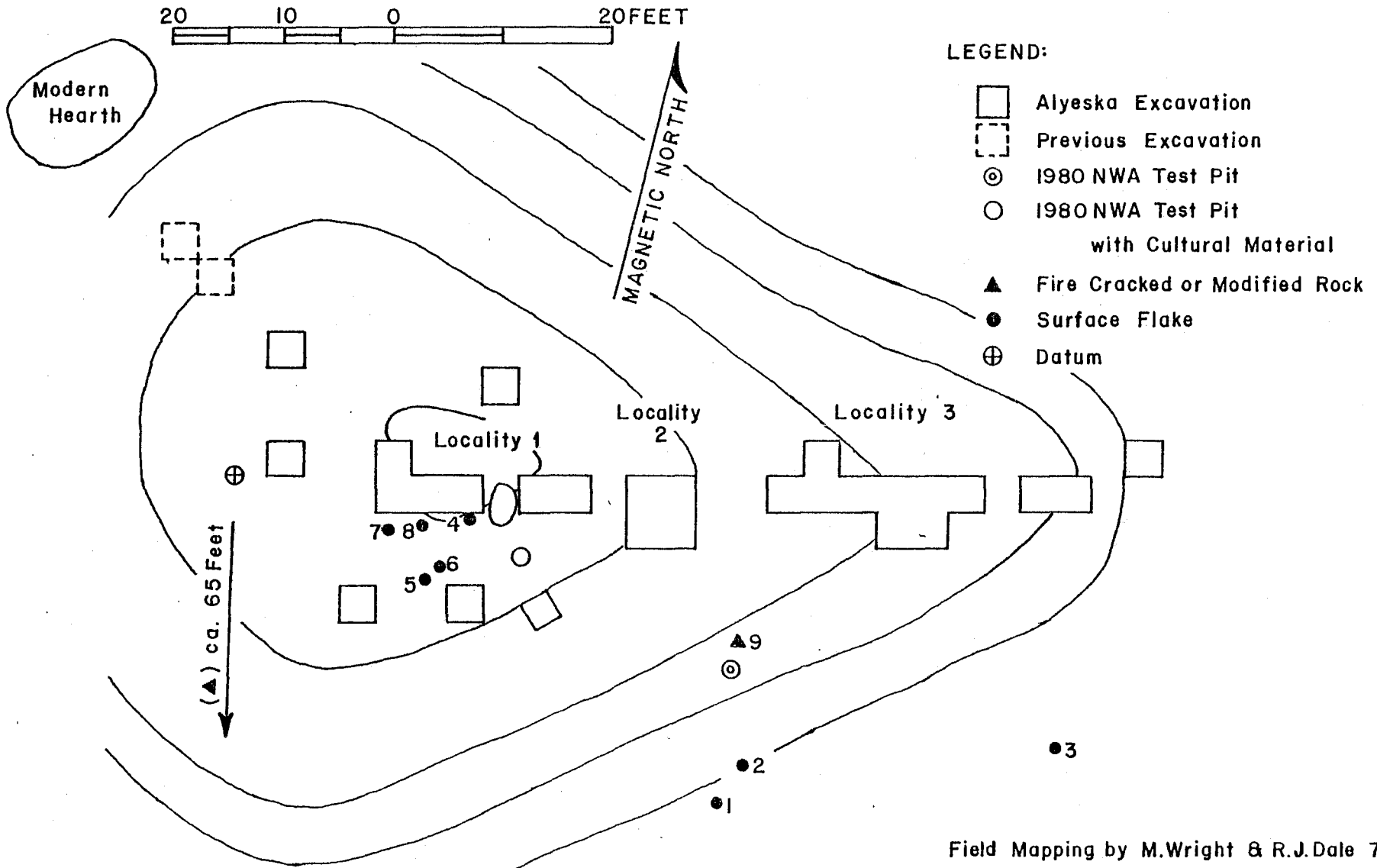
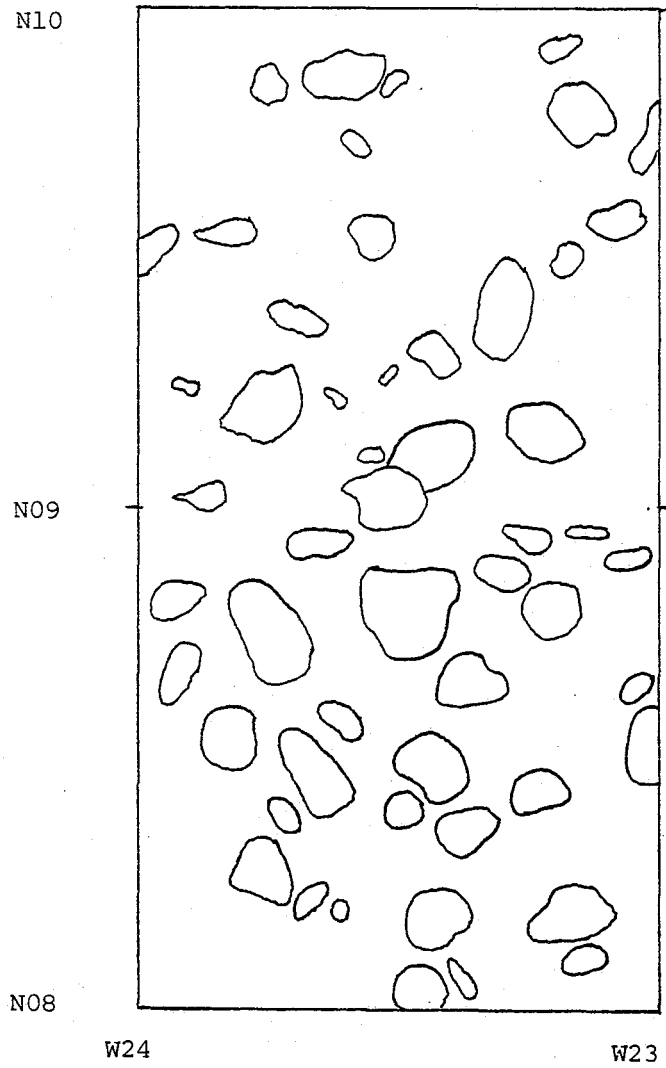


Figure 43.

Field Mapping by M.Wright & R.J.Dale 7/29/80
 Copy by R.A.Furilla 2/12/81
 Mapping by Tape & Compass
 Contour Interval 16 Inches, Adapted from
 Yarborough in (Cook (1977 fig 3-2)
 Knoll Rises 75 Feet Above Surrounding Terrain

Figure 44. WIS-003 hearth.



[after Yarborough in Cook 1977:723]

Alaska State Site No.: WIS-001 (addendum)

Also known as Alyeska Site "K-1"

University of Alaska Museum Accession No.: None

Location

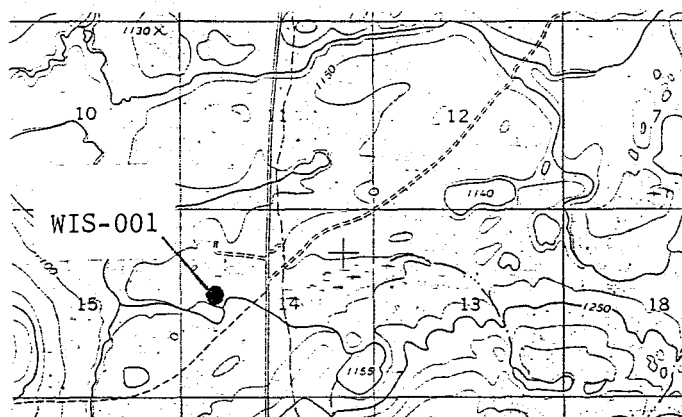
Latitude: 67° 04' 47"

Longitude: 150° 21' 39"

Alaska Coordinate System: 4,781,000 ft N; 448,700 ft E (Zone 4),
WIS A-1 quadrangle

Section, Township, Range: SW/4 of SE/4 of SW/4 of NW/4, Sec. 14,
T26N, R13W (Fairbanks Meridian)

General: WIS-001 is located 1600 ft west of the haul road, and 1150 ft south of existing Alyeska borrow pit MS-96-1; which is proposed to be expanded as EMS-46-1. The site lies on the south-central part of this expansion. A moderately small un-named lake borders the site to the south. (see WIS-019; Fig. 41).



Environmental Setting

WIS-001 and a number of other nearby sites (WIS-002, 004, 019, 023, 029, 030 and Find-1) are all set in a Quaternary moraine and kettle lake complex. Due to the numerous lakes, streams, vantage points and other numerous varied resources, the area is important archaeologically and has probably been utilized over millennia. In general, the habitat is much like that seen for WIS-006.

The site area lies between the South and Middle Forks of the Koyukuk River and their respective floodplain a few miles away. Residual bedrock hills are locally distributed. WIS-001 is situated on a small arcuate moraine overlooking a small un-named lake immediately to the south.

Three vegetational communities occur in the area. The moraine crests are well drained, and host scattered spruce and birch trees. The ground cover is mostly moss and lichen covered with scattered shrubs, open "parkland" settings are common. The sides of the moraine are more densely vegetated with preference to slope exposure. Much of the inter-moraine tracts are marshy and contain grasses, local shrub willow and alder thickets and moss. Tussocks are common. The lower-lying areas are almost completely submerged with grasses and some scrub willow as the main vegetation.

Animals observed or inferred to occur in the area comprise moose, bear, caribou, fox, wolf, Dall sheep (Cathedral Mountain area), and several species of waterfowl, wildfowl and rodents. Chapman Creek 1 mi to the north is the nearest known fish habitat.

Survey Methodology

WIS-001, a formerly excavated site, was re-located during the course of routine archaeological survey of EMS-46-1 in 1980. As the site lies outside the proposed EMS limits, it was not mapped in detail or tested subsurface. Figure 45, however, shows a rough field sketch of the site. As it was a high potential area, however, it was given intensive visual examination.

Site Description

WIS-001 lies on the crest at the western end of a small arcuate moraine, immediately north of a small lake. WIS-003 lies 750-800 ft away to the northeast. Former test pits placed by Alyeska archaeologists lie along the entire moraine crest. These were inspected but no cultural material was found. The only actual excavations were those seen at the WIS-001 locality. There are four such excavations present, covering an approximate collective area of 90 ft². The only written information on WIS-001 is by Holmes (in Cook 1970:11-12).

Cultural materials. Except for some scattered thermally altered rock, no artifacts were seen at WIS-001 in 1980. Holmes (Ibid.) briefly mentions a hearth (Fig. 46) that presumably produced the fired rocks. No charcoal was apparently associated, though it may have "leached away" or, more likely, blown away. The hearth consisted of a crude circle of large cobbles with fire shattered and stained rubble within. Several quartzite pebbles were found beneath the rubble, and a few flakes and one unidentifiable calcined bone were also associated with the hearth.

Only twelve other artifacts are described from WIS-001, and they are all comparatively diagnostic (Fig. 47). No mention is made of lithic 'waste' except for that associated with the hearth. No provenience data is available for these artifacts. Holmes' artifact classification and inventory is as follows:

| | | | |
|---------------|---|-------------------|---|
| flake cores | 2 | projectile points | 2 |
| scrapers | 2 | microblades | 2 |
| gravers | 2 | burins | 1 |
| notched piece | 1 | | |

It may be of some consequence that at least seven of these artifacts are composed of obsidian.

Stratigraphy. The moraine displays a typical till fabric and composition. There is little soil development on the surface.

Impact

Except for the former archaeological testing and excavations, the moraine is undisturbed. WIS-001 lies 500 ft away from the proposed boundary of EMS-46-1, and is therefore not threatened with direct impact. There is, however, some risk of impact from construction personnel and others who may wander around the small lake, e.g. during work breaks.

Significance

WIS-001 does not appear to have been as large or complex a site as others in the area. Judging from what is presently known of the artifact assemblage, certainly more activities transpired than tool preparation; the site seems function-specific in a number of ways. Any site with extant, undisturbed materials can potentially reveal much about prehistoric land and resource utilization, settlement patterns, and both inter- and intra-site activities.

Recommendation

WIS-001 contains additional archaeological information but lies well outside the proposed project area. We recommend no further action.

FLUOR

4680-9-KU-0-84

Figure 45. WIS-001 site map.

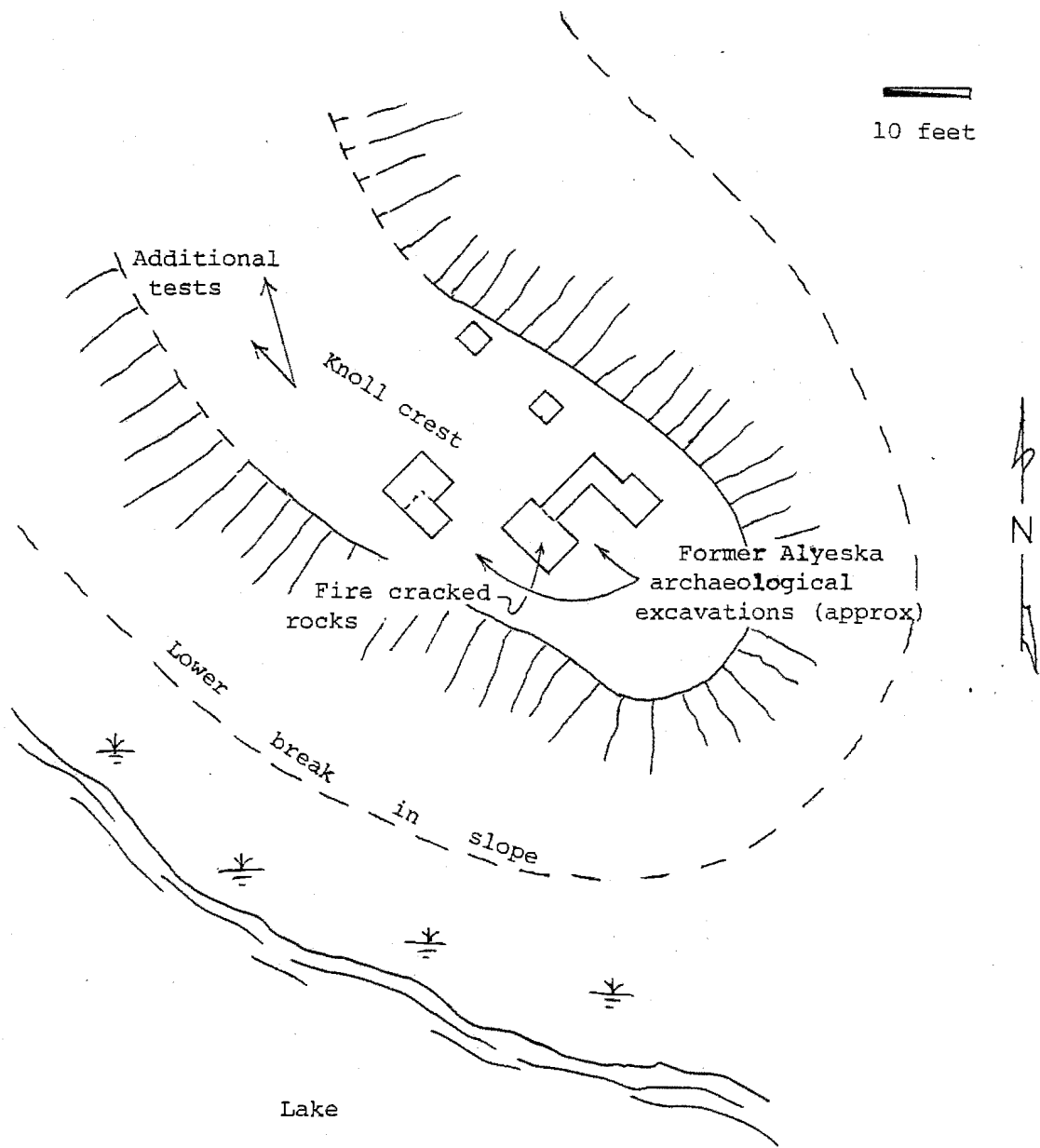


Figure 46. WIS-001 hearth.

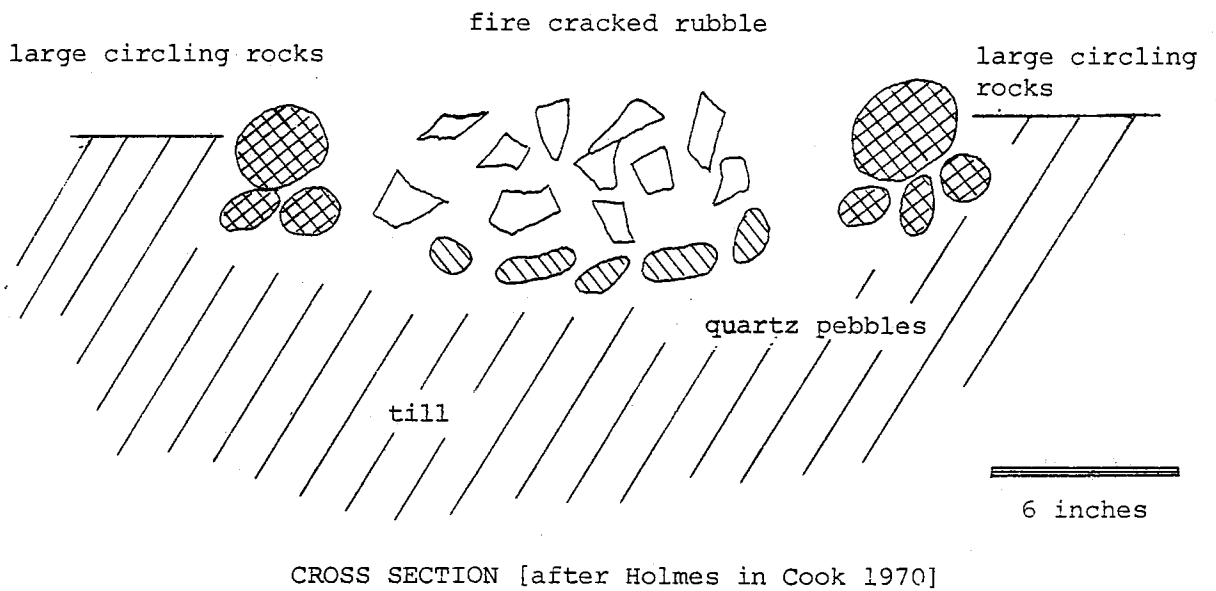
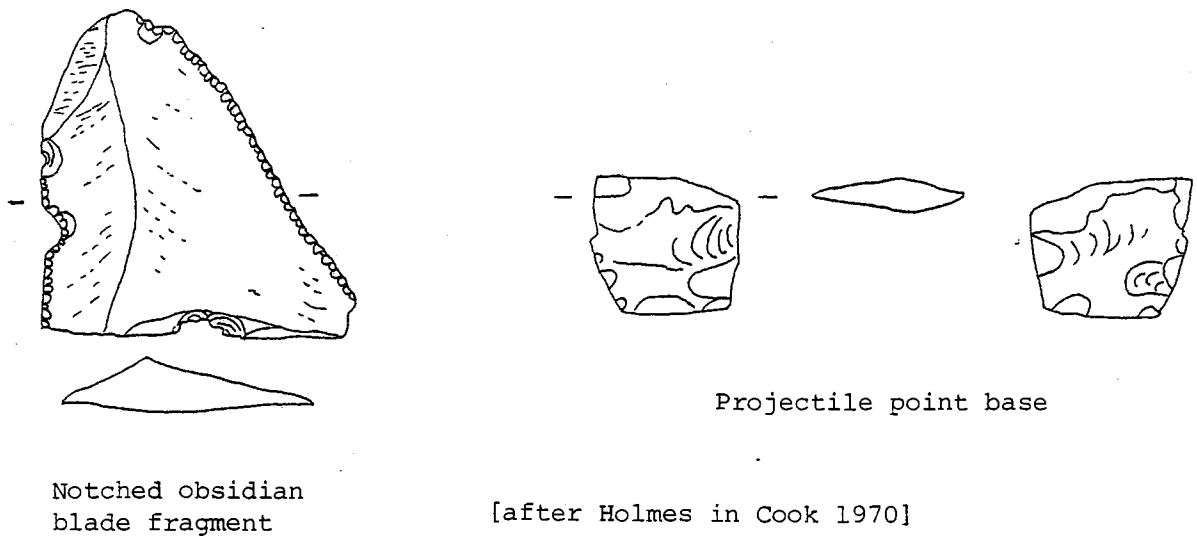


Figure 47. WIS-001 artifacts.



Alaska State Site No.: BET-055 (addendum)

University of Alaska Museum Accession No.: UA80-228; UA75-153 (former)

Location

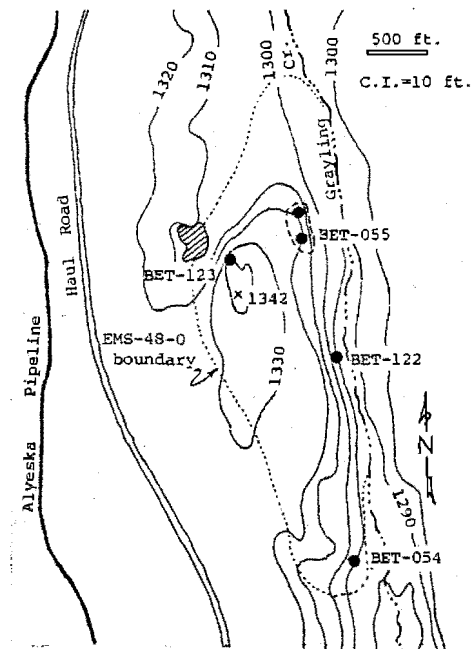
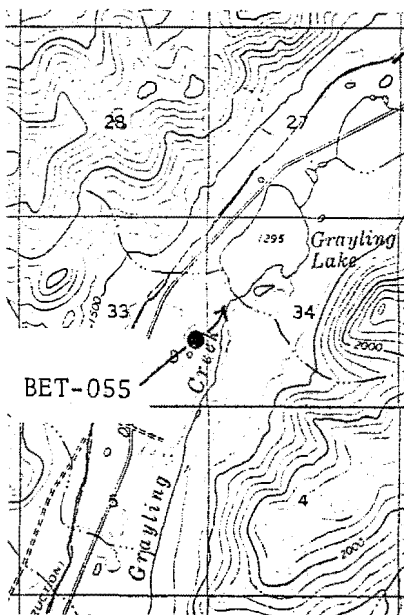
Latitude: 66° 56' 50"

Longitude: 150° 24' 10"

Alaska Coordinate System: 4,732,500 ft N; 442,300 ft E (Zone 4),
BET D-1 quadrangle

Section, Township, Range: NE/4 of NE/4 of SE/4 of SE/4, Sec. 33,
T25N, R13W (Fairbanks Meridian)

General: The site is located 3120 ft north-northeast of existing Alyeska borrow pit MS-93-3, 2000 ft south-southwest of Grayling Lake; and 1750 ft southeast of the haul road. It also lies within the northeastern limits of proposed EMS-48-0. EMS-48-0 Borehole D lies within 15 ft west of the site location.



Data from NWA Route Soil Conditions map, 1980
No. 4680-13-00-B-G-048.

Environmental Setting

BET-055 is situated on a terrace at the northeastern corner of a kame knoll. Grayling Creek lies 270 ft east of the site. From this locality a good view is afforded north and east. The area is generally resource-rich. Animal life seems plentiful, comprising notably moose, hare, bear and squirrels, and many well-developed game trails cross the kame. Nearby Grayling Lake and Grayling Creek also contain fish.

The kame is vegetated with tall, scattered spruce trees, and some willow and alder. The ground cover comprises a thick lichenous mat, moss, labrador tea and blueberries.

Survey Methodology

BET-055 was located during routine archaeological survey of proposed EMS-48-0 in 1980. This site was reported and tested by Gal in 1974 (in Cook 1976:94). Gal's single productive test pit was re-located, and 1980 testing centered around this and along the eastern slope of the terrace. A total of twenty-five test pits were placed, measuring roughly 1 ft² (Fig. 48) and exploratory holes (unmapped) were placed in addition to these. All test pits, artifacts and other cultural features, along with basic topographic features, were mapped and described.

Site Description

BET-055 is one of several 'kame sites' in the Grayling Lake/Jim River area, evidently located strategically so as to provide shelter, vantage and access to resources. The verified part of the site is situated on a gently westward-sloping bench on the northeastern side of a prominent kame knoll. The limits of the site are poorly defined but probably extend at least from the northeastern tip of the 'terrace' to 120 ft south, along the eastern side. All of the proven cultural materials lie along the gently sloping area immediately below the flat bench (Fig. 48).

As noted, the site was reported and subsequently tested by Gal in 1974 (Gal in Cook 1976:94). Gal's single productive pit from this period was re-located on the northern tip of the kame (Fig. 48), and measures 1 x 1.5 ft.

Cultural materials. Gal (Ibid.) reported finding some obsidian flakes and fragments of charred caribou bone from the test pit, ostensibly the one described above. In addition, a single grey chert flake was found 125 ft to the south, in a game trail.

Testing in 1980 focused, in part, upon enlarging Gal's pit and examining the old back dirt. In the process, fifteen associated small, transparent obsidian flakes, one black chert microblade, and three chert flakes were recovered. Most of this material was found below surface.

Another significant feature was located 100 ft to the south. Here a hearth was located by testing 1.5 inches below the surface (Figs. 48, 49). This feature consisted of an arcuate configuration of cobbles about 1.5 ft in diameter, with average cobble diameters measuring 4 inches. A greasy stain, caused possibly by decomposing bone or bone residue, was found outside and immediately adjacent to the hearth on its southern side. The stain had a thickness of 1.5 inches. The hearth stones were observed to lie on the original kame surface as their bottoms retain lichen residue. In addition, five chert waste flakes were found in association with the hearth and stain (Fig. 49). This feature was minimally disturbed, described and re-buried for future study.

Stratigraphy. The ground surficial stratigraphy of BET-055 consists of 1-2.5 inch thick dark brown humic layer overlying red-brown silt with admixed 'gravel,' grading downwards into normal till deposits. In the vicinity of Gal's test pit, the format was similar but the silt/gravel unit was orange in tone. In the locality of the hearth a 1 inch grey-brown silt overlies reddish-brown silt with admixed 'gravel,' grading downward into typical till deposits. In the hearth, proper, the matrix was dark brown-black, and had a greasy, charcoaled texture. Tiny admixed pebbles were included. In all cases, the cultural remains seem to lie beneath the surficial humic mat, on top the original kame deposits; the reddish-brown silts with admixed gravel appear culturally sterile.

Impact

Except for Gal's testing and that of 1980, BET-055 is undisturbed. However, the site is directly threatened with impact through exploitation of proposed EMS-48-0.

Significance

Despite the small artifact inventory recovered from BET-055, two discrete features, both sub-surficially occurring, suggest that the site may have additional potentially valuable cultural resources. The hearth suggests a camp function, at least, and the associated obsidian flake scatter suggests another discrete activity (flaking) focus.

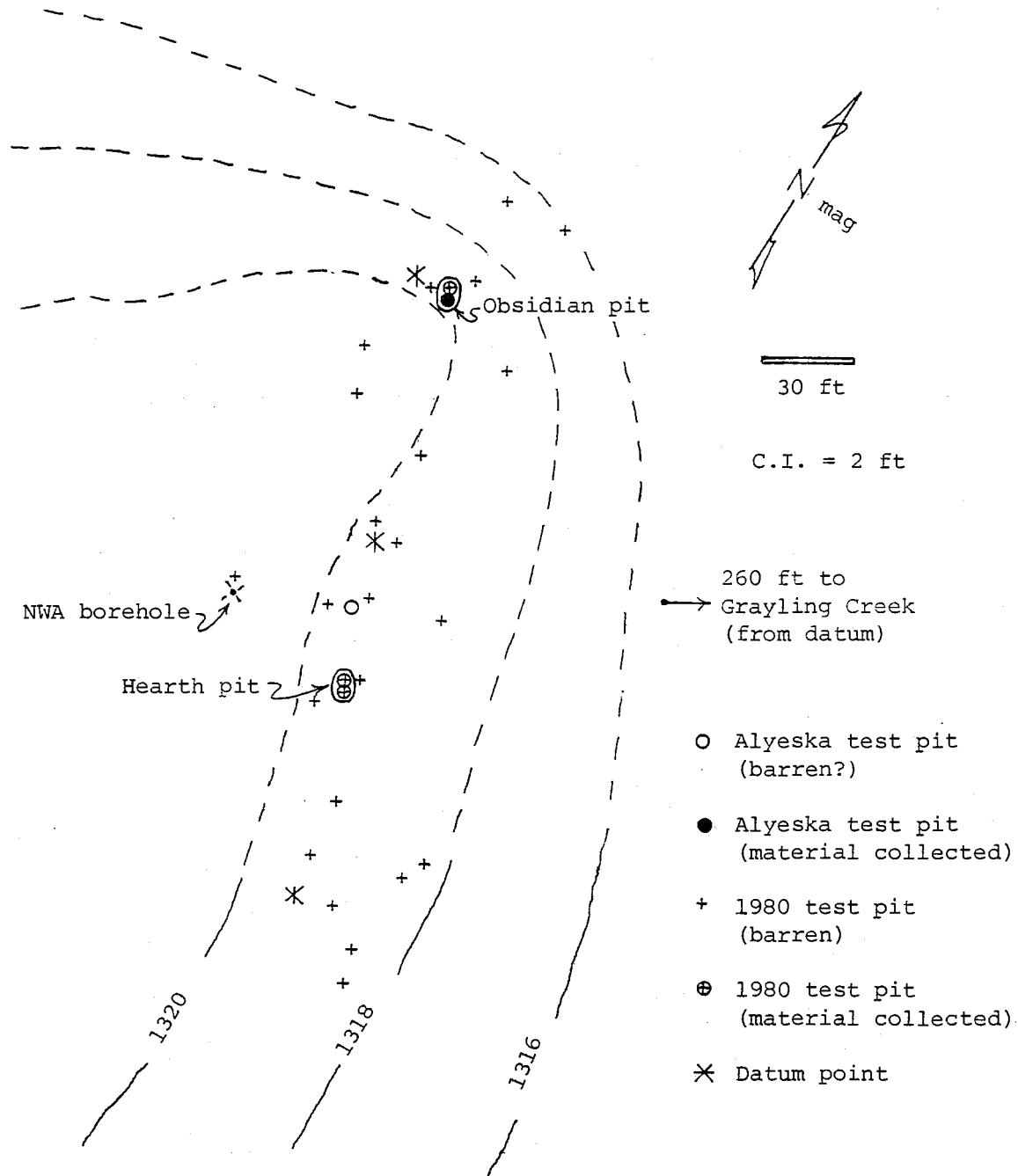
Gal (in Cook 1976:94) reported bone from BET-055 (which in light of the acid soils, would not endure for long), and deduced the site to be historic or proto-historic in age. No bone was observed in 1980, however, but its presence enhances the probability of multiple activities.

The Grayling Lake area is a potentially important prehistoric archaeological locus, and as many known sites in the area have been poorly documented, any new materials can be valuable in understanding prehistoric land/resource use, settlement patterns and task-specific activities.

Recommendation

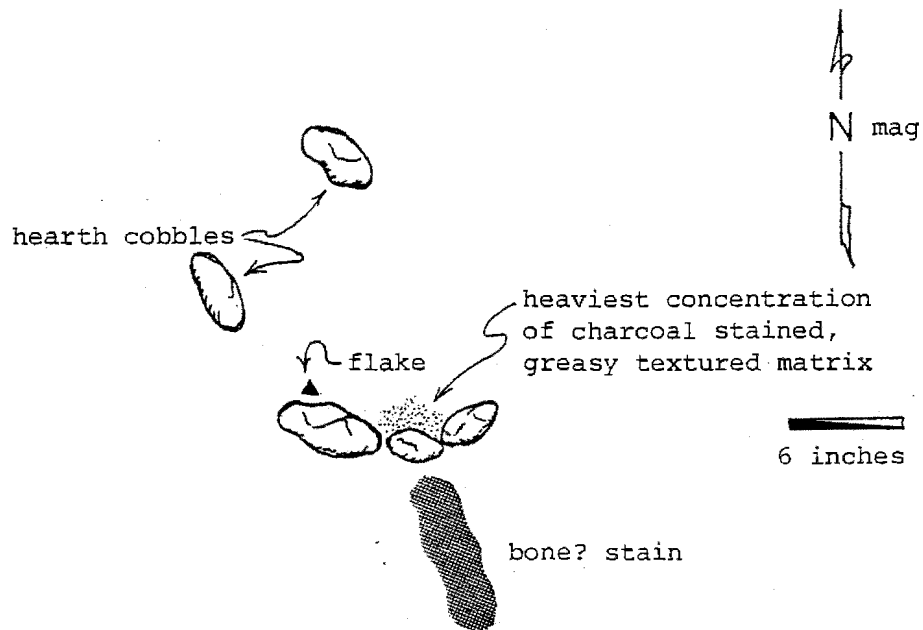
BET-055 contains archaeological information which is directly impacted by proposed project activities. We recommend a request for determination of eligibility.

Figure 48. BET-055 site map.



Mapping August 12, 1980 by:
 J. Jordan, R. Fox, T. Villa,
 J. Thorsen, L. Litwinionek

Figure 49. BET-055 hearth plan.



depth to matrix with charcoal staining = 2.5 in.

depth to top of hearth cobbles = 1 in.

Alaska State Site No.: BET-123

University of Alaska Museum Accession No.: UA80-227

Location

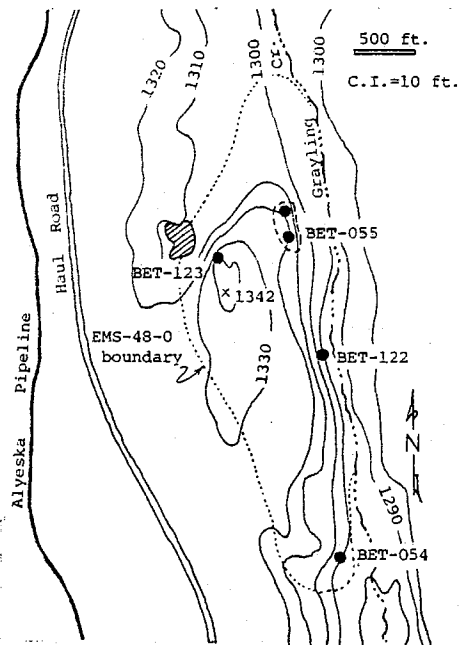
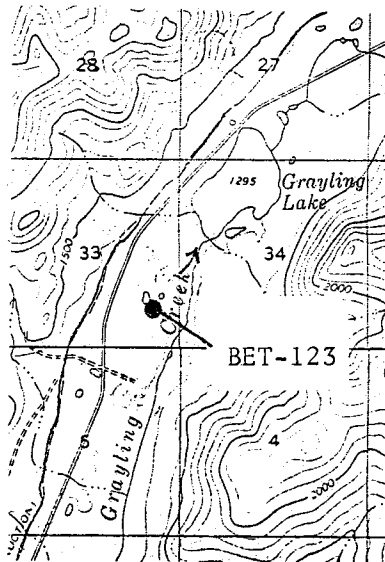
Latitude: 66° 56' 45"

Longitude: 150° 24' 10"

Alaska Coordinate System: 4,732,000 ft N; 442,000 ft E (Zone 4),
BET D-1 quadrangle

Section, Township, Range: NE/4 of NW/4 of SE/4 of SE/4, Sec. 33,
T25N, R13W (Fairbanks Meridian)

General: BET-123 lies 1100 ft west of Grayling Creek, and 200 ft west-southwest of a small un-named lake, 2200 ft north-northeast of Alyeska access road 93-AMS-2A, and 2500 ft south-southeast of Grayling Lake. It also lies within the limits of proposed EMS-48-0, 150 ft from the edge in the northeastern sector, 20 ft northeast of Borehole 'C.'



Data from NWA-Route Soil Conditions map, 1980
No. 4680-13-00-B-G-048.

Environmental Setting

BET-123 is situated on a kame terrace in a generally resource-rich area. The site overlooks a small lake to the west, and the view is also good to the north. Grayling Lake and Grayling Creek are nearby, to the north and east, respectively.

Well-developed game trails near the site attest to animal presence, particularly moose and hare. Bear is also present in the area, and fish occur in the local streams and lakes.

The kame surface is covered with lichen, blueberries, crowberries. Tall scattered spruce, scattered willow and alder are present as well.

Survey Methodology

The site was located during routine archaeological reconnaissance of proposed EMS-48-0 in 1980. It was intensively examined visually as well as by sub-surface testing. Test pits average 1 ft² and most were taken down to about 6 inches, where unweathered till occurred. The site was mapped and all test pits were re-filled.

Site Description

This is one of many 'kame sites' in the Grayling Lake/Jim River area, evidently strategically located so as to provide shelter, vantage and access to resources.

The limits of the site are uncertain, but an area of 19 x 25 ft was tested along the northwestern edge, within which two artifacts were recovered (Fig. 50).

Cultural materials. Only two artifacts were recovered, a tabular flake (possibly natural) and a black chert unifacially flaked and edgeretouched/utilized implement fragment (UA80-227-1; Fig. 5). This is probably a scraper.

Stratigraphy. The generalized stratigraphy of BET-123 consists of a thin, lichenous vegetative mat overlying brown-red silt with admixed pebbles, grading downwards into normal till deposits.

Impact

The site was found to be in an undisturbed state in 1980. It is, however, threatened by direct impact with exploitation of proposed EMS-48-0. The channel of Grayling Creek, incidentally, also appears threatened by planned mining activities.

Significance

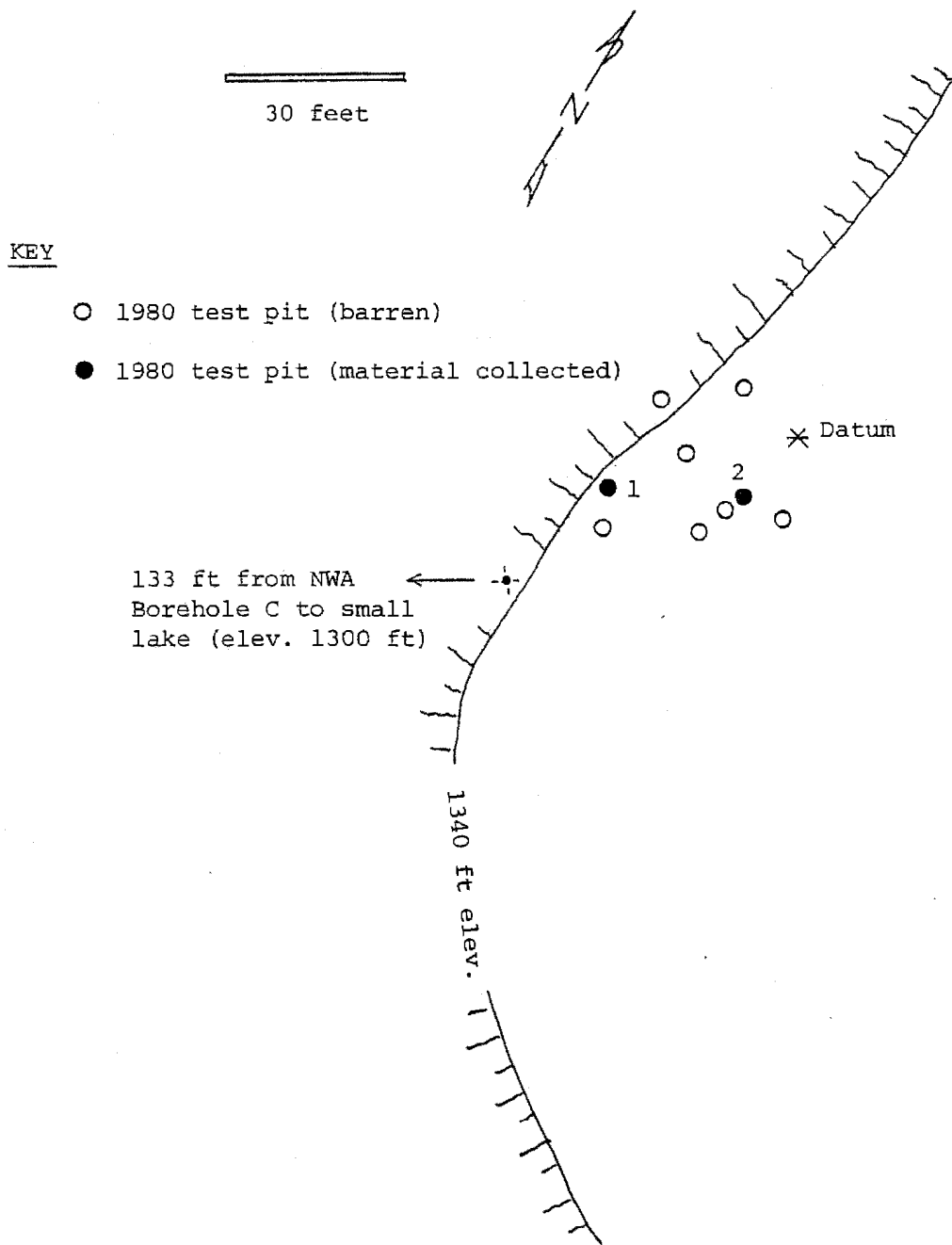
Due to the small artifact inventory observed in 1980, it is difficult to assess site function or significance. However, this site locality is analagous to other known sites in the area, and may still harbor undetected materials below the surface or at least elsewhere on the kame.

The Grayling Lake area is a potentially important prehistoric locus, and as many of the known sites in the area have been poorly documented, any new materials can potentially be valuable in understanding prehistoric land/resource use, settlement patterns, and especially task-specific activities.

Recommendation

BET-123 has insufficient information to permit an assessment. It is directly impacted by proposed project activities. We recommend further testing.

Figure 50. BET-123 site map.



Mapping August 12, 1980 by:
 J. Jordan, R. Fox, T. Villa
 J. Thorsen, L. Litwinionek

Alaska State Site No.: BET-122

University of Alaska Museum Accession No.: UA80-229

Location

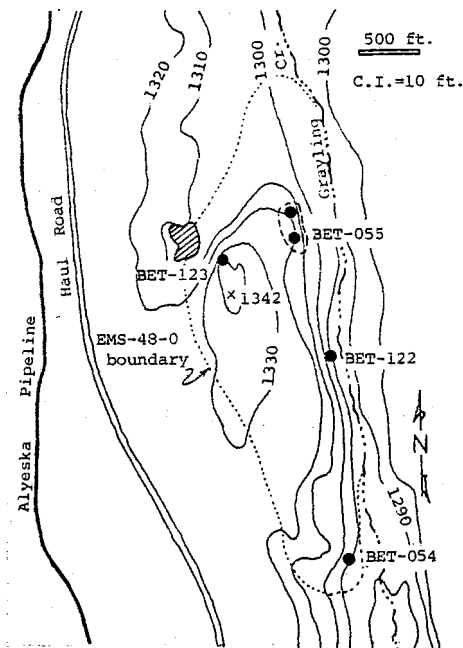
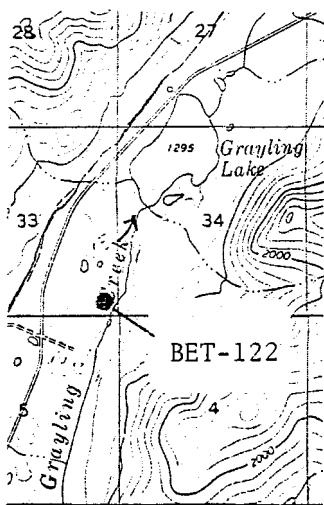
Latitude: 66° 56' 32"

Longitude: 150° 24' 10"

Alaska Coordinate System: 4,730,900 ft N; 442,000 ft E (Zone 4),
BET D-1 quadrangle

Section, Township, Range: SE/4 of SE/4 of SE/4, Sec. 33, T25N, R13W
(Fairbanks Meridian)

General: The site is located 1130 ft north-northeast of existing Alyeska borrow pit MS-93-3, 2900 ft south-southwest of Grayling Lake (outlet channel) and about 250 ft west of Grayling Creek. It also lies within the east-central limits of proposed EMS-48-0, 130 ft northeast of Borehole B.



Data from NWA Route Soil Conditions map, 1980
No. 4680-13-00-B-G-048.

Environmental Setting

BET-122 is situated on the eastern face of a kame terrace above Grayling Creek. The view to the north and east is good, and like other similarly located sites in the area it lies in a resource-rich environment. Grayling Lake and other small lakes, and streams are nearby; animal life is abundant. Moose, hare and bear are evident, and fish are plentiful in the local lakes and streams.

The kame is vegetated with scattered tall spruce trees, and an understory of labrador tea, cranberries, crowberries, moss and lichen.

Survey Methodology

The site was located during routine NWA archaeological survey of proposed EMS-48-0 in 1980. Due to limited time, the site was only nominally tested (twelve test pits measuring 1 ft²) in the vicinity of older, existing (Alyeska) test pits. Current testing and visual survey, however, established site presence, but no cultural concentrations or site limits were determined. The site was mapped, and all test pits were re-filled.

Site Description

BET-122 is one of several 'kame sites' in the Grayling Lake/Jim River area, evidently strategically located so as to provide shelter, vantage and access to resources. The site limits were not determined, nor were any discrete concentrations of cultural materials found. Testing, however, centered around eight old located archaeological test pits along the terrace edge, an area of 2000 ft² (Fig. 51). There is no available information on the results of this earlier testing.

Cultural materials. Only two artifact were found at BET-122. One was a lateral end fragment of a black chert implement (UA80-229-1A, B, C; Fig. 5), found in three associated fragments (test pit-1). The lateral margin shows tiny marginal utilization scars, and an adjacent 'graver bit' appears to be formed through retouch. The other artifact was a flake found in the backdirt of a former test pit.

Stratigraphy. The prevailing matrix is red-brown silt with admixed 'gravel,' grading into typical till deposits.

Impact

Except for the former test pits, BET-122 appears to be in fairly good condition. The site is threatened with direct impact from exploitation of proposed EMS-48-0.

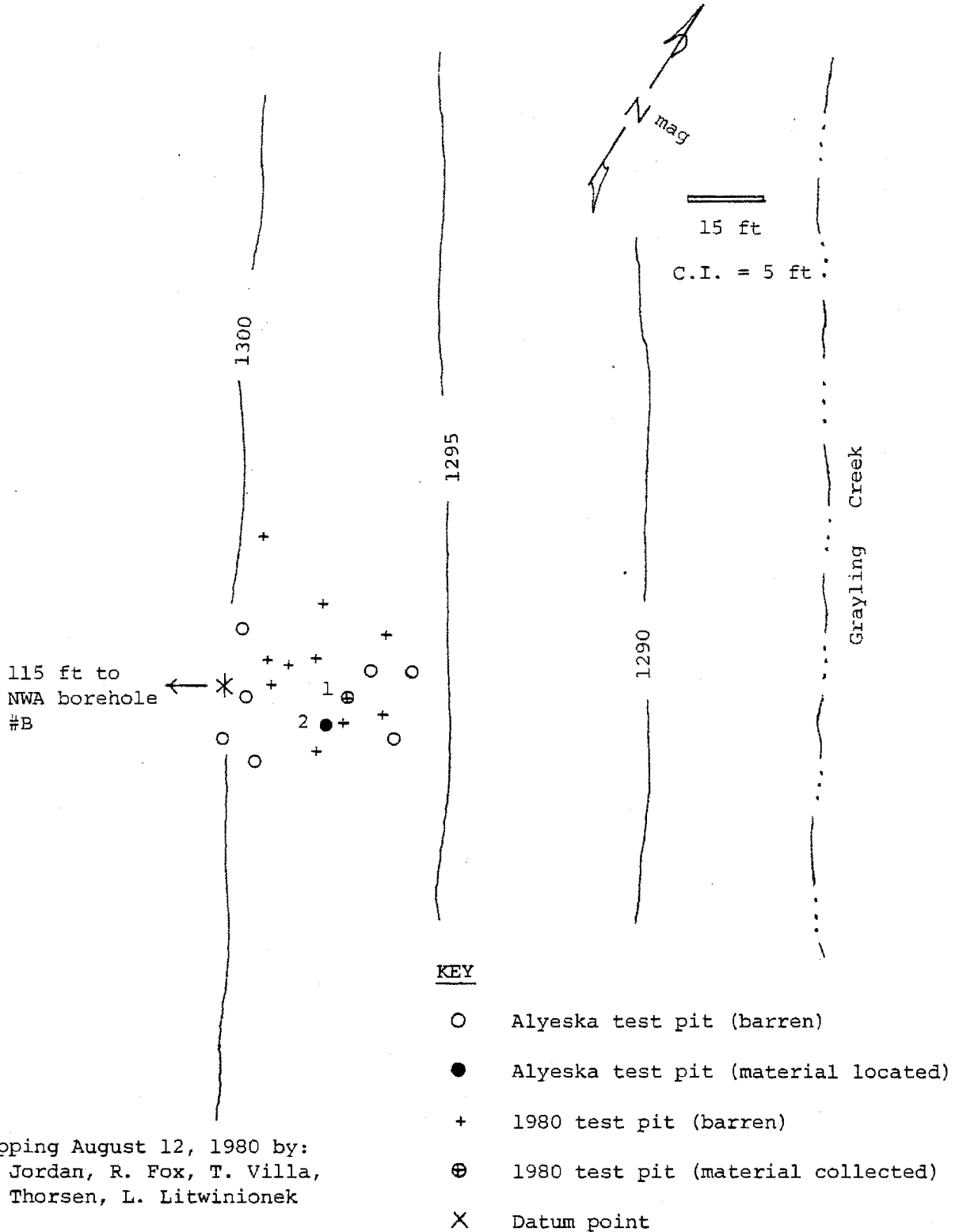
Significance

Due to the small artifact inventory observed in 1980, it is difficult to assess site function or significance. However, this site locality is analogous to other known sites in the area, and may still contain undetected subsurface cultural materials. The other portions of the kame also have high cultural potential. The Grayling Lake area is very likely an important prehistoric locus, and as many of the known sites in the area have been poorly documented, any new materials can potentially provide valuable information on prehistoric land and resource use, settlement patterns and, especially, task-specific activities.

Recommendations

BET-122 has data too limited for an assessment. It is directly impacted by proposed project activities. We recommend further testing be undertaken.

Figure 51. BET-122 site map.



Mapping August 12, 1980 by:
J. Jordan, R. Fox, T. Villa,
J. Thorsen, L. Litwinionek

Alaska State Site No.: BET-054 (addendum)

University of Alaska Accession No.: None current; UA75-173 (former)

Location

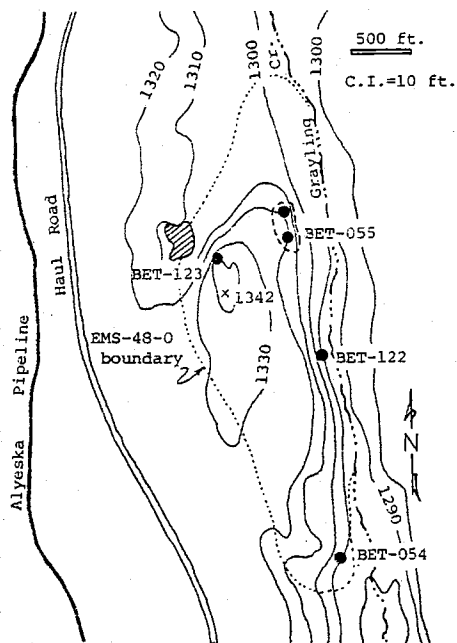
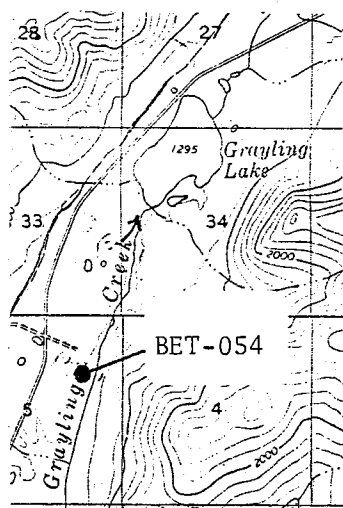
Latitude: 66° 56' 17"

Longitude: 150° 24' 45"

Alaska Coordinate System: 4,729,250 ft N; 441,250 ft E (Zone 4),
BET D-1 quadrangle

Section, Township, Range: NW/4 of SE/4 of NE/4, Sec. 5, T24N, R31W
(Fairbanks Meridian)

General: The site lies 150 ft due south of southeastern corner of existing Alyeska borrow pit MS-93-3, barely within proposed EMS-48-0, at its southeastern tip. Grayling Creek lies 200 ft to the east, and the haul road is 1220 ft to the west.



Data from NWA Route Soil Conditions map, 1980
No. 4680-13-00-B-G-048.

Environmental Setting

The site is set on a small, low relief knoll which slopes gently to the east, and is terraced at the bottom by an earlier channel of Grayling Creek. Grayling Lake lies about 1 mi to the north, and the Jim River is 1.5 mi to the south. The view from the site, however, is relatively poor.

The general floral environment consists of moderately dense but discontinuous spruce trees, with willow, alder, berries, lichens and mosses. The on-site trees have been cut, gathered and burned, and fireweed abounds. Moss somewhat fills the old excavations (see below).

No animal life was observed directly, but there is evidence for moose (well-developed game trails). Fish occur in both the Jim River and Grayling Lake, and bear sign was seen. In general, the region appears to be resource-rich.

Survey Methodology

The site was located during routine NWA archaeological survey on proposed EMS-48-0 in 1980. Former Alyeska archaeological excavations were noted and inspected. In addition, several small subsurface tests were placed around the site. These were subsequently re-filled. The site was photographed and mapped. No collections were made.

Site Description

This site, inferred to be BET-054, covers an area of 35 x 55 ft on a gently east-sloping terrace remnant. The site was excavated in 1974 by Gal and Yarborough (Gal in Cook 1976:97) and vestiges of the old excavations are still apparent (Fig. 52), covering about 49 m². Gal (Ibid.) reported fifteen 2 m units being placed (60 m²?). The ground is highly disturbed and filled with rocks, and the excavations had not been backfilled. An area occupied with burned slash (trees) and large cobbles is located on the southern margin of the excavations, in the approximate center of the terrace. This is presumably the result of site clearing preparatory to excavation.

Subsurface tests revealed no cultural materials, but eight artifacts (all flakes) were found in the old backdirt piles, and in and around the excavations. None were collected, and all are probably out of context.

Gal (Ibid.) reported two "knife bifaces," two large "side-scrapers" and a number of utilized flakes as "the only purposeful tools recovered" from the site with the remaining inventory comprising waste flakes. Based on these data, he concluded the site to be task-specific, namely a "kill site." No organic remains (bones) were reported.

Gal also reported that raw lithic materials were collected locally from Grayling Creek and nearby till deposits. The lack of diagnostic artifacts (those showing classifiable attributes) apparently made it impossible to determine either age or cultural affiliation for this site, although the side scrapers were observed to be similar to those at site BET-042, 1.2 mi to the south. In the filed Alaska Heritage Resource card, BET-054 is defined as a "lookout small campsite; few artifacts." See also Gal Alyeska Notes 74/10-11; 74-5/19-20.

Stratigraphy. 1980 observations revealed a basic stratigraphic format of a thin vegetative mat overlying red-brown silt with admixed gravels.

Impact

BET-054 appears to be threatened with direct impact by exploitation of proposed EMS-48-0. Previous Alyeska archaeological excavations occupy a major portion of the site, and have not been backfilled. Consequently, materials are being progressively eroded.

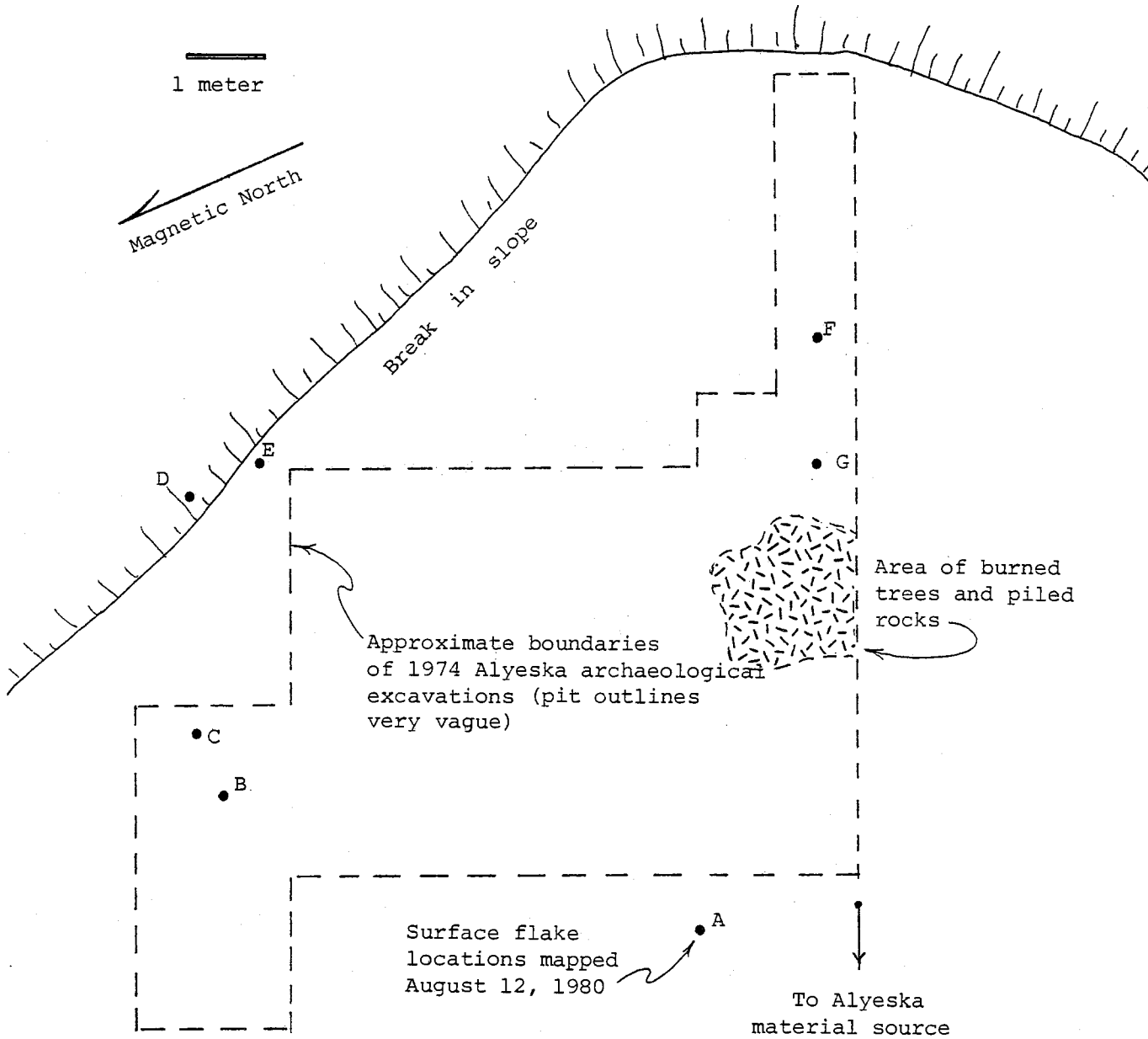
Significance

Based on available data it is not possible to assess site significance. Testing in 1980 revealed that some cultural materials are still extant, but have a disturbed context. The site may still have some remaining value in conjunction with other sites in the area, towards understanding prehistoric land use patterns and culture history of the Grayling Lake/Jim River area. However, it is doubtful that further excavations would yield additional information.

Recommendation

BET-054 did not reveal additional information in testing there. We recommend no further action.

Figure 52. BET-054 site map.



Mapping August 12, 1980 by:
L. Litwinionek, J. Jordan,
T. Villa, R Fox, J. Thorsen

Alaska State Site No.: BET-042

Also known as Alyeska site no. "S4-28"

University of Alaska Museum Accession No.: UA80-231, UA74-44 (former)

Location

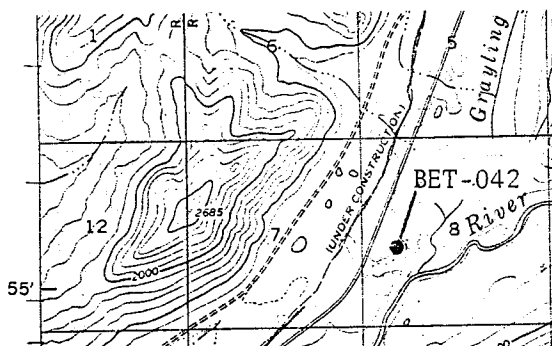
Latitude: 66° 55' 10"

Longitude: 150° 25' 45"

Alaska Coordinate System: 4,722,500 ft N; 438,300 ft E (Zone 4),
BET D-1 quadrangle

Section, Township, Range: NW/4 of SE/4 of NW/4, Sec 8, T24N, R13W
(Fairbanks Meridian)

General: BET-042 lies 1000 ft southeast of the haul road and 1100 ft west-northwest of the confluence of Grayling Creek and the Jim River. The site lies very close to the eastern border of proposed EMS-48-2A.



Environmental Setting

BET-042 is situated on top a flat-topped kame knoll near the Jim River (1000 ft to the southeast). An ephemeral stream channel runs along the southeastern base of the knoll. Grayling Lake lies approximately 2.5 mi to the north. The view afforded from the site is fairly good.

Birch and spruce trees occur in a scattered manner throughout the area. Grasses, moss, berries, fireweed, shrub willow and scrub alder are also present. Animals or their sign include moose, bear, squirrels and hare. Fish are present in the Jim River.

Survey Methodology

The site was encountered during routine archaeological survey of proposed EMS-48-2A in 1980. Intensive visual reconnaissance was conducted (five persons), and numerous test pits were placed. A representative collection of artifacts was taken, and a map was prepared.

Site Description

BET-042 is set on a southeastern projection of a kame terrace, and covers minimally 150 x 180 ft (Fig. 53). The site was excavated by Michael Yarborough in 1974 (Alyeska Archaeology Project), and is briefly discussed in Cook (1976:78-99). Observations in 1980 showed these old excavations in a disturbed state, numerous test pits and stakes extending over an area 125 x 135 ft. Substantial amounts of cultural material were seen in this disturbed area.

According to Yarborough (Cook 1976:98-99), BET-042 excavations consisted of forty-six 2 inch excavation units. Evidently the site had two concentrations of material, one of which centered around a hearth. No undisturbed materials were found in 1980.

Cultural materials. Several flakes of chert and obsidian were observed lying within the previously disturbed area. Six of these were collected along with a lanceolate projectile point base of obsidian (UA80-231-3; Figs. 53, 5).

The report in Cook (1976:98-99) indicates side and end scrapers recovered with "knife" bifaces, and thirteen lanceolate, triangular and side notched projectile points recovered from one locality of the site. Another locality, centered around a hearth, yielded two microblade cores, ten microblades and a burin.

Stratigraphy. The basic surficial stratigraphy comprises a 1.5 inch vegetative mat overlying 1.5 inches brown humic sandy silt with admixed small pebbles, overlying tan to reddish brown sandy silt with 'gravel.'

Impact

The site has previously been excavated. The excavated area is being affected by erosion. BET-042 lies close to the edge of EMS-48-2A and is subject to indirect impact.

Significance

Yarborough (Cook 1976:99), on the basis of the recovered assemblage, suggests BET-042 was used as a base camp for hunters. Overall, the assemblage evidently was most like that of the Itkillik complex at Onion Portage on the Kobuk River dated to A.D. 800. One radiocarbon

date of 835 ± 205 B.P. was obtained from a bone specimen from the hearth which is not too far removed from the original estimate of antiquity (Cook 1977:64).

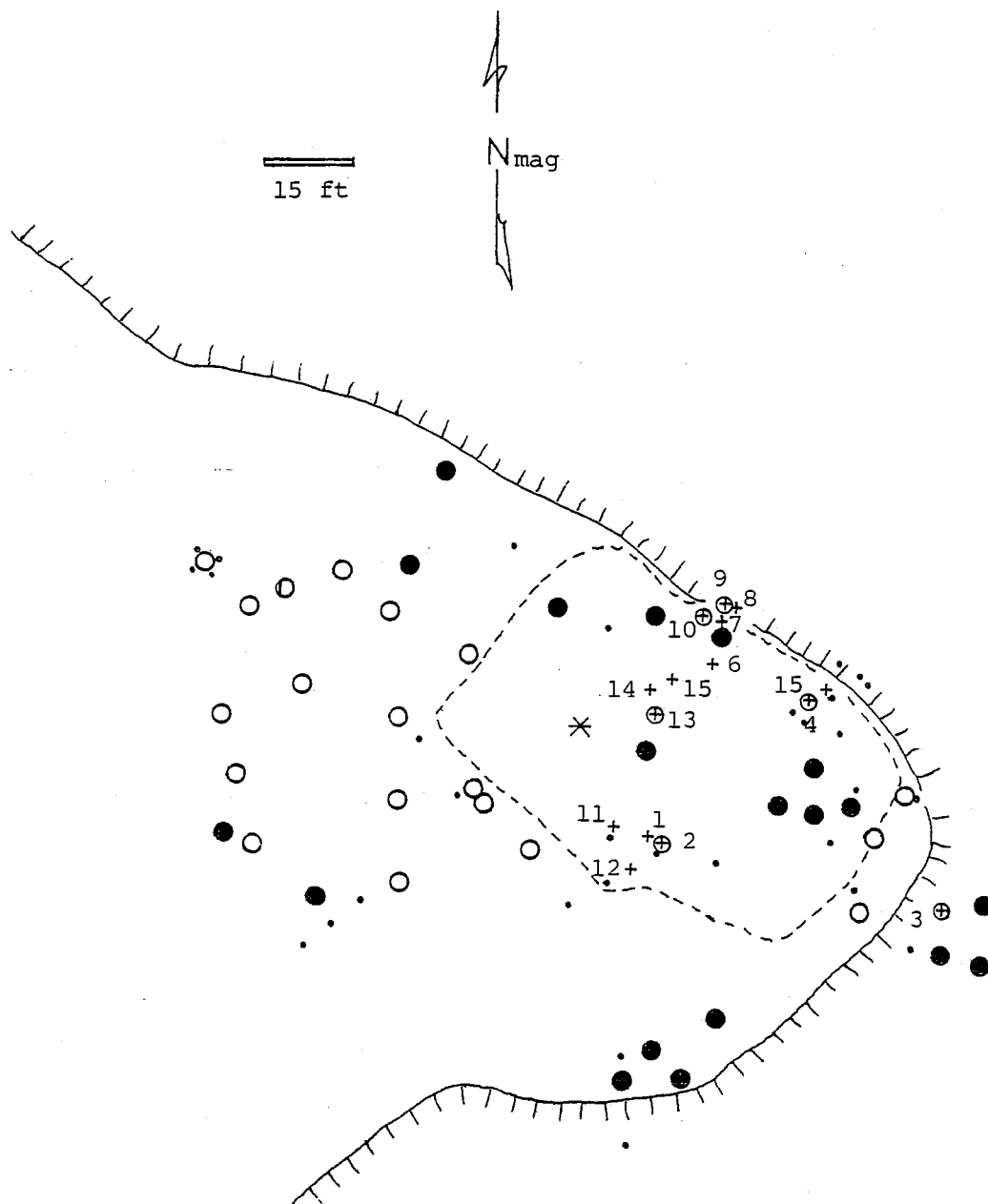
BET-042 was evidently rich and diverse in its cultural assemblage, and does appear to reflect a predominantly camp site function. The site is presently in a disturbed state.

BET-042 has significance in terms of prehistoric land and resource use, settlement patterns and intra-site behavior within the Grayling Lake/Jim River area.

Recommendation

BET-042 lies close to the proposed project area. It produced no additional data in context, and no further action is recommended.

Figure 53. BET-042 site map.



Mapping August 5, 1980 by:
 J. Jordan, R. Fox, T. Villa,
 J. Thorsen.

- + Artifact (not collected)
- ⊕ Artifact (collected + number)
- 1980 test pit (negative yield)
- 1974 Alyeska test pit
- Alyeska archaeology stake
- * Datum (1974)
- Area of Alyeska archaeological work

Alaska State Site No.: BET-125, BET-126, BET-083?, BET-Find (BET-082?),
BET-018

University of Alaska Museum Accession No.: UA80-211 (BET-125)
UA80-212 (BET-126)
UA80-213 (BET-Find)
UA74-50 (BET-018)

Location

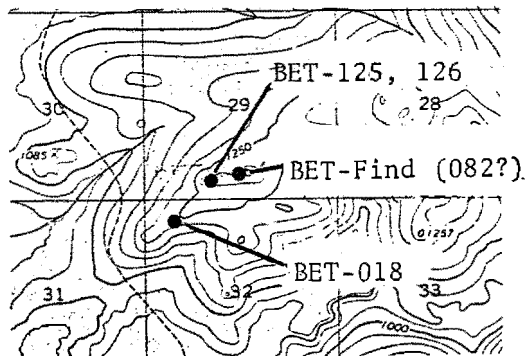
| <u>Latitude:</u> | <u>Longitude:</u> |
|----------------------|-------------------|
| BET-125 66° 41' 54" | 150° 38' 35" |
| BET-126 66° 41' 54" | 150° 38' 25" |
| BET-Find 66° 41' 55" | 150° 38' 05" |
| BET-018 66° 41' 45" | 150° 38' 50" |

Alaska Coordinate System: (Zone 4), BET C-2 quadrangle;
BET-125: 4,641,800 ft N; 406,900 ft E
BET-126: 4,641,800 ft N; 407,250 ft E
BET-Find: 4,642,000 ft N; 407,900 ft E
BET-018: 4,640,900 ft N; 406,400 ft E

Section, Township, Range: (Fairbanks Meridian)

BET-125: NE/4 of SW/4 of SE/4 of SW/4, Sec. 29, T22N, R14W
BET-126: South of the center of SE/4 of SW/4, Sec. 29, T22N, R14W
BET-Find: SE/4 of NE/4 of SE/4 of SW/4, Sec. 29, T22N, R14W
BET-018: SW/4 of SW/4 of NW/4, Sec. 32, T22N, R14W

General: The sites lie on a ridge of granitic bedrock within the proposed boundaries of EMS-51-3 (Fig.54).



Environmental Setting

BET-125, 126 and BET-Find are located along the crest of northeast-southeast trending ridge of granitic bedrock. An excellent view (360°) is afforded from the ridge. The valley of the North Fork of Bonanza Creek lies 1 mi to the south. A rolling plateau lies to the southwest,

and the terrain to the north and east is more rugged with hills and valleys. The ridge crest, itself, is open and flat, with four interspersed rocky promontories.

The ridge area hosts mainly well-spaced birch trees 20-30 ft tall, with an understory comprising leaf mulch, moss, lichen, and some shrubs (e.g., willow and berries). The hillside vegetation is more dense and varied, consisting of stunted spruce, birch, willow and shrubs. A marshy habitat with the normal conconvitant vegetation occurs in the adjacent lowlands.

Animals include bear, fox, wolf, hare, spruce grouse, ground squirrels and other rodents. Moose and caribou are also present in the general vicinity.

Survey Methodology

BET-125, 125 and BET-Find were found during routine NWA archaeological reconnaissance of proposed EMS-51-3 in 1980. Five persons intensively covered the bounds of the EMS visually, and areas that were not exposed were surface tested. All the sites were mapped (Figs. 55, 56, 57), and representative artifacts were collected in order to make assessments of site significance. In the course of the survey, former Alyeska excavations were noted (BET-018 for certain). Numerous test pits from the Alyeska archaeology survey were found throughout the EMS.

Site Description

BET-126 and BET-125 lie along a crest promontory west of the Alyeska pipeline, 300 x 600 ft, respectively. BET-125 lies 20-30 ft south of the ridge crest, and 440 ft west of the promontory summit (Fig. 54). From observed cultural material the site covers about 350 ft². Two areas of exposed bedrock characterize the site (Fig. 55). A total of eight test pits (1.5 ft²) were placed in the vicinity of the exposure (in the non-exposed areas) and seven small shovel tests were placed on the ridge crest. Only one test pit, between the exposures, had positive results.

BET-126 lies 130 ft west of the promontory summit, and about 300 ft east of BET-125, on a narrow portion of the ridge crest (Fig. 56). Most of the site area was 50-60% bare rock exposures, and soil elsewhere was minimal. The site itself appears small, characterized by only a highly restricted artifact scatter. Two test pits were placed in 1980, no former excavations or tests were noted.

BET-Find is located on the farthest promontory to the east, mid-way between the Alyeska pipeline and the promontory summit (Fig. 57). The ridge here is 700 ft wide, and slopes off in all directions.

BET-018, excavated by Robert Gal and Michael Yarborough on June 10, 1974 (in Cook 1977:300-302) was re-located in 1980 on the farthest promontory to the southwest, 2000 ft north of the haul road. Two 5 ft² excavations were worked and several test pits were placed (2 man days). These excavations were still visible.

There is considerable doubt as to where BET-082 and BET-083 are located, as no report other than brief statements of artifacts collected are available (Holmes in Cook 1970:39-40; Cook 1971:344) under sites "K-20" and "K-17," respectively. It is possible that one of the three sites newly designated in 1980 may wholly or partly incorporate one or both of these localities, or they have been destroyed by borrow pit development.

Cultural materials. With the exception of two artifacts being found in the test pit between the two rocky exposures, at BET-125, remaining artifacts (4) were found on the exposed areas (Fig. 55). The test pit yielded one chert flake and one obsidian bifacial 'core tool' (UA80-211-6; Fig. 5) immediately below the lichen ground mat. The other surface artifacts comprised flakes of basalt(?).

BET-126 yielded a projectile point fragment (lateral) (UA80-212-1; Fig. 5) and two chert flakes, all within a 8 ft² area (Fig.56).

BET-Find constitutes a single black chert flake found on the bedrock exposure (Fig. 57).

No cultural materials were seen at BET-018 in 1980. Gal's and Yarborough's work, however, yielded one end scraper, one retouched flake and one grey chert flake (un-utilized) (Cook 1977:300-302).

Stratigraphy. Much of the ridge west is exposed bedrock, and what soil is present is very thin. BET-125 showed a sequence in the test pit of 1-3 inches grey silty 'loam' over culturally sterile, oxidized, fragmented, granitic bedrock.

Impact

Between natural processes and former archaeological testing an excavations at the sites along the ridge, most of the cultural materials appear to have either been collected or eroded out of context. The two excavations at BET-018 were never backfilled, and have been effected also by erosion. There is also some disturbance in the areas with soil due to wind deflation. Any materials that may have once been present over the bedrock surfaces have been since lost.

Proposed development of EMS-51-3 will obliterate all of the sites, with the possible exception of BET-018, which lies on or very close to the proposed southwestern edge of the EMS.

FLUOR

4680-9-KU-8-4

Significance

All these sites, collectively, despite their present condition, are important in terms of prehistoric land use. Evidently they functioned primarily as game lookout stations where minor tool modification and other activities were conducted.

Recommendation

Testing of BET-125 and BET-126 in 1981 indicated that it is unlikely that additional data could be recovered from them. Thus no further action is recommended.

BET-Find (BET-082?) is an isolated find without context. Owing to a lack of information associated with this find (despite testing) we recommend no further action.

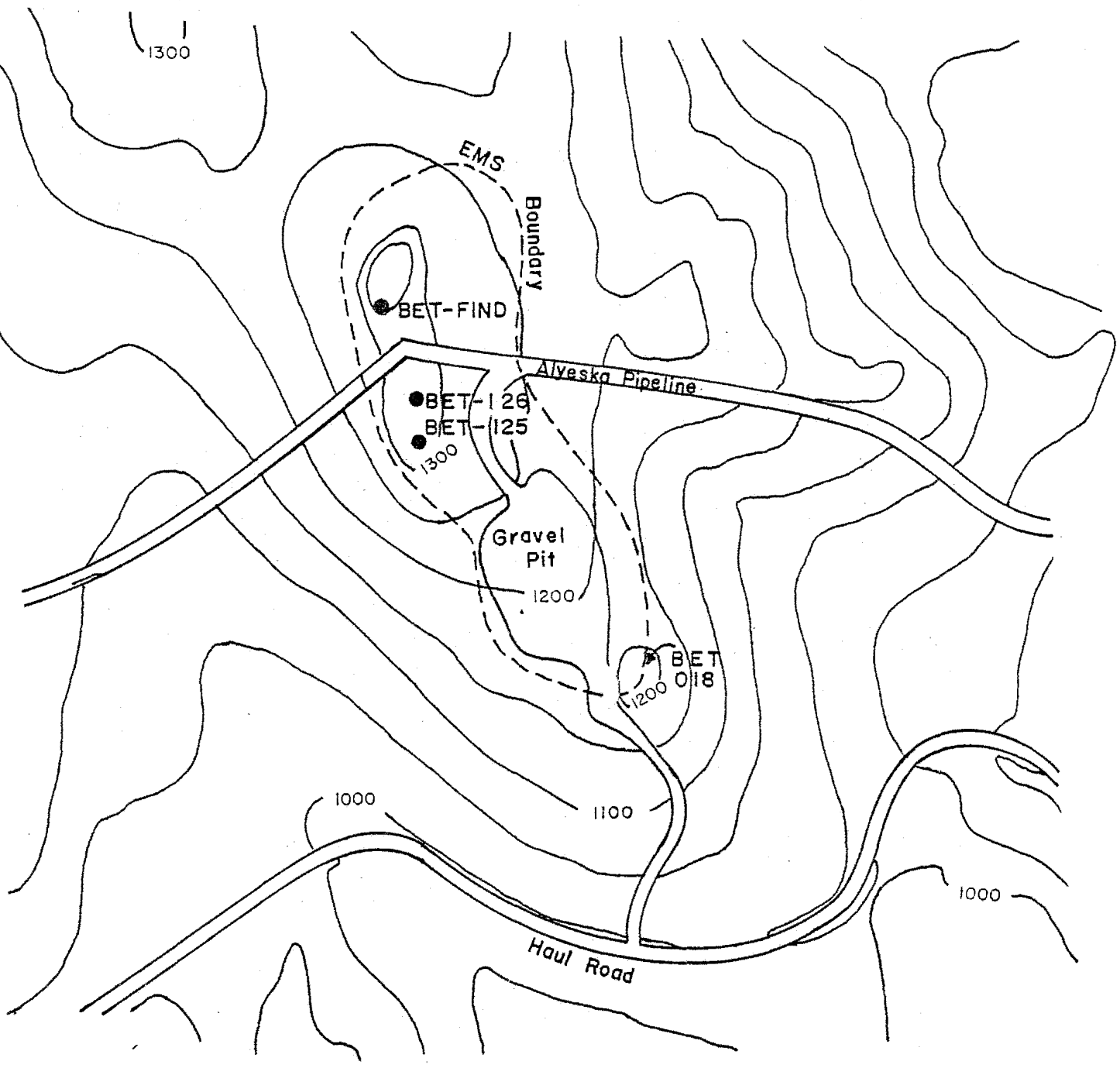
BET-018 was exhausted by previous archaeological salvage activities. No data remain. We recommend no further action.

BET-083 was apparently completely destroyed by construction activities. No data remain. We recommend no further action.

FLUOR

4680-9-K050-8-4

Figure 54.



Tracing from NWA Route Soil Conditions Map 4/8/80 Alignment Sheet O51
Contour Interval 50 Feet

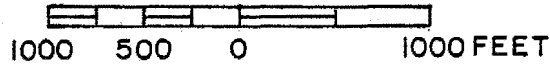
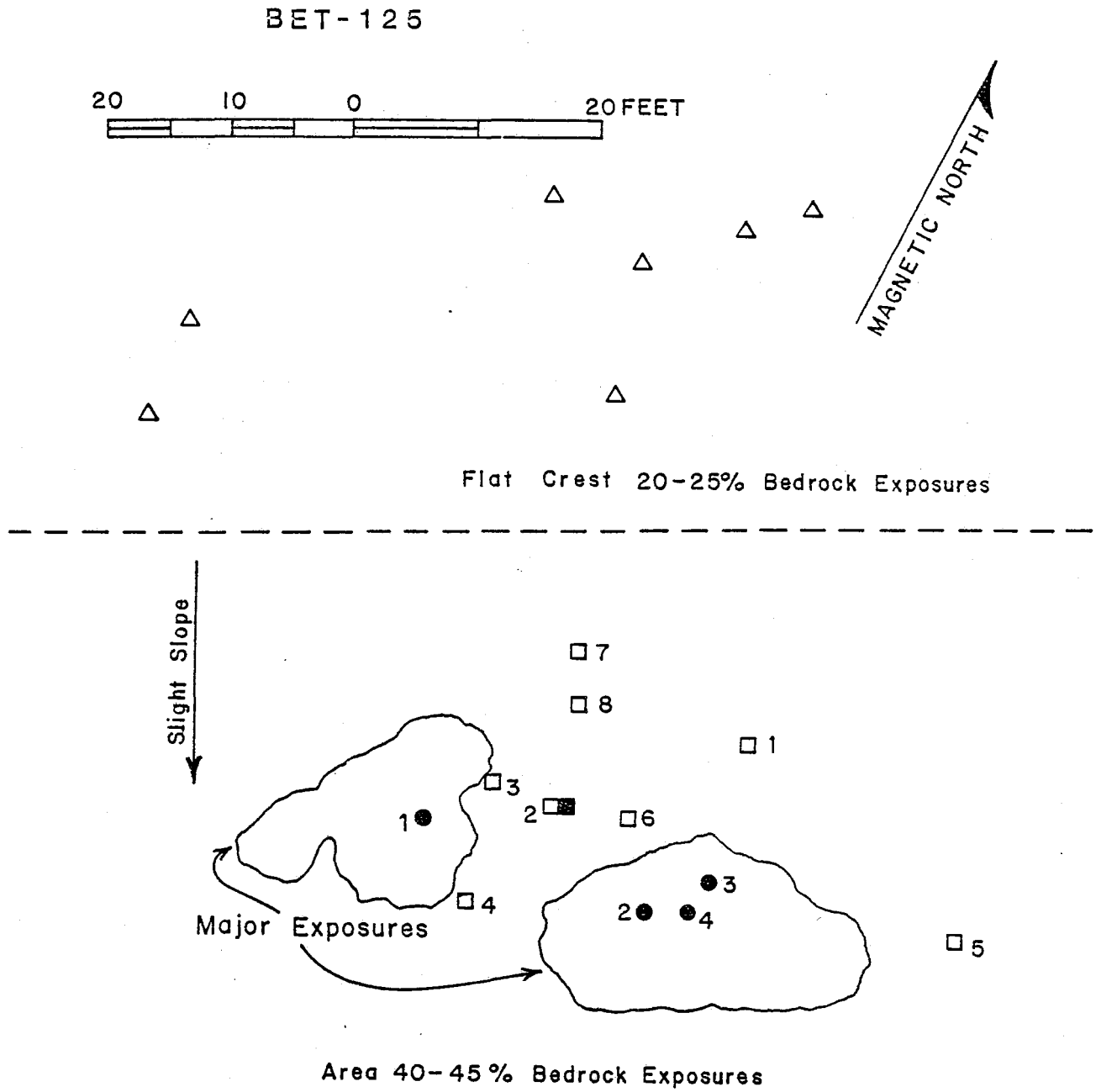


Figure 55.



LEGEND:

- △ Shovel Test
- Test Pit
- Productive Test Pit
- Flakes

Field Mapping by K. Leitge

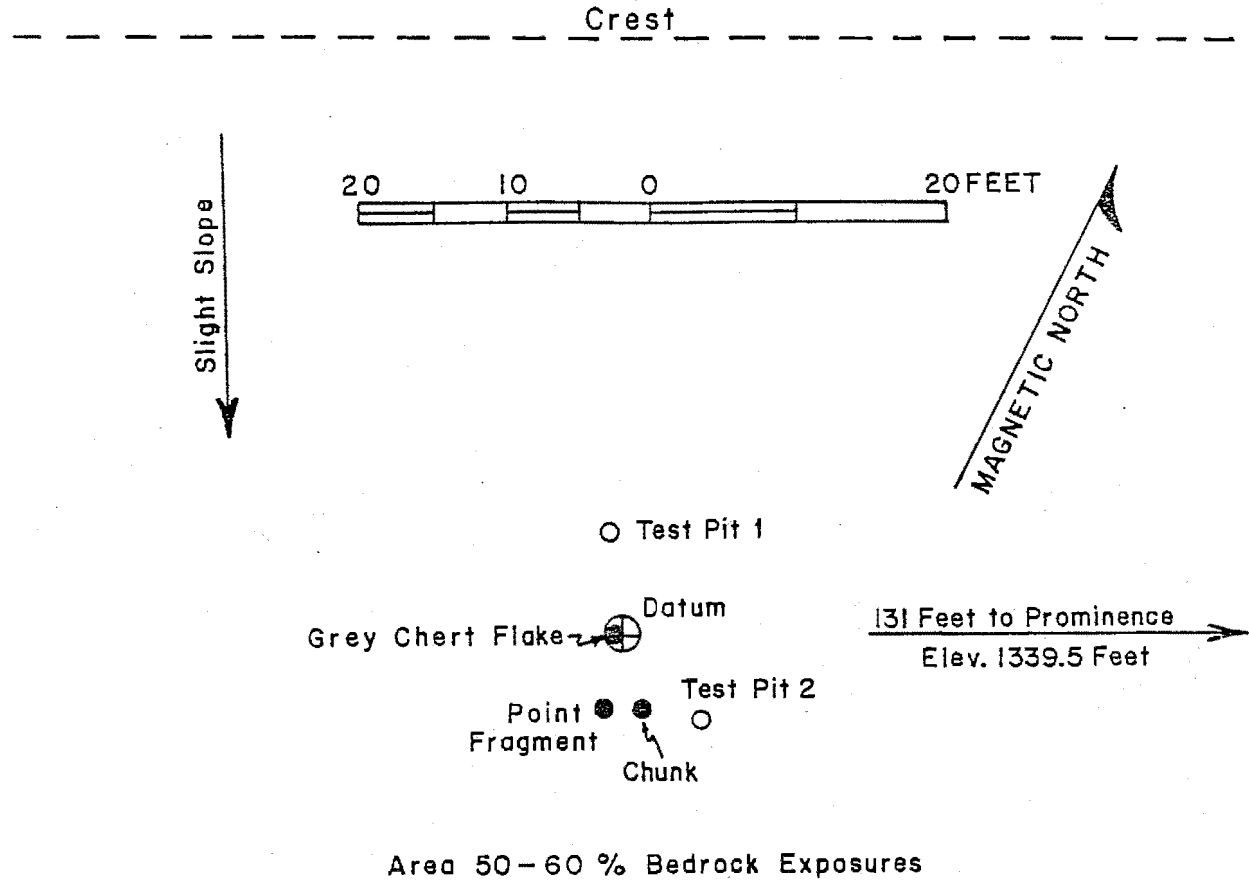
R.J. Dale 7/23/80

Copy by R.A. Furilla 2/17

Mapping by Tape & Comp

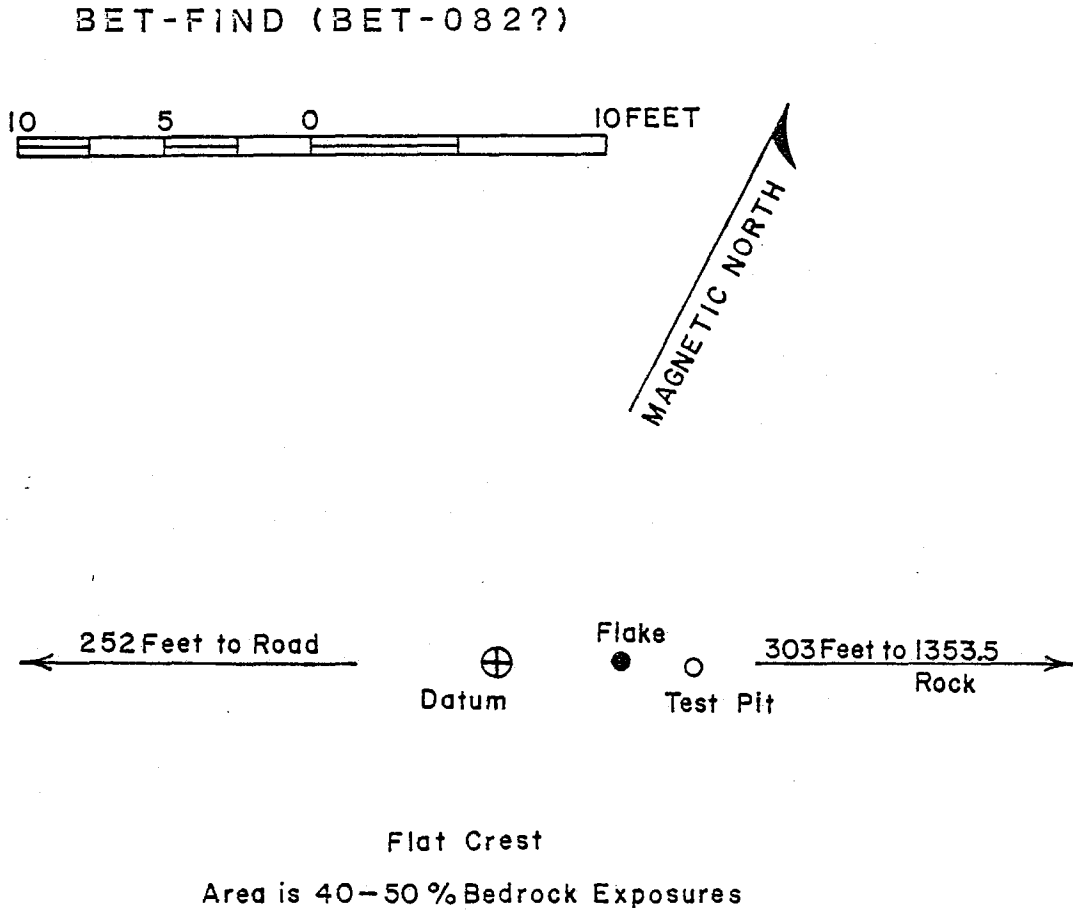
Figure 56.

BET-126



Field Mapping by R.J.Dale &
 M.Wright 7/23/80
 Copy by R.A.Furilla 2/16/81
 Mapping by Tape & Compass

Figure 57.



Field Mapping by K. Leitgeb &
P. Rissman 7/23/80
Copy by R.A. Furilla 2/15/81
Mapping by Pace & Compass

Alaska State Site No.: BET-006?

Formerly known also as Alyeska Site "Y-21."

University of Alaska Museum Accession No.: UA80-204; former numbers:
UA70-148?

Location

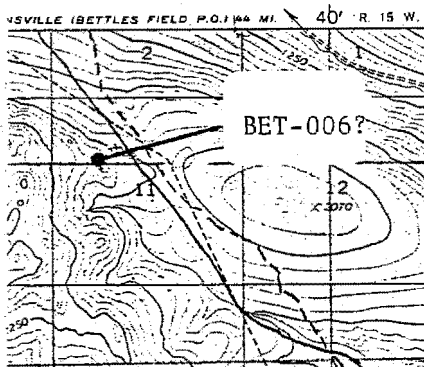
Latitude: 66° 29' 33"

Longitude: 150° 42' 35"

Alaska Coordinate System: 4,565,500 ft N; 396,200 ft E (Zone 4),
BET B-2 quadrangle

Section, Township, Range: SW/4 of NW/4 of SE/4 of NW/4, Sec. 11,
T19N, R15W

General: The site is located approximately 2 mi north of Old Man Camp, and 900 ft west of the haul road. It also lies within the northern part of proposed EMS-54-1B (Fig. 58).



Environmental Setting

The site is situated near a large distinctive bedrock exposure on the flat eastern end of a northwest-southeast trending ridge, sloping gently to the east, but rising sharply westward to a high peak. The area in general is part of a plateau with many bedrock outcrops forming small crests on the ridge slope. The rock is predominantly granitic.

The general vegetation is characteristic of open arctic tundra with some marshy areas, comprising blueberries, labrador tea, dwarf and shrub willow, mooses and lichens. Tussocks are common. Near the site, the vegetation consisted of clumps of small willow trees and a discontinuous moss or dry lichenous ground mat.

A small stream lies within 500 ft to the south of the site which appears to be a tributary to Netsch's Creek, which feeds into the Kanuti River.

Fauna includes bear, ground squirrels, wolf, fox, caribou, ermine, voles and fish. Waterfowl and moose are probably present as well, especially in the Kanuti River/Olsen's Lake area to the south. The site overlooks both the Kanuti and Fish Creek valleys.

Survey Methodology

The site was located during routine archaeological reconnaissance of proposed EMS-54-1B in 1980. The material site was intensively inspected both visually and by subsurface testing.

Evidently the locality had previously been tested and possibly excavated by Alyeska archaeologists.

Site Description

BET-006 (presumably) is located on a distinctive finger-like projection of weathered granite on the side of the ridge. Cultural materials were originally found scattered over an area 100 ft in diameter (Cook 1971: 414), all on an unvegetated gravel surface. Two other sites lie nearby to the east: BET-003 (Y-16), 600 ft, and BET-007 (Y-22), 300 ft.

Cultural materials. Only two artifacts were found at this locality in 1980. A medium size basalt flake (No. 1) was found imbedded edge-on in the mossy ground mat in an area of 40-50% bedrock exposure. Testing in the immediate vicinity revealed no further artifacts.

The second artifact is a large obsidian flake found in a bedrock exposure. Again, further testing produced negative results.

Approximately thirty basaltic waste flakes were originally recovered from this site by Alyeska archaeologists (Cook 1971:415).

Stratigraphy. The location of flake No. 1 reveals a stratigraphic sequence of 0.5 inch mossy vegetative mat overlying 5 inches blackish rooty silt with admixed pebbles, overlying 10 inches reddish brown sandy silt with pebbles. Boulders occur at 15 inch depth.

The flake No. 2 locality consisted of gravels and bedrock immediately below a very thin vegetative mat.

Impact

The site is threatened by direct impact by exploitation of proposed EMS-54-1B. The locality, by virtue of its extensive exposed areas, is in poor condition through erosion. It is difficult to assess whether some of these exposed areas are naturally formed features, or whether they reflect old archaeological excavations (perhaps BET-006).

Significance

BET-006 and associated nearby sites have significance with respect to prehistoric land and resource utilization, and inter-site relationships. However, due to limited published documentation on earlier work and unprecise locational data, site specifics are hard to assess. Little if any extant cultural resources remain at BET-006, and the same probably applies to the other sites as well. BET-006, on a larger scale, is a member of a dense concentration of archaeological sites located in the Kanuti River-Olsen's Lake area (herein referred to, informally, as the 'Olsen's Lake complex'). While precise environmental determinants are as yet unspecified for this clustering, any and all sites in this area, collectively, offer to reveal considerable information on prehistoric land use and settlement patterns.

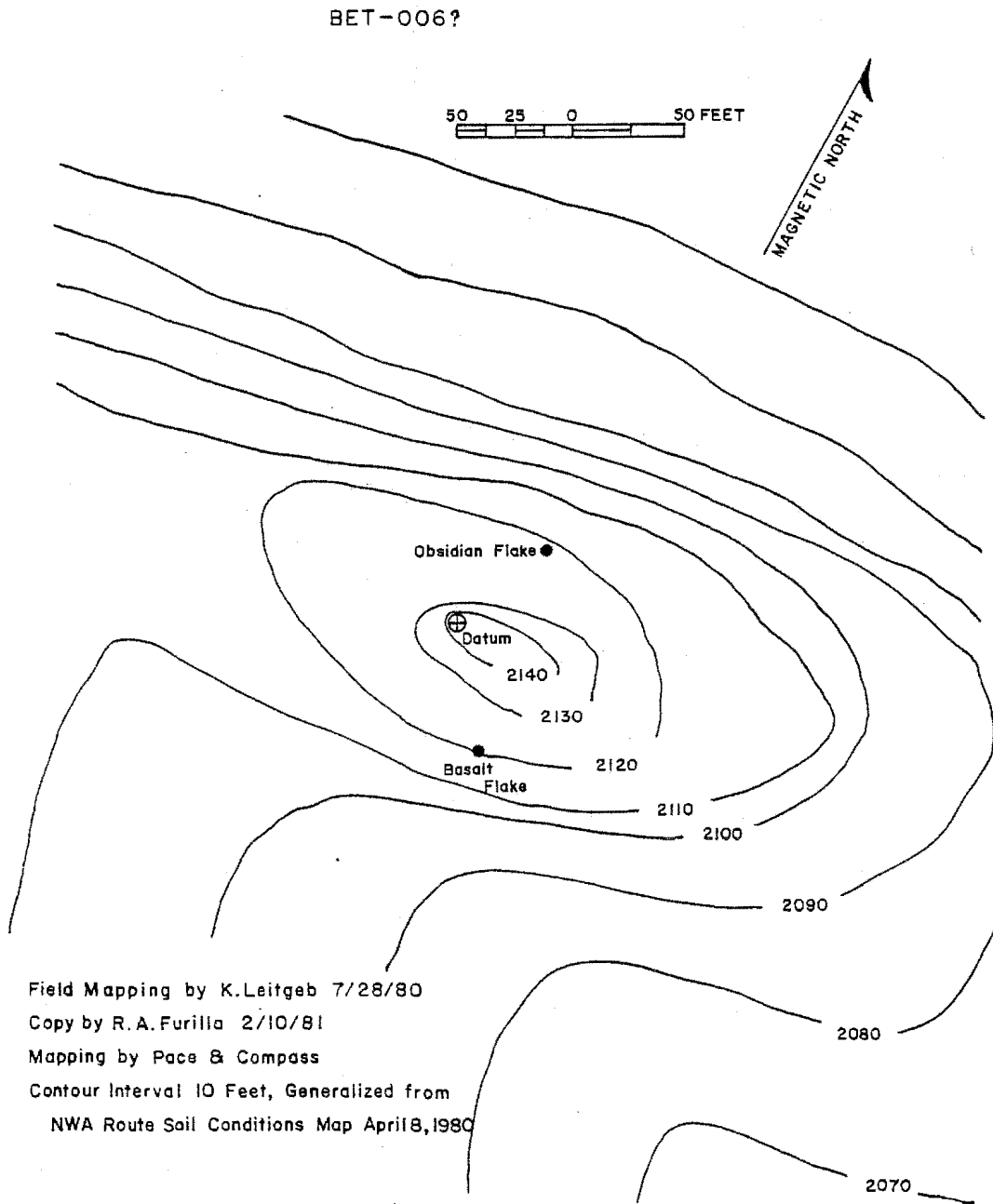
Recommendation

BET-006? contains no extant information. It lay directly in the proposed project area. We recommend no further action.

FLUP

4680-9-K050-84

Figure 58.



Alaska State Site No.: BET-124 (BET-058, 068, 073)

University of Alaska Museum Accession No.: UA80-250 (current);
 UA75-24 (BET-058);
 UA75-116 (BET-068);
 UA75-94 (BET-073)

Location

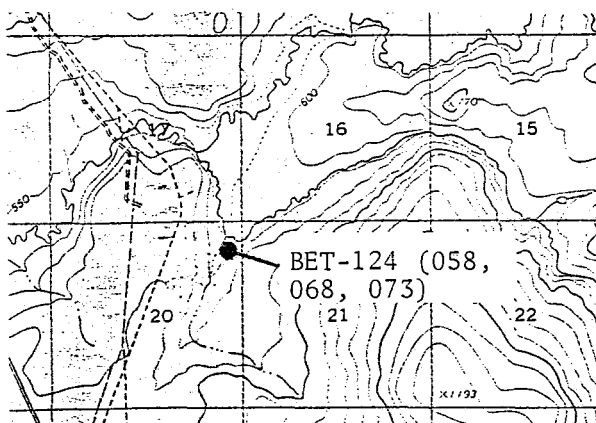
Latitude: 66° 07' 05"

Longitude: 150° 07' 30"

Alaska Coordinate System: 4,428,800 ft N; 481,790 ft E (Zone 4),
 BET A-1 quadrangle

Section, Township, Range: SE/4 of NE/4 of NE/4, Sec. 20, T15N, R12W
 (Fairbanks Meridian)

General: BET-124 is located on top the eastern cut bank of existing Alyeska borrow pit MS-82-0, east-southeast of a recent gravel stockpile. The locality is also on the east central edge of proposed EMS-60-1, about 1900 ft east of the Alyeska pipeline (Fig. 59).



Environmental Setting

The locality sits on an old terrace remnant of Quaternary age, bounded to the north (about 2600 ft) by "No Name Creek," a tributary of the Ray River. The general regional terrain is gently rolling and relief is moderate. The locality provides a fair view of the area.

The dominant vegetation is scattered to moderately dense birch trees with a ground cover of moss, grasses and lichens. Shrub willow occurs locally, and some alder lies along the Ray River. Animals comprise moose, bear, probably caribou, and a variety of birds and rodents. The Ray River supports fish.

Survey Methodology

The locality was encountered during 1980 archaeological monitoring of NWA backhoe testing of proposed EMS-60-1. As the locality lies apparently just outside the EMS boundary, no subsurface testing was attempted.

Site Description

The BET-124 locality was characterized by two lithic flakes and three pieces of 'shatter' along the edge of the cut bank immediately southeast of the southeastern corner of the existing pit. No spatial limits were determined for this locality, and they may well be remains of one of three sites (BET-058, 068 and 073) formerly excavated by Alyeska archaeologists. Two old 1 ft² test pits were noted in the vicinity.

BET-058, 068 and 073 were located along the eastern edge of Alyeska MS-82-0 (Fig. 59), but their precise locations are difficult to place due to excavations and possible obliteration from mining activities.

This area was first surveyed by Robert Gal in 1974 and re-surveyed by Michael Yarborough and Al Dekin the following year. Under Dekin's and Yarborough's supervision, 187 m² were excavated at BET-058, 100 m² at BET-068 and 58 m² at 073. Their results have been published fairly comprehensively in Cook 1977:529-603. At the time of this report, the proposed expansion of the material source (MS-82-0) had not been effected.

Cultural materials. See Dekin and Yarborough (in Cook 1977:529-603) for a complete description of the artifact assemblages from BET-058, 068 and 073.

Stratigraphy. No stratigraphic information was recorded in 1980. Dekin and Yarborough (1977:531-532) described the site localities as fairly homogeneous and simple (Fig. 60). From top to bottom, the stratigraphic regime comprised: 2-5 cm humic horizon; thin, sporadic black A1 horizon; a thin, leached A2 horizon; and a brown B horizon. This soil profile then graded into an "arctic brown" toward the southern end of the terrace. Most of the cultural materials were recovered from the humic, A1 and A2 horizons.

Impact

BET-058, 068 and 073 have been excavated by Alyeska archaeologists, and no doubt, at least in part, have been impacted by later expansion of the borrow pit. No traces of these excavations were seen in 1980, and survey was intensive. Dekin and Yarborough state (in Cook 1977:531) that further testing along the ridge may produce more sites, although they indicate an improbability. Although the BET-124 locality lies near the edge, outside of the proposed EMS-60-1, mining activities along the eastern side may possibly disrupt yet-unknown and undisturbed cultural resources.

Significance

BET-124, in itself, appears to have little research value and, therefore, little significance. In conjunction with one of the other three aforementioned sites, however, the locality acquires more importance, although it is not yet apparent to which of these sites BET-124 may be associated; the finds may be out of context.

Dekin's and Yarborough's preliminary assessment of BET-058, 068 and 073 states that the three sites appear to be spatially discrete clusters of cultural material. They tentatively hypothesized that each focus represented the remains of a single period of occupancy.

The three prehistoric sites all display discrete activity areas which are useful in interpreting specific intra-site behavior and settlement patterns.

Recommendation

BET-124 contains no in situ data. It lies near the margins of the proposed project area. Given the lack of extant data relating to this and other sites (on the material source), we recommend no further action.

BET-058 contains no extant information. It lies within the proposed project area. We recommend no further action.

BET-068 contains no extant information. It lies within the proposed project area. We recommend no further action.

BET-073 contains no extant information. It lies within the proposed project area. We recommend no further action.

Figure 59. BET-058, 068, 073, 124 location map (Cook 1977:531).

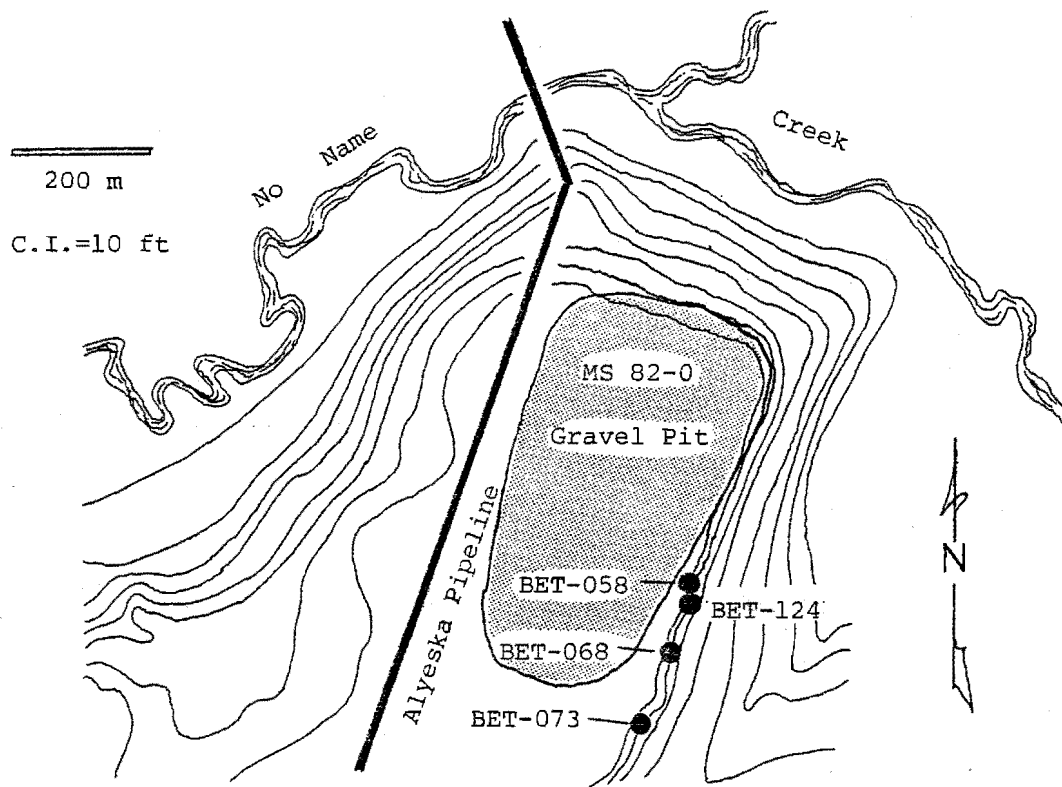
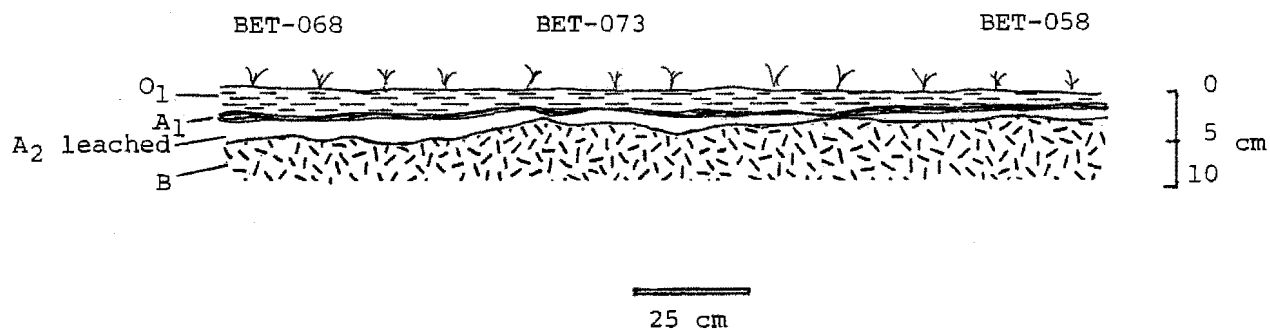


Figure 60. BET-058, 068, 073 stratigraphy (Cook 1977:532).



O₁ = humic horizon
 A₁ = thin, sporadic, black
 A₂ = thin, leached
 B = brown

} main culture-bearing horizons

Alaska State Site No.: LIV-055

Also known as "Juswon"

University of Alaska Museum Accession No.: UA75-111 (former); no 1980 collections

Location

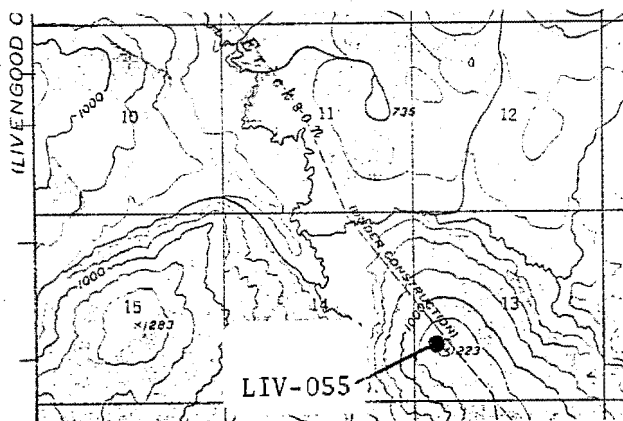
Latitude: 65° 36' 15"

Longitude: 148° 55' 35"

Alaska Coordinate System: 4,242,500 ft N; 662,400 ft E (Zone 4), LIV C-4 quadrangle

Section, Township, Range: S/2 of NW/4 of SW/4, Sec. 13, T9N, R7W (Fairbanks Meridian)

General: The site is located 4,450 ft southeast from where the Alyeska pipeline crosses Erickson Creek, and 100 ft southwest of the workpad. It also lies in the west-central part of proposed EMS-69-3B.



Environmental Setting

LIV-055 is located on a comparatively vegetation-free knoll near the crest of a steep northwest-southeast trending bedrock ridge measuring 1 x 2 mi. The ridge is almost surrounded by tributaries of Erickson Creek, 700 ft below. The general terrain is rugged, but the crest area is fairly flat and open.

Local vegetation consists of large, well-spaced spruce and birch trees with some willow and alder. The understory includes chiefly dwarf willow, lichen, moss, labrador tea and cranberries. Some of the vegetation is scorched from old burns.

Faunal resources include moose, bear, fox, shrews, voles, spruce grouse, squirrels, jays, owls, and other birds.

An important local resource is the outcropping of chert near the site which may constitute the main reason for site presence. The nearest water is Erickson Creek, but access is not easy. Another channel lies within 2000 ft which may provide a better potential water source closer to the ridge summit.

Survey Methodology

The site was encountered during routine archaeological survey of EMS-69-3B in 1980. Site presence was manifested by old exposed excavations placed by Alyeska archaeologists. Intensive testing was conducted in 1980, placing new test pits and expanding parts of the old excavations. An intensive visual survey of the locality, including examination of the exposed areas and old backdirt piles, was carried out as well.

Other knolls located on EMS-69-3B were also inspected, and were observed to have, likewise, been previously tested by Alyeska archaeologists.

Site Description

The site sits on a knoll measuring 70 x 100 ft. An area measuring approximately 33 x 66 ft had been previously excavated by Gal in 1975 (in Cook 1976:18), who reports the excavation of 113 one-meter squares. A large volume of field notes exists for this work at the University of Alaska Museum. No final report has been prepared.

Cultural materials. No artifacts were found at LIV-055 during the 1980 survey. Gal, however, collected over 500 chert flakes and assorted biface fragments, point fragments, obsidian flakes, scrapers and cutting tools. Most of these artifacts are accessioned at the University of Alaska Museum (UA75-111), but some are missing.

Stratigraphy. The stratigraphy on the knoll consists of a 1 inch-thick vegetative mat over 2 inches of red, semi-compacted silt/loess ("arctic red"), which overlies decomposing rock material.

Impact

The former Alyeska excavations have not been backfilled, and have been subjected to erosive processes. The site is directly threatened by impact from exploitation of proposed EMS-69-3B. "Revision 3" of the proposed gasline corridor lies 200 ft to the southwest of the site, posing some indirect threat of impact through construction activities.

Significance

Gal (in Cook 1976:18) speculates on the basis of his collected information, that LIV-055 "was occupied for only a short time and that it was probably used as a temporary camp site by people moving through the area."

A single occupation is suggested by artifact concentrations occurring on only one side of the knoll and the absence of any large amount of debris, except for two localized areas.

This is one of many sites identified in the Livengood area, which seem in some way, oriented towards the abundant outcrops of "Livengood chert". These sites seem to be mainly camp sites or quarry/stone reduction sites.

LIV-055, such as it is, can be accepted as having been mitigated as no further cultural materials apparently remain. However, the surrounding area, no doubt (and hopefully) harbors other sites.

Recommendation

LIV-055 contains no extant information. It lay within the proposed project area. We recommend no further action.

Alaska State Site No.: LIV-Find 1, LIV-Find 2, LIV-032

University of Alaska Museum Accession No.: UA80-205 (LIV-Find 1)
 UA80-206 (LIV-Find 2)
 Unknown (LIV-032)

Location:

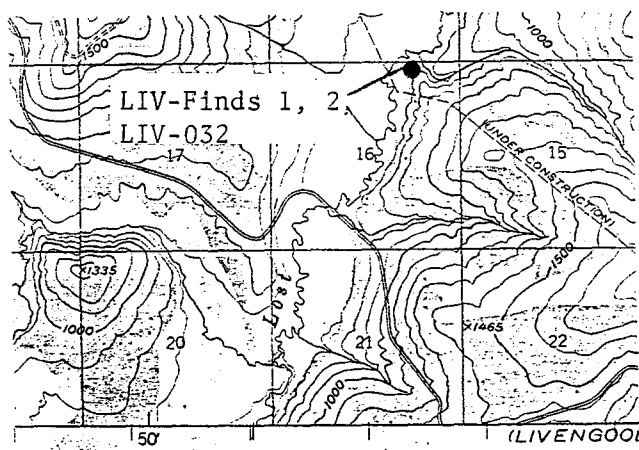
Latitude: 65° 31' 38" Longitude: 148° 47' 05"
 (LIV-Finds 1 and 2); unknown for LIV-032.

Alaska Coordinate System: (Zone 4), LIV C-4 quadrangle;
 LIV-Find 1: 4,214,750 ft N; 684,300 ft E;
 LIV-Find 2: 4,214,650 ft N; 684,100 ft E;
 LIV-032: Undetermined

Section, Township, Range: LIV-Finds 1 and 2, NW/4 of NW/4 of NE/4 of NE/4, Sec. 16, T8N, R6W (Fairbanks Meridian);
 LIV-032, described as NE/4 of NE/4, Sec. 16, T8N, R6W

General: LIV-Finds 1 and 2 lie within the proposed EMS 71-0A, northeast from where Lost Creek crosses the Alyeska pipeline, 1500 ft southeast x 500 x 750 ft northeast, respectively, from where Alyeska access road 71-APL-1 enters the workpad.

LIV-032 is not well located, but apparently lies off the EMS 71-0A (to the east?) on and below a north-facing prominence overlooking Lost Creek.



Environmental Setting

EMS 71-0A (and the LIV-Find locations) are situated on the remains of a metamorphic bedrock ridge fronted on the west by an Alyeska disposal site, and truncated to the south by a gravel pit and the Alyeska pipe pad. Lost Creek flows around the remnant ridge from the southwest to the northern side, roughly 60 ft below the ridge top.

The ridge is steep-sided and the top is characterized by two subsidiary but distinct lobes projecting northward. These projections are separated by a low vegetated valley, while the lobes are covered mainly by a lichen mat and exposed rock. On the sides and adjacent to EMS, the vegetation is more varied and dense, comprising well-spaced spruce, birch and willow trees, and a moss/lichen surface mat.

Fauna includes spruce grouse, squirrels, bear (scat), and inferred fox, rodents, moose, wolf and fish.

An excellent view is afforded from the ridge, looking north and south into the valleys of Lost Creek and the West Fork of the Tolovana River. Evidently cryptocrystalline lithic resources (chert) are available in the vicinity.

Survey Methodology

LIV-Finds 1 and 2 were found during routine archaeological reconnaissance of proposed EMS 71-0A in 1980. The EMS was intensively surveyed both visually and by sub-surface testing.

The EMS, especially the ridge crests (lobes) have also been extensively tested formerly by Alyeska archaeologists, but these results are unknown. LIV-032 (Cook 1976:13-14) was not relocated.

Site Description

As LIV-Finds 1 and 2 constitute only isolated occurrences, they do not constitute 'sites' in the adopted sense. LIV-Find 1, a black chert 'waste' flake located on the northeastern, upper side of the western ridge lobe, was found during a routine trowel test. Further testing in the vicinity revealed nothing else.

LIV-Find 2 constitutes one dark grey chert fragment with cortex found in a rocky exposure on the steeply sloping west face of the western lobe, 25 ft from the bottom. Again, examination of the vicinity produced negative results.

LIV-032 (the "Lost Creek Shelter") was initially reported and tested by Gal (in Cook 1976:13-14). It was described as being situated on and below a prominence with a view overlooking Lost Creek to the north. Part of this site is on an old bulldozer trail which crosses Lost Creek. A bulldozer trail was observed in 1980, running along the top of the western ridge lobe, which may or may not be an extension of the one described. LIV-032 was originally located on the Alyeska centerline, but the centerline was moved to take advantage of an old drainage channel located "151.51 m to the west." At the time of the report, the site was essentially intact despite some disturbance from tracked vehicles, and no excavations were undertaken.

LIV-032, however, was tested, but the only results known comprise the reporting of "some well-defined flakes of Livengood chert in addition to a rather large basaltic flake." The 1976 report states that no further work was planned, but recommends "sites of this type that have been affected by bulldozer activity should be excavated." It was then felt that erosive agencies created by such activity and frost action in the soil would destroy the site in a short time. These processes were in evidence in 1980, especially upon the old test pits which were never backfilled.

Although some rock shelters were noted in 1980 at the base of EMS 71-0A, near the Lost Creek floodplain, their investigation revealed no cultural materials.

Stratigraphy. The stratigraphy of LIV-Find 1 comprises a 1 inch surficial lichen mat overlying 4 inches wet brown silt, overlying 3 inches yellowish brown clayey silt. Gravels occur below. The stratigraphy of LIV-Find 2 consists of just gravels below a mossy surface mat.

Impact

While much of the ridge remains intact, considerable impact (including loss of earth materials) has occurred through prior material source exploitation, and erosion is locally prevalent along old bulldozer tracks and old archaeological test pits. Further, probably total destruction of the ridge is imminent if proposed mining of EMS 71-0A materializes.

As LIV-032 was not located (with any certainty), it may have already been destroyed by earlier mining/construction activities.

Significance

The significance of this presumed prehistoric locality is difficult to assess from the two finds and the documentation on LIV-032. Certainly, any occupied rock shelter offers to contain potentially important cultural information, as they are apparently rare in central Alaska.

The finds, especially LIV-Find 2, have questionable provenience and therefore little research value. Nevertheless, the hilltop locality is of a type evidently favored by prehistoric peoples, and important in respect to the available view and lithic resources.

Manifestations of aboriginal use or occupation at this locality have either largely been collected previously, or have been destroyed by mining activities. The 1980 finds may simply represent erratic occurrences. It does not seem likely that any substantive extant cultural material went undetected in 1980.

Recommendation

LIV-Find #1 is an isolated find without context in the proposed project area. As a result of our tests and observation, we recommend no action.

LIV-Find #2 is an isolated find without context in the proposed project area. As a result of our tests and observation, we recommend no action.

LIV-032 has inadequate data for review but lies outside the proposed project area. We recommend no further action.

Alaska State Site No.: LIV-039

Also known as the "Lost Creek Cabin"

University of Alaska Museum Accession No.: None

Location:

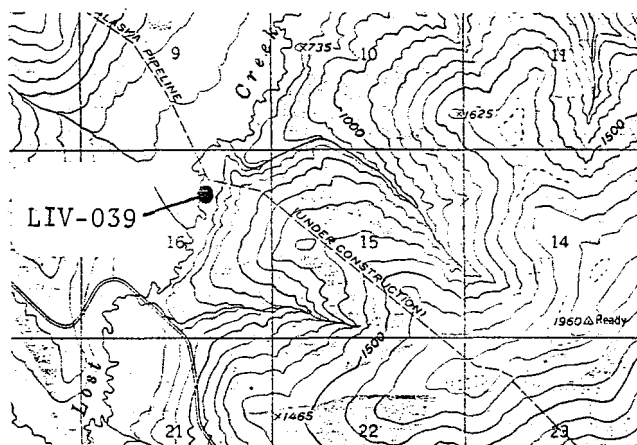
Latitude: 65° 31' 27"

Longitude: 148° 48' 20"

Alaska Coordinate System: 4,213,500 ft N; 683,700 ft E (Zone 4),
LIV C-4 quadrangle

Section, Township, Range: Center of S/2 of NW/4 of NE/4, Sec. 16,
T8N, R6W (Fairbanks Meridian)

General: The site is located within 200 ft southwest of the Alyeska pipeline workpad, on the eastern side of Lost Creek, and 75 ft west of NWA borehole no. 71-31.



Environmental Setting

The site is set on older floodplain deposits of Lost Creek, in a generally forested environment of spruce and scattered birch and aspen trees. Shrub willow and alder are locally abundant as well. The dominant understory comprises moss, lichens, labrador tea, rose, and numerous species of berries.

Survey Methodology

The site was verbally reported by Ken Swanson (Office of the Federal Inspector, Fairbanks) on October 10, 1980. It was subsequently verified by Fluor Northwest field personnel.

Site Description

LIV-039 is named the "cabin at Lost Creek," and is an historic site. It consists of a log cabin with its walls only partially standing.

Trees 4 inches in diameter are reportedly growing inside the structure. No other information is available concerning structural details or associated artifacts.

Impact

The cabin lies approximately 800 ft northeast of "Revision 3" of the proposed NWA gasline route, and is not threatened with direct impact from construction activities. Some potential secondary threat is posed, however, through vandalism. The cabin is already in a moderate state of disrepair.

Significance

LIV-039 is a dwelling, probably relating to historic mining activities in the Livengood area. It may have National Register eligibility.

Recommendation

LIV-039 is an extant structure outside the project area. Since we view the distance as adequate to deter most project personnel from disturbing the site, we recommend no further action.

Alaska State Site No.: LIV-103, LIV-107, LIV-108

University of Alaska Museum Accession No.: UA80-220 (LIV-103)
UA80-219 (LIV-107)
UA80-218 (LIV-108)

Location:

| <u>Latitude:</u> | <u>Longitude:</u> |
|---------------------------|-------------------|
| LIV-103: 65° 29' 18" | 148° 40' 42" |
| LIV-107, 108: 65° 29' 20" | 148° 40' 42" |

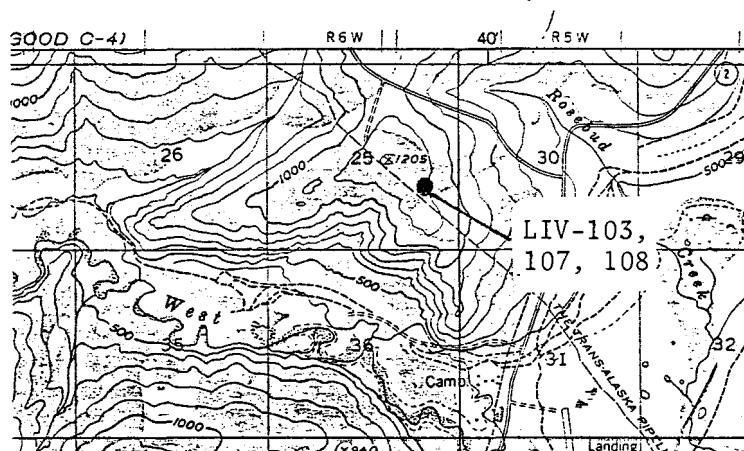
Alaska Coordinate System: (Zone 4), LIV B-4 quadrangle.

| | | |
|----------|-----------------|--------------|
| LIV-103: | 4,200,800 ft N; | 700,750 ft E |
| LIV-107: | 4,200,900 ft N; | 700,550 ft E |
| LIV-108: | 4,200,950 ft N; | 700,550 ft E |

Section, Township, Range: Fairbanks Meridian

| | |
|----------|--------------------------------------------------|
| LIV-103: | SE/4 of SW/4 of NE/4 of SE/4, Sec. 25, T8N, R6W. |
| LIV-107: | S/2 of SW/4 of NE/4 of SE/4, Sec. 25, T8N, R6W. |
| LIV-108: | S/2 of SW/4 of NE/4 of SE/4, Sec. 25, T8N, R6W. |

General: The sites lie adjacent to the Alyeska workpad, on its north-eastern side, 1500, 1560 and 1700 ft (LIV-108, 107 and 103, respectively) southeast from where Alyeska access road 70-APL/AMS-1M intersects the Alyeska workpad. All three sites lie within the central part of proposed EMS-71-3A (Fig. 61).



Environmental Setting

All three sites occur on a broad flat ridge crest in a forest environment. This ridge is part of Rosebud Knob, and numerous outcrops of chert (so-called "Livengood chert") are present in the area.

The on-site vegetation, unlike that of most of the other recorded sites in the vicinity, is more dense, consisting mainly of well-spaced birch and spruce trees, alder and shrub willow thickets. The understory comprises labrador tea, cranberries, blueberries and a generally thick mossy mat. The view from all three sites is limited to poor.

Animals or their sign observed comprise moose, fox, bear, and squirrels.

Rosebud Creek lies 1 mi to the east and northeast, and the west fork of the Tolovana River lies about 1 mi to the southwest. The terrain is locally hilly.

Survey Methodology

LIV-103, 107 and 108 were found during routine archaeological survey of EMS 71-3A in 1980. Each locality represents an apparent cultural focus, and as such, each was subsequently defined as an individual archaeological site. As the general area has already been severely affected by prior excavations and pipeline construction activities, only a minimal amount of on-site testing was conducted in 1980 at LIV-103, 107 and 108 once the sites were located through intensive visual and incremented subsurface prospecting techniques - in order to conserve their undisturbed states as much as possible for future study. No subsurface tests were placed at LIV-103 and LIV-107. Three contiguous 1.5 ft² test pits and one isolated pit of the same size were placed at LIV-108. The three sites, all surface finds and test pit locations are shown in Figure 62.

Site Description

Once located, LIV-103, 107 and 108 were not intensively tested. Consequently, the limits of each site is presently undetermined. They may, in fact, constitute one focus, or part of even a large one.

LIV-108 is the northwestern-most site, separated from LIV-107 by 60 ft which, in turn, is 140 ft from LIV-103. Unlike other observed sites in the region, they lie in a forested environment rather than on a relatively unvegetated knoll or ridge. Together, these three sites cover an estimated 12,000 ft² (Fig.62).

Cultural materials. Only one artifact, a large chert chunk with flake scars, was found at LIV-103 on the vegetated ground surface, 10 ft from the Alyeska pipe pad. No similar materials were seen in the bank spoils, indicating that the item is relatively in context.

LIV-107 is identified on the basis of three artifacts: one black chert retouched flake found in a game trail, and two additional flakes half-buried in the moss 20 ft to the north, 50 ft northeast of the Alyeska work pad.

LIV-108 was first identified by a half-buried surficial flake of black chert, approximately 40 ft northeast of the work pad. Three contiguous test pits (Test Pit-1) placed under this find (Fig. 62) yielded: three black chert flakes and two small, grey, translucent flakes (southeast corner); one grey and black banded flake (northeast corner), and a similar flake from the northwestern corner. Test Pit-2 placed 17 ft to the southwest, yielded twenty two chert flakes, most of which are black chert.

Stratigraphy. The general stratigraphic format for these three sites, and specifically for LIV-108 (test pit-1) comprises a 1 inch vegetative (mossy) mat overlaying 2 inches of black humus with admixed chert (including artifacts) which in turn overlies 'gravel.'

Impact

The three sites are still in a pristine state, but any manifestation to the southwest may have been obliterated by construction of the Alyeska pipeline. Direct impact of LIV-103, 107 and 108 is posed by potential exploitation of EMS 71-3A within which the sites lie. The proposed NWA gasline route poses no threat.

Significance

Due to the limited amount of cultural materials recovered in 1980 from these three sites, especially LIV-103 and LIV-107, it is difficult to posit any site function. LIV-108, however, is evidently either a quarry locality or a campsite and testing suggests activity areas may be present, and cultural materials abundant. LIV-103 and 107 may or may not be mutual components of the LIV-108 focus.

One noteworthy observation is the presence (identification) of this site in an environment other than where sites have traditionally been found locally, namely in 'alpine meadows' on ridge crests and knolls. This enhances the notion that this entire portion of Rosebud Knob constitutes one large cultural focus used perhaps over millennia, concentrated on the exploitation of the locally abundant chert deposits.

In light of past impact to the area and the sketchy nature of archaeological documentation, these three sites may be valuable in providing a fresh opportunity to study aboriginal lithic reduction techniques and spatial distribution of related activities.

Recommendation

LIV-103^{*} contains archaeological information and lies in the proposed project area. We recommend a request for determination of eligibility.

LIV-107 contains archaeological information and lies in the proposed project area. We recommend a request for determination of eligibility.

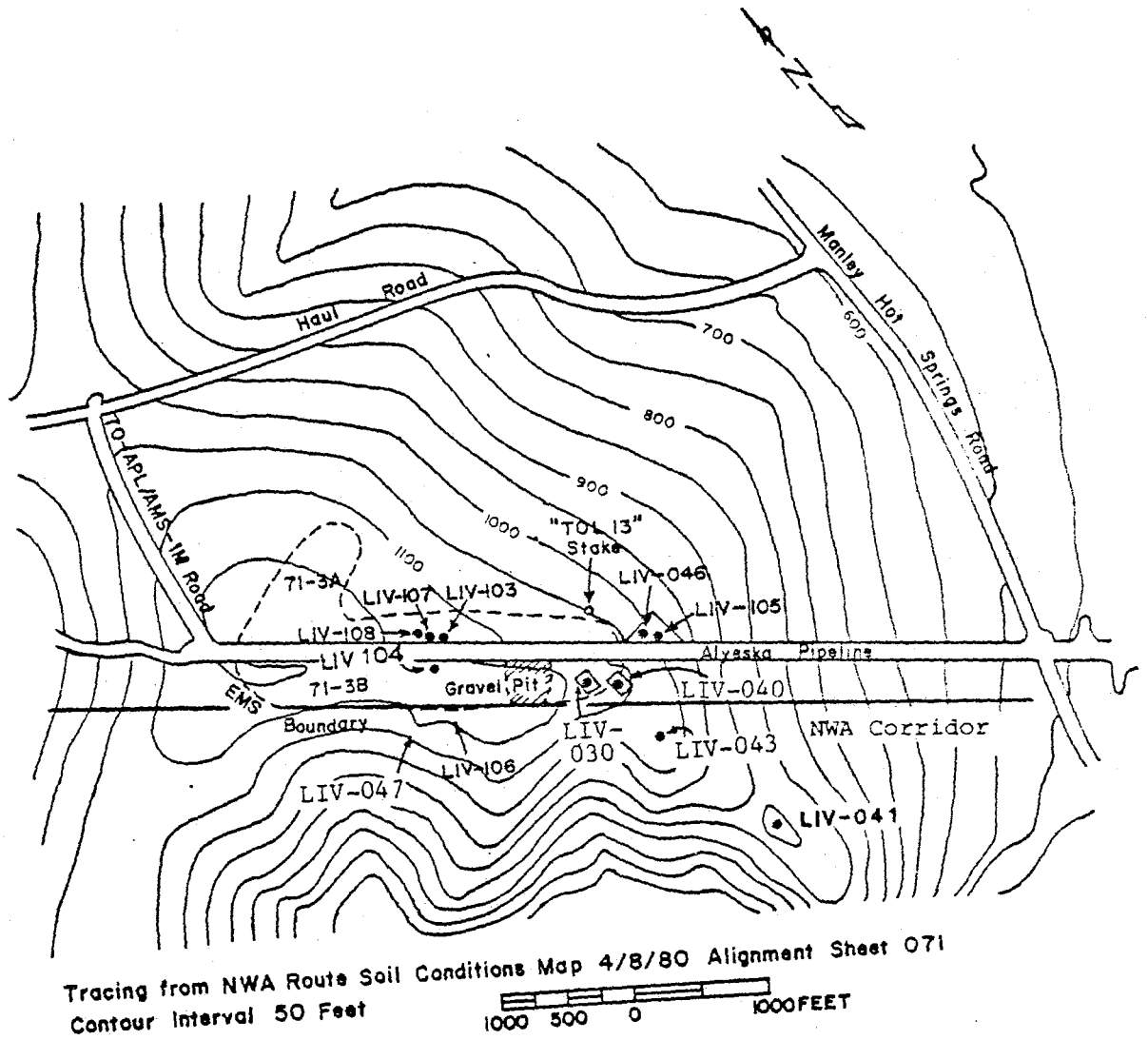
LIV-108 contains archaeological information and lies in the proposed project area. We recommend a request for determination of eligibility.

*Inclusion of LIV-103 in an archaeological district nomination consisting of LIV-103, 107, 108, 104, 047, 106, 050, 030, 040, 046, 105, 043 is currently under consideration.

FLUOR

4680-9-KU-0-8-4

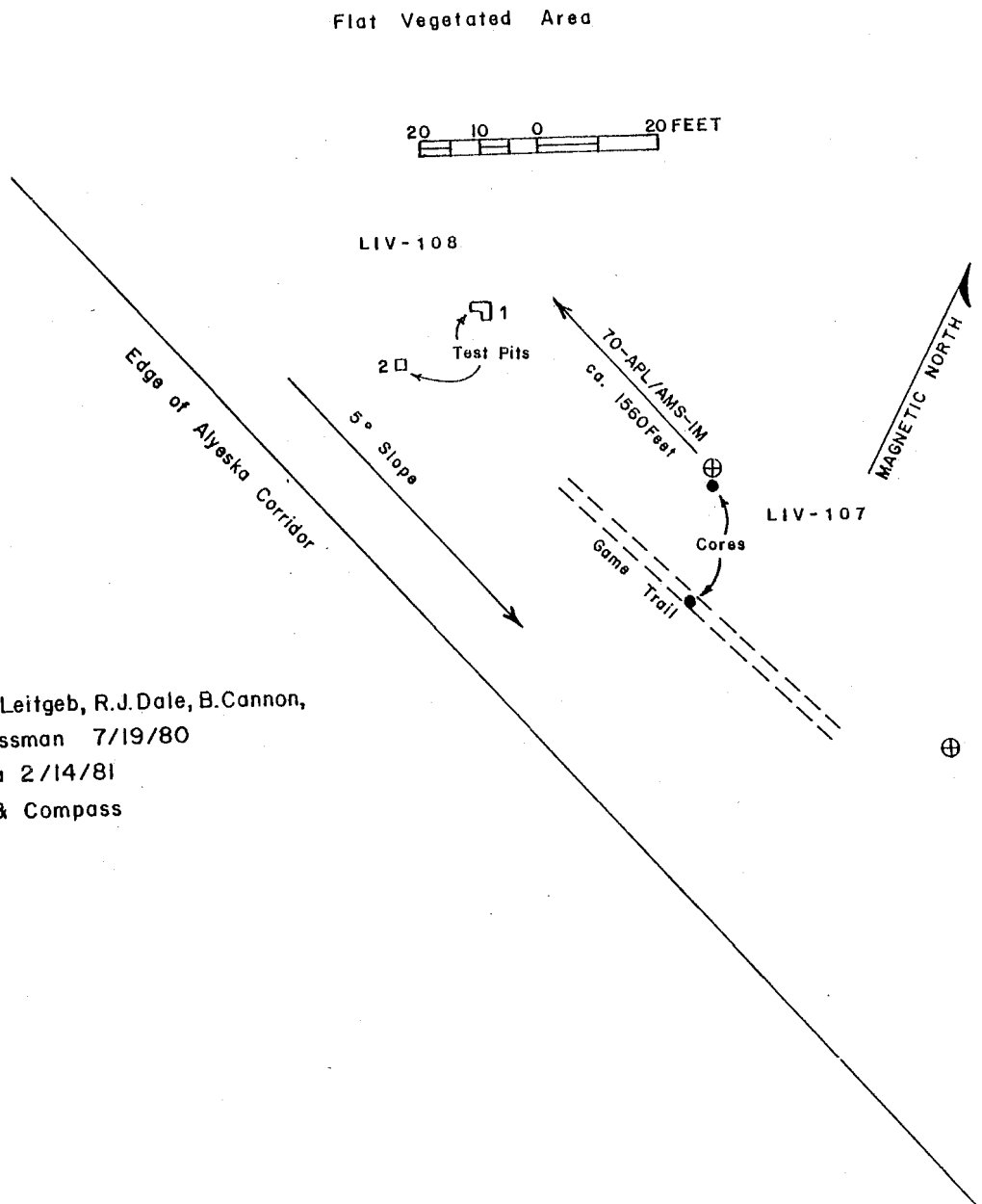
Figure 61. 'Rosebud Knob Archaeology Sites'



FLUOR

4680-9-KU-0-8-4

Figure 62. LIV-103, 107, 108 site map.



Field Mapping by K.Leitgeb, R.J.Dale, B.Cannon,
M.Wright & P.Rissman 7/19/80
Copy by R.A.Furilla 2/14/81
Mapping by Pace & Compass

Alaska State Site No.: LIV-047, 104 and 106

'LIV-047 is also known as "Tolovana-1"

University of Alaska Museum Accession No.: UA80-214 ('LIV-047),
UA80-217 (LIV-104),
UA80-215 (LIV-106)

Location:

Latitude: 65° 29' 15"

Longitude: 148° 40' 45"

Alaska Coordinate System: (Zone 4), LIV B-4 quadrangle.

'LIV-047': 4,200,600 ft N; 700,500 ft E.

LIV-104: 4,200,500 ft N; 700,600 ft E.

LIV-106: 4,200,500 ft N; 700,500 ft E.

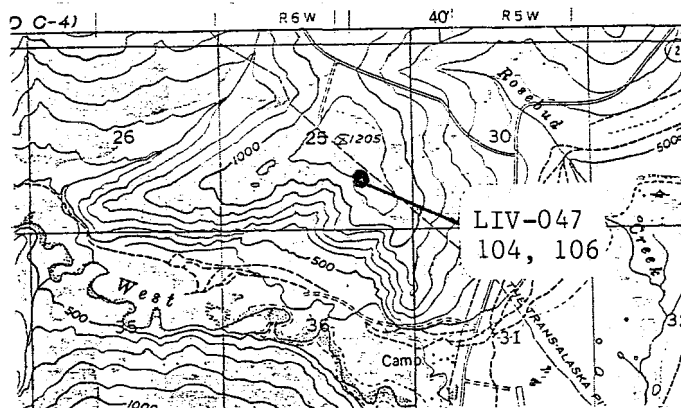
Section, Township, Range: (Fairbanks Meridian)

'LIV-047': NE/4 of SW/4 of SE/4, Sec. 25, T8N, R6W;

LIV-104: NW/4 of NW/4 of SE/4, Sec. 25, T8N, R6W;

LIV-106: NW/4 of NW/4 of SE/4, Sec. 25, T8N, R6W

General: The three sites are located 1600-1900 ft southeast of Alyeska access road 70-APL/AMS-1M from where it connects with the pipeline workpad, and southerly from the workpad 15-100 ft. The sites are also located within the north central part of proposed EMS-71-3B (Fig. 61).



Environmental Setting

The sites are closely associated, and lie on two flat to gently west-sloping metamorphic bedrock ridge crests near the summit of Rosebud Knob. The ridge system trends southwest-northeast, and overlooks the Tolovana River watershed.

The sites, themselves are in a meadow-like setting, which is, comparatively, sparsely vegetated with birch and scattered spruce and willow trees, and some alder. The understory consists of labrador tea,

cranberries, grasses, fireweed and several species of leafy plants. Mosses and lichens are also present. The off-site vegetation is similar, but more dense.

Bear and moose sign were seen, and squirrels are present.

The ridge is bounded on the east and northeast by Rosebud Creek (over one mile away). Water is also available at the bottom of the ridge, but access is not easy.

Extensive outcrops of black chert (the so-called "Livengood chert") are present in the general vicinity, especially on or near the site locations. The general area contains numerous archaeological sites.

Survey Methodology

The sites were encountered during routine archaeological survey of the proposed NWA Material Site 71-3B.

It was observed that 'LIV-047' had previously been excavated by Alyeska archaeologists, and the ground surface was literally paved with lithic cultural materials. As the former excavations are still exposed, the provenience of the remaining artifacts is uncertain, and documentation vague, scanty or unavailable, all that was done in 1980 consisted of mapping and photographing the sites, and collecting enough artifact samples to make some assessment of significance. Evidently, Thomas Andrews (Alberta, Canada) is currently analyzing materials from this site and his results are pending.

Site LIV-106, on the next ridge 120 ft to the south, had also been tested in the past. However, the site apparently has never been ascribed a site designation. Only one small test pit was placed in 1980.

LIV-104 was surface collected only minimally, and no subsurface testing was conducted due to the disturbed nature of the locality and its limited exposure.

Site Description

'LIV-047', the largest and most complex of these three associated sites, occupies an area of 100 x 600 ft along the crest of a small ridge. A total of 43 excavation units, measuring 5 x 5' (1075 ft²), placed by Alyeska archaeologists, were situated along the ridge. Most of these center around the 'summit' (Fig. 63). None of the units had been backfilled. In addition, at least 65 small test pits were present, extending along the crest. Some backdirt piles still remain, notably in the eastern-most excavation unit, and unexplained piles of lithic cultural material occur in and around the larger excavation unit off the crest to the south. The site surface, especially the area around the summit, is covered with lithic cultural debris.

LIV-104 is located about 100 ft from 'LIV-047', along the same crest to the east, and essentially on the edge of the workpad cut (Fig. 63). This locality may be a distinct cultural focus, but its limits are not clear. Whatever manifestations it might have had eastward has been obliterated by pipeline construction. Some of the lithic material was on the vegetation mat and some was half buried in moss. In some respects, LIV-104 may be considered as a component of 'LIV-047.' One possible black chert core fragment and a black chert chunk were collected.

LIV-106 is located on an adjacent small ridge crest 120 ft southeast of 'LIV-047'; the settings are similar (Fig. 63). The two localities are separated by a 5-10 ft-deep ravine, paralleling the ridges. A lithic scatter is present on the surface along the summit area, but not to the apparent extent seen at 'LIV-047.' Some limited testing has occurred along the crest, and two old disturbed areas lie along the crest near the western break-in-slope which may possibly be old excavation units. Nine medium and small sized flakes of black chert were recovered from one test pit in 1980.

Cultural materials. A total of 44 artifacts were collected at 'LIV-047' in 1980 (Appendix 6). Two small test pits yielded one long curved black chert blade (test pit #1), and 6 black chert flakes from test pit #2. A third test pit revealed nothing. Thirty-three flakes of black chert and two chert chunks (possibly flake cores) were collected from the surface. Most of the lithic remains are products of aboriginal stone reduction and quarrying techniques, but many fragments are also due to cryoturbation (frost action).

David Derry is now deceased, and Livengood materials (including 'LIV-047') are currently being studied by Thomas Andrews in Alberta, Canada.

The materials from LIV-104 and 106 have been mentioned above (site description) and are described in Appendix 6. The samples are too meager for any meaningful analysis.

Stratigraphy. The basic stratigraphy at 'LIV-047' comprises a very thin, discontinuous, vegetative mat (chiefly moss and/or lichen) overlying a discontinuous but locally dense accumulation of fragmented chert, gravels, and decomposing metamorphic bedrock - all in a thin red silt matrix. Depth to 'solid' bedrock is rarely deeper than 8 inches.

The stratigraphy of LIV-106 is similar, comprising: 1-1.5 inch lichen moss mat with tiny admixed chert fragments and flakes, overlying; 1.5 inch dark brown organic material, overlying; 6 inches reddish silt with chunks of chert; and bedrock.

Impact

'LIV-047' has been formerly excavated by Alyeska archaeologists. Only about 2% of the site has been excavated.

The site is presently threatened by impact directly by its location within the proposed NWA EMS-71-3B, and probably is also threatened by the 1980 replacement ("Revision 3") of the proposed NWA gasline, at least along the lower (western) portions of the crest.

The same situation applies to LIV-106, but this site is better preserved. LIV-104, is already impacted by the Alyeska pipeline, and may be further impacted by exploitation of EMS-71-3B. Any further trampling by personnel on any of the sites constitutes an indirect impact insofar as the surficial distribution of the lithic cultural materials is important in interpreting discrete activities at the sites.

Significance

These sites, 'LIV-047', and LIV-106 in particular, are part of an areal complex of stone reduction, quarry sites around Rosebud Knob due to the presence of the Livengood chert. In a sense, the area can be perhaps considered as one large archaeological focus, used perhaps over millennia. Despite past disturbances, an enormous amount of potential information is still available concerning prehistoric resource utilization, stone working techniques, and spatial activity partitioning.

Recommendation

'LIV-047' contains extant materials and is directly impacted by proposed project activities. We recommend a request for determination of eligibility.

LIV-104 was a find without context in the project area. We recommend no further action.

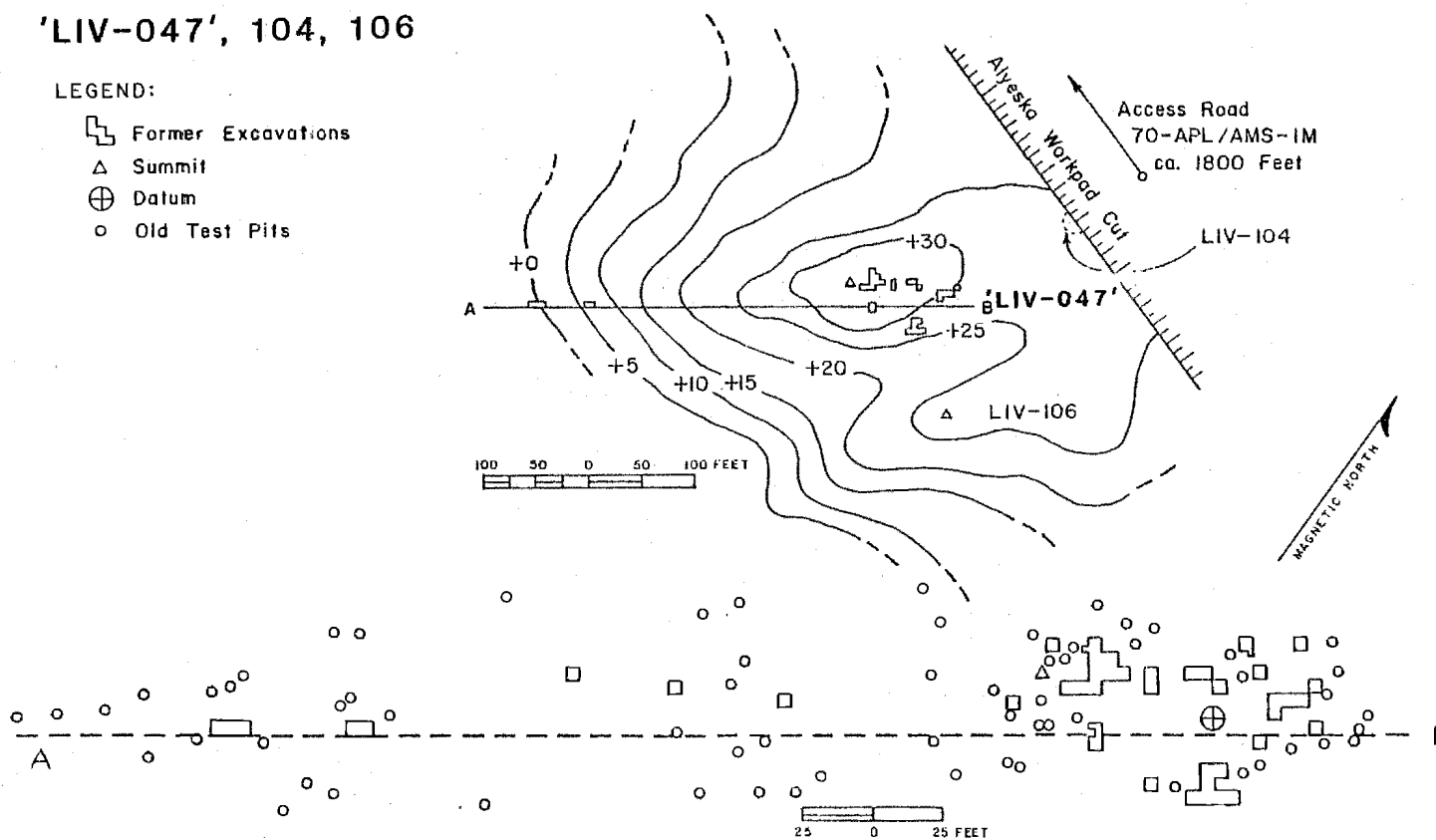
LIV-106 contains archaeological information. It lies within the proposed project area. We recommend a request for determination of eligibility.

Figure 63.

'LIV-047', 104, 106

LEGEND:

- ◻ Former Excavations
- △ Summit
- ⊕ Datum
- Old Test Pits



Field Mapping by B.L.Gannon, S.Fetter,
 & P.L.Bennett 8/25/80
 Copy by R.A.Furilla 12/19/80
 Mapping by Pace & Compass
 Contour Interval ca. 5 Feet
 (Contours by Inspection, Arbitrary
 Baseline Set at +0)

Detail of Excavations
 'LIV-047'

Alaska State Site No.: LIV-050?

Possibly "Tolovana 13"

University of Alaska Museum Accession No.: None

Location

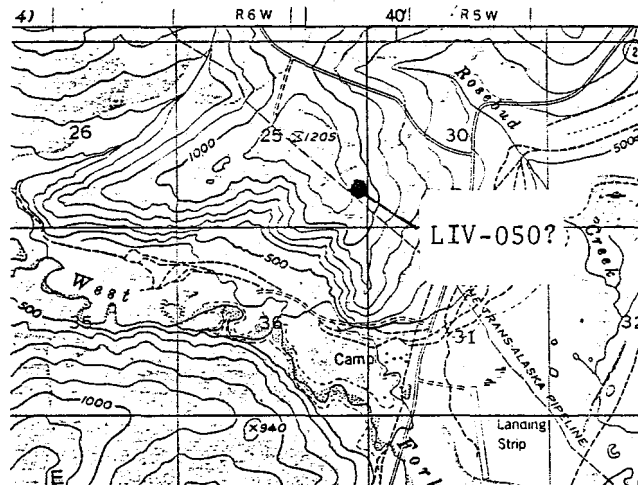
Latitude: 65° 29' 12"

Longitude: 148° 40' 18"

Alaska Coordinate System: 4,200,300 ft N; 701,700 ft E (Zone 4),
LIV B-4 quadrangle

Section, Township, Range: SE/4 of NE/4 of SE/4 of SE/4, Sec. 25,
T8N, R6W (Fairbanks Meridian)

General: The site is located 225 ft northeast of the Alyeska workpad, 2600 ft southeast from where Alyeska access road 70-APL/AMS-1M intersects the workpad. It is also within proposed EMS-71-3A, 200 ft from the southeastern end (Fig. 61).



Environmental Setting:

The site is situated on the flat crest of a bedrock ridge (Rosebud Knob). The locale is in a moderately forested setting. The overall environment is the same as that described for the other 'Tolovana' sites on Rosebud Knob.

Survey Methodology

'LIV-050' was located during routine archaeological survey along the proposed NWA gasline route in 1980. This locality was surface inspected, and subsurface tests were dug.

Site Description

On the site is a 2 x 2 inch wooden stake driven into the moss-covered ground, labelled "Tolovana 13." There were no surficial cultural features, excavations or ground exposure, observed. There is also no known published information on this site, save the Alaska Heritage Resource card which states, "surface 10 to 15 flakes," collected presumably by Alyeska archaeologists. The stake may not be in its original position.

Our identification of this site as LIV-050 is uncertain. We suspect the stake may have been moved to this location. There is no information on the stratigraphic format at this site.

Impact

'LIV-050' is apparently undisturbed. Direct impact is threatened by exploitation of proposed EMS 71-3A.

Significance

Beyond the few flakes mentioned above, which may not relate to this locality, the significance of 'LIV-050' appears to be nil. Testing was performed revealing no in situ materials.

Any undisturbed site in the Rosebud Knob area is potentially important, especially in light of past impact through construction activities. The Rosebud Knob area is important primarily because of the extensive outcrops of "Livengood chert," and resource use perhaps over millennia by aboriginal peoples. Still, 'LIV-050' is an unproven locality, despite testing in 1980.

Recommendation

'LIV-050' evidently does not contain (extant) materials. It lies within the proposed project area. We recommend no further action.

Alaska State Site No.: LIV-046? and 105

'LIV-046' is also known as "Tolovana-9"

University of Alaska Museum Accession No.: UA80-210, UA74-61 (LIV-046);
UA80-221 (LIV-105)

Location:

Latitude: 65° 29' 10"

Longitude: 148° 40' 12"

Alaska Coordinate System: (Zone 4), LIV B-4 quadrangle.

LIV-046: 4,200,100 ft N, 701,950 ft E;

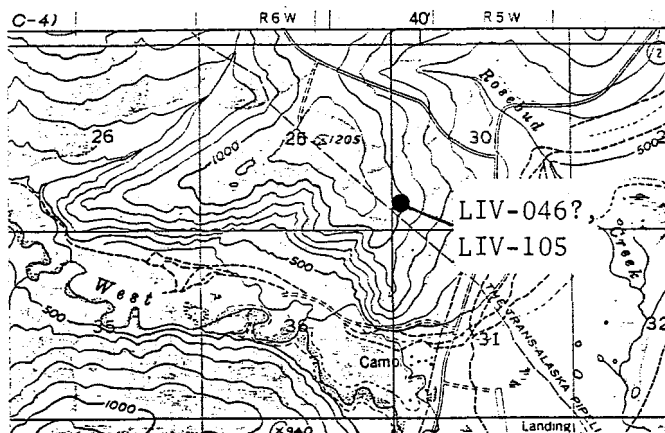
LIV-105: 4,200,000 ft N, 701,900 ft E

Section, Township, Range: (Fairbanks Meridian)

LIV-046: center of W/2 of SW/4 of SW/4, Sec. 30,
T8N, R5W;

LIV-105: center of W/2 of SW/4 of SW/4, Sec. 30,
T8N, R5W.

General: These two sites are located 3,375 ft southeast of Alyeska access road 70-APL/AMS-1M from where it connects with the pipeline workpad, and 40-120 ft northeast from the workpad (Fig. 61). The sites lie just outside (approximately 200 ft) of proposed EMS 71-3A, to the east. An Alyeska benchmark (APSC 633 RM-1, 1977) is located 48 ft southwest of the datum at LIV-105.



Environmental Setting

These two sites are closely associated on a series of four low relief, generally east-west trending ridge crests on the metamorphic terrain of Rosebud Knob. The slope drops abruptly to the east and southeast. The view is limited, but good to the east and southeast, and the nearest water is Rosebud Creek, 1 mi to the northeast. Overall, the regional terrain is rugged.

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The sites, themselves, appear to occupy a meadow-like (sparsely vegetated) setting, surrounded by similar, but more dense, forested habitat. General vegetation comprises birch and spruce trees with some willow and alder. The understory consists of labrador tea, cranberries, grasses, fireweed and several species of leafy plants. Mosses and lichens are also present.

Extensive local outcrops of black chert (the so-called "Livengood chert") occur in the area. The presence of this key resource is no doubt a primary factor for the large number of sites in the vicinity.

Survey Methodology

The sites were encountered during routine archaeological survey of the proposed EMS 71-3A. 'LIV-046' had previously been tested by Alyeska archaeologists, but has only been documented on a State Heritage Resource card which refers to "Alyeska Notes" (see Site Description and Significance).

In 1980, the area of the two sites was divided on the basis of four separate recognized cultural foci. The three northerly ones were considered as part of 'LIV-046,' and named, north to south, 'Knolls 1', '1A' and '2' (Fig. 64). A fourth focus, a bit more separated from the others to the south, was arbitrarily designated as LIV-105 due to its still undisturbed character and presumed facilitation of future discussion and analysis. There appear to be no inherent cultural division present which would otherwise necessitate this division.

Investigation of these sites in 1980 consisted of routine mapping, photography and documentation. A minimal amount of artifact sampling was conducted in order to aid the assessment of significance. Both old and new test sites are shown in Figure 64, and results of the tests are given below.

1980 testing was primarily visual, and only six test pits were placed in the vicinity of Knoll 1. Of these, the four closest to the knoll itself had positive yields. Some limited surface collecting was conducted on Knolls 1 and 2.

Site Description

As mentioned, 'LIV-046' is sub-divided into three foci (Knolls 1, 1A and 2), each on a subtle ridge crest separated from one another by swales (Fig. 64). Together, they cover about 13,000 ft². The site was discovered (1980) by the presence of surficial lithic artifacts on all three knolls and a wooden stake (datum) on Knoll 2 identified as "Tolovana-9". A survey marker (R.P. 20255 to a D + 00) lies 32 ft southeast of this stake. Our identification of the locality as 'LIV-046' is uncertain.

The site had been previously tested by Alyeska archaeologists, but no excavations were observed. Three old 1 ft² test pits were located on Knoll 1A, and five small exploratory holes on Knoll 2. Knoll 1 displayed no evidence of prior testing despite the surface scatter of cultural material and chert outcrops. As bedrock occurs immediately beneath the discontinuous lichen map, however, evidence of prior testing may not have been visible due to erosion.

No documentation of this site beyond an entry on an Alaska Heritage Resource card is known. A check with the University of Alaska Museum revealed that an accession number (UA74-61) had been reserved for this material by David Derry (now deceased), but no artifacts were ever submitted, and their whereabouts are unknown.

LIV-105 was tested by only one pit in 1980 to keep disturbance to a minimum. It had not been formerly tested, and it had no surficial exposure of artifacts. This locality apparently was not included in Derry's or Kegler's description of 'LIV-046.' LIV-105 is in a similar setting to that of 'LIV-046,' and lies 100 ft southeast of the 'LIV-046' datum on Knoll 2 (Fig. 64). Its areal extent is somewhat vague, but cultural materials extend easterly at least 130 ft from the datum point.

Cultural materials. Most of the cultural materials lie on or just below the lichen vegetative map at both sites. The bulk of this material comprises black or grey chert flakes, chunks and core fragments. Most of the flaking is primary, and little or no finished implements were noted.

Appendix 6 itemizes the materials collected from 'LIV-046' and LIV-105. Briefly, six black and grey chert flakes were collected from the surface of Knoll 1 and five similar specimens from Knoll 2 at 'LIV-046.' Specimen UA80-210-7 found on the surface of Knoll 2 appears to be a preform (Fig. 5). Test pits 1, 2, 5 and 6 yielded three, four, three and one flakes, respectively. Test pits 3 and 4 were sterile. The entry on the earlier Heritage Resource card states a "single biface" found.

Material noted and collected at LIV-105 comprise specimens of blackish chert. Some appear cryoturbated. The one test pit (Fig. 64) yielded 14 flakes. A core fragment and two chert chunks with possible retouch scars were collected from the southeast slope of LIV-105 (Fig. 64).

Stratigraphy. A generalized profile, top to bottom, observed at 'LIV-046' between Knolls 1 and 1A comprise: 0-2 in vegetative mat; 1 in black organic layer; 1-2.5 in grey 'clay'; 7-10 in bright red cohesive silt; and basal gravel with chert fragments. Fragmented chert occurred in all layers. The profile on the knolls is similar but the silt unit was more brown than red. Decomposing bedrock was found at a depth of 1.2 ft. In both localities, subsurface cultural material seemed to originate at the contact of the grey 'clay' and the red/brown silt. Much of the surficial material may have been transported upward by frost action.

The ground profile at LIV-105 consists of a very thin vegetative mat with a basal black organic zone overlying clayey silt with pebbles and chert fragments.

Impact

'LIV-046' and LIV-105 are not directly threatened with impact from NWA gasline construction. The sites apparently lie outside (to the southeast) of the boundaries of proposed EMS 71-3A, and the centerline lies on the opposite side of the Alyeska work pad to the west.

Portions of 'LIV-046' have been impacted by former archaeological work and exacerbated by unfilled test pits acted upon by erosive processes.

Significance

'LIV-046' and LIV-105 are members of an areal prehistoric complex of stone reduction/quarry sites in the region of Rosebud Knoll due to the occurrence of the Livengood chert. The area can be considered as one large archaeological focus, but no one site should necessarily be considered as 'typical' as previously noted in former Alyeska archaeological notes. Nor should the 'significance' be noted as 'nil' for 'LIV-046' as indicated in the Alaska Heritage Resource card.

Despite some disturbances to the localities, a large body of potential information is to be had concerning prehistoric resource utilization, stone working techniques and spatial activity partitioning.

Recommendation

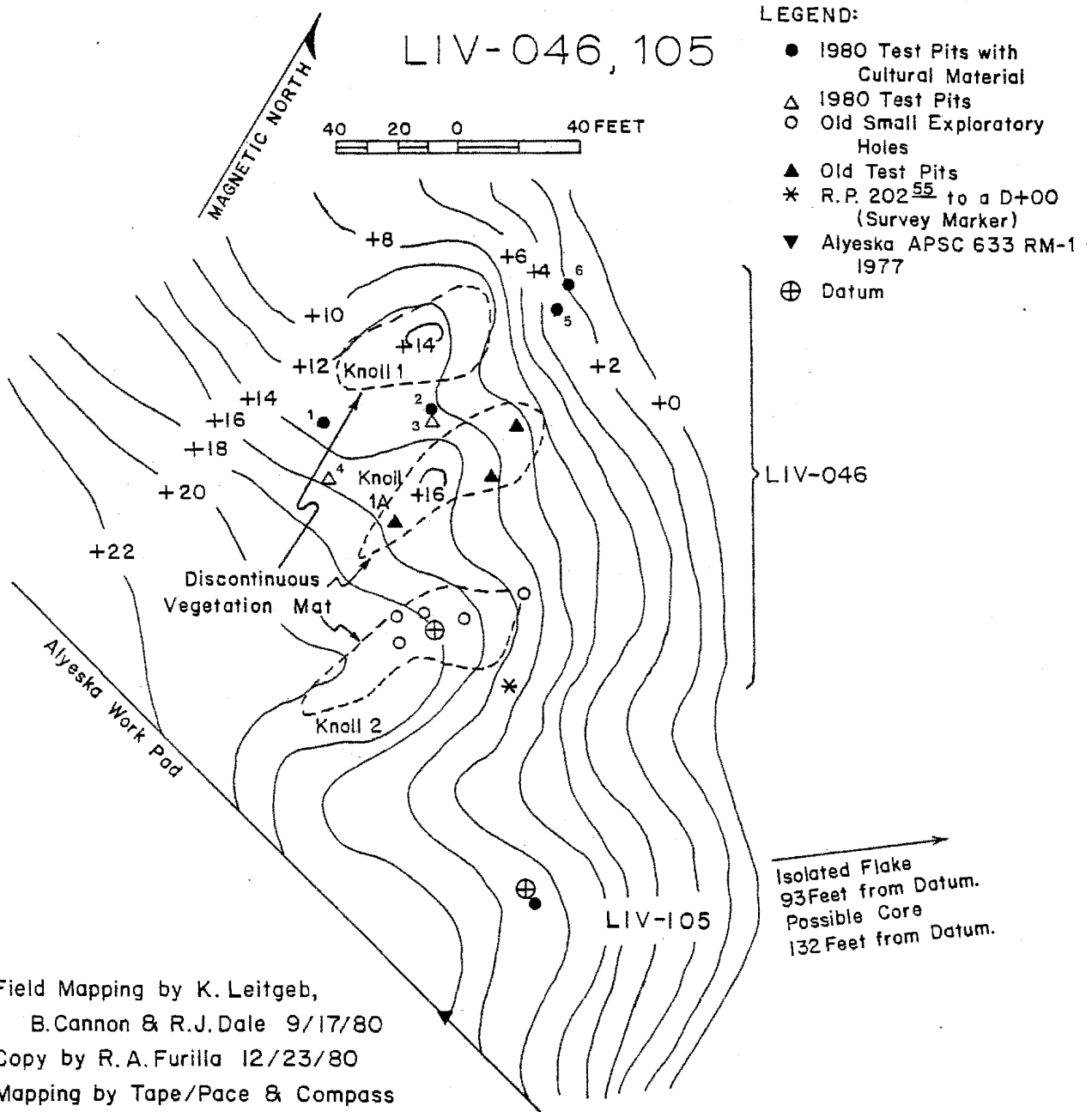
'LIV-046' contains archaeological information and lies near the proposed project area. We recommend testing.

LIV-105 contains archaeological information and lies near the proposed project area. We recommend testing.

FLUOR

4680-9-K050-8-4

Figure 64.



Field Mapping by K. Leitgeb,
 B. Cannon & R.J. Dale 9/17/80
 Copy by R. A. Furilla 12/23/80
 Mapping by Tape/Pace & Compass
 Contour Interval ca. 2 Feet
 (Contours by Inspection, Arbitrary
 Baseline Set at +0)

Alaska State Site No.: LIV-030

Also known as "Tolovana-2."

University of Alaska Accession No.: UA70-218 (former),
UA80-216 (present)

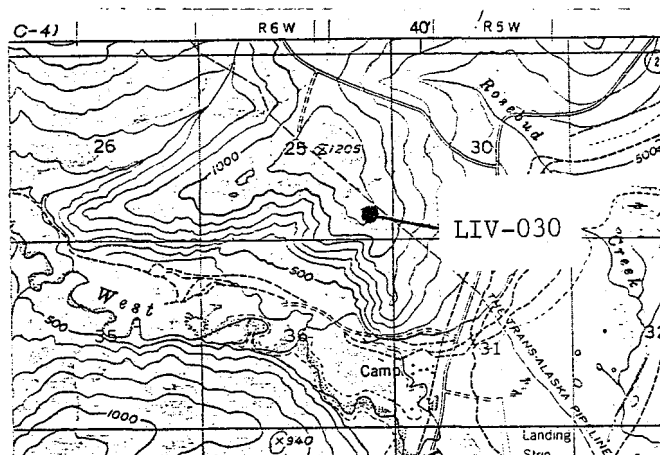
Location:

Latitude: 65° 29' 10" Longitude: 148° 40' 23"

Alaska Coordinate System: 4,200,000 ft N; 701,400 ft E (Zone 4),
LIV B-4 quadrangle

Section, Township, Range: NW/4 of SE/4 of SE/4 of SE/4, Sec. 25,
T8N, R6W (Fairbanks Meridian)

General: The site is located 2600 ft southeast of where Alyeska access road 70-APL/AMS-1M intersects the Alyeska pipeline, and 200 ft southwest of the work pad. 'LIV-030' also lies within the southeastern part of proposed EMS 71-3B, and 190 ft south-southeast of the southern edge of an existing Alyeska material source (Fig. 61).



Environmental Setting

'LIV-030' lies on the crest of a small ridge near the summit of Rosebud Knob. The ridge drops off abruptly to the south. The view is good, especially to the west where the west fork of the Tolovana River watershed is overlooked.

The ridge crest is sparsely vegetated compared to the surrounding areas. Local vegetation comprises mainly birch and spruce trees, with some shrub willow and alder. The understory includes labrador tea, grasses, cranberries, rose, blueberries, fireweed and several species of low, leafy plants. Moss and lichen constitutes a discontinuous but significant part of the on-site ground cover.

Fauna in the area includes bear, moose, fox and squirrels. Rosebud Creek lies about 1 mi to the east and northeast, and is the closest major water source to the site.

Rosebud Knob, and the site location, specifically, contains extensive outcrops of blackish and grey chert (the so-called "Livengood chert") which is an important cultural resource, transported and utilized at least 100 mi from this general area. The occurrence of the many sites in this area is also, no doubt, due mainly to the presence of this material.

Survey Methodology

'LIV-030' was located during routine archaeological survey of EMS 71-3B in 1980. The site was identified by an old stake labelled "Tol-2," and the presence of former Alyeska archaeological excavations. This site has been recently discussed in a re-study by Anderson (1975). Anderson's map corresponds exactly with the one produced in 1980 (Figs. 65, 66).

The site was mapped, photographed and described in 1980, and was followed by an intensive visual reconnaissance for cultural materials. A number of routine test pits were placed off the knoll, and only three test pits were placed on the knoll itself (Fig. 65).

Site Description

The site is situated on an elongate northeast-southwest trending ridge crest, characterized by a small knoll. The estimated site area is about 1600 ft². The 1974 Alyeska excavations, which lie immediately southwest of the ridge summit, however, only covers 18 m², about 9% of the site (Fig. 65).

Cultural materials. For a senior thesis at the University of Alaska, V. Sue Anderson (1975) performed further analysis of twenty-seven selected artifacts from LIV-030 (accessioned as UA70-218). The University Museum lists site LIV-26 (Y-40) for this accession number. Her classification comprised: bevelled flakes (15%), bifaces (37%), retouched flakes (18%), retouched nodules (15%), burins (4%) and amorphous cores (11%). While not all of her specimens were mapped, Anderson (1975:17) shows the heaviest apparent concentration of these artifacts occurring in the northeastern part of the excavation, between 5 and 15 ft southwest of the datum (Figs. 66, 67). Anderson's plotting of flake density (Anderson 1975:18) shows a similar focus in the same area, with flake numbers/weight decreasing both southwest and northeast

from this area (within the excavation). Her conclusion is that 'LIV-030' is a quarry site where much of the material was worked at its source, and that no evidence exists for long-term occupation (Ibid.:14).

Despite the unknown sampling procedure applied during this time, it is presently felt that Anderson's functional assessment is essentially correct. However, length of occupancy and other, subsidiary site functions are unknown.

Of the three on-site test pits placed in 1980, only Test Pit-1 (Fig. 65) produced any cultural materials (one flake at a depth of 3 inches). Very little in the way of surficial artifacts were seen, but some material including a burin, was observed and collected at the base of the knoll.

Stratigraphy. The stratigraphic format on the knoll top consists of a 0-0.5 inch discontinuous lichen mat overlying 2 inches reddish silt (loess?) with admixed chert fragments (including artifacts). Decomposing bedrock lies below. The format is similar at the base of the knoll, but the vegetative mat and the reddish silt/loess? are thicker.

Impact

The site has formerly been excavated (in part), and as the excavations have not been backfilled, erosion is impacting the site to a minor degree. Direct impact is threatened by proposed exploitation of EMS 71-3B, within which the site lies. In addition, "Revision 3", (1980 of the NWA gasline places the centerline within 200 ft of 'LIV-030', to the southwest, posing possibly indirect impact by construction personnel and equipment.

Significance

'LIV-030' has been only partially excavated. The complete artifact assemblage is presumed to be repositied in the University of Alaska Museum, but has not been analyzed.

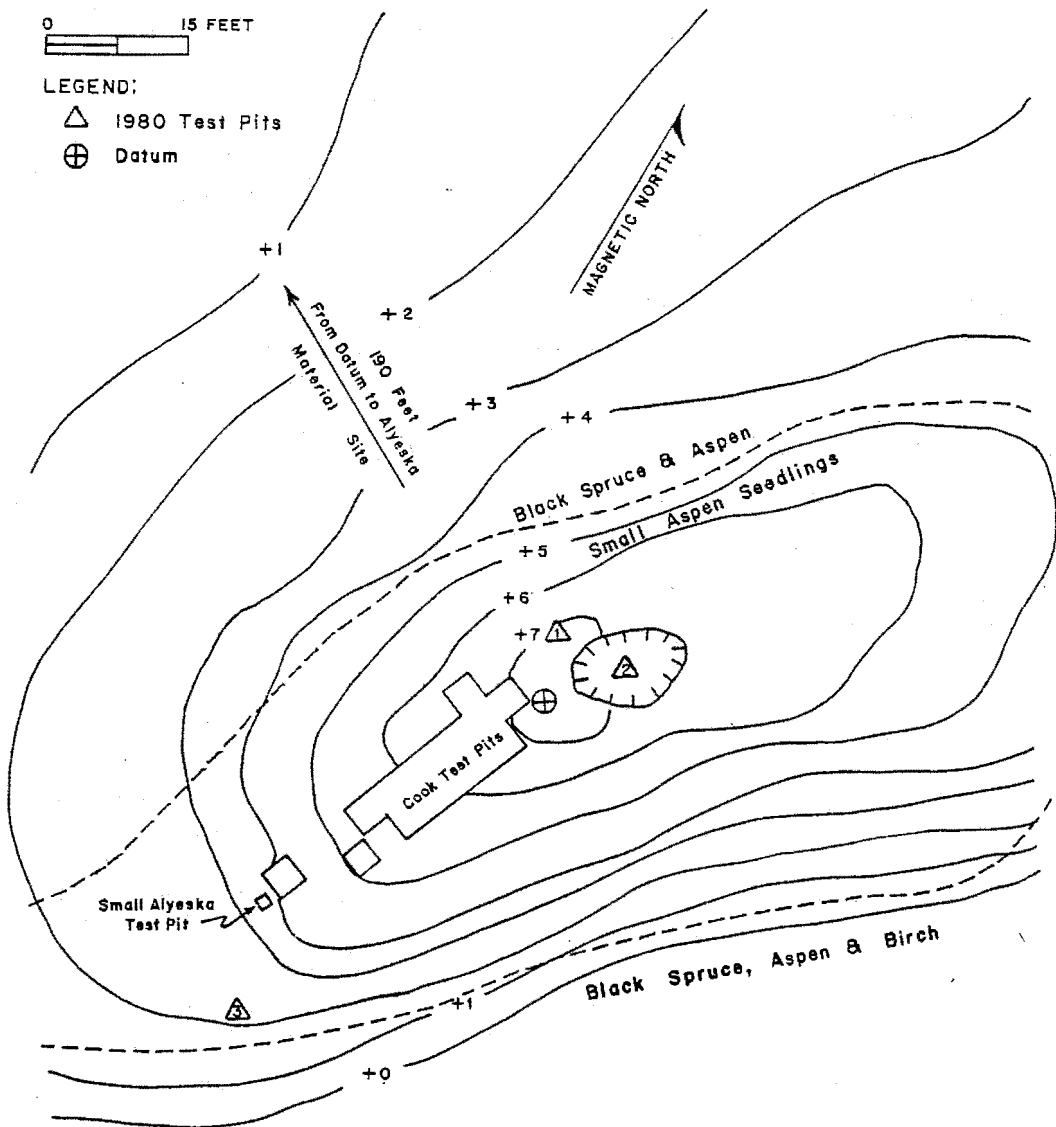
'LIV-030' has been defined as a quarry site, and is part of an areal complex of other prehistoric stone reduction and camp sites distributed on Rosebud Knob due, chiefly, to the locally abundant outcrops of Livengood chert. The entire area can perhaps be considered as one cultural focus, inhabited and exploited probably over millennia.

Recommendation

'LIV-030' contains extant data and is directly impacted by proposed project activities. We recommend a request for determination of eligibility.

Figure 65.

LIV-030



Field Mapping by B. Cannon, D. Hanson
 & T. Des Rochers 8/24/80
 Copy by R. A. Furilla 9/1/80
 Mapping by Pace & Compass
 Contour Interval ca. 1 Foot
 (Contours by Inspection, Arbitrary
 Baseline Set at +0)

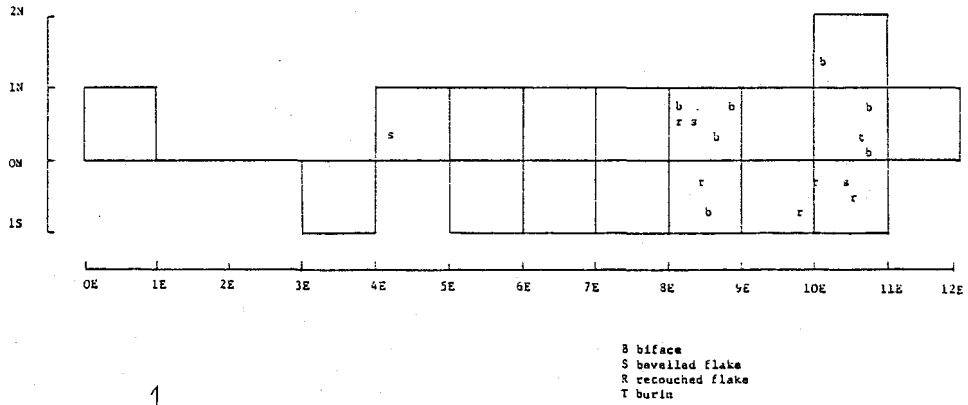


Figure 66. Distribution of selected diagnostic artifacts from LIV-030.

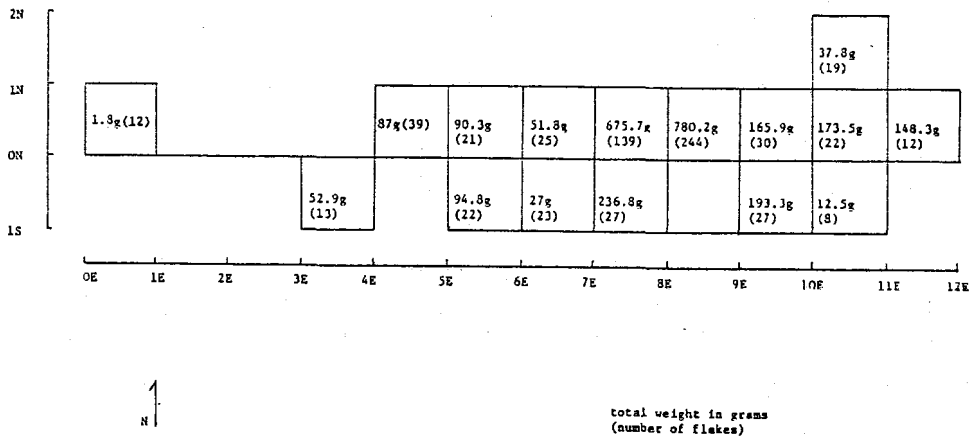


Figure 67. Distribution of lithic flakes from LIV-030 by number and weight.

(From Anderson 1975)

Alaska State Site No.: LIV-040

University of Alaska Museum Accession No.: UA75-40 (former); none ascribed in 1980

Location:

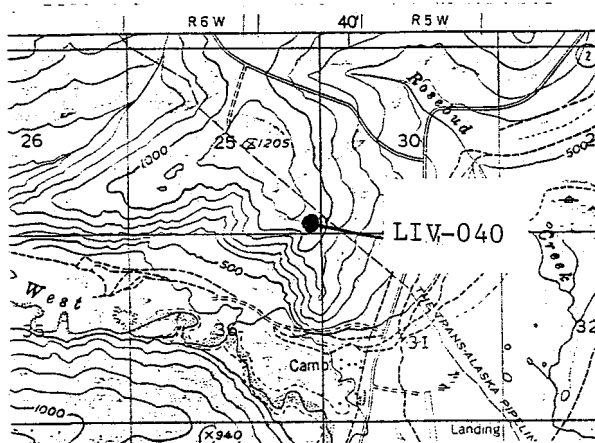
Latitude: 65° 29' 09"

Longitude: 148° 40' 18"

Alaska Coordinate System: 4,199,900 ft N; 701,700 ft E (Zone 4), LIV B-4 quadrangle

Section, Township, Range: NE/4 of SE/4 of SE/4 of SE/4, Sec. 25, T8N, R6W (Fairbanks Meridian)

General: The site lies 3100 ft southeast of where Alyeska access road 70-APL/AMS-1M intersects the Alyeska pipeline, and southwest of and immediately adjacent to the workpad. It lies 200 ft southeast of proposed EMS 71-3B (Fig. 61).



Environmental Setting

The site lies on a low knoll of generally cherty composition, near the summit of Rosebud Knob. The knoll rests on a low relief ridge which is the southwestern extension of the one upon which sites 'LIV-046' and LIV-105 are situated. The location overlooks the Tolovana River watershed, and vantage from the site is fairly good.

LIV-040 is set in a relatively clear area (vegetatively). Dominant local vegetation comprises birch and spruce trees and shrub willow. The understory includes labrador tea, grasses, cranberries, rose, fireweed and several species of low, leafy plants. Mosses and lichens are also present as discontinuous ground cover. Fauna in the area includes bear, moose, fox and squirrel.

The site location is bounded to the east and northeast by Rosebud Creek (about 1 mi away). No other substantial body of water is close by.

Rosebud Knob, and the site location specifically, contain extensive outcrops of blackish chert (so-called "Livengood chert"), an important cultural resource, and one which is probably the primary reason for the abundance of archaeological sites in the area.

Survey Methodology

This site, LIV-040, was located during routine archaeological survey of proposed EMS 71-3B in 1980. The site actually lies outside the prospective EMS boundary, but due to the high site density in the area, peripheral localities felt to have high cultural resource potential were also inspected. It is within the corridor (revision 3, March 1981).

The site was noted first by the presence of former Alyeska excavations (Fig. 68) and a weathered wooden stake reading: "TOL-5" or "TOL-3" (datum on map).

The site was mapped, described and photographed, and four small test pits placed in 1980, but no artifact samples were collected.

Site Description

The site is situated on and around a small knoll rising approximately 3-5 ft above the immediate surroundings, and measuring approximately 50 ft in diameter. The slope drops off fairly abruptly to the south; the terrain to the northeast is relatively flat. Much of the ground is exposed near the higher parts of the knoll, displaying many chert cobbles.

The locality immediately east of the knoll summit (20 ft) is occupied by an excavated area formerly worked by Alyeska archaeologists. The main excavation covers approximately 175 ft² (17 m²), and a single 1 m² excavation unit lies adjacent to the main one, east, by about 3 ft (Fig. 68). Two other old smaller test pits lie northeast of the knoll summit and along the south edge of the excavated area.

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Cultural materials. Four chert waste flakes were found in 1980 on the site surface in and around the excavated area (Fig. 68). They were not collected. No other cultural remains were noted, and four test pits yielded negative results. Thomas Andrews (University of Alberta) is evidently organizing and studying materials from this and other 'Rosebud Knob' sites.

Stratigraphy. The general stratigraphic makeup of LIV-040 is a thin, discontinuous humic zone overlying a reddish-brown site (loess?) with abundant admixed chert cobbles and cultural materials. 'Bedrock' is shallow (no deeper than 8 inches).

Impact

Apparently, there is little cultural information of any value remaining at this site, either through excavations or possible Alyeska construction activities.

The site lies very close to the southeastern end of proposed EMS 71-3B, and may be subject to further indirect impact.

The proposed NWA centerline now passes within 200 ft of the site, to the southwest ("Revision 3"), and potentially threatens the site with at least indirect impact by construction equipment or personnel. The excavations were never backfilled, and erosion is creating minor disturbance.

Significance

The site, no longer extant, is part of an areal complex of stone reduction/quarry sites around Rosebud Knob due, for the most part, to the outcrops of Livengood chert. The area may be described as one large cultural focus/locus? used, perhaps over millennia. There is some potential for cultural materials occurring in the vicinity.

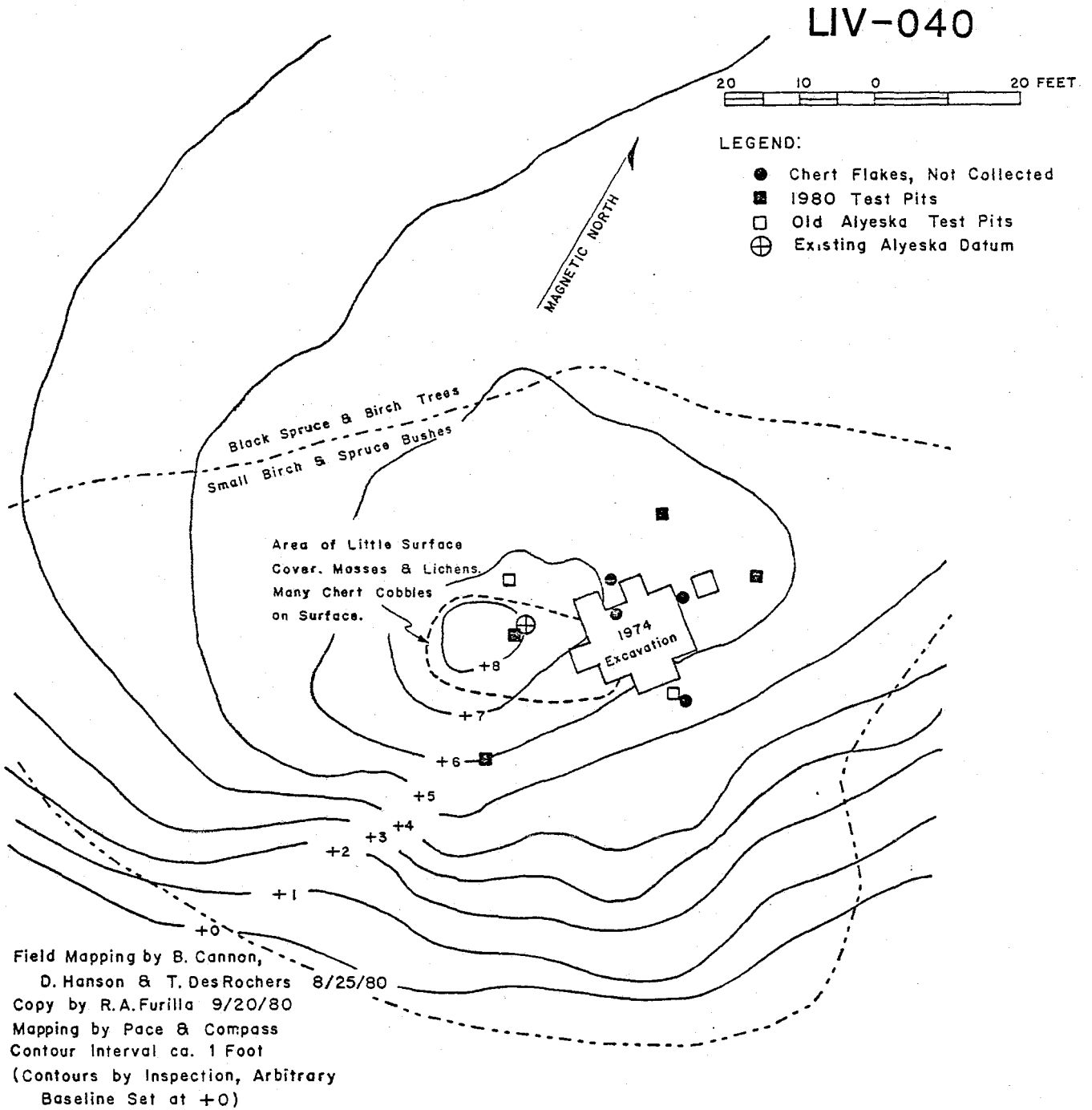
Recommendation

'LIV-040' contains no extant data. It is within the proposed project boundaries. We recommend no further action.

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Figure 68.



Alaska State Site No.: LIV-043 and LIV-041

LIV-043 is also known as "Tolovana-5",

University of Alaska Museum Accession No.: None

Location

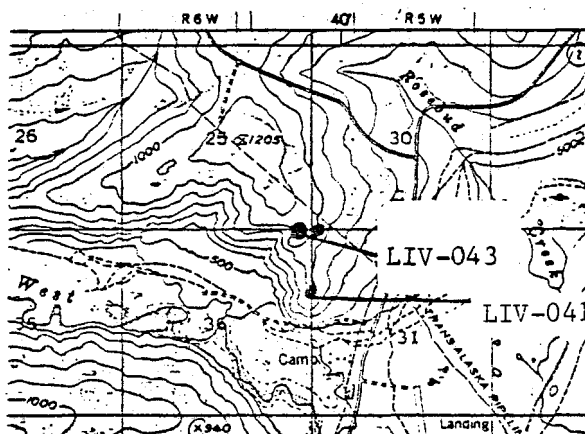
Latitude: 65° 29' 03"

Longitude: 148° 40' 20"

Alaska Coordinate System: 4,199,300 ft N; 701,500 ft E (Zone 4),
LIV B-4 quadrangle

Section, Township, Range: N/2 of NE/4 of NE/4 of NE/4, Sec. 36, T8N,
R6W (Fairbanks Meridian)

General: The site is located 3300 ft southeast of where Alyeska access road 70-APL/AMS-1M intersects the workpad, and 600 ft southwest of the workpad (Fig. 61).



Environmental Setting

The site, inferred to be LIV-043 (Tolovana-5) in 1980, is described as an alpine knoll site, much like the setting of others in the area. The site is located on the flat crest of a bedrock ridge, known as Rosebud Knob. LIV-041 lies south of LIV-043 and is also described here.

Survey Methodology

The site was located during routing archaeological reconnaissance of proposed EMS-71-3B in 1980. No test pits were placed as cultural material was surficially exposed, and the site lies off the proposed EMS.

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4680-9-KU50-8-4

Site Description

The site has previously been excavated by Alyeska archaeologists (Derry in Cook 1977:274-275), and a weathered stake on-site is probably labelled "Tol-5."

The site is located on the last knoll before a steep drop-off to the south. Abundant cultural material is visible on the site surface and in the sides of old exposed test pits. Two excavated areas exist, one on a small, sharp knob, and another on the flat area to the west and northwest.

LIV-041 is described by Derry (in Cook 1977:268-289) as the only stratified site in the Rosebud Knob area. While it does not occur on or near a chert outcrop, it is within 0.5 mi from such a source. The site was estimated to cover "175-200 square meters," with cultural materials occurring along the highest part of the ridge crest. Three cultural horizons were identified, top to bottom: CH-I, CH-II and CH-III.

Cultural Materials. Abundant cultural material was observed in both sites in 1980, eroding out of the sides of the old excavations and lying about on the site surface. None were collected.

At LIV-041, Derry's cultural Horizon-I (Cook 1977:270-272) was identified as Tuktuk/Palisades characterized by Tuktuk tabular microblades, both side-notched and lanceolate projectile points, and a variety of scrapers (Fig. 69). Interestingly, a number of these implements are made of non-local chert, yet no lithic waste of similar composition was recovered at the site. An approximate age of 5500-7500 years B.P. was suggested for this horizon based on typological dating. Due to the comparatively broader range of implement types, it was also suggested this horizon did not reflect a primary quarry/workshop emphasis.

Cultural Horizon-II was termed the 'wedge-shaped microblade core component,' radiocarbon dated at 5845 \pm 246 B.P. (Ibid.:272). Burins, absent in CH-I are present, and projectile points with corner notching and expanding stems are present along with end scrapers having graver tips (Fig. 70). These scrapers are similar to UA80-229-1 recovered from BET-122 (Fig. 5). None of the buff colored 'foreign' chert was present in this horizon, but obsidian did occur.

Cultural Horizon-III was the oldest recognized component at LIV-041, with 20% of the artifacts lying directly upon the bedrock at the base of the loess. No microblade cores were recovered, but burins and projectile points showing concave bases and convex sides were observed. All the points were broken in a manner suggestive of use (Fig. 71).

LIV-043 (detailed in the forthcoming report on the 1981 field season) produced Tuktuk materials both with and without microblades (Cook 1976:19).

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Stratigraphy. Most of the LIV-041 materials lie within a loess varying in thickness from 14-30 inches, equated with the Ready Bullion Formation. A very thin soil horizon occurs on top the loess. Beneath the soil horizon a mildly oxidized A₂ horizon is present, grading downward (ca. 6 inches) into an unoxidized tan loess (C horizon). Beneath the base of the loess and bedrock, another zone occurs which is also a loess but with a higher clay content and coarser upward size range. The unit contains scattered angular pebbles mainly derived from the eroding bedrock. The bedrock, itself, appears pitted due to natural abrasion, and in one case, probably due to prehistoric quarrying activities (Derry in Cook 1977:268-269).

LIV-043 consists of two loci covering 500 m². A 30% excavation removed 80% of the remain according to Derry (field notes 1974). Most materials were in the organic layer or just below it.

Impact

Both sites have been formerly excavated, and because none of the pits were backfilled, erosion is severely destroying much of the remaining, undisturbed portions.

LIV-041 lies off the project area.

LIV-043 lies approximately 300 ft south of proposed boundaries EMS 71-3B, so it is not directly threatened with direct impact from mining activities. Possibilities of indirect impact, however, do exist. In addition, the "Revision 3" placement of the proposed gasline corridor basically includes the site (to the west), and now poses a direct threat.

Significance

The site, LIV-041, is significant in that it is a stratified site with three distinct cultural components. As such, it is important in what it can reveal about long term prehistoric land and resource utilization, and both inter- and intra-site relationships. It is probable that additional materials remain that could reveal more about this important cultural/archaeological prehistoric locus.

LIV-043 contains several loci which have been excavated. Some material remains in situ; however, previous work collected the bulk of it.

Recommendations

LIV-041 does contain extant materials but it is outside the project area. We recommend no further action.

LIV-043 does contain some extant materials and lies inside the project area. It is unlikely that any important material remains. We recommend no further action.

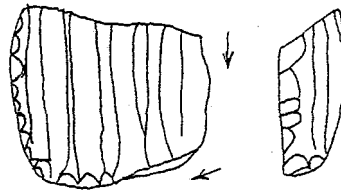
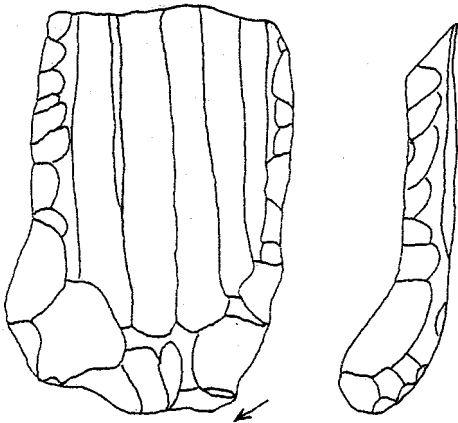
FLUOR

4680-9-K000-84

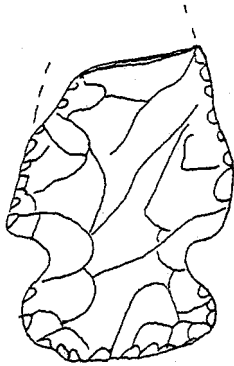
4680-9-K050-8-4

Figure 69. LIV-041/CH-1 artifacts.

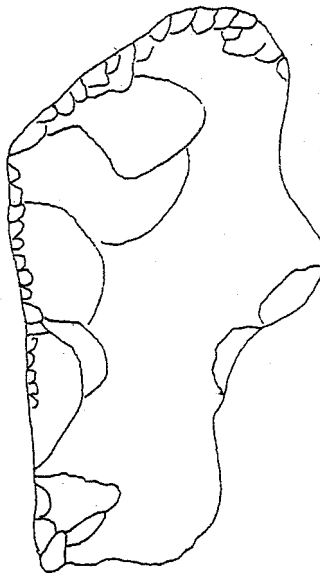
[from Cook 1976]



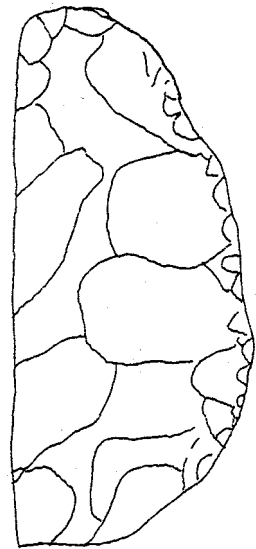
Tuktuk type microcores (note burin blows)



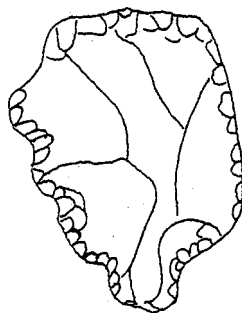
Large side-notched point



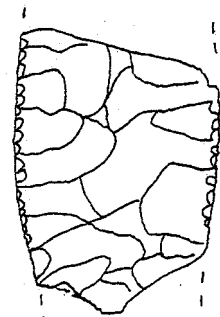
Flake knife



Bifacial semi-lunar knife



Notched scraper



Medial section of lanceolate? point

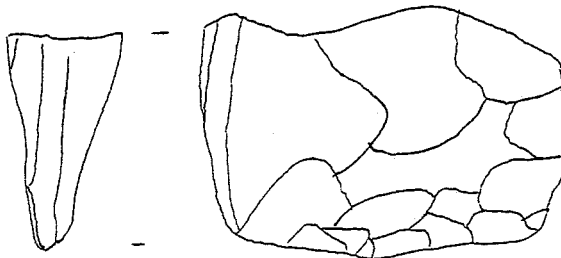
FLUOR

4680-9-KU50-84

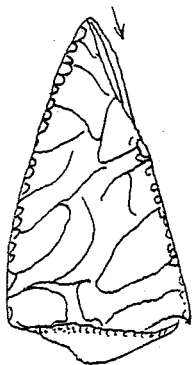
Figure 70. LIV-041/CH-2 artifacts.



Core tablet



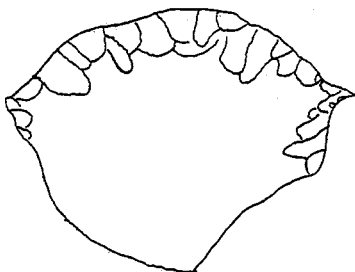
Wedge-shaped microcore



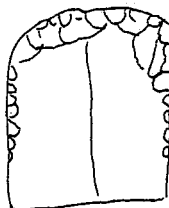
Burinated point tip



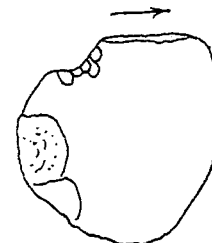
Corner notched/expanding stem points



Scraper-graver



End-of-blade scraper



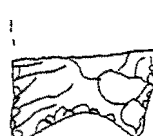
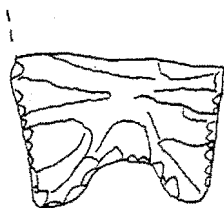
Burin on a concave truncation

[from Cook 1976]

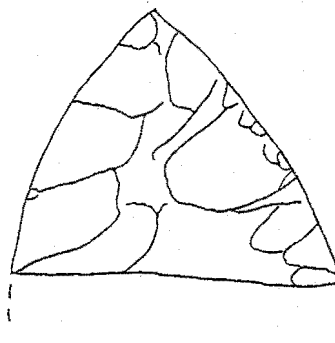
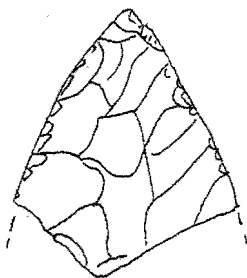
FLUOR

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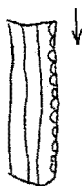
Figure 71. LIV-041/CH-3 artifacts.



Concave base point fragments



Large biface fragments



Edge-burinated microblades (note retouch adjacent to facets on all specimens)

[from Cook 1976]

Alaska State Site No.: XBD-042

University of Alaska Museum Accession No.: None

Location

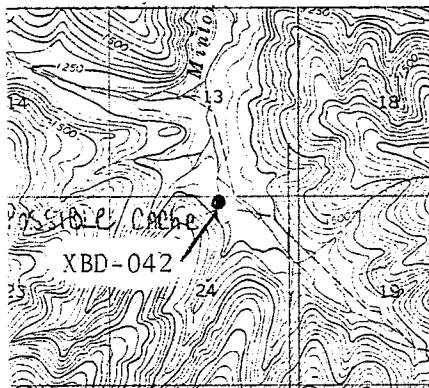
Latitude: 64° 23' 15"

Longitude: 146° 15' 55"

Alaska Coordinate System: 3,796,200 ft N; 458,000 ft E (Zone 3),
XBD B-5 quadrangle

Section, Township, Range: NE/4 of NW/4 of NW/4 of NE/4, Sec. 24,
T6S, R7E (Fairbanks Meridian)

General: The site is situated 650 ft northwest of an existing borrow pit and 100 ft southwest of the GVEA corridor, between the two middle tributaries to Minton Creek (Fig.72).



Environmental Setting

The site sets in hilly terrain of moderate relief, vegetated with a forest of large spruce, birch, cottonwood? and willow trees, and an understory of berries, moss, lichen, ferns, labrador tea. Willow thickets occupy the valley bottom. Water is plentiful in the nearby Minton Creek and its tributaries. Animal life comprises moose, bear, spruce grouse, fox, hare, squirrels, and other smaller rodents. The South Fork of Minton Creek is a fish habitat.

Survey Methodology

The site was located during routine archaeological survey along the proposed NWA gasoline corridor in 1980. The feature characterizing the site was tested, mapped and described, and testing was conducted in the immediate vicinity.

Site Description

The site consists of a crudely rectilinear, shallow depression, tentatively identified as a possible cache. The feature measures 5.6 x 6.1 ft, 5.6 ft (east-west) x 6.1 ft (north-south). Depth is not indicated. No distinct berm was noted on the periphery, but a tree-covered 'lump' lies adjacent to the pit. Testing, however, revealed nothing extraordinary. Some possible bird bones were recovered from a small test pit placed in the bottom of the feature. Subsurface testing in the vicinity revealed no cultural materials. The stratigraphy seen in the test pit placed in the center revealed a thick moss mat over blackish organic material overlying 1 ft + red silt (loess?). This regime is the same outside the pit.

Impact

The site (feature) was apparently well-preserved, despite its unknown function. The feature is directly threatened with direct impact from the proposed NWA gasline.

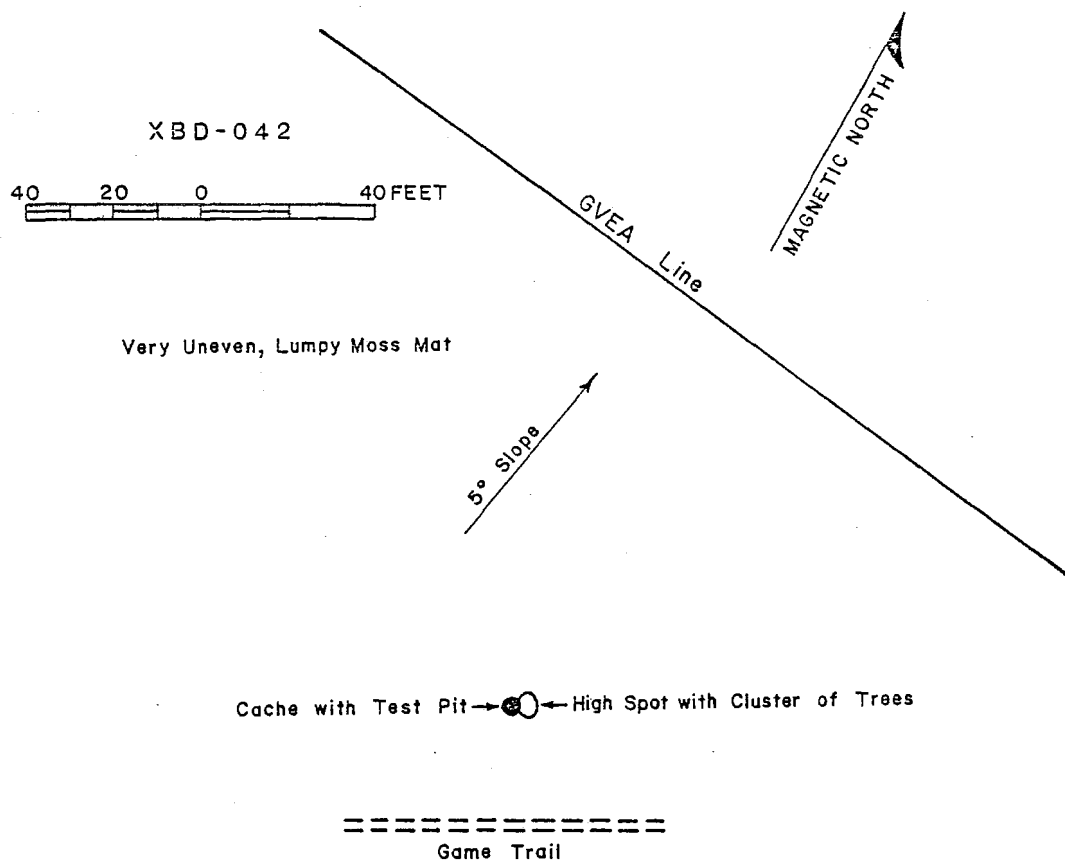
Significance

Significance of this feature is difficult to assess. Its function as a 'cache' is somewhat speculative. There are no (other) cultural materials in the near vicinity.

Recommendation

XBD-042 is a possible cultural resource with no data to provide outside of its form and location. The site has been carefully photographed and documented, thus, we recommend no further action.

Figure 72.



Field Mapping by K. Leitgeb &
J. Dale 7/2/80
Copy by R.A. Furilla 2/7/81
Mapping by Pace & Compass

Alaska State Site No.: TNX-Find

University of Alaska Museum Accession No.: UA80-166

Location

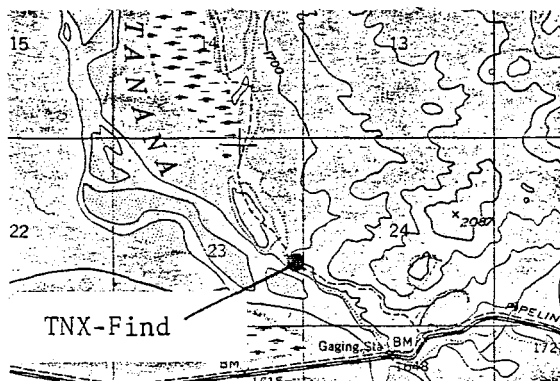
Latitude: 63° 19' 25"

Longitude 142° 39' 20"

Alaska Coordinate System: 3,407,600 ft N; 392,350 ft E (Zone 2),
TNX B-4 quadrangle

Section, Township, Range: NW/4 of NW/4 of SW/4, Sec. 24, T18N,
R14E (Copper River Meridian)

General: The site is located on the southwest side of a hill overlooking the Tanana River, approximately 0.9 mi from the Alaska Highway, along a northwest trending access road.



Environmental Setting

The locality is set on a bedrock bluff overlooking the Tanana River. Vegetation comprises a moderately dense spruce forest with scattered alder, willow, moss, lichen, berries and grasses. On-site (the road cut) only alder was present.

Faunal resources include hare, moose, bear, spruce grouse, squirrels, and other rodents, waterfowl, fish and a variety of small birds. The nearest water is the Tanana River 30 ft below the locality to the southwest. The terrain consists of rolling hills to the east mixed with the flat floodplain of the Tok and Tanana Rivers' confluence. The view to the north and south (along the river) is good.

Survey Methodology

The find was made during archaeological survey of a locality designated for a NWA fault stability test site. The road cut and adjacent terrain, which constitute the access, and the test site, were intensively surveyed. Four test pits were placed on the bank top.

Site Description

The find area consists of a road cut and the adjacent bank top (Fig. 73). This upper surface is disturbed and hummocky, and appears to be a spoil/slash site for road construction. The area surveyed measured 15 x 30 ft, and except for some alder, is void of trees. If the locality is an archaeological site, its limits were not established.

Cultural materials. Three dark grey, basaltic? lithic flakes were recovered from a paleosol exposed in the road cut, 1.7-1.9 feet below the surface. The flakes have questionable human origins, although they do appear anomolous in the otherwise fine grained silty loess. Two of the flakes also show a vestige of a percussion bulb. The test pits placed on the bank top had negative results.

Stratigraphy. The general stratigraphy of the locality is predominantly a loess sequence with interbedded paleosols and volcanic tephra units. The sequence is locally disturbed through rodent activity and recent construction activity, but no sign of prehistoric disturbance was noted. The volcanic tephra is probably the White River Ash, dating at 1,890 years B.P. based on geological cross-dating (Bowers 1978:22). Some typical stratigraphic profiles are shown in Figure 74.

Impact

If this is an archaeological focus, it has been impacted by road construction. At present, the bank is subject to erosion, and NWA intends to place a fault stability test trench in the vicinity.

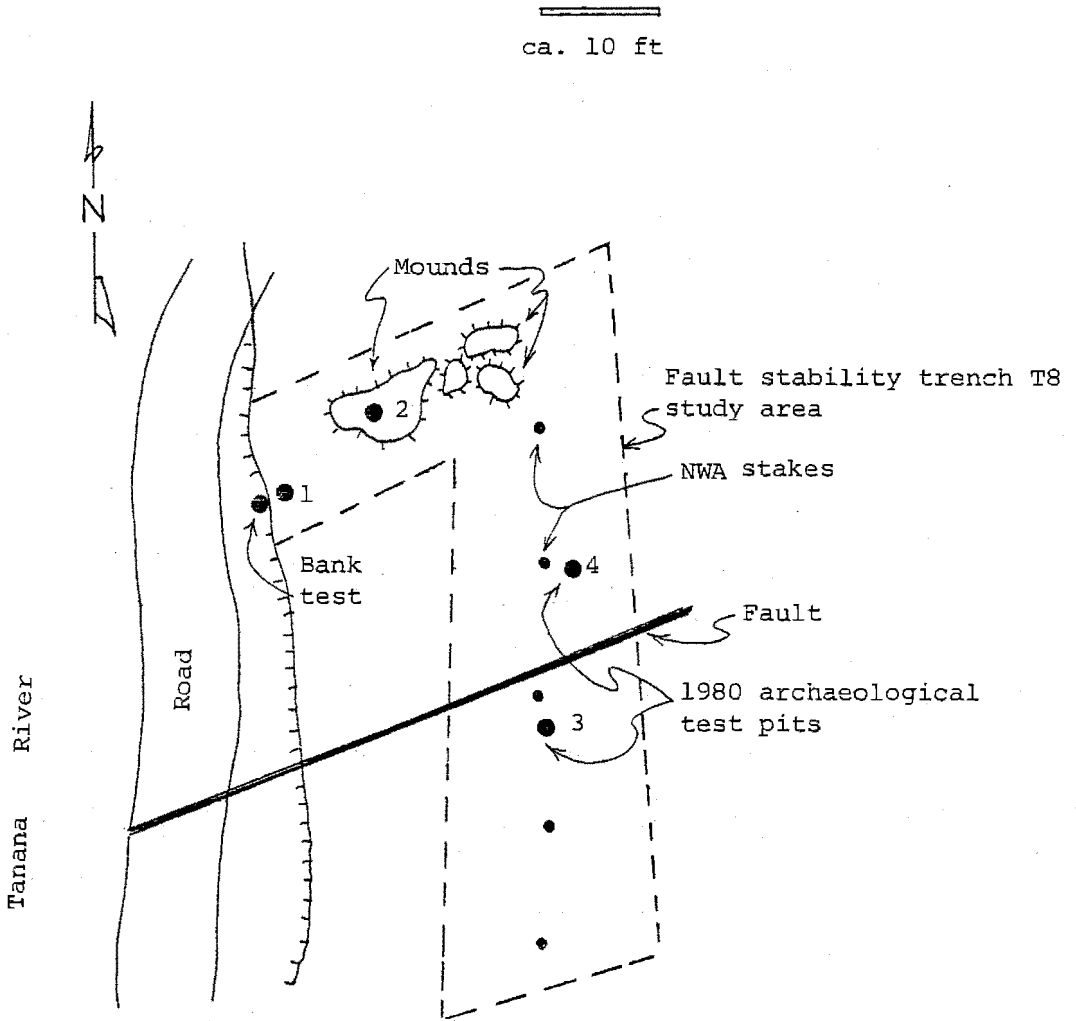
Significance

The three flakes recovered from the bank are inconclusive and insufficient to assess any possible archaeological significance to the locality. The stratigraphy contains paleosols underlying 1900 year old volcanic ash, which have the potential for harboring cultural resources, and the three 'flakes' are anomolous in terms of their provenience, not to mention their origin. The nearest known cultural resource to the locality is TNX-I, on the river bar directly across the Tanana River to the east.

Recommendation

TNX-Find is isolated. Testing and detailed examination revealed no additional data. We recommend no further action.

Figure 73. TNX-Find map.



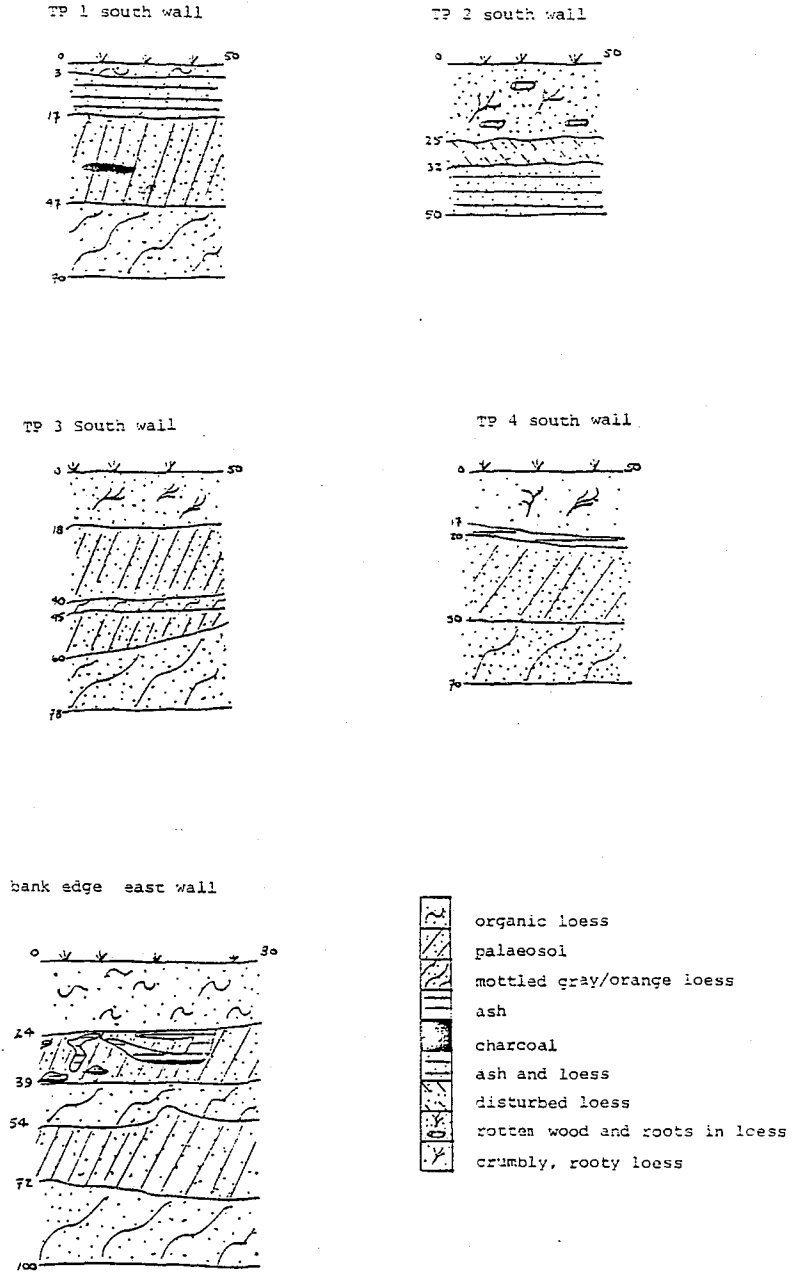


Figure 74. Representative stratigraphic profiles, TNX-Find.

SUMMARY OF CULTURAL RESOURCES REQUIRING MANAGEMENT
CONSIDERATION

Some 81 cultural resources (sites, structures, isolated finds and accumulations of modern debris) were identified in the 1980 archaeology survey of the proposed centerline, EMS's and ancillary locations associated with the NWA gasline/alignment (Table 6).

Specifically, the inventory comprises newly identified and previously recorded cultural resources which were re-identified and field checked. Of the 81, 54 are directly threatened with adverse impact by proposed project activities (i.e., potential destruction of cultural resources through centerline construction or EMS development). Seventeen require management. In addition, seven of 15 resources which lie within 200 feet of the proposed project boundaries are, because of their conspicuous natures (e.g., structures and promontories), jeopardized by indirect, potentially adverse impacts. In the authors' judgment those 12 resources which lie at distances greater than 200 feet (in most cases in excess of 400 feet) from the proposed construction areas, are not likely to be adversely affected by project personnel or equipment. In these cases no further action is normally recommended.

A review of available information on the cultural resources included in the present report indicates that 17 contain sufficient research data potential to warrant a request for a determination of National Register eligibility at this time. Not all are endangered by the project. Seventeen resources contain insufficient information to render an opinion of eligibility. Some 47 resources reviewed are not, in the authors' estimation, of Register quality. That is, they do not contain data which will provide insight(s) into local or regional history or prehistory. Most of these are finds without context, or are sites that have been previously excavated or destroyed through earlier construction activities.

Of relevance to the sponsor for management considerations, 8 cultural resources are identified from the 1980 survey which contain information and which are potentially threatened with adverse impact (directly and indirectly, as described above) by NWA construction plans. It is suggested to the sponsor and to the reviewing agencies that sufficient data exist at these localities to seek determinations of Register eligibility at this time. In these eight cases the sponsor and agencies need to coordinate the development of a management program. Toward this end, a tentative estimate of worker days required for scientific data recovery in each case is provided (in the preceding section).

In 16 cases where insufficient information is available to render an opinion on site significance and where the potential resource is endangered by proposed construction activities, it is recommended that additional testing (or suggested analysis of existing data) be undertaken during the 1981 field season in order to plan for their management. There are 57 cases for which it is recommended that no further action be required or taken. These include 47 for which no information potential is present, and 10 which contain data but lie well outside the project boundaries.

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4680-9-K050-8-4.

Table 7 indicates those sites which, in the authors' judgement, require further consideration. Those sites lying on or near the centerline are keyed to alignment sheet (AS) numbers, or by EMS numbers when applicable. More precise site locations are given in the preceding site reports. All other centerline segments, EMS's and ancillary localities surveyed intensively on foot or visually in 1980 lack visible evidence of cultural resources, and have no need for additional survey prior to commencement of construction in the view of the investigators.

TABLE 7. RESOURCES FOR WHICH FURTHER ACTION IS RECOMMENDED*

| Centerline Impact: Request Determination of Eligibility | Centerline Impact: Require Additional Testing | EMS Impact: Request Determination of Eligibility | EMS Impact: Require Additional Testing |
|---------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AS-027: PSM-192 | AS-016: SAG-006 AS-028: PSM-069 | EMS-20-3A: PSM-060 EMS-48-0: BET-055 EMS-71-3A: LIV-103 EMS-71-3A: LIV-107 EMS-71-3A: LIV-108 EMS-71-3B: LIV-030 EMS-71-3B: LIV-047 EMS-71-3B: LIV-106 | EMS-21-1: PSM-189 EMS-26-1: PSM-181 EMS-26-1: PSM-182 EMS-26-1: PSM-183 EMS-26-1: PSM-184 EMS-27-18: PSM-190 EMS-36-3: CHN-012 EMS-45-3: WIS-051 EMS-46-1: WIS-019 EMS-48-0: BET-122 EMS-48-0: BET-123 EMS-71-3A: LIV-046 EMS-71-3A: LIV-105 |

*The following cultural resources contain recoverable information relevant to local and regional history and prehistory. They lie outside the project boundaries by at least 200 feet and up to 1200 feet.

Off Centerline

AS-016: SAG-011
AS-027: PSM-193
AS-027: PSM-191
AS-029: PSM-194
AS-040: CHN-015
AS-040: CHN-014
AS-071: LIV-039

Off EMS

EMS-41-3: WIS-050
EMS-46-1: WIS-001
EMS-71-3B: LIV-041

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4680-9-KU50-8-4

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APPENDIX 1

Field Personnel, 1980

Jean S. Aigner, Ph.D., in general charge of the program.

Brian L. Gannon, B.A., in charge of the field crews.

Crew: P. Bennett, B.S.
L. Boring, M.A.
D. Rintoul, A.A.
J. Dale,* M.A.
N. Collins, B.A.

Brian Cannon, B.A., crew leader.

Crew: S. Alloway,* A.A.
K. Miller, B.A.
D. Hanson, B.A.
T. DesRochers, B.A.

Kathy Leitgeb, B.A., crew leader.

Crew: J. Dale,* M.A.
M. Wright, B.A.
R. Timian, B.A.
P. Rissman, M.A.

Sharon Fetter, M.A., crew leader.

Crew: L. Litwinionek,* B.A.
J. Thorsen, B.A.
J. Jordan, B.A.
R. Fox, B.A.
T. Villa, B.A.

*Also served as backhoe program monitors.

Other participants

Field: P. Book, Ph.D.
B. Byington, M.A.
L. Heartfield, Ph.D.

Typing: E. West

APPENDIX 2

Work Completed: Centerline Segments*

| <u>Segment Width 150 ft.</u> | <u>Segment Width 500 ft.</u> | <u>Work Completed</u> | <u>If Not, Reason</u> |
|----------------------------------|----------------------------------|-----------------------|--------------------------------------------------------------------------------------------------|
| - | 0-10.2 | + | |
| 10.2-12.2 | - | + | |
| - | 12.2-24 | + | |
| 24-44 | - | + | |
| - | 44-45 | + | |
| 45-96 | - | + | |
| 125-132 | - | + | |
| - | (149.6-150) | + | |
| 150-206 | - | + | |
| 217-228 | + | - | |
| 236-247 | + | - | |
| - | 247-248.5 | - | Not flagged, considered to hold high potential for cultural resources. |
| 248.5-254 | - | + | |
| - | 499-503.6 | + | |
| 503.6-515.5 | - | + | |
| - | 515.5-519.4 | + | |
| 519.4-522 | - | + | |
| 528-528.5 | - | - | Deleted as per verbal instructions from A. Cranmer |
| 528.5-534.5 | - | + | |
| - | 534.5-537 | + | |
| - | 537-539.3 | - | Partly lacking permis- sions, partly deleted as per verbal instructions from A. Cranmer |
| 539.3-548 | - | + | |

Total miles assigned in W.O. = 231 miles
Total miles added in field = 0.4 miles

Total miles completed = 227.1 miles
Total miles not completed = 4.3 miles

Total miles assigned = 231.4 miles
Total miles completed = 227.1 miles
Estimated square miles = 8.7 miles
Estimated worker days = 285-290 days

Survey intensity: 33 worker days/square mile (compared to 43-46 worker days for 1978 and 1979 surveys in forested areas; 1980 segments were both forest and tundra vegetation, permitting easier survey in the latter areas).

*NWA Alignment Sheets 1980 Rev. 1.

APPENDIX 3

Summary of EMS's: 1980 Survey

| <u>Intensive Walkover</u> | <u>Acres</u> | <u>Visual</u> | <u>Acres</u> | <u>Total Acres</u> | <u>Notes</u> |
|---------------------------|--------------|---------------|--------------|--------------------|------------------------------------------------------------------------------|
| | | 1-1 | 88 | 88 | |
| | | 1-2 | 101 | 101 | |
| | | 1-3 | 63 | 63 | |
| 1-4 | 40 | | | 40 | Some archaeological potential, scheduled for visual but intensively surveyed |
| | | 2-1 | 754 | 754 | |
| | | 3-1 | 346 | 346 | |
| | | 3-2 | 384 | 384 | |
| | | 4-1 | 459 | 459 | |
| | | 4-2 | 688 | 688 | |
| | | 4-3A | 355 | 355 | |
| | | 4-3B | 42 | 42 | |
| | | 5-1 | 622 | 622 | |
| | | 5-2 | 217 | 217 | |
| | | 5-3A | 158 | 158 | |
| | | 5-3B | 213 | 213 | |
| | | 6-1 | 388 | 388 | |
| | | 6-2 | 194 | 194 | |
| | | 7-1 | 258 | 258 | |
| | | 8-1A | 121 | 121 | |
| | | 8-1B | 181 | 181 | |
| | | 8-2 | 370 | 370 | |
| | | 8-3 | 354 | 354 | |
| | | 9-0 | 259 | 259 | |
| | | 9-1 | 718 | 718 | |
| | | 10-1A | 121 | 121 | |
| | | 10-1B | 363 | 363 | |
| | | 10-2 | 439 | 439 | |
| | | 10-3 | 155 | 155 | |
| | | 11-1 | 325 | 325 | |
| 11-2 | 98 | | | 98 | |
| | | 12-1 | 320 | 320 | |
| 12-2A | 37 | | | 37 | Not scheduled but examined since has potential and were accessible |
| 12-2B | 10 | | | 10 | |
| | | 14-1 | 421 | 421 | |
| 14-2 | 40 | 14-2 | 41 | 81 | |
| | | 14-3 | 43 | 43 | |
| | | 15-2 | 288 | 288 | |
| 16-1 | 30 | 16-1 | 80 | 110 | Potentially no access |
| | | 16-2 | 29 | 29 | Visual scheduled for intensive survey but inaccessible |

Summary of EMS's - Continued

| <u>Intensive Walkover</u> | <u>Acres</u> | <u>Visual</u> | <u>Acres</u> | <u>Total Acres</u> | <u>Notes</u> |
|---------------------------|--------------|---------------|--------------|--------------------|-------------------------------------------------------|
| 16-3 | 96 | | | 96 | |
| | | 17-2 | 28 | 28 | |
| 18-1A | 19 | | | 19 | |
| | | 18-1B | 17 | 17 | |
| 18-1C | 112 | | | 112 | |
| | | 18-1.1 | 94 | 94 | |
| | | 19-1 | 67 | 67 | |
| | | 19-1.1A | 59 | 59 | |
| | | 19-1.1B | 133 | 133 | |
| 19-2A | 86 | | | 86 | |
| | | 19-2B | 26 | 26 | |
| 20-3A | 32 | | | 32 | |
| 20-3B | 50 | | | 50 | Not scheduled but done since near known site on 20-3A |
| 21-0 | 246 | | | 246 | |
| 21-2 | 128 | | | 128 | |
| 22-1 | 37 | | | 37 | |
| 22-2 | 18 | | | 18 | |
| 24-1A | 69 | | | 69 | |
| 24-1B | 41 | | | 41 | |
| 25-1 | 75 | | | 75 | |
| 25-2 | 50 | | | 50 | |
| 26-0 | 153 | | | 153 | |
| 26-1 | 169 | | | 169 | |
| 27-1A | 54 | | | 54 | |
| 27-1B | 27 | | | 27 | |
| 27-2 | 56 | | | 56 | |
| 28-1A | 46 | | | 46 | |
| 28-1B | 15 | | | 15 | |
| 28-4A | 14 | | | 14 | |
| 28-4B | 8 | | | 8 | |
| 29-1A | 10 | | | 10 | |
| 29-1B | 21 | | | 21 | |
| 29-1C | 33 | 29-1C | 20 | 53 | Partially inaccessible Examined aerial photo |
| | | 29-2 | | | |
| 29-3A | 5 | 29-3A | 15 | 20 | |
| 29-3B | 13 | | | 13 | |
| 30-1 | 31 | | | 31 | |
| 30-3 | | | | | Deleted from W.O.#8, no access |
| 31-1 | 8 | | | 8 | |
| 31-2 | 8 | | | 8 | |
| 31-3A | 43 | | | 43 | |
| 31-3B | 39 | | | 39 | |
| 32-1 | 30 | 32-1 | 12 | 42 | Partially inaccessible |
| 32-2 | 111 | | | 111 | |
| 32-3 | 80 | 32-3 | 39 | 119 | Partially inaccessible |

Summary of EMS's - Continued

| <u>Intensive Walkover</u> | <u>Acres</u> | <u>Visual</u> | <u>Acres</u> | <u>Total Acres</u> | <u>Notes</u> |
|---------------------------|--------------|---------------|--------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| 33-1 | 21 | | | 21 | Deleted from W.O.#8 but done as it was accessible & requested by L. Ericson Did not do visually in field, examined air photos |
| | | 34-0 to 39-1 | | | |
| 39-3 | 201 | | | 201 | |
| 41-1 | 48 | | | 48 | |
| 41-2A | 54 | | | 54 | |
| | | 41-2B | 35 | 35 | |
| 41-3 | 31 | | | 31 | |
| 42-3 | 41 | | | 41 | |
| | | 43-2 | 86 | 86 | |
| | | 43-3 | 144 | 144 | |
| | | 44-1 | 208 | 208 | |
| | | 44-4 | 147 | 147 | |
| 44-5 | 27 | | | 27 | Scheduled as visual: added since accessible |
| 45-1 | 73 | | | 73 | |
| 45-2A | 62 | | | 62 | |
| 45-3 | 191 | | | 191 | |
| 46-1 | 118 | | | 118 | |
| 48-0 | 66 | | | 66 | |
| 48-2A | 28 | | | 28 | |
| 48-2B | 56 | | | 56 | |
| 48-3 | 100 | | | 100 | |
| 48-4 | 139 | | | 139 | |
| 51-1A | 37 | | | 37 | |
| 51-3 | 88 | | | 88 | |
| 52-3B | 9 | | | 9 | |
| 54-1B | 19 | | | 19 | |
| 55-1B | 18 | | | 18 | |
| 55-2A | 47 | | | 47 | |
| 60-1 | 85 | | | 85 | |
| 60-1.1 | 69 | | | 69 | |
| | | 64-1 | 201 | 201 | Not scheduled but done since near 60-1 Cleared for hand sample only, not accessible for survey. Helicopter access. Helicopter access. |
| 69-3A | 14 | | | 14 | |
| 69-3B | 15 | | | 15 | |
| 71-0A | 9 | | | 9 | |
| 71-1 | 15 | | | 15 | |
| 71-3A | 23 | | | 23 | |
| 71-3B | 17 | | | 17 | |

Summary of EMS's - Continued

| <u>Intensive Walkover</u> | <u>Acres</u> | <u>Visual</u> | <u>Acres</u> | <u>Total Acres</u> | <u>Notes</u> |
|-------------------------------------------|--------------|---------------|--------------|--------------------|--------------|
| GRAND TOTAL | | | | | |
| 72 | 4009 | 52 | 11289 | 15298 | |
| WORKERDAYS | 315 | | | | |
| INTENSITY (workerdays/ square mile) | 50 | | | | |

Aerial photo interpretation:

EMS's 29-2
 30-2
 30-3
 30-4
 34-0
 34-2
 34-3
 34-4
 35-2.1
 36-1
 36-2
 36-4
 37-2
 38-2
 39-1

APPENDIX 4

Miscellaneous Work - 1980, Requested in Field

| <u>Work</u> | <u>Acres</u> |
|-----------------------------------------------------------------------------|--------------|
| Trench stability plot TS-A1, 1300 x 600 ft. 5 persons @ 100 ft. spacing | 17.9 |
| Trench stability plot TS-D4, 1000 x 1000 ft. 4 persons @ 100 ft. spacing | 23.0 |
| Trench stability plot TS-E4, 700 x 1200 ft. 5 persons @ 80 ft. spacing | 19.3 |
| Trench stability plot TS-I5, 1100 x 800 ft. 5 persons @ 100 ft. spacing | 20.2 |
| Trench stability plot TS-B4, 1000 x 800 ft. 5 persons @ 80 ft. spacing | 18.3 |
| Borehole 41-32 + vicinity 260 x 200 ft., 5 persons | 1.2 |
| Borehole 42-35 + vicinity 260 x 200 ft., 5 persons | 1.2 |
| Borehole 42-37 + vicinity 260 x 200 ft., 5 persons | 1.2 |
| Borehole 27-32 + vicinity 150 x 150 ft., 5 persons | 0.5 |
| Borehole 27-33 + vicinity 150 x 150 ft., 5 persons | 0.5 |
| TOTAL | 103.3 ACRES |

APPENDIX 5

Summary of Monitored Backhoe Trenches on EMS'sSouthern Portion - Canadian border to Yukon River; amended to W.O. #8

| <u>EMS Number</u> | <u>Number of Trenches</u> |
|-----------------------|---------------------------|
| 125-3 | 3 |
| 120-3 | 3 |
| 117-2 | 2 |
| 116-1 | 2 |
| 114-1 | 4 |
| 113-1 | 3 |
| 112-2 | 3 |
| 112-1 | 3 |
| 111-2 | 3 |
| 110-2 | 3 |
| 106-1 | 1 |
| 105-2 | 1 |
| 105-1 | 2 |
| 103-2B | 2 |
| 102-1 | 5 |
| 99-2 | 3 |
| 98-2 | 5 |
| 98-1 | 3 |
| 95-5 | 8 |
| 92-1 | 5 |
| 86-3.1A | 1 |
| 86-2A | 2 |
| 86-2B | 5 |
| 76-1 | 1 |
| 72-3B | 2 |
| 71-0C | 2 |
| Total 26 EMS's | 77 Trenches |

Northern Portion - Exhibit E; W.O. #8

| | |
|-------|---|
| 68-4D | 4 |
| 68-4B | 3 |
| 67-2 | 4 |
| 60-3 | 7 |
| 60-2 | 4 |
| 60-1 | 3 |
| 59-2 | 5 |
| 56-1 | 9 |
| 54-2 | 8 |
| 50-1B | 8 |
| 49-3 | 3 |
| 49-2 | 3 |

Northern Portion - Continued

| <u>EMS Number</u> | <u>Number of Trenches</u> |
|-------------------|------------------------------------------------------|
| 47-2 | 6 |
| 46-2C | 1 |
| 46-2A | 3 |
| 45-2B | 4 |
| 45-2A | 3 |
| 45-1 | 4 |
| 44-5 | 4 |
| 43-4 | 20 |
| 43-1 | 10 |
| 42-3 | 5 |
| 42-1 | 8 |
| 40-2B | 0 access cleared but could not get through muskeg |
| 40-2A | 3 |
| 39-3 | 5 |
| 38-4 | 12 |
| 38-3 | 8 |
| 37-3 | 8 |
| 36-5 | 7 |
| 36-3 | 7 |
| 35-4 | 8 |
| 35-2A | 4 |
| <u>35-2B</u> | <u>8</u> |
| Total 34 EMS's | 119 Trenches |

Sites north of the area in Exhibit E; added to program in the field.

| | |
|-------|----|
| 33-3 | 3 |
| 32-2 | 9 |
| 32-1 | 4 |
| 31-3 | 5 |
| 31-2 | 2 |
| 31-1 | 5 |
| 30-3 | 6 |
| 30-1 | 9 |
| 29-3 | 5 |
| 29-1 | 11 |
| 28-4A | 3 |
| 28-4B | 2 |
| 28-1A | 4 |
| 28-1B | 3 |
| 27-2 | 7 |
| 27-1 | 7 |
| 26-1A | 12 |
| 26-0 | 2 |
| 25-1 | 3 |
| 24-1 | 4 |

Sites north of Exhibit E - Continued

| <u>EMS Number</u> | <u>Number of Trenches</u> |
|-------------------|---------------------------|
| 22-2 | 3 |
| 21-2 | 2 |
| 21-1 | 2 |
| <u>18-1A</u> | <u>1</u> |
| Total 24 EMS's | 114 Trenches |

TOTAL OF SITES: 84

TOTAL OF TRENCHES: 390

Field Changes to the Work Order:

Deleted in field:

| | |
|-------------|----------------|
| 34-1 | 4 |
| 38-2 | 3 |
| 39-4 | 2 |
| 40-B | 7 inaccessible |
| 41-3.1 | 12 |
| 41-5 | 12 |
| 42-2A, B, C | 12 |
| 43-3 | 6 |
| 50-2 | 5 |
| 51-A | - |

Added in field:

| | |
|-------|---|
| 39-3 | 5 |
| 42-3 | 5 |
| 44-5 | 4 |
| 45-2A | 3 |
| 45-2B | 4 |
| 46-2A | 3 |
| 46-2C | 1 |
| 49-3 | 3 |
| 54-2 | 8 |
| 56-1 | 9 |
| 67-2 | 4 |

APPENDIX 6
Artifact Catalog

SAG-011

AAS 016

Site #1

B. Cannon
Date Collected: 7-23-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|-----------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 236-1 | | (Surface find - 47'2" N8W from datum - Lot #4 - BC) large black chert flake with possible use wear | | See Figure 5 |
| 236-2 | | (Surface find - 130' N30E of datum - Book 3 p. 100 - Lot #5 - DH) veined chert core with battering | | |
| 236-3 | | (Pit #1, 8-10" below surface - S51E 81'8" from datum - Lot #6 - KM) thin grey translucent chert flake | | |
| 236-4 | | (Pit #1, 8-10" below surface - S51E 81'8" from datum - Lot #6 - KM) thin grey translucent chert flake | | |
| 236-5 | | (Pit #1, 8-10" below surface - S51E 81'8" from datum - Lot #6 - KM) thin grey translucent flake | | |
| 236-6 | | (Pit #1, 8-10" below surface - S51E 81'8" from datum - Lot #6 - KM) 7 small grey translucent chert flakes | | |
| 236-13 | | (Pit #2, 3" below surface - S56E 73'1" from datum - Lot #7 - KM) tiny grey translucent chert flake | | |
| 236-14 | | (Pit #4, 1" below surface, S46E 122'8" from datum - Lot #8 - TDesR) light grey opaque chert flake | | |
| 236-15 | | (Pit #5, 8" below surface, N4E 65'3" from datum - Lot #9 - SA) dark grey (thin) flake | | |
| 236-16 | | (Pit #7, 1-1/2" below surface, S46E 77-1/2" from datum - Lot #8 - KM) small grey chert flake | | |
| 236-17 | | (Pit #10, 3-6" in depth, S33E 36'3" from datum - Lot #11 - KM) 6 small black chert flake | | |

SAG-011

AAS 016

Site #1

B. Cannon
Date Collected: 7-23-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 236-23 | | (Pit #10, 3-6" in depth, S33E 36'3" from datum - KM - Lot #11) small black chert flake - thin | | |
| 236-24 | | (Pit #10, 3-6" in depth, S33E 36'3" from datum - KM - Lot #11) black chert flake | | |
| 236-25 | | (Pit #10, 3-6" in depth, S33E 36'33" from datum - KM - Lot #11) black chert flake | | |
| 236-26 | | (Pit #12, 2-6" in depth, S57E 44'6" from datum - KM - Lot #12) black chert pebble | | |
| 236-27 | * | (Pit #13, 2" below surface, S60W 18'9" from datum - BC - Lot #13) very small black flake | | |
| 236-28 | * | (Pit #13, 2" below surface, S60W 18'9" from datum - BC - Lot #13) blade-like black chert flake | | |
| 236-29 | | (Pit #14, 4" below surface, N40W 11'2" from datum - DH - Lot #14, note in Book 3 pp. 98-99) grey chert core fragment with battering along an edge (unifacial) | | |
| 236-30 | | (Pit #16, 2" deep, N58E 44'0" from datum - TDesR - Lot #15) small black chert flake | | |
| 236-31 | | (Pit #6, 2" deep, N58E 44'0" from datum - TDesR - Lot #15) small grey chert chunk | | |

*Note these are in envelope.

PSM-060 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|---------------------------------------------------------------------------------------------|---------------------|-----------------|
| 234-6 | (TP #1, Alyeska Excavation Area I, BLG) thin black chert flake | | |
| 234-7 | (TP #1, Alyeska Excavation Area I, BLG) black chert fragment | | |
| 234-8 | (TP #1, Alyeska Excavation Area I, BLG) mottled grey/brown chert flake | | |
| 234-9 | (Surface find, Alyeska Excavation Area I, BLG) grey chert flake | | |
| 234-10 | (Surface find, Alyeska Excavation Area I, BLG) dark grey chert chunk | | |
| 234-11 | (Surface find, Alyeska Excavation Area I, BLG) thin black chert flake | | |
| 234-12 | (TP #2, 0-15 cm depth, Alyeska Excavation Area I, NC) grey quartzite possible flake | | |
| 234-13 | (TP #2, 0-15 cm depth, Alyeska Excavation Area I, NC) translucent grey chert flake fragment | | |
| 234-14 | (TP #2, 0-15 cm depth, Alyeska Excavation Area I, NC) translucent grey chert flake fragment | | |
| 234-15 | (TP #2, 0-15 cm depth, Alyeska Excavation Area I, NC) thin black chert flake | | |
| 234-16 | (TP #2, 0-15 cm depth, Alyeska Excavation Area I, NC) small black chert flake - curved | | |
| 234-17 | (TP #2, 0-15 cm depth, Alyeska Excavation Area I, NC) thin black chert flake | | |

PSM-060 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|----------------------------------------------------------------------------------------|---------------------|-----------------|
| 234-18 | (TP #2, 0-15 cm depth, Alyeska Excavation Area I, NC) black chert fragment | | |
| 234-19 | (TP #2, 0-15 cm depth, Alyeska Excavation Area I, NC) tiny black chert flake | | |
| 234-20 | (TP #2, 0-15 cm depth, Alyeska Excavation Area I, NC) small, thin black chert flake | | |
| 234-21 | (TP #3, Alyeska Excavation Area I, LB) light tan chert flake fragment | | |
| 234-22 | (TP #3, Alyeska Excavation Area I, LB) black chert flake fragment | | |
| 234-23 | (TP #3, Alyeska Excavation Area I, LB) black chert flake | | |
| 234-24 | (TP #3, Alyeska Excavation Area I, LB) black chert chunk | | |
| 234-25 | (TP #3, Alyeska Excavation Area I, LB) mottled brown/grey chert flake | | |
| 234-26 | (TP #3, Alyeska Excavation Area I, LB) thin black chert flake | | |
| 234-27 | (TP #3, Alyeska Excavation Area I, LB) small black chert flake | | |
| 234-28 | (TP #3, Alyeska Excavation Area I, LB) thin, small black chert flake | | |
| 234-29 | (TP #4, Alyeska Excavation Area II, PLB) translucent grey chert flake | | |
| 234-30 | (TP #4, Alyeska Excavation Area II, PLB) translucent striated grey chert flake | | |

PSM-060 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 234-31 | (TP #4, Alyeska Excavation Area II, PLB) translucent grey chert flake | | |
| 234-32A | (TP #5, Alyeska Excavation Area II, RJD) proximal end of large black chert biface trimming flake that has been unifacially worked | | See Figure 5 |
| 234-32B | (Beside west side of TP #5, Alyeska Excavation Area II, RJD) medial section of large black chert biface trimming flake that has been unifacially worked | | See Figure 5 |
| 234-32C | (TP #5, Alyeska Excavation Area II, RJD) distal end of large black chert biface trimming flake that has been bifacially worked | | See Figure 5 |
| 234-33 | (TP #5, Alyeska Excavation Area II, RJD p. 46) chalky grey chert flake | | |
| 234-34 | (TP #5, Alyeska Excavation Area II, RJD p. 46) translucent grey chert flake | | |
| 234-35 | (TP #5, Alyeska Excavation Area II, RJD p. 46) translucent rosey chert flake - twisted | | |
| 234-36 | (TP #5, Alyeska Excavation Area II, RJD p. 46) translucent rosey/grey chert flake | | |
| 234-37 | (TP #5, Alyeska Excavation Area II, RJD p. 46) tiny grey chert flake | | |
| 234-38 | (TP #5, Alyeska Excavation Area II, RJD p. 46) small translucent rosey/grey chert flake | | |
| 234-39 | (TP #5, Alyeska Excavation Area II, RJD p. 46) grey chert flake | | |

PSM-060 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|--------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 234-40 | (TP #5, Alyeska Excavation Area II, RJD p. 46) translucent grey chert blade-like flake | | |
| 234-41 | (TP #5, Alyeska Excavation Area II, RJD p. 46) translucent grey chert fragment | | |
| 234-42 | (TP #5, Alyeska Excavation Area II, RJD p. 46) rosey/brown chert fragment | | |
| 234-43 | (TP #5, Alyeska Excavation Area II, RJD p. 46) thin translucent grey chert flake | | |
| 234-44 | (TP #5, Alyeska Excavation Area II, RJD p. 46) thin translucent rosey/grey chert flake | | |
| 234-45 | (TP #5, Alyeska Excavation Area II, RJD p. 46) small translucent grey chert flake | | |
| 234-46 | (Surface find, Alyeska Excavation Area II, RJD p. 46) large thin patinated black chert biface trimming flake | | |
| 234-47 | (TP #6 (NE corner), Alyeska Excavation Area II, DR-RJD p. 46) large thin black chert biface trimming flake | | |
| 234-48 | (TP #7, Alyeska Excavation Area I, NC) grey chert chunk | | |
| 234-49 | (TP #7, Alyeska Excavation Area I, NC) white quartzite chunk | | |
| 234-50 | (Surface find, Alyeska Excavation Area I, BLG) translucent light grey chert blade-like flake | | |
| 234-51 | (Surface find, Alyeska Excavation Area I, BLG) translucent grey chert flake fragment | | |
| 234-52 | (Surface find, Alyeska Excavation Area I, BLG) tan opaque chert flake | | |

PSM-060 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 234-53 | (Surface find - frost boil, RJD p. 37) black chert flake fragment | | |
| 234-54 | (Surface find, 3 m W and 3 m N of TP #1, 2 and 7, terrace edge, BLG) opaque grey chert flake - curved | | |
| 234-55 | (Surface find, 3 m W and 3 m N of TP #1, 2 and 7, terrace edge, BLG) translucent grey chert flake - curved | | |
| 234-56 | (Surface find, 3 m W and 3 m N of TP #1, 2 and 7, terrace edge, BLG) opaque grey biface trimming flake | | |
| 234-57 | (Surface find, 3 m W and 3 m N of TP #1, 2 and 7, terrace edge, BLG) chalky grey chert flake | | |
| 234-58 | (Surface find, 3 m W and 3 m N of TP #1, 2 and 7, terrace edge, BLG) opaque grey chert flake - curved | | |
| 234-59 | (Surface find, 3 m W and 3 m N of TP #1, 2 and 7, terrace edge, BLG) light grey blade-like biface trimming flake | | |
| 234-60 | (Surface find, 3 m W and 3 m N of TP #1, 2 and 7, terrace edge, BLG) light grey chert flake | | |
| 234-61 | (Surface find, 3 m W and 3 m N of TP #1, 2 and 7, terrace edge, BLG) translucent grey-white chert flake | | |
| 234-62 | (Surface find, 3 m W and 3 m N of TP #1, 2 and 7, terrace edge, BLG) black chert flake fragment | | |
| 234-63 | (Surface find, 3 m W and 3 m N of TP #1, 2 and 7, terrace edge, BLG) small light grey chert fragment | | |
| 234-64 | (Surface find, 3 m W and 3 m N of TP #1, 2 and 7, terrace edge, BLG) thin black chert flake | | |

PSM-060 continued

| <u>Artifact No. UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|--------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 234-65 | (Surface find, 3 m W and 3 m N of TP #1, 2 and 7, terrace edge, BLG) light grey chert flake | | |
| 234-66 | (Surface find, 3 m W and 3 m N of TP #1, 2 and 7, terrace edge, BLG) white/grey chert fragment | | |
| 234-67 | (Surface find, 3 m W and 3 m N of TP #1, 2 and 7, terrace edge, BLG) thin black chert flake | | |
| 234-68 | (Surface find, 3 m W and 3 m N of TP #1, 2 and 7, terrace edge, BLG) thin translucent grey chert flake | | |
| 234-69 | (TP #E, RJD) grey chert flake | | |
| 234-70 | (TP #H, 15' E of TP #6, 5 and 4, RJD p. 43) chunky black chert flake | | |
| 234-71 | (TP #H 15' W of TP #6, 5 and 4, RJD p. 43) black chert fragment | | |
| 234-72 | (TP #K, possibly windblown flake, at edge of cat tracks, RJD p. 44) black chert fragment | | |
| 234-73 | (TP #''0'', RJD p. 49) black chert flake | | |
| 234-74 | (TP #''0'', RJD p. 49) black chert fragment | | |
| 234-75 | (TP #'d', in test trench of possible housepit, RJD p. 52) black chert fragment | | |
| 234-76 | (Found in accidentally dumped quarried gravel, RJD pp. 39-40) grey chert fragment | | |
| 234-77 | (Test Trench 1, Housepit 'd', Area 1, LB, RJD p. 51) organic sample | | |

PSM-060 continued

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 234-78 | | (Test Trench 1 (SE corner), Housepit 'd', Area 1, RJD p. 51) sample of thick compact humic mat | | |
| 234-79 | | (Test Trench 1 (S end), Housepit 'd', Area 1, LB, RJD p. 51) sandy humic sample | | |

PSM-189

EMS 21-1 (MP 114 + 3760/April 80)
Site #1

B. Gannon
Date Collected: 7-16, 7-29, 8-24-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 233-1 | | (1112' E of centerline, terrace edge T8S R14E section 5; NW 1/4 of NW 1/4 of SW 1/4 of NE 1/4 - TDesR, BC - Lot #69) black chert flake | | |
| 233-2 | | (TP #1, ridge top S of gully - NE corner of terrace) small black chert flake | | |
| 233-3 | | (TP #1, ridge top S of gully - NE corner of terrace) chunky black chert flake fragment | | |
| 233-4 | | (TP #1, ridge top S of gully - NE corner of terrace) chunk of black chert | | |
| 233-5 | | (TP #1, ridge top S of gully - NE corner of terrace) black chert flake with cortex | | |
| 233-6 | | (TP #1, ridge top S of gully - NE corner of terrace) small blade-like black chert flake | | |
| 233-7 | | (Surface of previous excavation - NE corner of S terrace) striated grey chert flake | | |
| 233-8 | | (Surface of previous excavation - NE corner of S terrace) striated grey chert chunk | | |

PSM-189 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 233-9 | (Surface of previous excavation - NE corner of S terrace) black chert flake | | |
| 233-10 | (Surface of previous excavation - NE corner of S terrace) small black chert flake | | |
| 233-11 | (Surface of previous excavation - NE corner of S terrace) small black chert flake | | |
| 233-12 | (Surface of previous excavation - NE corner of S terrace) small black chert chunk | | |
| 233-13 | (Surface of previous excavation - NE corner of S terrace) small black chert flake fragment | | |
| 233-14 | (Surface of previous excavation - NE corner of S terrace) small black chert chunk | | |
| 233-15 | (Surface of previous excavation - NE corner of S terrace) small black chert flake fragment | | |
| 233-16 | (Subsurface test pit N3 (A) from summer backhoe program in S terrace, RJaD) chunky black chert fragment | | |
| 233-17 | (Subsurface test pit N4 (C) from summer backhoe program in N terrace, RJaD) chunky black chert fragment with cortex | | |

PSM-181

EMS 26-1
Site #1

Sharon Fetter
Date Collected: 7-23-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|-----------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 222-1 | | (TP #1, Lot #1) grey (Jasper?) flake with cortex on dorsal surface - use wear along left vertical surface | | |
| 222-2 | | (TP #1, Lot #1) grey (Jasper?) flake fragment | | |
| 222-3 | | (TP #4, Lot #2) grey chert flake fragment | | |
| 222-4 | | (Next to TP #6, Lot #3 surface) grey chert fragment of a bifacially worked piece | | |
| 222-5 | | (From S-1 concentration, Lot #4) grey/black chert chunk | | |
| 222-6 | | (From S-1 concentration, Lot #4) grey/black striated chert chunk - possible core fragment | | |
| 222-7 | | (From S-1 concentration, Lot #4) grey/black striated chert flake | | |
| 222-8 | | (From S-1 concentration, Lot #4) grey/black striated chert flake | | |
| 222-9 | | (From S-1 concentration, Lot #4) grey/black striated chert flake | | |
| 222-10 | | (From S-1 concentration, Lot #4) sandy-grey chert flake | | |
| 222-11 | | (From S-1 concentration, Lot #4) two small grey/black striated chert flakes | | |
| 222-12 | | (S-2 concentration, Lot #5) grey chert flake | | |
| 222-13 | | (S-2 concentration, Lot #5) grey quartzite flake | | |
| 222-14 | | (S-2 concentration, Lot #5) dark grey chert flake | | |

PSM-181 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 222-15 | (S-2 concentration - Lot #5) grey chert flake | | |
| 222-16 | (S-2 concentration - Lot #5) grey chert flake | | |
| 222-17 | (S-2 concentration - Lot #5) grey chert flake | | |
| 222-18 | (S-2 concentration - Lot #5) grey chert chunk | | |
| 222-19 | (S-2 concentration - Lot #5) grey chert flake | | |
| 222-20 | (S-2 concentration - Lot #5) dark grey chert flake | | |
| 222-21 | (S-2 concentration - Lot #5) dark grey chert flake | | |
| 222-22 | (S-2 concentration - Lot #5) grey chert flake | | |
| 222-23 | (S-2 concentration - Lot #5) grey chert flake | | |
| 222-24 | (Pit #7 - Artifact #A - Lot #6) large biface fragment | | See Figure 5 |
| 222-25 | (Pit #7 - Artifact #B - Lot #7) grey chert flake with unifacial retouch and heavy use wear bifacially on right lateral edge | | See Figure 5 |
| 222-26 | (Pit #7 - Lot #8) dark grey chert unifacially worked fragment with heavy lateral use wear | | See Figure 5 |
| 222-27 | (Pit #7 - Lot #9) grey chert flake fragment with cortex | | |
| 222-28 | (Pit #7 - Lot #10) dark grey chert blade-like flake | | |
| 222-29 | (Pit #7 - Lot #11) grey chert flake | | |
| 222-30 | (Pit #7 - Lot #12) dark grey chert flake (blade-like) | | |

PSM-181 continued

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|-------------------------------------------------------------------------|---------------------|-----------------|
| 222-31 | | (Pit #7 - Lot #13) grey chert blade-like flake | | |
| 222-32 | | (Pit #7 - Lot #14, 15, 16, 17) 4 small grey chert blade-like flakes | | |
| 222-33 | | (Pit #7 - Lot #18) grey chert chunk possible core fragment | | |
| 222-34 | | (Pit #7 - Lot #18) grey chert biface trimming flake - large | | |
| 222-35 | | (Pit #7 - Lot #18) dark grey chert biface trimming flake - large | | |
| 222-36 | | (Pit #7 - Lot #18) large grey chert flake | | |
| 222-37 | | (Pit #7 - Lot #18) large thick grey chert flake | | |
| 222-38 | | (Pit #7 - Lot #18) large thin grey chert flake | | See Figure 5 |
| 222-39 | | (Pit #7 - Lot #18) large thin grey chert flake fragment | | |
| 222-40 | | (Pit #7 - Lot #18) grey chert flake fragment | | |
| 222-41 | | (Pit #7 - Lot #18) grey (dark) chert flake fragment with hinge fracture | | |
| 222-42 | | (Pit #7 - Lot #18) grey chert flake (thin) | | |
| 222-43 | | (Pit #7 - Lot #18) grey chert flake fragment with hinge fracture | | |
| 222-44 | | (Pit #7 - Lot #18) large thin grey (dark) chert flake fragment | | |

PSM-181 continued

| <u>Artifact No. UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|---------------------------------------------------------------------|---------------------|-----------------|
| 222-45 | (Pit #7 - Lot #18) large thin grey chert flake fragment | | |
| 222-46 | (Pit #7 - Lot #18) brown/grey chert flake fragment | | |
| 222-47 | (Pit #7 - Lot #18) grey chert blade-like flake | | |
| 222-48 | (Pit #7 - Lot #18) grey chert blade-like flake | | See Figure 5 |
| 222-49 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-50 | (Pit #7 - Lot #18) large thin grey chert flake | | |
| 222-51 | (Pit #7 - Lot #18) grey chert biface trimming flakes | | |
| 222-52 | (Pit #7 - Lot #18) large thin grey chert flake | | |
| 222-53 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-54 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-55 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-56 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-57 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-58 | (Pit #7 - Lot #18) thin grey chert flake with curved hinge fracture | | |
| 222-59 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-60 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-61 | (Pit #7 - Lot #18) grey chert flake fragment | | |
| 222-62 | (Pit #7 - Lot #18) thin dark grey chert flake | | |

PSM-181 continued

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|-------------------------------------------------------|---------------------|-----------------|
| 222-63 | | (Pit #7 - Lot #18) grey chert fragment | | |
| 222-64 | | (Pit #7 - Lot #18) grey chert flake (curved) | | |
| 222-65 | | (Pit #7 - Lot #18) thin dark grey chert | | |
| 222-66 | | (Pit #7 - Lot #18) brown chert flake | | |
| 222-67 | | (Pit #7 - Lot #18) grey chert flake | | |
| 222-68 | | (Pit #7 - Lot #18) brown chert flake | | |
| 222-69 | | (Pit #7 - Lot #18) brown chert flake | | |
| 222-70 | | (Pit #7 - Lot #18) grey chert fragment | | |
| 222-71 | | (Pit #7 - Lot #18) grey chert flake fragment | | |
| 222-72 | | (Pit #7 - Lot #18) grey chert flake (curved) | | |
| 222-73 | | (Pit #7 - Lot #18) grey chert flake | | |
| 222-74 | | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-75 | | (Pit #7 - Lot #18) light grey chert flake (thin) | | |
| 222-76 | | (Pit #7 - Lot #18) grey chert flake fragment (curved) | | |
| 222-77 | | (Pit #7 - Lot #18) grey chert flake | | |
| 222-78 | | (Pit #7 - Lot #18) grey chert flake fragment | | |
| 222-79 | | (Pit #7 - Lot #18) grey chert flake fragment | | |
| 222-80 | | (Pit #7 - Lot #18) grey chert flake | | |

PSM-181 continued

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|---------------------------------------------------------|---------------------|-----------------|
| 222-81 | | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-82 | | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-83 | | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-84 | | (Pit #7 - Lot #18) grey chert flake | | |
| 222-85 | | (Pit #7 - Lot #18) grey chert flake | | |
| 222-86 | | (Pit #7 - Lot #18) light grey chert flake | | |
| 222-87 | | (Pit #7 - Lot #18) grey chert flake | | |
| 222-88 | | (Pit #7 - Lot #18) grey chert flake with hinge fracture | | |
| 222-89 | | (Pit #7 - Lot #18) grey chert flake | | |
| 222-90 | | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-91 | | (Pit #7 - Lot #18) light grey chert flake (curved) | | |
| 222-92 | | (Pit #7 - Lot #18) thin light grey chert flake | | |
| 222-93 | | (Pit #7 - Lot #18) grey chert flake | | |
| 222-94 | | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-95 | | (Pit #7 - Lot #18) grey chert flake (curved) | | |
| 222-96 | | (Pit #7 - Lot #18) grey biface trimming flake | | |
| 222-97 | | (Pit #7 - Lot #18) grey chert flake | | |
| 222-98 | | (Pit #7 - Lot #18) thin grey chert flake | | |

PSM-181 continued

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|-------------------------------------------------------------------------|---------------------|-----------------|
| 222-99 | | (Pit #7 - Lot #18) grey chert flake | | |
| 222-100 | | (Pit #7 - Lot #18) thin grey chert flake (slight curve) | | |
| 222-101 | | (Pit #7 - Lot #18) thin grey chert flake (slight curve) | | |
| 222-102 | | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-103 | | (Pit #7 - Lot #18) grey chert flake (curved) | | |
| 222-104 | | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-105 | | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-106 | | (Pit #7 - Lot #18) grey chert flake | | |
| 222-107 | | (Pit #7 - Lot #18) dark grey chert flake | | |
| 222-108 | | (Pit #7 - Lot #18) thin dark grey chert flake | | |
| 222-109 | | (Pit #7 - Lot #18) grey chert flake | | |
| 222-110 | | (Pit #7 - Lot #18) thin dark grey chert flake | | |
| 222-111 | | (Pit #7 - Lot #18) thin grey biface trimming flake | | |
| 222-112 | | (Pit #7 - Lot #18) grey chert flake fragment | | |
| 222-113 | | (Pit #7 - Lot #18) thin light grey chert flake | | |
| 222-114 | | (Pit #7 - Lot #18) thin dark grey chert flake | | |
| 222-115 | | (Pit #7 - Lot #18) light grey biface trimming flake | | |
| 222-116 | | (Pit #7 - Lot #18) light grey chert flake fragment (thin and curved) | | |

PSM-181 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|-----------------------------------------------------------------------|---------------------|-----------------|
| 222-117 | (Pit #7 - Lot #18) thin grey biface trimming flake | | |
| 222-118 | (Pit #7 - Lot #18) grey chert flake (curved) | | |
| 222-119 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-120 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-121 | (Pit #7 - Lot #18) light brown flake - hinge-like fracture | | |
| 222-122 | (Pit #7 - Lot #18) thin grey chert flake (curved) | | |
| 222-123 | (Pit #7 - Lot #18) thin grey chert flake fragment with hinge fracture | | |
| 222-124 | (Pit #7 - Lot #18) thin dark grey flake (curved) | | |
| 222-125 | (Pit #7 - Lot #18) dark grey chert flake fragment | | |
| 222-126 | (Pit #7 - Lot #18) light grey chert flake fragment | | |
| 222-127 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-128 | (Pit #7 - Lot #18) thin dark grey chert flake | | |
| 222-129 | (Pit #7 - Lot #18) light grey chert flake | | |
| 222-130 | (Pit #7 - Lot #18) light grey chert flake | | |
| 222-131 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-132 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-133 | (Pit #7 - Lot #18) thin grey chert flake (curved, twisted) | | |

PSM-181 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|------------------------------------------------------------------|---------------------|-----------------|
| 222-134 | (Pit #7 - Lot #18) thin dark grey chert flake | | |
| 222-135 | (Pit #7 - Lot #18) dark grey chert flake | | |
| 222-136 | (Pit #7 - Lot #18) grey chert flake | | |
| 222-137 | (Pit #7 - Lot #18) dark grey chert flake (curved, twisted) | | |
| 222-138 | (Pit #7 - Lot #18) black chert flake with hinge fracture | | |
| 222-139 | (Pit #7 - Lot #18) grey chert flake fragment with hinge fracture | | |
| 222-140 | (Pit #7 - Lot #18) dark grey chert flake | | |
| 222-141 | (Pit #7 - Lot #18) grey chert flake | | |
| 222-142 | (Pit #7 - Lot #18) grey chert biface trimming flake | | |
| 222-143 | (Pit #7 - Lot #18) grey chert flake | | |
| 222-144 | (Pit #7 - Lot #18) grey chert flake | | |
| 222-145 | (Pit #7 - Lot #18) light grey chert flake | | |
| 222-146 | (Pit #7 - Lot #18) brown chert flake | | |
| 222-147 | (Pit #7 - Lot #18) dark grey chert flake fragment (twisted) | | |
| 222-148 | (Pit #7 - Lot #18) brown chert flake | | |
| 222-149 | (Pit #7 - Lot #18) thin grey chert flake (curved) | | |

PSM-181 continued

| <u>Artifact No. UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|-------------------------------------------------------------------------------|---------------------|-----------------|
| 222-150 | (Pit #7 - Lot #18) grey chert flake (thick) | | |
| 222-151 | (Pit #7 - Lot #18) thin dark grey chert flake | | |
| 222-152 | (Pit #7 - Lot #18) dark grey chert flake fragment | | |
| 222-153 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-154 | (Pit #7 - Lot #18) light grey chert chunk | | |
| 222-155 | (Pit #7 - Lot #18) grey chert flake fragment | | |
| 222-156 | (Pit #7 - Lot #18) grey chert flake (thin) | | |
| 222-157 | (Pit #7 - Lot #18) thin grey flake fragment (chert) | | |
| 222-158 | (Pit #7 - Lot #18) light grey chert flake (curved) | | |
| 222-159 | (Pit #7 - Lot #18) grey chert flake (curved) | | |
| 222-160 | (Pit #7 - Lot #18) grey chert flake fragment | | |
| 222-161 | (Pit #7 - Lot #18) thin grey chert flake fragment | | |
| 222-162 | (Pit #7 - Lot #18) thin light grey chert flake (twisted) | | |
| 222-163 | (Pit #7 - Lot #18) dark grey chert fragment | | |
| 222-164 | (Pit #7 - Lot #18) dark grey chert chunk | | |
| 222-165 | (Pit #7 - Lot #18) grey chert fragment with frost spauling on ventral surface | | |
| 222-166 | (Pit #7 - Lot #18) grey chert fragment (curved) | | |

PSM-181 continued

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|--------------------------------------------------------------|---------------------|-----------------|
| 222-167 | | (Pit #7 - Lot #18) grey chert flake | | |
| 222-168 | | (Pit #7 - Lot #18) grey chert flake fragment | | |
| 222-169 | | (Pit #7 - Lot #18) thin grey chert flake fragment | | |
| 222-170 | | (Pit #7 - Lot #18) dark grey chert flake (twisted) | | |
| 222-171 | | (Pit #7 - Lot #18) thin dark grey chert flake (twisted) | | |
| 222-172 | | (Pit #7 - Lot #18) thin dark grey chert flake | | |
| 222-173 | | (Pit #7 - Lot #18) thin light grey chert flake fragment | | |
| 222-174 | | (Pit #7 - Lot #18) light grey chert flake fragment | | |
| 222-175 | | (Pit #7 - Lot #18) grey chert flake fragment (twisted) | | |
| 222-176 | | (Pit #7 - Lot #18) thin grey chert flake fragment | | |
| 222-177 | | (Pit #7 - Lot #18) thin grey chert flake (curved) | | |
| 222-178 | | (Pit #7 - Lot #18) grey chert fragment (twisted) | | |
| 222-179 | | (Pit #7 - Lot #18) thin grey chert flake with hinge fracture | | |
| 222-180 | | (Pit #7 - Lot #18) brown chert flake fragment | | |
| 222-181 | | (Pit #7 - Lot #18) grey chert flake fragment | | |
| 222-182 | | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-183 | | (Pit #7 - Lot #18) light grey chert fragment (chunk) | | |
| 222-184 | | (Pit #7 - Lot #18) grey chert flake | | |

PSM-181 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|---------------------------------------------------------|---------------------|-----------------|
| 222-185 | (Pit #7 - Lot #18) grey chert flake chunk (curved) | | |
| 222-186 | (Pit #7 - Lot #18) grey chert flake chunk | | |
| 222-187 | (Pit #7 - Lot #18) thin light grey chert flake | | |
| 222-188 | (Pit #7 - Lot #18) grey chert flake fragment | | |
| 222-189 | (Pit #7 - Lot #18) grey chert biface trimming flake | | |
| 222-190 | (Pit #7 - Lot #18) brown chert flake | | |
| 222-191 | (Pit #7 - Lot #18) grey chert flake fragment (curved) | | |
| 222-192 | (Pit #7 - Lot #18) thin brown chert flake | | |
| 222-193 | (Pit #7 - Lot #18) grey chert flake fragment (curved) | | |
| 222-194 | (Pit #7 - Lot #18) grey chert biface trimming flake | | |
| 222-195 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-196 | (Pit #7 - Lot #18) thin dark grey chert flake (twisted) | | |
| 222-197 | (Pit #7 - Lot #18) thin light grey chert flake fragment | | |
| 222-198 | (Pit #7 - Lot #18) thin brown chert flake (curved) | | |
| 222-199 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-200 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-201 | (Pit #7 - Lot #18) brown chert flake | | |
| 222-202 | (Pit #7 - Lot #18) grey chert biface trimming flake | | |

PSM-181 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|--------------------------------------------------------|---------------------|-----------------|
| 222-203 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-204 | (Pit #7 - Lot #18) grey chert flake fragment | | |
| 222-205 | (Pit #7 - Lot #18) thin grey chert flake (twisted) | | |
| 222-206 | (Pit #7 - Lot #18) dark grey chert flake fragment | | |
| 222-207 | (Pit #7 - Lot #18) curved grey chert flake fragment | | |
| 222-208 | (Pit #7 - Lot #18) thin grey chert flake | | |
| 222-209 | (Pit #7 - Lot #18) grey chert flake | | |
| 222-210 | (Pit #7 - Lot #18) thin grey chert flake (curved) | | |
| 222-211 | (Pit #7 - Lot #18) thin dark grey chert flake | | |
| 222-212 | (Pit #7 - Lot #18) grey chert flake fragment (twisted) | | |
| 222-213 | (Pit #7 - Lot #18) grey chert flake fragment | | |
| 222-214 | (Pit #7 - Lot #18) 98 small grey flakes | | |

PSM-184

EMS 26-1
Site #2

S. Fetter
Date Collected: 7-22-80

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|---------------------------------------------------|---------------------|-----------------|
| 223-1 | (Artifact #G - Lot #2*) grey chert flake fragment | | |
| 223-2 | (Artifact #G - Lot #2) grey chert flake fragment | | |
| 223-3 | (Artifact #G - Lot #2) grey chert flake fragment | | |

*There is no bag #1.

PSM-184 continued

| <u>Artifact No. UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 223-4 | (Artifact #G - Lot #2) grey chert flake fragment | | |
| 223-5 | (Artifact #E - Lot #3) grey chert biface fragment with heavy use wear along the lateral edges - battered | | See Figure 5 |
| 223-6 | (Artifact #E - Lot #4) grey chert biface fragment - it may be part of the same biface as 223-5 but the grain within the raw material do not appear to be the same | | See Figure 5 |
| 223-7 | (Artifact #D - Lot #5) dark grey chert with patination - possible retouch along dorsal edge and use wear? | | See Figure 5 |
| 223-8A | (Artifact #C - Lot #6) grey quartzite flake | | |
| 223-8B | (Artifact #C - Lot #6) grey quartzite flake fragment - right dorsal-distal lateral edge retouch and in vial | | |
| 223-9 | (Artifact #F - Lot #7) large thick grey chert flake with battering along lateral edge | | See Figure 5 |
| 223-10 | (Artifact #F - Lot #8) 4 small grey quartzite flakes | | |
| 223-11 | (Artifact #F - Lot #8) grey quartzite biface trimming flake | | |
| 223-12 | (Artifact #F - Lot #8) grey quartzite biface trimming flake | | |
| 223-13 | (Artifact #F - Lot #8) grey quartzite biface trimming flake | | |
| 223-14 | (Artifact #F - Lot #8) grey quartzite biface trimming flake | | |
| 223-15 | (Artifact #F - Lot #8) grey quartzite biface trimming flake | | |

PSM-184 continued

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|------------------------------------------------------|---------------------|-----------------|
| 223-16 | | (Artifact #F - Lot #8) grey chert flake | | |
| 223-17 | | (Artifact #F - Lot #8) grey chert (banded) flake | | |
| 223-18 | | (Artifact #F - Lot #8) grey quartzite flake fragment | | |
| 223-19 | | (Artifact #F - Lot #8) grey quartzite flake fragment | | |

PSM-182

EMS 26-1
Site #3

S. Fetter
Date Collected: 7-22-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|--------------------------------------------------------------------------------------|---------------------|-----------------|
| 224-1 | | (Artifact #C - Lot #1) green-grey chalky chert burin fragment | | See Figure 5 |
| 224-2 | | (Artifact #F - Lot #2) light grey chalky chert flake fragment | | |
| 224-3 | | (Artifact #D - Lot #3) light grey chalky chert flake fragment | | See Figure 5 |
| 224-4 | | (Artifact #E - Lot #4) mottled grey (chalky) chert flake - possible lateral use wear | | See Figure 5 |
| 224-5 | | (Artifact #B - Lot #5) chalky grey chert flake with possible unifacial retouch | | See Figure 5 |
| 224-6 | | (Artifact #A - Lot #6) chalky grey chert flake with unifacial retouch and use wear | | See Figure 5 |
| 224-7A and 7B | | (Pit #1, bottom of 2nd level - Lot #7) varigrade grey chert very large flake | | See Figure 5 |

PSM-182 continued

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|----------------------------------------------------------------|---------------------|-----------------|
| 224-8 | | (Pit #1, bottom of 2nd level - Lot #7) light sandy brown flake | | |

PSM-183

EMS 26-1
Site #4

S. Fetter
Date Collected: 7-22-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|--------------------------------------------------------------------------------|---------------------|-----------------|
| 225-1 | | (Artifact #1 - Lot #1) thin black biface trimming flake - curved | | |
| 225-2 | | (Artifact #2 - Lot #2) light grey flake - twisted | | |
| 225-3 | | (Artifact #3 - Lot #3) grey translucent chert blade-like flake | | |
| 225-4 | | (Artifact #4 - Lot #4) grey chert long flake | | |
| 225-5 | | (Artifact #5 - Lot #5) grey-brown flake with something happening on the bottom | | |
| 225-6 | | (Artifact #A - Pit #A - Lot #6) grey chert blade-like flake | | |
| 225-7 | | (Pit #C - Lot #7) large grey chert blade-like flake* | | |
| 225-8 | | (Pit #C - Lot #8) large grey chert chunk fragment - twisted | | |
| 225-9 | | (Pit #C - Lot #8) large grey chert chunk fragment - twisted | | |

*This is an extremely large flake similar to UA80 224-1.

PSM-183 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|--------------------------------------------------------------------------------------|---------------------|-----------------|
| 225-10 | (Pit #C - Lot #8) large quite thin grey chert flake - curved | | |
| 225-11 | (Pit #C - Lot #8) large grey chert chunk fragment with hinge fracture | | |
| 225-12 | (Pit #C - Lot #8) large grey chert chunk fragment | | |
| 225-13 | (Pit #C - Lot #8) light grey chert chunk | | |
| 225-14 | (Pit #C - Lot #8) thin patinated grey chert flake - twisted with hinge fracture | | |
| 225-15 | (Pit #C - Lot #8) grey chert flake | | |
| 225-16 | (Pit #C - Lot #8) large grey chert chunk with hinge fracture | | |
| 225-17 | (Pit #C - Lot #8) large grey chert flake fragment | | |
| 255-18 | (Pit #C - Lot #8) thin grey chert flake with long thin flake removed along bottom | | |
| 255-19 | (Pit #C - Lot #8) thin grey chert flake | | |
| 255-20 | (Pit #C - Lot #8) patinated grey chert blade-like flake | | |
| 225-21 | (Pit #C - Lot #8) thin grey chert flake - curved | | |
| 225-22 | (Pit #C - Lot #8) thin grey chert blade-like flake - curved and twisted | | |
| 225-23 | (Pit #C - Lot #8) thin grey chert flake | | |

PSM-183 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|---------------------------------------------------------------|---------------------|-----------------|
| 225-24 | (Pit #C - Lot #8) grey chert flake - twisted | | |
| 225-25 | (Pit #C - Lot #8) grey chert flake | | |
| 225-26 | (Pit #C - Lot #8) grey chert flake | | |
| 225-27 | (Pit #C - Lot #8) grey chert chunk | | |
| 225-28 | (Pit #C - Lot #8) light grey translucent chert flake | | |
| 225-29 | (Pit #C - Lot #8) grey chert chunk | | |
| 225-30 | (Pit #C - Lot #8) light grey chert flake | | |
| 225-31 | (Pit #C - Lot #8) patinated grey chert flake - curved | | |
| 225-32 | (Pit #C - Lot #8) thin grey chert flake | | |
| 225-33 | (Pit #C - Lot #8) thin grey chert flake fragment | | |
| 225-34 | (Pit #C - Lot #8) grey chert flake fragment | | |
| 225-35 | (Pit #C - Lot #8) thin grey chert flake fragment | | |
| 225-36 | (Pit #C - Lot #8) grey chert flake fragment | | |
| 225-37 | (Pit #C - Lot #8) thin light grey chert flake fragment | | |
| 225-38 | (Pit #C - Lot #8) thin grey chert flake fragment - twisted | | |
| 225-39 | (Pit #C - Lot #8) patinated grey chert flake | | |
| 225-40 | (Pit #C - Lot #8) brown chert flake fragment | | |
| 225-41 | (Pit #C - Lot #8) light grey chert flake fragment | | |

PSM-183

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|---------------------------------------------------|---------------------|-----------------|
| 225-42 | (Pit #C - Lot #8) light grey translucent fragment | | |
| 225-43 | (Pit #C - Lot #8) grey (patinated) chert fragment | | |
| 225-44 | (Pit #C - Lot #8) black chert flake - curved | | |
| 225-45 | (Pit #C - Lot #8) black chert flake fragment | | |
| 225-46 | (Pit #C - Lot #8) black chert flake | | |
| 225-47 | (Pit #C - Lot #8) black chert flake (thin) | | |
| 225-48 | (Pit #C - Lot #8) black chert flake - curved | | |
| 225-49 | (Pit #C - Lot #8) black chert flake | | |
| 225-50 | (Pit #C - Lot #8) black chert fragment | | |
| 225-51 | (Pit #C - Lot #8) thin grey chert flake | | |
| 225-52 | (Pit #C - Lot #8) thin grey chert flake - curved | | |
| 225-53 | (Pit #C - Lot #8) grey chert fragment | | |
| 225-54 | (Pit #C - Lot #8) thin grey chert flake | | |
| 225-55 | (Pit #C - Lot #8) grey chert fragment | | |
| 225-56 | (Pit #C - Lot #8) black chert flake | | |
| 225-57 | (Pit #C - Lot #8) black chert flake | | |
| 225-58 | (Pit #C - Lot #8) black chert flake (blade-like) | | |
| 225-59 | (Pit #C - Lot #8) black chert flake | | |

PSM-183

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|----------------------------------------------------------------|---------------------|-----------------|
| 225-60 | | (Pit #C - Lot #8) black chert flake | | |
| 225-61 | | (Pit #C - Lot #8) thin black chert flake | | |
| 225-62 | | (Pit #C - Lot #8) thin black chert flake | | |
| 225-63 | | (Pit #C - Lot #8) black chert flake - thin and curved | | |
| 225-64 | | (Pit #C - Lot #8) thin black chert flake | | |
| 225-65* | | (Pit #C - Lot #8) grey chert flake | | |
| 225-66 | | (Pit #C - Lot #8) grey chert flake fragment | | |
| 225-67 | | (Pit #C - Lot #8) thin grey chert (translucent) flake fragment | | |
| 225-68 | | (Pit #C - Lot #8) thin black chert flake | | |
| 225-69 | | (Pit #C - Lot #8) black chert flake - curved | | |
| 225-70 | | (Pit #C - Lot #8) black chert fragment - curved | | |
| 225-71 | | (Pit #C - Lot #8) black chert biface trimming flake | | |
| 225-72 | | (Pit #C - Lot #8) black chert flake - curved | | |
| 225-73 | | (Pit #C - Lot #8) thin black chert flake | | |
| 225-74 | | (Pit #C - Lot #8) black chert flake - curved | | |
| 225-75 | | (Pit #C - Lot #8) black chert flake | | |
| 225-76 | | (Pit #C - Lot #8) black chert flake | | |

*From this number onwards, the items will be found in envelopes.

PSM-183 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|----------------------------------------------------|---------------------|-----------------|
| 225-77 | (Pit #C - Lot #8) black chert flake - curved | | |
| 225-78 | (Pit #C - Lot #8) black chert flake - curved | | |
| 225-79 | (Pit #C - Lot #8) thin black chert flake | | |
| 225-80 | (Pit #C - Lot #8) black chert flake | | |
| 225-81 | (Pit #C - Lot #8) grey chert fragment | | |
| 225-82 | (Pit #C - Lot #8) grey chert flake | | |
| 225-83 | (Pit #C - Lot #8) black chert flake - curved | | |
| 225-84 | (Pit #C - Lot #8) black chert fragment | | |
| 225-85 | (Pit #C - Lot #8) grey chert flake - curved | | |
| 225-86 | (Pit #C - Lot #8) black chert flake | | |
| 225-87 | (Pit #C - Lot #8) grey chert flake | | |
| 225-88 | (Pit #C - Lot #8) black chert flake - slight curve | | |
| 225-89 | (Pit #C - Lot #8) grey chert flake | | |
| 225-90 | (Pit #C - Lot #8) thin black chert flake | | |
| 225-91 | (Pit #C - Lot #8) grey chert fragment | | |
| 225-92 | (Pit #C - Lot #8) grey chert flake fragment | | |
| 225-93 | (Pit #C - Lot #8) thin black chert flake | | |
| 225-94 | (Pit #C - Lot #8) black chert flake - twisted | | |

PSM-183 continued

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|------------------------------------------------------|---------------------|-----------------|
| 225-95 | | (Pit #C - Lot #8) thin black chert flake - twisted | | |
| 225-96 | | (Pit #C - Lot #8) thin black chert flake - twisted | | |
| 225-97 | | (Pit #C - Lot #8) thin grey chert flake | | |
| 225-98 | | (Pit #C - Lot #8) creamy brown chert flake - twisted | | |
| 225-99 | | (Pit #C - Lot #8) black chert flake - curved | | |
| 225-100 | | (Pit #C - Lot #8) black chert flake fragment | | |
| 225-101 | | (Pit #C - Lot #8) thin black chert flake | | |
| 225-102 | | (Pit #C - Lot #8) black chert flake | | |
| 225-103 | | (Pit #C - Lot #8) thin black chert flake | | |
| 225-104 | | (Pit #C - Lot #8) grey chert flake fragment | | |
| 225-105 | | (Pit #C - Lot #8) black chert flake - curved | | |
| 225-106 | | (Pit #C - Lot #8) thin black chert flake | | |
| 225-107 | | (Pit #C - Lot #8) black chert flake | | |
| 225-108 | | (Pit #C - Lot #8) black chert flake - curved | | |
| 225-109 | | (Pit #C - Lot #8) black chert flake - curved | | |
| 225-110 | | (Pit #C - Lot #8) black chert flake | | |
| 225-111 | | (Pit #C - Lot #8) black chert flake | | |
| 225-112 | | (Pit #C - Lot #8) black chert flake | | |
| 225-113 | | (Pit #C - Lot #8) grey chert flake | | |

PSM-183 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|---------------------------------------------------------|---------------------|-----------------|
| 224-114 | (Pit #C - Lot #8) grey chert flake | | |
| 225-115 | (Pit #C - Lot #8) black chert blade-like flake | | |
| 225-116 | (Pit #C - Lot #8) thin black chert flake | | |
| 225-117 | (Pit #C - Lot #8) blade-like grey chert fragment | | |
| 225-118 | (Pit #C - Lot #8) thin grey chert flake | | |
| 225-119 | (Pit #C - Lot #8) thin black chert flake | | |
| 225-120 | (Pit #C - Lot #8) black chert flake - curved | | |
| 225-121 | (Pit #C - Lot #8) black chert fragment | | |
| 225-122 | (Pit #C - Lot #8) black chert biface trimming flake | | |
| 225-123 | (Pit #C - Lot #8) black chert flake - curved | | |
| 225-124 | (Pit #C - Lot #8) black chert blade-like flake | | |
| 225-125 | (Pit #C - Lot #8) black chert flake - curved | | |
| 225-126 | (Pit #C - Lot #8) black chert flake fragment | | |
| 225-127 | (Pit #C - Lot #8) grey chert biface trimming flake | | |
| 225-128 | (Pit #C - Lot #8) black chert blade-like flake | | |
| 225-129 | (Pit #C - Lot #8) black chert flake | | |
| 225-130 | (Pit #C - Lot #8) black chert flake with hinge fracture | | |
| 225-131 | (Pit #C - Lot #8) black chert biface trimming flake | | |

PSM-183 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------------------------------------|----------------------------------------------------------------------------------|---------------------|-----------------|
| 225-132 | (Pit #C - Lot #8) black chert flake fragment | | |
| 225-133 | (Pit #C - Lot #8) black chert flake - curved | | |
| 225-134 | (Pit #C - Lot #8) grey chert flake fragment | | |
| 225-135 to 265 | (Pit #C - Lot #8) 130 very small grey/black chert flakes and flake fragments | | |
| Note: one more flake from this test pit Artifact #300. | | | |
| 225-266A | (Pit #C - Lot #9) black chert projectile point - base | | See Figure 5 |
| 225-266B | (Pit #C - Lot #10) black chert projectile point - mid section | | See Figure 5 |
| 225-267 | (Pit #C - Lot #11) mid-section of a projectile point - black chert | | See Figure 5 |
| 225-268 | (Pit #C - Artifact #D - Lot #12) basal section of a black chert projectile point | | See Figure 5 |
| 225-269 | (Pit #D - Lot #13) grey chert flake - curved | | |
| 225-270 | (Pit #D - Lot #13) grey chert flake - curved | | |
| 225-271 | (Pit #D - Lot #13) grey chert flake | | |
| 225-272 | (Pit #D - Lot #13) grey chert fragment | | |
| 225-273 | (Pit #D - Lot #13) grey chert flake - curved | | |
| 225-274 | (Pit #D - Lot #13) brown chert fragment | | |
| 225-275 | (Pit #D - Lot #13) grey chert flake fragment | | |
| 225-276 | (Pit #D - Lot #13) grey chert flake fragment | | |

PSM-183 continued

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|-------------------------------------------------------------------|---------------------|-----------------|
| 225-277 | | (Pit #D - Lot #13) grey chert flake | | |
| 225-278 | | (Pit #F - Lot #14) small grey chert flake | | |
| 225-279 | | (Pit #F - Lot #14) small grey chert flake - curved | | |
| 225-280 | | (Pit #F - Lot #14) small grey chert flake - curved | | |
| 225-281 | | (Pit #F - Lot #14) light grey chert fragment | | |
| 225-282 | | (Pit #F - Lot #14) grey chert flake - curved | | |
| 225-283 | | (Pit #F - Lot #14) dark chert flake | | |
| 225-284 | | (Pit #F - Lot #14) light grey translucent chert flake - curved | | |
| 225-285 | | (Pit #F - Lot #14) grey chert fragment | | |
| 225-286 | | (Pit #F - Lot #14) light grey chert flake fragment | | |
| 225-287 | | (Pit #F - Lot #14) grey chert fragment | | |
| 225-288 | | (Pit #F - Lot #14) brown chert flake fragment | | |
| 225-289 | | (Pit #F - Lot #14) grey chert flake | | |
| 225-290 | | (Pit #F - Lot #14) dark grey chert fragment | | |
| 225-291 | | (Pit #F - Lot #14) grey translucent chert flake | | |
| 225-292 | | (Pit #F - Lot #14) dark grey biface trimming flake | | |
| 225-293 | | (Pit #F - Lot #14) grey translucent chert flake | | |
| 225-294 | | (Pit #F - Lot #14) light grey chert flake | | |

PSM-183 continued

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 225-294 | | (Pit #F - Lot #14) light grey chert flake | | |
| 225-295 | | (Pit #F - Lot #14) light grey chert flake | | |
| 225-296 | | (Pit #F - Lot #14) small grey chert flake fragment - translucent brown chert flake fragment | | |
| 225-297 | | (Pit #F - Lot #14) brown chert flake fragment | | |
| 225-298 | | (Pit #F - Lot #14) tiny translucent grey chert flake | | |
| 225-299 | | (Pit #F - Lot #14) small translucent grey chert flake | | |
| 225-300 | | (Pit #C - Lot #8) grey chert flake | | |
| 225-301 | | (Pit #F - Lot #15) dark grey translucent chert chunky blade-like flake | | |
| 225-302 | | (Pit #F - Lot #16) grey chert biface trimming flake with a large portion of the edge | | |
| 225-303 | | (Pit #H - Lot #17) light grey chert flake | | |

PSM-190

EMS 27-1B

B. Gannon
Date Collected: 7-22, 7-23-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 235-1 | | (Surface, Area I, BLG) black chert stemmed and eared projectile point | | See Figure 5 |
| 235-2 | | (Bank edge - confluence of a stream and the Atigun River, RJD p. 59) long bone shaft fragment | | |
| 235-3 | | (TP? - found above Pothunter's screen and disturbed bone concentration - just below sod layer - approximately 5 cm deep - Area II, LB) long bone shaft fragment | | |
| 235-4 | | (Test Trench 1 extension, surface to 5 cm depth, Area III, LB) 5 small bone fragments | | |

UA80 Faunal Remains

Area III - Pothunter's

| | <u>Number of Individuals</u> | |
|------------------------------------------------------------------------|------------------------------|----------------|
| | <u>Minimum</u> | <u>Maximum</u> |
| 70 Phalanges - <u>Rangifer tarandus</u> (caribou) | 3 | 12 |
| 13 Carpals/tarsals and 1 platella - <u>Rangifer tarandus</u> (caribou) | - | - |
| 11 Metatarsals - <u>Rangifer tarandus</u> (caribou) | 5 | 9 |
| 10 Metacarpals - <u>Rangifer tarandus</u> (caribou) | 5 | 10 |
| 47 Long bone shaft fragment - <u>Rangifer tarandus</u> (caribou) | - | - |
| 28 Long bone Epiphyseal fragment - <u>Rangifer tarandus</u> (caribou) | - | - |
| 10 Scapula/scapulae fragments - <u>Rangifer tarandus</u> (caribou) | 3 | 4 |
| 15 Rib and sternum fragments - <u>Rangifer tarandus</u> (caribou) | - | - |
| 1 Immature vertebra - <u>Rangifer tarandus</u> (caribou) | 1 | 1 |
| 21 Unidentified bone fragments | - | - |

PSM-190 continued

| <u>UA80 Faunal Remains</u> | <u>Number of Individuals</u> | |
|--------------------------------------------------|------------------------------|----------------|
| | <u>Minimum</u> | <u>Maximum</u> |
| Area III - Pothunter's (continued) | | |
| Small mammal bones: | | |
| 3 Right femurs | 3 | 3 |
| 3 Left humeri | 3 | 5 |
| 2 Right humeri | | |
| 1 Right tibia | 1 | 2 |
| 1 Left tibia | | |
| 2 Right innominates (different sizes) | 3 | 3 |
| 1 Left innominate | | |
| 1 Left scapula | 1 | 1 |
| 4 Complete skulls (ground squirrel) | 5 | 8 |
| 4 Skull fragments (unidentified) | | |
| 2 Bird humeri | 1 | 2 |
| Possible sheep: | | |
| 11 Unidentified phalanges | - | - |
| Test Trench I, Area III - Surficial Bone Scatter | | |
| 16 Miscellaneous bones/fragments | - | - |

PSM-191

AAS 027

Site #1

B. Cannon

Date Collected: 8-5-80

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|----------------------------------------------------------------------------|---------------------|-----------------|
| 237-1 | (Surface find, N44E 7'5" from datum, Lot #16) small grey chert flake | | |
| 237-2 | (Surface find, N34E 12'2" from datum, Lot #17) small thin grey chert flake | | |
| 237-3 | (Surface find, N40E 12'6" from datum, Lot #18) small grey chert flake | | |
| 237-4 | (Surface find, N41E 13'6" from datum, Lot #19) grey chert biface tip | | See Figure 5 |
| 237-5 | (Surface find, N46E 15'3" from datum, Lot #20) large grey chert | | |
| 237-6 | (Surface find, N60E 16'1" from datum, Lot #21) grey chert blade-like flake | | |
| 237-7 | (Surface find, N66E 15'0" from datum, Lot #22) grey chert flake | | |
| 237-8 | (Surface find, N70E 16'7" from datum, Lot #23) grey chert flake - curved | | |
| 237-9 | (Surface find, N74E 17'9" from datum, Lot #24) grey chert flake | | |
| 237-10 | (Surface find, N76E 17'5" from datum, Lot #25) grey chert flake | | |
| 237-11 | (Surface find, N82E 17'2" from datum, Lot #26) thin grey chert flake | | |
| 237-12 | (Surface find, N85E 18'9" from datum, Lot #27) thin grey chert flake | | |

355

PSM-191 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|---------------------------------------------------------------------------------------|---------------------|-----------------|
| 237-13 | (Surface find, N89E 18'8" from datum, Lot #28) | | |
| 237-14 | (Surface find, S89E 19'1" from datum, Lot #29) grey chert flake | | |
| 237-15 | (Surface find, S82E 24'11" from datum, Lot #30) small grey chert flake | | |
| 237-16 | (Surface find, S69E 28'1" from datum, Lot #31) grey chert bifacial trimming flake | | |
| 237-17 | (Surface find, S31E 4'9" from datum, Lot #32) grey chert flake | | |
| 237-18 | (Surface find, S27E 28'2" from datum, Lot #33) dark grey chert flake | | |
| 237-19 | (Surface find, S23W 27'1" from datum, Lot #34) long bone shaft fragment | | |
| 237-20 | (Surface find, S8E 4'3" from datum, Lot #35) long bone shaft fragment | | |
| 237-21 | (Surface find, N65W 2'9" from datum, Lot #30) ulna of small rodent | | |
| 237-22 to 24 | (Pit #1, 1" depth, S75E 13'5" from datum, SA, Lot #37) three small grey chert flakes | | |
| 237-25 | (Pit #2, 2-3" depth, N54E 9'0" from datum, SA, Lot #38) grey chert flake | | |
| 237-26 | (Pit #2, 2-3" depth, N54E 9'0" from datum, SA, Lot #38) grey chert flake | | |
| 237-27 to 29 | (Pit #2, 2-3" depth, N54E 9'0" from datum, SA, Lot #38) three small grey chert flakes | | |

PSM-192

AAS 027

Site #2

B. Cannon

Date Collected: 8-9-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 238-1 | | (Surface find, S06W 21'2" from datum, Lot #39) thick black chert flake | | |
| 238-2 | | (Surface find, S08E 19'2" from datum, Lot #40) light grey chert flake | | |
| 238-3 | | (Surface find, S14E 76'1" from datum, Lot #41) chunky black chert flake | | |
| 238-4 | | (Surface find, S09E 88'2" from datum, Lot #42) translucent grey chert flake - curved | | |
| 238-5 | | (Surface find, N76E 61'6" from datum, Lot #43) mottled grey chert flake | | |
| 238-6 | | (Surface find, N53E 54'6" from datum, Lot #44) black obsidian flake - small and thin | | See Figure 5 |
| 238-7 | | (Surface find, N55E 65'4" from datum, Lot #45) unifacially retouch [right dorsal (distal and lateral) edge] blue/black chert flake with use wear | | See Figure 5 |
| 238-8 | | (Surface find, N63E 67' from datum, Lot #46) small dark grey chert flake - curved | | |
| 238-9 | | (Surface find, N51E 73' from datum, Lot #47) grey chert flake | | |
| 238-10 | | (Surface find, N40W 33'6" from datum, Lot #48) light grey chert (translucent) flake fragment | | |
| 238-11 | | (Surface find, N35W 46'1" from datum, Lot #49) small grey angular debris | | |

PSM-192 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|--------------------------------------------------------------------------------------------|---------------------|-----------------|
| 238-12 | (Surface find, N60W 73'1" from datum, Lot #50) small blade-like black chert flake | | |
| 238-13 | (Surface find, S82W 40'3" from datum, Lot #51) small black chert nodule (probably natural) | | |

PSM-193

AAS 027
Site #3

B. Cannon
Date Collected: 8-9-80

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|-------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 239-1 | (Surface find, S63W 72'3" from datum, Lot #52) veined (blue) grey chert with battered edge | | |
| 239-2 | (Surface find, N28W 15'6" from datum, Lot #53) quartz chunk | | |
| 239-3 | (Surface find, N22E 11'6" from datum, Lot #54) almost complete projectile point - stemmed, eared and concave base | | See Figure 5 |
| 239-4 | (Surface find, N26E 28'1" from datum, Lot #55) biface fragment - grey/grey banded chert | | See Figure 5 |
| 239-5 | (Surface find, S40E 15'6" from datum, Lot #56) core fragment with possible use wear or battering | | |
| 239-6 | (Surface find, N61W 33'1" from datum, Lot #57) dark grey chert pebble with small hole in the center | | |
| 239-7 | (Pit #5, 1-1/2" below surface, N29E 25'5" from datum, Lot #58) brown chert flake | | |

PSM-069

AAS 028
Site #1

B. Cannon
Date Collected: 7-30-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 240-1 | | (Found on Old Alyeska/Cook backdirt pile, S43E 66' from datum, Lot #59) small grey chert angular debris | | |
| 240-2 | | (Surface find, 8 cm SW of Pit #1, DKH note 118, Lot #60) burned wood | | |
| 240-3 | | (Pit #2, humic layer, DKH notes pp. 126-127) humic charcoal | | |
| 240-4 to 28 | | (Pit #2, in turf/humus, DKH notes pp. 126-127, Lot #28) 25 bone fragments | | |
| 240-29 | | (Pit #19, N30E 5'2" from datum, Lot #68) bone fragment below surface | | |
| 240-Bones | | Unidentified longbone shaft fragments - caribou (32) AAS 028/1/C, Lot #67 bone concentration N46E 4'5" (next to old Alyeska/Cook test pits) | | |
| 240-Bones | | Possibly identifiable longbone shaft fragment - caribou (15) AAS 028/1/C, Lot #67 bone concentration N46E 4'5" (next to old Alyeska/Cook test pits) | | |

PSM-FIND

EMS 28-1 (Backhoe)
Site #1

R.Jane Dale
Date Collected: 8-22-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|--------------------------------------------------------------------------------|---------------------|-----------------|
| 248-1 | | (Backdirt of parka squirrel colony - at N #21B) mottled grey/black chert flake | | |

PSM-194

AAS 029
Site #1

B. Cannon
Date Collected: 8-3-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 241-1 | | (Pit #2, 1-2" depth, S5E 2'9" from datum, KM, Lot #63) small clear chert flake fragment | | |
| 241-2 | | (Surface find, S52E 12'9" from datum, located in south end of tent ring, DKH Book #3 p. 139, Lot #64) caribou ulna | | |
| 241-3A and 3B | | (Surface find, S45E 12'5" from datum, located in south end of tent ring, DKH Book #3 p. 139, Lot #65) right and left mandible of a large rodent | | |

PSM-185

AAS 029 (MP 163 & 150/April 80)
Site #2

B. Cannon
Date Collected: 8-2, 8-5-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|-------------------------------------------------------------------|---------------------|-----------------|
| 232-1 | | (Surface find, on hill, DKH pp. 146-147) tiny grey chert flake | | |
| 232-2 | | (Flake scatter A, DR) small black chert flake | | |
| 232-3 | | (Flake scatter A, DR) black chert flake | | |
| 232-4 | | (Flake scatter A, DR) tiny black chert flake | | |
| 232-5 | | (Flake scatter A, DR) black chert flake | | |
| 232-6 | | (Flake scatter B, DR) grey chert flake | | |

PSM-FIND

EMS 30
Site #1

R. Jane Dale
Date Collected: 8-21-80

Artifact No. UA80

Provenience/Description

Significance

Comments

249-1 (Surface find, frost heave adjacent to Alyeska materials pit, 25' south of backhoe trench N #4(D), RJaD Book #2 pp. 1-2) possibly bifacially worked flat river cobble of granite

CHN-FIND

AAS 035 (MP 194.26/April 80)
Site #1

B. Cannon
Date Collected: 8-7-80

Artifact No. UA80

Provenience/Description

Significance

Comments

245-1 (Surface find, 30' west of centerline, DH Book #4 p. 174, Lot #66) tobasco sauce bottle neck - found near modern (possible Alyeska pipeline construction) hearth

CHN-012

EMS 36-3
Site #1

R. Jane Dale
Date Collected: 8-19-80

Artifact No. UA80

Provenience/Description

Significance

Comments

251-1 (Hole N5(B) distal end of caribou humerus fragment - right side, no obvious cut marks

(N6) 1 tin of organic soil sample, from a depth of 8 feet

CHN-010

EMS 39-3
Site #2

S. Fetter
Date Collected: 8-11-80

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|----------------------------------------------------|---------------------|-----------------|
| 226-1 | (Lot #1) banded grey chert biface fragment (large) | | See Figure 5 |

WIS-FIND

EMS 45-1
Site #1

S. Alloway
Date Collected: 8-14-80

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|-------------------------------------------------------------------|---------------------|-----------------|
| 247-1 | (Rip-rap on access road) bifacially worked pebble - possible tool | | |

WIS-FIND

EMS 45-2A
Site #1 (Knoll top of island)

K. Leitgeb
Date Collected: 8-7-80

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|--------------------------------|---------------------|-----------------|
| 230-1 | Flake (possible) - black chert | | |

WIS-051

EMS 45-3
Site #1

K. Leitgeb
Date Collected: 8-9-80

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|---------------------------------------------------------------------------|---------------------|-----------------|
| 246-1 | (Eastern half of square) greasy soil sample from possible housepit | | |
| 246-2 | Soil sample from possible housepit - may contain burned bone and charcoal | | |
| 246-3 | Charcoal from possible housepit | | |

WIS-051 continued

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|----------------------------------------|---------------------|-----------------|
| 246-4 | | Charcoal sample from possible housepit | | |
| 264-5 | | Burned bone from possible housepit | | |

WIS-003 ADDENDUM

EMS 46-1
Site #1

K. Leitgeb
Date Collected: 7-29-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 207-1 | | (Bag #5 - surface collection) black chert retouch flake (could be part of a broken scraper) | | See Figure 5 |
| 207-2 | | (Bag #6 - surface collection) black chert unifacially retouched along all edges (knife?) | | See Figure 5 |
| 207-3 | | (Bag #7 - surface collection) striated grey-black chert flake | | |
| 207-4 | | (Bag #7 - surface collection) grey-black chert chunk | | |
| 207-5 | | (TP #1 - surface of TP - nothing in TP #1, RGT) black chert flake with possible use wear | | |
| 207-6 | | (TP #1 - surface of TP, RGT) grey (quartzite?) flake fragment | | |
| 207-7 | | (TP #1 - surface of TP, RGT) black obsidian flake | | |
| 207-8 | | (TP #2 - KL) black chert flake fragment | | |
| 207-9 | | (TP #2 - KL) 1 small black chert flake | | |
| 207-10 | | (TP #2 - KL) 1 small grey chert flake fragment | | |

WIS-FIND

EMS 46-1
Site #2

K. Leitgeb
Date Collected: 7-29-80

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|----------------------------------------------------------------------------------------------|---------------------|-----------------|
| 208-1 | (Isolated find) small obsidian flake - cortex and possible use wear along both lateral edges | | |

WIS-019 ADDENDUM

EMS 46-1
Site #3

K. Leitgeb
Date Collected: 8-2-80

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 209-1 | (Surface collection) grey chert micro-blade fragment - medial section | | |
| 209-2 | (TP #2 - NE Quad) 1 chunk quartz crystal, 1 chunk quartz, 1 chunk black chert | | |
| 209-3* | (TP #2 - NE Quad) striated grey (black) flake | | |
| 209-4* | (TP #2 - NE Quad) grey chert flake | | |
| 209-5* | (TP #2 - NE Quad) grey chert flake fragment | | |
| 209-6 | (TP #2 - NE Quad) grey and black chert flakes - one may be a "long thin microblade waste flake?" (KL on the bag) - 18 flakes | | |
| 209-7* | (TP #2 - NE Quad) black chert flake fragment | | |
| 209-8 | (TP #2 - NW Quad) 6 small grey chert flake fragments and 5 small black chert flake fragments | | |

*These flakes were given separate numbers because they were large enough to write on.

WIS-019 ADDENDUM continued

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|-----------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 209-9 | | (TP #2 - SW Quad) grey chert flake fragment - found in grey soil | | |
| 209-10 | | (TP #2 - SW Quad) grey quartzite? flake - found in grey soil | | |
| 209-11 | | (TP #2 - SW Quad) grey quartzite? flake - found in grey soil | | |
| 209-12 | | (TP #2- SW Quad) 23 grey (and a few black) chert and quartzite flake fragments - found in grey soil | | |
| 209-13 | | (TP #2 - SE Quad) grey chert flake fragment | | |
| 209-14 | | (TP #2 - SE Quad) grey chert flake fragment | | |
| 209-15 | | (TP #2 - SE Quad) 1 chunk of grey chert and 18 small flakes grey and black chert | | |
| 209-16 | | (TP #2 - SE Quad) 6 pieces of bone (Note: some may be identifiable) | | |

BET-123

EMS 48-0

Site #2

S. Fetter
Date Collected: 8-8-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|---------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 227-1 | | (Borehole C - TP #1, Lot #1) frost heave - bipolar lateral scraper - possible use wear along distal end | | See Figure 5 |
| 227-2A | | (Borehole C - TP #F2, Lot #2) large flake sand stone? | | |
| 227-2B | | (Borehole C - TP #F2, Lot #2) flake fragment - it fits with 227-2A | | |

BET-122

EMS 48-0
Site #3

S. Fetter
Date Collected: 8-12-80

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 229-1A | (Borehole #B, Lot #1) black chert with cortex possibly retouched flake fragment (3 pieces total) - proximal part | | See Figure 5 |
| 229-1B | (Borehole #B, Lot #1) medial segment of flake fragment with what Sharon refers to as a graver on distal end | | See Figure 5 |
| 229-1C | (Borehole #B, Lot #1) distal segment of flake fragment with possible retouch along the distal edge | | See Figure 5 |

BET-055

EMS 48-0
Site #4

S. Fetter
Date Collected: 8-12-80

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|----------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 228-1 | (Borehole #D - TV's pit) 1 obsidian flake removed for INAA by John Cook | | |
| 228-2 | (Borehole #D - TV's pit) 1 obsidian flake removed for INAA by John Cook | | |
| 228-3 | (Borehole #D - TV's pit, Lot #3) 13 small black obsidian flakes and 1 small black chert flake | | |
| 228-4 | (Borehole #D - original pit, Lot #5) blue-grey banded chert possible blade fragment - retouch along left dorsal edge | | |
| 228-5 | (Borehole #D - original pit, Lot #4) blue-grey banded chert possible flake fragment | | |
| 228-6* | (Borehole #D - original pit, Lot #5) sandy colored sandstone? with frost spauls on ventral surface | | |

*A note was written on the bag - "white possibly fits what was left in pit".

BET-042

EMS 48-2A
Site #1

S. Fetter
Date Collected: 8-5-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|----------------------------------------------------------------------------------|---------------------|-----------------|
| 231-1 | | (Artifact #9, Lot #1) black obsidian flake fragment | | |
| 231-2 | | (Artifact #2, Lot #2) white chalky sandstone chunk | | |
| 231-3 | | (Artifact #3, Lot #3) black obsidian point fragment - possibly the base | | See Figure 5 |
| 231-4 | | (Artifact #4, Lot #4) white sandstone flake | | |
| 231-5 | | (Artifact #10, Lot #5) quartz crystal flake fragment with possible use wear | | |
| 231-6 | | (Artifact #13, Lot #6) quartz crystal flake fragment | | |
| 231-7 | | (Artifact #14, Lot #7) large basalt biface trimming flake - heavily patinated | | |

BET-125

EMS 51-3
Site #1

K. Leitgeb
Date Collected: 7-23-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|-------------------------------------------------------------------------------|---------------------|-----------------|
| 211-1 | | RJaD - surface find - grey quartzite flake (patinated?) | | |
| 211-2 | | KL - surface find - grey quartzite/chert? possible flake with frost spalls | | |
| 211-3 | | KL - surface find - grey quartzite flake (same material as in 211-1) | | |
| 211-4 | | KL - surface find - grey quartzite - it may be heavily patinated chert | | |
| 211-5 | | (MW - Test Pit - first flake found) brown/red quartzite flake | | |

BET-125 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|-------------------------------------------------------------------|---------------------|-----------------|
| 211-6 | (MW - Test Pit - 2nd flake) obsidian cortex and bifacially worked | | See Figure 5 |

BET-126

EMS 51-3
Site #2

K. Leitgeb
Date Collected: 7-26-80

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|------------------------------------------------------|---------------------|-----------------|
| 212-1 | (KL - surface find) lateral edge of projectile point | | See Figure 5 |
| 212-2 | (KL - surface find) grey chert flake fragment | | |
| 212-3 | (KL - surface find) grey-black chert chunk | | |

BET-FIND - Possibly 082 Addendum

EMS 51-3
Site #3

K. Leitgeb
Date Collected: 7-23-80

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|----------------------------------------------------------------------|---------------------|-----------------|
| 213-1 | (Surface find, RGT) grey-black fine ground chert with hinge fracture | | |

BET-006 ADDENDUM

EMS 54-1B
Site #1

K. Leitgeb
Date Collected: 7-28-80

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|----------------------------------------------------------------------|---------------------|-----------------|
| 204-1 | (Isolated flake - KL) basalt flake fragment | | |
| 204-2 | (Isolated flake - PR) large obsidian (black) flake - broken for Cook | | |

BET-058

EMS 60-1
Site #1

R. J. Dale
Date Collected: 9-8-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 250-1 | | (River terrace edge of previously (Alyeska?) tested area at SE edge of existing materials pit) possible flake of grey igneous rock | | |
| 250-2 | | (River terrace edge of previously (Alyeska?) tested area at SE edge of existing materials pit) grey igneous chunk | | |
| 250-3 | | (River terrace edge of previously (Alyeska?) tested area at SE edge of existing materials pit) possible flake fragment of grey igneous rock | | |
| 250-4 | | (River terrace edge of previously (Alyeska?) tested area at SE edge of existing materials pit) flake of grey igneous rock | | |
| 250-5 | | (River terrace edge of previously (Alyeska?) tested area at SE edge of existing materials pit) grey igneous flake fragment | | |

LIV-FIND

EMS 71-0A
Site #1

K. Leitgeb
Date Collected: 7-14-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|---------------------------------------------------------------------------------------|---------------------|-----------------|
| 205-1 | | (On top of knoll) - Lost Creek black chert flake | | |
| Site #2 | | | | |
| 206-1 | | (Lost Creek slope - 25' up from gravel pit - Area #B) grey chert fragment with cortex | | |

LIV-108

EMS 71-3A

Site #1

K. Leitgeb

Date Collected: 7-15-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|----------------------------------------------------------------------------|---------------------|-----------------|
| 218-1 | | (Surface - half buried in moss - KL) black chert core fragment - patinated | | |
| 218-2 | | (NE/4 of TP #1 - MW) grey chert fragment | | |
| 218-3 | | (NW/4 of TP #1 - PR) grey chert flake fragment - patinated | | |
| 218-4 | | (SE/4 of TP #1 - RGT) two small grey chert flakes | | |
| 218-5 | | (SE/4 of TP #1 - RGT) coarse black chert flake fragment | | |
| 218-6 | | (SE/4 of TP #1 - RGT) coarse black chert flake fragment | | |
| 218-7 | | (SE/4 of TP #1 - RGT) black chert flake fragment | | |
| 218-8 | | (TP #2 - 26' from TAPS) 13 small black chert flakes | | |
| 218-9 | | (TP #3 - RJaD) black chert chunk | | |
| 218-10 | | (TP #2 - RJaD) black chert flake fragment | | |
| 218-11 | | (TP #2 - RJaD) black chert chunk | | |
| 218-12 | | (TP #2 - RJaD) black chert chunk - patinated | | |
| 218-13 | | (TP #2 - RJaD) black chert chunk | | |
| 218-14 | | (TP #2 - RJaD) grey black chert chunk | | |
| 218-15 | | (TP #2 - RJaD) grey black chert - patinated | | |
| 218-16 | | (TP #2 - RJaD) black chert flake fragment | | |
| 218-17 | | (TP #2 - RJaD) black chert flake fragment - patinated | | |

LIV-107

EMS 71-3A
Site #2

K. Leitgeb
Date Collected: 7-15-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|-----------------------------------------------------------------------------------|---------------------|-----------------|
| 219-1 | | (60' SE of Site #1 - surface - game trail - Bag #1) black chert flake fragment | | |
| 219-2 | | (60' SE of Site #1 - surface - Bag #2) black chert chunk | | |
| 219-3 | | (60' SE of Site #1 - surface - Bag #2) black chert chunk | | |

LIV-046

EMS 71-3A - Tolovana 9
Site #3

K. Leitgeb
Date Collected: 7-18-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|-------------------------------------------------------------------------------|---------------------|-----------------|
| 210-1 | | (Knoll #1 - MW - surface collection) grey-black chert flake fragment | | |
| 210-2 | | (Knoll #1 - MW - surface collection) banded grey and black quartzite flake | | |
| 210-3 | | (Knoll #1 - MW - surface collection) black chert flake fragment | | |
| 210-4 | | (Knoll #1 - MW - surface collection) black chert flake fragment | | |
| 210-5 | | (Knoll #1 - MW - surface collection) black chert flake fragment | | |
| 210-6 | | (Knoll #1 - MW - surface collection) black chert flake fragment | | |
| 210-7 | | (Knoll #2 - PR - surface collection) grey-black chert flake | | See Figure 5 |

LIV-046 continued

| <u>Artifact No. UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|----------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 210-8 | (Knoll #2 - PR - surface collection) black chert flake - blade-like | | |
| 210-9 | (Knoll #2 - PR - surface collection) black chert flake fragment - patinated | | |
| 210-10 | (Knoll #2 - PR - surface collection) black chert flake - possible lateral use wear - retouch? | | |
| 210-11 | (Knoll #2 - PR - surface collection) black chert flake - retouched? | | |
| 210-12 | (Knoll #1 - KL's TP #1) 3 small black chert flake fragments | | |
| 210-13 | (Knoll #2 - KL's TP #2) 1 large grey chert chunk | | |
| 210-14 | (Knoll #1 - RJAD's TP #1) 3 small flake fragments - one may be a small microblade fragment (grey one) | | |
| 210-15 | (Knoll #1 - RJAD's TP #2 - 50' NE of KL's TP #1) banded grey-brown chert fragment | | |
| 210-16 | (Knoll #1 - RJAD's TP #2 - 50' NE of KL's TP #1) black chert flake fragment | | |
| 210-17 | (Knoll #1 - RJAD's TP #2 - 50' NE of KL's TP #1) black chert chunk | | |
| 210-18 | (Knoll #1 - RJAD's TP #2 - 50' NE of KL's TP #1) grey chert fragment (very small) | | |

Sample of lichen taken from one of the knolls.

LIV-103

EMS 71-3A
Site #4

K. Leitgeb
Date Collected: 7-15-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|----------------------------------------------------------------------------------------|---------------------|-----------------|
| 220-1 | | (Isolated find along TAPS - approximately 100' S of Site #2) black chert core fragment | | |

LIV-105

EMS 71-3A
Site #5

K. Leitgeb
Date Collected: 7-19-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|----------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 221-1 | | (Slope side - RJaD - return traverse #8-9) isolated find - core fragment - black chert - patinated | | |
| 221-2 | | (RJaD - isolated find #2 and #3) black chert chunk - patinated - it looks frost shattered | | |
| 221-3 | | (RJaD - isolated find #2 and #3) black chert chunk - possible retouch along unpatinated edge | | |
| 221-4 | | (RGT) grey-black chert core fragment | | |
| 221-5 | | (RGT) grey-black chert flake | | |
| 221-6 | | (RGT) black chert flake fragment | | |
| 221-7 | | (RGT) grey-black flake fragment | | |
| 221-8 | | (RGT) black chert chunk (blockish) | | |
| 221-9 | | (RGT) black chert flake fragment - possible use wear | | |
| 221-10 | | (RGT) black chert core fragment | | |
| 221-11 | | (RGT) mottled grey-black chert flake fragment | | |

LIV-105 continued

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|---------------------------------------|---------------------|-----------------|
| 221-12 | | (RGT) black chert fragment | | |
| 221-13 | | (RGT) grey-black chert flake fragment | | |
| 221-14 | | (RGT) grey-black chert fragment | | |
| 221-15 | | (RGT) grey-black chert fragment | | |
| 221-16 | | (RGT) black chert fragment | | |
| 221-17 | | (RGT) grey-black chert chunk | | |

LIV-047 Addendum

EMS 71-3B
Site #1

K. Leitgeb
Date Collected: 7-14-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|-------------------------------------------------------------------------------|---------------------|-----------------|
| 214-1 | | (Bag #1) black chert unifacially worked chunk | | |
| 214-2 | | (Bag #2 - RGT) grey-black chert flake (possible use wear) - blade-like | | |
| 214-3 | | (Bag #3 - MW) black chert flake with lateral use wear | | |
| 214-4 | | (Bag #4 - RJaD - surface) black chert chunk | | |
| 214-5 | | (Bag #4 - RJaD - surface) black chert chunk | | |
| 214-6 | | (Bag #4 - RJaD - surface) black chert core fragment | | |
| 214-7 | | (Bag #4 - RJaD - surface) large grey-black chert flake with possible use wear | | |
| 214-8 | | (Bag #4 - RJaD - surface) banded grey chert flake | | |

LIV-047 continued

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|------------------------------------------------------------------------------------------|---------------------|-----------------|
| 214-9 | | (Bag #4 - RJaD - surface) black chert flake | | |
| 214-10 | | (Bag #4 - RJaD - surface) black chert chunk - patinated | | |
| 214-11 | | (Bag #4 - RJaD - surface) black chert flake - patinated | | |
| 214-12 | | (Bag #4 - RJaD - surface) black chert core fragment | | |
| 214-13 | | (Bag #4 - RJaD - surface) black chert flake - patinated | | |
| 214-14 | | (Bag #4 - RJaD - surface) black chert fragment | | |
| 214-15 | | (Bag #4 - RJaD - surface) black chert fragment | | |
| 214-16 | | (Bag #4 - RJaD - surface) black chert flake fragment - patinated | | |
| 214-17 | | (Bag #4 - RJaD - surface) black chert flake - patinated - blade-like | | |
| 214-18 | | (Bag #4 - RJaD - surface) black chert flake fragment - possible use wear - blade-like | | |
| 214-19 | | (Bag #4 - RJaD - surface) black chert fragment with cortex | | |
| 214-20 | | (Bag #4 - RJaD - surface) black chert flake fragment - blade-like | | |
| 214-21 | | (Bag #4 - RJaD - surface) black chert flake fragment | | |
| 214-22 | | (Bag #4 - RJaD - surface) black chert flake fragment - blade-like | | |
| 214-23 | | (Bag #4 - RJaD - surface) black chert flake | | |

LIV-047 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|--------------------------------------------------------------------------------|---------------------|-----------------|
| 214-24 | (Bag #4 - RJaD - surface) black chert flake - blade-like | | |
| 214-25 | (Bag #4 - RJaD - surface) black chert flake fragment | | |
| 214-26 | (Bag #4 - RJaD - surface) black chert flake fragment | | |
| 214-27 | (Bag #4 - RJaD - surface) black chert chunk - blockish | | |
| 214-28 | (Bag #4 - RJaD - surface) black chert flake fragment | | |
| 214-29 | (Bag #4 - RJaD - surface) black chert chunk - possible use wear along one edge | | |
| 214-30 | (Bag #4 - RJaD - surface) black chert flake - use wear along lateral edge | | |
| 214-31 | (Bag #4 - RJaD - surface) black chert flake - possible use wear | | |
| 214-32 | (Bag #4 - RJaD - surface) black chert flake fragment - possible use wear | | |
| 214-33 | (Bag #4 - RJaD - surface) black chert chunk (flake scars on dorsal surface) | | |
| 214-34 | (Bag #4 - RJaD - surface) black chert flake fragment - patinated - blade-like | | |
| 214-35 | (Bag #4 - RJaD - surface) black chert flake fragment | | |
| 214-36 | (Bag #4 - RJaD - surface) black chert flake | | |
| 214-37 | (Bag #4 - RJaD - surface) black chert flake fragment | | |
| 214-38 | (Bag #4 - RJaD - surface) black chert flake fragment - small | | |
| 214-39 | (Bag #5 - RGT 2nd pit) large grey-black chert flake fragment | | |

LIV-047 continued

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|-----------------------------------------------------------------------|---------------------|-----------------|
| 214-40 | (Bag #5 - RGT 2nd pit) black chert flake fragment with hinge fracture | | |
| 214-41 | (Bag #5 - RGT 2nd pit) black chert flake - patinated | | |
| 214-42 | (Bag #5 - RGT 2nd pit) black chert flake - patinated | | |
| 214-43 | (Bag #5 - RGT 2nd pit) black chert flake with possible use wear | | |
| 214-44 | (Bag #5 - RGT 2nd pit) black chert flake with possible retouch | | |

LIV-106

EMS 71-3B
Site #2

K. Leitgeb
Date Collected: 7-15-80

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|----------------------------------------------------------------------------------------------|---------------------|-----------------|
| 215-1 | (Flake #1 - surface collection - MW) black chert chunky flake with lateral possible use wear | | |
| 215-2 | (Flake #2 - MW - surface collection) black chert flake | | |
| 215-3 | (TP #1) grey chert flake fragment | | |
| 215-4 | (TP #1) black chert flake fragment | | |
| 215-5 | (TP #1) black chert flake fragment | | |
| 215-6 | (TP #1) 6 small black chert flakes | | |

LIV-030 Addendum

EMS 71-3B Tolovana 2
Site #3

K. Leitgeb
Date Collected: 7-19, 8-25-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|--------------------------------------------------------------|---------------------|-----------------|
| 216-1 | | (TP #23 - 1st traverse - RJaD) black chert burin - patinated | | |
| 216-2 | | (TP #23 - 1st traverse - RJaD) grey chert flake | | |
| 216-3 | | (Isolated surface - RGT) black chert flake | | |
| 216-4 | | (S corner of TP #1 - DKH - 5 cm) black chert flake | | |

LIV-104

EMS 71-3B
Site #6

K. Leitgeb
Date Collected: 7-19-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|-------------------------------------------------------------|---------------------|-----------------|
| 217-1 | | (Edge of cut - 1300' from W) black chert core fragment | | |
| 217-2 | | (Edge of cut - 1300' from W) black chert flake - blade-like | | |

XBD-042

MP 517.5 - AAS 092
Site #1

K. Leitgeb
Date Collected: 7-2-80

| <u>Artifact No.</u> | <u>UA80</u> | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|---------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| | | Samples from possible cache 600' NW of Alyeska gravel pit at mile post 517.5 - refer to Leitgeb Book #1 pp. 25-26 and Soils Notebook #1 p. 15 | | |
| 243.1 | | Soil sample (dark/black soil) | | |
| 243.2 | | Bone sample (extremely small amount) | | |

TNX-FIND

AAS 118 - Test Area #8 Fault Stability Study
Site #1

R. J. Dale
Date Collected: 9-28-80

| <u>Artifact No.</u> UA80 | <u>Provenience/Description</u> | <u>Significance</u> | <u>Comments</u> |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|
| 166-1 | (On proposed access route to site in bank of existing road cut - lower of 2 palaeosol in loess deposits - 53-67 cm below surface) black igneous flake | | |
| 166-2 | (On proposed access route to site in bank of existing road cut - lower of 2 palaeosol in loess deposits - 53-67 cm below surface) black igneous flake | | |
| 166-3 | (On proposed access route to site in bank of existing road cut - lower of 2 palaeosol in loess deposits - 53-67 cm below surface) small black igneous flake | | |