Documentation on the Evaluation of the Northwest Alaskan Reconnaissance Material Sites from Delta to the Canadian Border

(Including the Report, Introductory Texts, and Related Letters)

This report consists primarily of a reconnaissance report 219 leaves long prepared by the Alaska Dept. of Fish and Game and the U.S. Fish and Wildlife Service referred to as "an evaluation of the Northwest Alaskan reconnaissance material sites from Delta to the Canadian border" (see the last title listed in the table of contents below). It was originally sent accompanied by a letter of transmittal (a memorandum dated Mar. 29, 1979) from Al Ott (Supervisor, Pipeline Surveillance Team, Habitat Protection Section, ADF&G) to Amos C. Mathews (State Pipeline Coordinator). This document here includes the original report and Mar. 29 memorandum along with another letter of transmittal dated the next day from Al Ott to Edwin Kuhn (Director, Government and Environmental Affairs, Northwest Alaskan Pipeline Company), which was copied to another company officer and thirteen state and federal officers.

Contents

- [Letter] 1979 March 30, Anchorage, Alaska [to] Edwin "Al" Kuhn, Washington, D.C. / [from] Amos C. Mathews -- (1 leaf)

This letter from Amos C. Mathews is the letter of transmittal accompanying the entire documentation below. He forwarded the documentation he received the day before from Al Ott. It was sent to Edwin Kuhn, and, in addition, it was copied to fourteen other persons in its entirety.

- Material sites (NAPLINE) between Delta Junction and the Canadian border / [from] Al Ott. -- (1 leaf)

This memorandum from Al Ott is a letter of transmittal accompanying the entire documentation below which was sent to Amos C. Mathews. The documentation is divided into two attachments, A and B.

- Attachment A.
    - Material sites, Delta Junction to the Canadian border. -- (2 leaves)

This report describes the material site situation and refers to the reconnaissance study included as Attachment B.

- Attachment B.
    - [Introductory sheet]. -- (1 leaf)

This sheet introduces the reconnaissance study below.

    - Material site reconnaissance. -- (219 leaves)

This is the primary report.

JAY S. HAMMOND
GOVERNOR

Case
AK03.013008

STATE OF ALASKA
OFFICE OF THE PIPELINE COORDINATOR
620 EAST TENTH AVENUE
MAILING: P.O. BOX 1782 • ANCHORAGE, ALASKA 99510
TELELPHONE (907) 279-1502 TELEX 26-599

March 30, 1979

Mr. Edwin "Al" Kuhn, Director
Government and Environmental Affairs
Northwest Alaskan Pipeline Company
1801 K Street, N.W.
Washington, D.C. 20036

Dear Mr. Kuhn:

The Alaska Department of Fish and Game and the U.S. Fish and Wildlife Service have prepared an evaluation of the Northwest Alaskan Reconnaissance Material Sites from Delta to the Canadian border (enclosures). These evaluations should be invaluable during Northwest's planning for Phase II exploratory work for the reconnaissance material sites.

Sincerely,

Amos C. Mathews
State Pipeline Coordinator

ACM:AO:km
Enclosures (For distribution - 5 copies)
Transmittal Memorandum Al Ott to Amos C. Mathews
Material Sites Delta Junction to the Canadian border
Site Specific Evaluation of Material Sites

cc: Hershal Gober, Northwest Alaskan Pipeline Company, Fairbanks
Keith Schreiner, U.S. Fish and Wildlife Service
Richard Thiel, Environmental Protection Agency, Anchorage
George Robertson, Corps of Engineers, Anchorage
Morris Turner, Alaska Pipeline Office, Anchorage
Harry Hulsing, U.S. Geological Survey, Anchorage
Ken Chalk, U.S. Fish and Wildlife Service, Anchorage
Tony Booth, U.S. Fish and Wildlife Service, Fairbanks
Richard Shidler, Department of Fish and Game, Fairbanks
Larry Dietrick, Department of Environmental Conservation, Fairbanks
Richard Logan, Department of Fish and Game, Juneau
Julius Rockwell, Alaska Pipeline Office, Anchorage
Carl Markon, Department of Fish and Game, Anchorage
Al George, State Pipeline Coordinator's Office, Fairbanks

02-001B (Rev. 10/78)

STATE
of ALASKA

MEMORANDUM

TO: Amos C. Mathews
State Pipeline Coordinator

DATE: March 29, 1979

FILE NO:

TELEPHONE NO:

FROM: Al Ott, Supervisor
Pipeline Surveillance Team
Habitat Protection Section
Alaska Department of Fish and Game

SUBJECT: Material Sites (NAPLINE) Between Delta Junction and the Canadian Border

The Alaska Department of Fish and Game and the U.S. Fish and Wildlife Service conducted field surveys of potential material sites selected by NAPLINE between Delta Junction and the Canadian Border during the summer of 1978. As a result of this field effort, data summaries for each individual site field checked were prepared and an overall analysis of material sources was completed (Attachments A and B). The Alaska Department of Fish and Game feels that this information should be transmitted to Northwest Alaskan Pipeline Company for their consideration in the exploration phase and in the development of mining plans.

AGO:cd

Attachments

Attachment A

MATERIAL SITES
DELTA JUNCTION TO THE CANADIAN BORDER

Documentation is available regarding the acreages of disturbance by activity for construction of the Trans-Alaska Pipeline System. The major disturbance, in terms of surface area altered, was attributable to the removal of materials which were subsequently utilized for workpad construction, haul road construction, access roads, camps, airstrips, etc. The total acres altered with respect to material removal and installation of a workpad were 11,700 and 10,600, respectively (personal communication, W.L. Pamplin, USFWS). For this reason, field investigations were initiated when Northwest Alaskan Pipeline Company (NAPLINE) applied for 71 tentative material sites between Delta Junction and the Canadian Border.

Sites tentatively selected by NAPLINE consist of upland and floodplain types, thus potentially affecting both aquatic and terrestrial habitats. The general tendency by review agencies, particularly the Alaska Department of Fish and Game, is to react negatively to any request to remove gravel from within or immediately adjacent to a watercourse. This concern has been amplified by past mining abuses and the position will remain essentially unchanged since impact to riparian and aquatic environments can be significant and these resources are, in many instances, limited.

Another important concern to the biologist is that the material requirements (specifications on riprap, fills, etc.) be met and that variances are not permitted. To illustrate, workpad constructed with below-specification materials (sand, high percentage of silts) ultimately results in erosion, thereby impacting additional aquatic and terrestrial habitats. The workpad between Rosa Pass and the Salcha River was installed using materials which did not meet the approved specifications; the result was extensive erosion of the pad and drainage structures with direct impact to both aquatic and terrestrial habitats. Stabilization of drainage structures, an important factor in minimizing long-term environmental damage, frequently requires site specific use of riprap to prevent erosion on slopes, cuts, and the inlets and outlets of culverts. Use of materials which are not adequate can lead to long-term erosion at these crossings.

With these thoughts in mind, the material sites identified by Northwest were reviewed in the field. Originally, 71 sites were proposed between Delta Junction and the Canadian Border; however, Michael Baker had as of November 8, 1978 deleted 5 sites (1P-2, 2P-2, 7P-3, 11P-2, and 23P-3) from the exploration phase.

Field investigations were conducted by Booth, Sigman and Keiser (USFWS - NAES) and Shideler (ADF&G) with Shideler and Booth completing the evaluation of these site reports (Attachment B). The following criteria were employed:

(1) Recommendations made are specific to the exploration phase only.

(2) Evaluations were confined to sites requested by NAPLINE. Previously existing sites were not evaluated as possible substitutes in areas where NAPLINE requested new sites.

(3) Designated access to the sites was evaluated as if this would be the permanent access.

(4) Ownership of land was taken from the "P" series (revision 1) alignment sheets provided for the Centerline Drilling Program.

(5) Evaluation report comments concerning the proximity of peregrine falcon nest sites to proposed material sites are not intended to establish critical habitat criteria. Endangered species protection will be addressed during FERC's Section 7 consultation with USFWS.

Based on preliminary data obtained to date the following comments are provided for consideration by NAPLINE:

(1) Only two possible riprap sites (RMS 7P-1 and RMS 21P-1) have been identified by Michael Baker between Delta Junction and the Canadian Border, a distance of approximately 195 pipeline miles. Since riprap will be necessary for stabilization at some culverts, some river crossings, and other similar areas requiring hydraulic control, this represents a significant deficiency in terms of erosion control materials.

(2) In several instances a 300 foot buffer strip of undisturbed vegetation was left between proposed material sites and waterbodies. This is inconsistent with the draft lease stipulation which will require a <u>minimum</u> 500 foot buffer zone.

The following data summaries for each material site (except RMS 16P-2 which was not field checked) were prepared based on field surveys conducted during the summer of 1978. Abbreviations commonly used in the summaries are presented below:

AHMP - Alaska Highway Milepost
ADOT/PF - Alaska Department of Transportation/Public Facilities
HMP - Haines Pipeline Milepost
MS - Material Site
N/A - Not applicable
RMS - Reconnaissance Material Site
2WD - two-wheel drive vehicle
4WD - four-wheel drive vehicle

MATERIAL SITE RECONNAISSANCE

Site Identification Number *RMS 1P-1* Reconnaissance Date *8/27/78*

Ownership *Private/State Patent*

Alaska Highway Milepost *1421*

Photographs *Air Photo 9-27* *Shideler: Roll G012, #24, 25*

SITE DESCRIPTION

Access *Existing all-weather road at AHMP 1421.0 to adjacent trailer court*

Geomorphology *Part of site appears to be old creek bed, probably of Jarvis Creek. Soil is sandy overburden underlain by cobbles and gravel.*

Slope/Aspect *0-5 degrees, toward north*

Drainage System *Tanana River drainage; old channel of Jarvis Creek*

Terrestrial Habitat *Vegetative communities; mixed aspen/softwood (white spruce and larch), mature aspen/poplar/birch, and open parkland dominated by grass and poplar.*

Aquatic Habitat *N/A*

Fish and Wildlife Observations *Numerous fresh bison tracks and droppings*

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Likely significant adverse visual and auditory effects on people living immediately adjacent to area but site well screened from Alaska Highway by topography and vegetation.*

Water Quality N/A

Fish N/A

Wildlife *Clearing and revegetation of site with grass or shrubs could attract and concentrate bison, causing an adverse impact of increased human-bison interactions.*

Timber *Little merchantable timber, but scattered spruce, aspen, and poplars exceed 10" dbh - could be salvaged for local use as firewood.*

Hydraulics N/A

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available, we recommend that RMS 1P-1 be included in the Exploration Phase.

Field Investigators	Date
D. Shideler	1/17/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 1P-2 Reconnaissance Date 8/24/78

Ownership State Pat.

Alaska Highway Milepost 1418.7 - 1419.1

Photographs Air Photo 9-25

SITE DESCRIPTION

Access Existing access to old ADOT Material Site then several cat trails, suitable for winter use only

Geomorphology Alluvial; includes upland and lowland areas

Slope/Aspect 0-5 degrees, toward north

Drainage System Tanana River, although no apparent drainage through site

Terrestrial Habitat Major vegetational communities include a lowland black spruce area and open to dense stands of predominantly aspen (inclusions and separate stands)

Aquatic Habitat N/A

Fish and Wildlife Observations (1) Bison tracks (2) Coyote and fox scats

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Only a minor visual impact because of topography and intervening vegetation in 500' buffer strip*

Water Quality N/A

Fish N/A

Wildlife *(1) Depending on type of revegetation, may serve as attraction to bison utilizing the Haines Highway ROW; may result in less depredation on Delta-Barley Project by serving as alternative food source. (2) Depending on type of revegetation, may provide temporarily increased forage for moose.*

Timber *Only scattered trees of merchantable size*

Hydraulics N/A

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available, we recommend that RMS 1P-2 be included in the Exploration Phase.

Field Investigators	Date
D. Shideler	1/16/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 1P-3 Reconnaissance Date 8/24/78

Ownership U. of A. (private)

Alaska Highway Milepost 1417.3 - 1417.9

Photographs Air Photo 9-25 Shideler: Roll G012, #9

SITE DESCRIPTION

Access 1417.3, existing gravel/silt access off Alaska Highway ("Triple H" Road)

Geomorphology Upland alluvial site with shallow swales

Slope/Aspect Western portion, 0-5 degrees toward northeast

Drainage System Tanana River

Terrestrial Habitat Vegetation consists primarily of dense aspen/spruce stands, and open aspen stands. Open aspen stands on west side of site where numerous spruce have been cut.

Aquatic Habitat N/A

Fish and Wildlife Observations Fresh fox scats near access road

EVALUATION OF IMPACTS

Aesthetics *Topography and intervening vegetation in 500' buffer strips visually screen site from highway and "Triple H" road.*

Water Quality N/A

Fish N/A

Wildlife *(1) Depending on type of revegetation, may serve as an attractant to bison due to forage availability. (2) Loss of tall shrub understory, one of the most productive types* (Cont. on "Other")

Timber *Only scattered timber of commercial size could be salvaged locally for firewood*

Hydraulics N/A

Other (Wildlife Cont.) *for nesting songbirds, will adversely affect an unknown number of birds. (3) The open aspen brushland is an important habitat type for sharp-tailed grouse.*

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available, we recommend that RMS 1P-3 be included in the Exploration Phase.

Field Investigators

D. Shideler

Date

1/7/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 2P-1 Reconnaissance Date 8/24/78

Ownership State Pat. Pending

Alaska Highway Milepost 1414.9 - 1415.4

Photographs Air Photo 9-24 Shideler: Roll G012, #4-8

SITE DESCRIPTION

Access 1415, existing road (Jack Warren Road) and entrance to ADOT material site, section line road on north boundary-each is suitable for all-weather use, and for permanent access

Geomorphology N/A

Slope/Aspect 0-5 degrees, to northeast

Drainage System Into Tanana River, no apparent drainage through site

Terrestrial Habitat Includes two dry sedge meadows (recent ponds), and a burn revegetated by mixed aspen/poplar stand among scattered remnant white spruce

Aquatic Habitat N/A

Fish and Wildlife Observations (1) Numerous fresh bison tracks and droppings; well-developed trails through sedge meadows. Small grassy openings appear to be bison resting areas-numerous droppings, beds, and trampled ground; (2) Harlan's hawk resting in large poplar in meadow; (3) Numerous savannah and tree sparrow nests along meadow/shrub edge; and (4) Numerous recent fox scats along trails and roads

EVALUATION OF IMPACTS

Aesthetics *Site is visually buffered from Jack Warren road by topography and intervening vegetation. Noise may negatively impact nearby residents.*

Water Quality N/A

Fish N/A

Wildlife *(1) Depending on type of revegetation, increased forage abundance may serve as alternative attractant to bison; advantage of attracting bison from nearby barley fields may be offset by increased chance of bison-*
Cont. on "Other"

Timber *Only scattered trees of commercial size, could be salvaged locally for firewood.*

Hydraulics N/A

Other *Cont. from Wildlife - auto collision; (2) Loss of interspersed sedge meadow/tall shrub habitat will adversely affect local songbird populations due to loss of nesting habitat; and (3) Adjacent grain fields are important staging and feeding areas for migrant geese and sandhill cranes.*

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available (1) We recommend that RMS 2P-1 be included in the Exploration Phase; (2) Development of this site should proceed from the existing ADOT site, using the sedge meadows in the northeast portion only if necessary.

Field Investigators

D. Shideler

Date

1/5/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 2P-2 Reconnaissance Date 8/27/78

Ownership State T.A.

Alaska Highway Milepost 1412.7 - 1413.5

Photographs Air Photo 9-22 Shideler: Roll G012, #23

SITE DESCRIPTION

Access 1413.2, bladed trail - gravel/cobble substrate; possibly old stream bed, but looks manmade (firebreak)

Geomorphology Alluvial, upland, with silty sand substrate

Slope/Aspect 0-5 degrees, to northeast

Drainage System No apparent drainages, generally into Tanana River

Terrestrial Habitat Portion of old burn with two vegetational communities; aspen/black spruce stand and open willow stand with aspen inclusions.

Aquatic Habitat N/A

Fish and Wildlife Observations (1) Numerous bison tracks and droppings; (2) Fox tracks and scats, coyote-size scat and wolf-size track on access road; (3) Five sharp-tailed grouse on access road

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Negative impact unlikely; site is one half mile from highway on shallow slope*

Water Quality N/A

Fish N/A

Wildlife *(1) Loss of tall shrub habitat will adversely affect an unknown number of songbirds which depend on this habitat type for nesting and feeding. (2) Removal of this old burn brushland will destroy prime sharp-tailed grouse habitat. (3) Depending on type of revegetation site may serve as an alternative attractant to bison due to the increase in forage availability and may lessen depredation on nearby grain fields.*

Timber *Only scattered trees of commercial-size could be salvaged locally for firewood.*

Hydraulics

Other

RECOMMENDATION

Based on biological data currently available, we recommend that RMS 2P-2 be included in the Exploration Phase.

Field Investigators

D. Shideler

Date

Note: This site deleted 11/78 by Michael Baker, Inc.

MATERIAL SITE RECONNAISSANCE

Site Identification Number *RMS 3P-1* Reconnaissance Date *8/24/78*

Ownership *State*

Alaska Highway Milepost *1409.7*

Photographs *Air Photo 9-20 Shideler: Roll G014, #24-25*

SITE DESCRIPTION

Access *Existing brushed trail from south side of highway through the RMS*

Geomorphology *Upland, alluvial*

Slope/Aspect *Less than 5 degrees, to north*

Drainage System *Tanana River*

Terrestrial Habitat *Mixed aspen/white spruce in semiopen to open stands, with dense pure black spruce and aspen inclusions. Understory is primarily aspen saplings, willow and spruce seedlings. Aspen saplings appear to be decadent, being replaced by spruce. Groundcover consists of Ledum spp., Sphagnum spp., and lowbush cranberry.*

Aquatic Habitat *N/A*

Fish and Wildlife Observations *(1) The follwing songbirds were observed: tree sparrow, orange-crowned warbler, ruby-crowned kinglet; (2) Male spruce grouse; (3) Bison tracks and droppings; (4) Moose tracks and droppings.*

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Terrain and intervening vegetation in the 500' visual buffer should preclude visual impact*

Water Quality N/A

Fish N/A

Wildlife *(1) Depending on type of revegetation, may attract bison. This attraction may, in turn, increase chance of bison-auto collisions. This attraction also may help ease Bison depredation on the Delta-Barely Project*

Cont. on "Other"

Timber *Only scattered commercial-sized timber is present.*

Hydraulics N/A

Other *Wildlife Cont.- by serving as an alternate food source. (2) Depending on the type of revegetation, site may enhance local moose populations by temporarily increasing local forage abundance. (3) Some songbird and sharp-tailed grouse habitat will be lost, although revegetation with proper species could enhance local populations.*

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available, we recommend that RMS 3P-1 be included in the Exploration Phase.

Field Investigators

D. Shideler

Date

1/4/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 3P-2 Reconnaissance Date 8/24/78

Ownership State (Patent and T.A.)

Alaska Highway Milepost 1405.3

Photographs Air Photo 9-18 Shideler: Roll G014, #21-22

SITE DESCRIPTION

Access Access to area was on foot. Vehicle was parked in ADOT material site on south side of highway (3P-2a)

Geomorphology Upland

Slope/Aspect 0-5 degrees, to northeast

Drainage System No drainages were observed, but area appears to drain into the Granite/Rhoads Creek complex.

Terrestrial Habitat 3P-2a, north of Alaska Highway, has three habitat types - (1) dense dwarf balck spruce with no understory, and ground cover of Ledum spp. sphagnum, and Vaccinium vitis-idaea, (2) open stands of mature aspen mixed with spruce, with an understory primarily spruce saplings, and ground cover of V. vitis-idaea, Ledum fireweek (Epilobium) and bunchberry (Cornus canadensis), and (3) an aspen shrubland, with some spruce saplings, and ground cover of V. vitis-idaea and Ledum. 3P-2b, south of the highway is a gravel pit surrounded by a thick dwarf black spruce habitat type, with ground cover primarily V. vitis-idaea and sphagnum.

Aquatic Habitat N/A

Fish and Wildlife Observations (1) Fresh black bear scats on access trail to Haines ROW; and (2) Old moose pellets and tracks.

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics Area 3P-2a is visually screened from highway due to topography and intervening vegetation. Area 3P-2b includes an existing material site immediately adjacent and visible to the highway.

Water Quality N/A

Fish N/A

Wildlife (1) Depending on the type of revegetation, local moose populations may be temporarily enhanced by an increase in forage abundance; (2) This RMS is located a mile north of the proposed bison range, and if revegetated Cont. on "Other"

Timber Mature aspen in the 10-12" dbh size range occur on this site; salvage of this timber should be encouraged.

Hydraulics N/A

Other Cont. from Wildlife - with exotic grasses, may serve as an alternate attractant to bison, attracting them north of the highway, which defeats the purpose of the bison range, and increases the probability of bison-auto collisions; (3) Loss of open aspen shrubland habitat, a prime habitat type for sharp-tailed grouse, would affect an unknown number of this species; and (4) The interspersion of mature decidous and shrubland types results in good quality songbird and small mammal habitat. This habitat would be lost, affecting an unknown number of animals.

RECOMMENDATION

Based on biological data currently available, we recommend (1) that RMS 3P-2 be included in the Exploration Phase; and (2) development and expansion of the existing ADOT site is preferable to opening a new site north of the highway.

Field Investigators

D. Shideler

Date

1/22/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 4P-1 Reconnaissance Date 8/24/78

Ownership State (TA)

Alaska Highway Milepost 1402.5 -1402.9

Photographs Air Photo 9-16 Shideler: Roll GO14, #20

SITE DESCRIPTION

Access Access was through an existing disturbed site (possibly a Canol Pipeline pump station). This access may be suitable for a permanent access to the RMS, however, the site would be directly visible to the highway.

Geomorphology Upland, alluvial

Slope/Aspect 0-5 degrees, to north

Drainage System RMS is within one-half mile of Sawmill Creek

Terrestrial Habitat White spruce overstory and understory, in dense to open stands. Ground cover in closed stands is Ledum spp. and Vaccinium vitis-idaea; in open stands, V. vitis-idaea, sphagnum, and Sterocaulon and Cladonia lichens.

Aquatic Habitat N/A

Fish and Wildlife Observations (1) Old and recent moose pellets

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Material site is screened from highway due to topography and intervening vegetation, however, existing access at AHMP 1402.7 would allow a clear view of part of the site.*

Water Quality N/A

Fish N/A

Wildlife *Depending on type of revegetation, local moose populations may be temporarily enhanced by increase in forage abundance.*

Timber *There are few trees of commercial-size on the RMS, however, smaller-diameter trees could be salvaged for firewood.*

Hydraulics N/A

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available, we recommend that RMS 4P-1 be included in the Exploration Phase.

Field Investigators

D. Shideler

Date

1/22/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 4P-2 Reconnaissance Date 8/24/78

Ownership State (TA)

Alaska Highway Milepost 1400.3 - 1401.2

Photographs Air Photo 9-14 Shideler: Roll G014, #17-19

SITE DESCRIPTION

Access Access on foot along old trail, crossing Haines ROW near Haines Milepost 511

Geomorphology Upland, alluvial "flats"

Slope/Aspect 0-3 degrees, toward north

Drainage System No apparent drainages through RMS, but located in the Sawmill Creek drainage.

Terrestrial Habitat (1) Mixed aspen/black spruce forest (varying from almost pure aspen to almost pure black spruce) with a spruce and aspen sapling understory, and herbaceous ground cover of scattered patches of Ledum, Vaccinium vitis-idea, and small (less than one square meter) patches of Arctostaphylos uva-ursi; and (2) Dense black spruce stands with no understory and ground cover of Ledum, sphagnum, and grass.

Aquatic Habitat N/A

Fish and Wildlife Observations None

EVALUATION OF IMPACTS

Aesthetics *The RMS is visually screened from the highway due to topography and intervening vegetation*

Water Quality N/A

Fish N/A

Wildlife *(1) Depending on type of revegetation, local moose populations may temporarily be enhanced by increase in forage abundance; (2) Interspersion of mixed deciduous and coniferous forest is a fair to good quality migrant*
Cont. on "Other"

Timber N/A

Hydraulics N/A

Other *Cont. from Wildlife - songbird habitat; loss of this habitat will affect unknown number of birds; and (3) Depending on the type of revegetation this site may attract bison to the north side of the highway. This would increase the probability of biso-auto collisions on the highway, and crop depredations on the Delta-Barley Project.*

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available, we recommend that RMS 4P-2 be included in the Exploration Phase.

Field Investigators

D. Shideler

Date

1/22/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 5P-1 Reconnaissance Date 8/24/78

Ownership State

Alaska Highway Milepost 1397

Photographs Air Photo 9-12

SITE DESCRIPTION

Access Reconnaissance access was on foot down cleared trail (also a four-wheel drive road) at AHMP 1397.0

Geomorphology Upland, alluvial "flat"

Slope/Aspect 0-3 degrees, toward north

Drainage System Area is located midway between Sawmill Creek and Gerstle River. Although Dames and Moore (1978 report) found a dry drainage at AHMP 1397.3, this report was not available at the time of our reconnaissance and this intermittent drainage was not observed.

Terrestrial Habitat (1) Dense upland black spruce with no understory, and ground cover of sphagnum, Vaccinium vitis-idaea, Vaccinium uliginosum, and patches of lichen; and (2) Open to dense stands of mature aspen and black spruce (spruce appears to be replacing aspen).

Aquatic Habitat Not available; we did not investigate intermittent drainage at AHMP 1397.3

Fish and Wildlife Observations (1) Numerous tracks and droppings of several age classes of bison (2) Numerous tree sparrows using the seral shrub community created by the clearing along the trail

EVALUATION OF IMPACTS

Aesthetics *There is a suitable visual screen from the highway due to topography and intermittent vegetation.*

Water Quality *No field evaluation was completed because presence of intermittent drainage was unknown at the time. Several apparent drainages (e.g. Sawmill and Rhoads Creeks) in the same soil type in this vicinity, begin subsurface flow at about the same contour interval.*

Fish *See "Water Quality"*

Wildlife *(1) Depending on type of revegetation, local moose populations may be temporarily enhanced by a temporary increase in forage abundance; (2) Interspersion of mixed deciduous/coniferous and tall shrub habitat (See "Other" for continuation)*

Timber

Hydraulics *See "Water Quality"*

Other *Con't - along the trail creates an excellent nesting habitat type for migratory songbirds; loss of this habitat will affect an unknown number of birds; and (3) Depending on the type of revegetation, this site may attract bison to the north side of the highway, away from the proposed bison range on the south side of the highway. This would increase the probability of bison-auto collisions, and crop depredations on the Delta-Barley Project.*

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available, we recommend that RMS 5P-1 be included in the Exploration Phase.

Field Investigators

D. Shideler

Date

1/22/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 5P-2 Reconnaissance Date 8/24/78

Ownership State

Alaska Highway Milepost 1394

Photographs Air Photo 9-10 Shideler: Roll G014, #11-16

SITE DESCRIPTION

Access Access was through a scraped area (did not appear to be a material site) at AHMP 1393.7

Geomorphology Upland, alluvial

Slope/Aspect 0-5 degrees, to northeast

Drainage System No observable drainages cross RMS, however the area drains into the Gerstle River, which is within 2000 feet

Terrestrial Habitat (1) Black spruce overstory varying from open to closed stands, with no understory, and ground cover in open stand consisting of Ledum, sphagnum, Stereocaulon lichen, Vaccinium vitis-idaea and Arctostaphylos uva-ursi, and in the closed stands consisting of sphagnum and V. vitis-idaea; (2) Mixed aspen/black spruce forest in open stands,

con't
Aquatic Habitat N/A

Fish and Wildlife Observations (1) Fresh and old moose tracks and droppings; (2) Bison tracks; (3) Red fox scats; and (4) Tree sparrows along Haines ROW and in revegetated disturbed area.

Con't from "Terrestrial" - no understory and ground cover consisting of sphagnum and V. vitis-idaea; (3) Tall shrub area around disturbed areas; and (4) Black spruce bog (identified from air photos-not checked on-site).

EVALUATION OF IMPACTS

Aesthetics *This site is visually screened from the highway due to topography and intervening vegetation.*

Water Quality N/A

Fish N/A

Wildlife *(1) Depending on type of revegetation, local moose population may be temporarily enhanced because of an increase in forage abundance; (2) The interspersion of mixed deciduous/coniferous forest and tall shrub*
(Con't on "Other")

Timber *Although there are few trees of commercial-size, smaller diameter trees could be salvaged for firewood*

Hydraulics N/A

Other *Con't - habitat results in a good quality habitat for nesting songbirds. Loss of this habitat type will affect an unknown number of birds; and (3) Depending on the type of revegetation, this site may attract bison and encourage them to spend more time north of the highway, away from proposed bison range on the south side of the highway. This condition is aggravated because bison use the Gerstle River and Haines ROW as important migration corridors. This would increase the possibility of bison-auto collisions, and crop depredations on the Delta Barley Project.*

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available, we recommend that RMS 5P-2 be included in the Exploration Phase.

Field Investigators

D. Shideler

Date

1/19/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number *RMS 6P-1* Reconnaissance Date *8/24/78*

Ownership *State*

Alaska Highway Milepost *1393 (Gerstle River)*

Photographs *Air Photo 9-9 Sigman: RMS 5, #9-13*

SITE DESCRIPTION

Access *Access to Gerstle River floodplain is at a two wheel drive road off the northeast side of the bridge, also the road to Cummings log mill on the lower Gerstle River*

Geomorphology *Floodplain of Gerstle River, including the active channel*

Slope/Aspect *0-5 degrees, north*

Drainage System *Gerstle River*

Terrestrial Habitat *Active unvegetated floodplain, and recently revegetated inactive floodplain. Revegetation is seral willow and balsam poplar seedlings, and pioneer legume species.*

Aquatic Habitat *Braided glacial river with unvegetated banks, considerable aufeising in early fall, and (reportedly) a cessation of flow during winter.*

Fish and Wildlife Observations *(1) Fox tracks; and (2) Bison tracks*

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics Because the floodplain is currently unvegetated little negative visual impact is expected

Water Quality The Gerstle River is a braided glacial river with seasonally high discharge, and high bedload. Unless mined properly, severe effects on the hydraulics of the river, and secondary but important effects on a buried gasline and the highway bridge, could occur. No fish have been observed in the Gerstle River or its upstream tributaries, however, mining plans for this RMS should include measures to prevent fish entrapment in case further research demonstrates that fish are present.

Fish

Wildlife

Timber N/A

Hydraulics

Other Cummings road to his log mill follows the east side of the river downstream. Rehabilitation of his road may be necessary following development of the site.

RECOMMENDATION

Based on biological data currently available we recommend that RMS 6P-1 be included in the exploration phase. We further recommend that before development of RMS 6P-1, a hydrologist investigate the site to determine how to minimize impacts on the hydraulics of the river. In addition, fisheries investigations should be initiated to determine the presence, species, critical periods, and life stages of fish if present.

Field Investigators		Date
J. Glaspell	N. Hemming	1/21/79
D. Shideler	M. Sigman	1/21/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 6P-2 Reconnaissance Date 6/27/78

Ownership State T.A.

Alaska Highway Milepost 1391.7 - 1392.1

Photographs Sigman: Roll RMS 5, #14, 15; Air photo 9-9
Shideler: Roll G008, #25

SITE DESCRIPTION

Access 1392, existing dirt road.

Geomorphology Old ADOT quarry removed from base of domelike hill on alluvial fan

Slope/Aspect South-facing slope, cliff at quarry site, steep slope (15-20 degrees) into forested area

Drainage System Site is above a blind channel or man-made diversion ditch into Tanana River or Gerstle River

Terrestrial Habitat Early successional vegetation on weathered portions (alders, willows, low shrubs). Site includes open spruce stand above quarry

Aquatic Habitat N/A

Fish and Wildlife Observations Small colony of about 20 bank swallows in soft dirt area behind cliff outcrop - not currently occupied

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Extension of quarry will be visible from road due to relief; no buffer possible.*

Water Quality N/A

Fish N/A

Wildlife *(1) Gravel extraction will destroy existing swallow nesting habitat; (2) depending on type of revegetation, may enhance local moose populations by temporarily increasing forage abundance; and (3) depending on type of revegetation, may attract bison to area, resulting in increased chance for bison-auto collisions, but also may offer alternative attraction away from Delta-Barley Project.*

Timber *No commercial-sized timber is present, however, smaller diameter spruce could be salvaged for firewood.*

Hydraulics

Other

RECOMMENDATION

Based on biological data currently available we recommend that RMS 6P-2 be included in the exploration phase.

Field Investigators	Date
D. Shideler M. Sigman	1/4/79
J. Glaspell N. Hemming	1/4/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 6P-3 Reconnaissance Date 6/22/78

Ownership State T.A.

Alaska Highway Milepost 1388.7

Photographs Air photos 9-7; Sigman Roll RMS5, #16,17; Shideler Roll G010, #1,7.

SITE DESCRIPTION

Access Proposed access is a dense poplar/birch swath which may have been a trail. This trail exists within the site as well as a high water channel of the Tanana which could be used for traffic within the site. Dirt road exists along part of west bank of Little Gerstle River, but it would need to be widened and the surface upgraded.

Geomorphology

Geomorphology: Mature and vegetated floodplain of Tanana River

Slope/Aspect 0-5 degrees, to northwest

Drainage System Tanana River

Terrestrial Habitat (1) Mature white spruce floodplain forest and (2) Riparian willow and alder-tall shrub community.

Aquatic Habitat

Fish and Wildlife Observations (1) Access area has abundance of moose winter droppings; (2) Fresh tracks of cow and calf moose along high water channel and sand/gravel bar; (3) Merganser, spotted sandpiper, and an unidentified shorebird on Tanana River gravel bar; (4) Coyote tracks in high water channel; (5) bald eagle nest approximately 0.5 mile upstream from site, eagle observed sitting near nest; (6) Young snowshoe hare in spruce forest; (7) The side drainage is dry during winter. Grayling are reported to exist throughout this river system and char probably are present. Grayling, whitefish, slimy sculpin, and longnose suckers have been sampled in a 1000 foot section upstream of the highway.

EVALUATION OF IMPACTS

Aesthetics There will be some negative noise and visual impact on users of the Tanana River; topography and intervening vegetation screen area from highway.

Water Quality Final assessment of the impacts of this site can only be determined after NAPLINE submits final mining plans and after a hydrologist has examined the site. (1) Because several high-water channels cross the site, severe erosional problems could result during high water periods; (2) Fish entrapment could result from fish entering the site during high water, and being trapped as the water level receded; and (3) Subsurface percolation could occur if the area were developed below high water level this would add an inducement to fish entrapment.

Fish

Wildlife (1) Riparian habitat will be lost; (2) Mature floodplain forest is habitat for spruce grouse and great-horned owls; (3) A peregrine falcon nest is within one mile of the site-utilization during certain critical periods could induce nest avoidance or abandonment; (4) Bald eagle nest is located within a mile-same comments as for peregrine falcons; and (5) Tall shrub community is the most productive nesting habitat for passerines destruction of this habitat type would affect an unknown number of these birds.

Timber The mature white spruce on southwest portion is of merchantable size.

Hydraulics

Other

RECOMMENDATION

Based on biological data currently available we believe that this site is only [marginally] acceptable for inclusion in the exploration phase, reasons for this follow: [1] significant potential exists for negative impact on Tanana River because of presence of overflow channels within the site; [2] access required to reach RMS is long and crosses ice-rich soils; and [3] proximity to peregrine falcon and bald eagle nesting areas.

Field Investigators		Date
D. Shideler	M. Sigman	1/4/79
J. Glaspell	N. Hemming	1/4/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 7P-1 Reconnaissance Date 6/28/78

Ownership State T.A.

Alaska Highway Milepost 1385.7

Photographs Air Photo 9-4, Shideler: Roll G010, #13-16

SITE DESCRIPTION

Access 1385.7, abandoned trail passes through low, boggy area

Geomorphology Portion of Tanana River floodplain (inside meander) and river terrace

Slope/Aspect 6-8' drop-off from terrace to high water channel. North facing; slope is 25 degrees off terrace, 0-5 degrees in floodplain

Drainage System Tanana River

Terrestrial Habitat Terrace on southern portion of site supports black/white spruce climax community. Riparian vegetation consists of a medium alder shrub stand while the sand/gravel bar supports legumes, horsetail, low willow, and scattered medium-size alder and willow clumps. A moist high water channel passes below the terrace and supports grasses, horsetail, and sedges, indicating infrequent inundation.

Aquatic Habitat Tanana River floodplain.

Fish and Wildlife Observations (1) Much evidence (droppings, tracks) of recent moose use of high water channel and gravel bar; (2) Numerous goose droppings - may be spring staging area; (3) sandpiper, ruffed grouse observed; and (4) Coyote tracks on gravel bar.

EVALUATION OF IMPACTS

Aesthetics *There will be negative visual and noise impacts on users of Tanana River. Extraction of gravel will result in large gravel area similar to other portions of the river.*

Water Quality *Silt loads in the Tanana are very high except in fall and winter. Care must be taken during these periods to avoid siltation.*

Fish *Care must be taken to avoid anadromous and resident fish entrapment. Many resident species are thought to overwinter in the Tanana, so the impact of winter operations (which is best from standpoint of access) must be evaluated.*

Wildlife *(1) Temporary loss of riparian habitat (utilized by such species as moose, Canada geese, and ruffed grouse) will occur, but will probably revegetate eventually, unless channel shifts, destroying point bar. (2) A bald eagle nest, occupied in 1977, is located within one mile of the site-disturbance may cause nest abandonment (bald eagles are known to reuse nests year after year) or failure to reuse.*

Timber: *Merchantable-sized white spruce exists on river terrace - should be salvaged.*

Hydraulics *The actual impact of development of this site on the hydraulics of the Tanana River (and the resulting effects on fish and water quality) cannot be evaluated until NAPLINE provides a detailed mining plan, and the site is assessed by a hydrologist. However, a preliminary assessment is as follows: (1) Existing high water channels cross the site - some of these had been inactive for a year prior to our site visit but contained water in summer 1976 (based on air photo examination). (2) If the area were mined too deeply, percolation of subsurface water could fill the pit; both this and flooding at high water could attract fish, which could then become trapped as water level dropped; and (3) The site is especially susceptible to high water flooding because the entire river passes through a single channel here, and is deflected off a rock bluff on the east bank. This area had a small log-jam at the time of our site visit, and it is quite conceivable that all or a portion of the channel could become blocked by a log or ice jam at this point and be deflected through the site.*

RECOMMENDATION

Based on biological data currently available we recommend that RMS 7P-1 be deleted from further study because of the following: (1) The site has great potential for negative impacts on the fish and hydraulics of the Tanana River. (2) Access to the site is on ice-rich soils, requires crossing at least one high water channel, and is located at a great distance from the proposed alignment; and (3) RMS 7P-2 (an upland site) is located less than one mile away, and is adjacent to the alignment.

Field Investigators		Date
D. Shideler	M. Sigman	1/5/79
J. Glaspell	N. Hemming	1/5/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number *RMS 7P-2* Reconnaissance Date *6/2/78*

Ownership *State (TA)*

Alaska Highway Milepost *1385.5*

Photographs *Air Photo 9-4, Shideler: Roll G006, #11-14*

SITE DESCRIPTION

Access *The eastern portion of this RMS abuts the Haines ROW. Access is along the Haines ROW from the Alaska Highway at AHMP 1386.0.*

Geomorphology *Upland; esker ridges and thermokarst lakes*

Slope/Aspect *5-10 degrees, toward northeast*

Drainage System *Tanana River*

Terrestrial Habitat *Overstory on the ridges is mature birch and scattered spruce, with an understory of predominantly alder and willow in the gullies, and ground cover of Calamagrostis spp. on the ridge sites and Equisetum spp. on the lowland sites.*

Aquatic Habitat *Thermokarst ponds in various stages of maturity surrounded by sedge (Carex aquatilis?) and Equisetum meadows. Water surface area varies from ¼ - 3 acres. Bottom is of organic debris in various stages of decomposition.*

Fish and Wildlife Observations *1. As noted above, sedimentation effects (and disturbance) will likely cause cessation of use of these ponds by aquatic wildlife - waterfowl and muskrats principally. 2. Dependent on type of revegetation increase in forage abundance may temporarily enhance local moose populations. 3. Destruction of alder/willow and sedge meadows will result in loss of an important songbird habitat type, although the exact number of birds so affected is unknown.*

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics

Water Quality

Fish

Wildlife

Timber *Scattered pockets of commercial-sized birch and spruce are present.*

Hydraulics

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 7P-2 be included in the Exploration Phase. However, development of this site should proceed from the eastern portion first, and with the westernmost portion developed last. The possibility of deep mining to create new aquatic habitat also should be investigated.

Field Investigators

D. Shideler

Date

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 7P-3 Reconnaissance Date 7/5/78

Ownership State (TA)

Alaska Highway Milepost 1382.3

Photographs Air Photo #9-3, Shideler, Roll G010, #17-19

SITE DESCRIPTION

Access Along old highway alignment, leaving Alaska Highway at AHMP 1382.3, then 0.5 mile east along old alignment (2WD road) to edge of site, then on foot. Access on old alignment is suitable for all-weather use, except for lower portion where erosion and slumping has occurred - would require upgrading

Geomorphology Thermokarst ponds and esker ridges with connecting lowlands.

Slope/Aspect 0-5 degrees, toward north

Drainage System No defined drainage near site, but area slopes generally toward Tanana River

Terrestrial Habitat Esker ridges have an overstory consisting of closed mature white spruce, birch, aspen forest and an open understory of aspen and willow saplings. Ground cover is primarily Rosa aciculatis, Mertensia panniculata, and Linnea borealis. The lowland areas separating the ridges consisted of a tussock/Labrador tea community with an open shrub layer of birch, willow, and occasional patches of alder. Several low areas are apparently old thermokarst ponds which have succeeded to Equisetum flats.

Aquatic Habitat Several small ponds in the RMS are surrounded by a sedge meadow with scattered Ranunculus (buttercup) spp., Potentilla spp. (cinquefoil), and shrub Salix. Some emergent vegetation, [Nymphaceae] is present on large pond at southwest corner of site.

Fish and Wildlife Observations (1) Moose tracks and evidence of browsing and bedding around ponds; (2) an abandoned beaver lodge on one small pond; at one time water level must have been 2½-3' higher because entrance to lodge is at least 2½' above current water level; and (3) duck droppings along bank.

EVALUATION OF IMPACTS

Aesthetics The RMS is well buffered from highway by terrain and one-quarter mile of mixed deciduous/coniferous forest. Access road is likewise buffered by numerous curves and intervening vegetation.

Water Quality Development will likely destroy or severely impact the water quality of the ponds, however, these ponds are not inter-connected nor connected to flowing drainages therefore will likely have no effect on fish or hydraulics of fluvial systems.

Fish

Wildlife (1) During certain periods of the year, these ponds may serve as resting areas for an undetermined number of waterfowl. This habitat will be destroyed if the area is developed; (2) Evidence of at least slight moose utilization of the area is present-this utilization could be decreased or enhanced, dependent on the type and method of revegetation.

Timber Although spruce and birch of commercial-size occur on the site, the density is so low that it likely would not be economically feasible to remove except as firewood, or possibly house logs, on a salvage basis.

Hydraulics

Other

RECOMMENDATION

Based on biological data currently available we recommend that RMS 7P-3 can be included in the exploration phase. The eastern portions of the site should be cleared and developed first so that the ponds at the southwestern edge of the RMS are protected. The feasibility and desirability of creating a man-made pond to attract post-development use by migrating waterfowl should be evaluated.

Field Investigators	Date
D. Shideler	12/28/78
M. Sigman	12/28/78

NOTE: RMS 7P-3 has been deleted by Michael Baker Jr., Inc.

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 8P-1 Reconnaissance Date 7/27/78

Ownership State T.A.

Alaska Highway Milepost 1381.4 - 1381.6

Photographs Air Photo 9-2, Shideler: Roll G010, #8-9

SITE DESCRIPTION

Access AHMP 1381.6, existing road on west bank (has not been field checked). Existing road/trail on east bank onto vegetated gravel bar. Road would need upgrading (gravel fill) for all-year use. Acceptable for winter (one-time) use (to be used in centerline drilling program).

Geomorphology Active floodplain of large, braided glacial river, (Johnson River). Consists of coarse glacial till in active floodplain and finer gravel on vegetated margins

Slope/Aspect 0-5 degrees, toward North

Drainage System Approximately 0.5 mile from mouth of Johnson River.

Terrestrial Habitat Vegetated bar, on west bank supports an early successional community of willow and woody shrub species.

Aquatic Habitat Site includes several unvegetated channels of large braided glacial river

Fish and Wildlife Observations 1. Moose tracks (cow and calf) on vegetated gravel bar; willows recently browsed by moose; 2. Raptor nest across Tanana River from mouth of Johnson River; and 3. Fox scat on access road.

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *There is visual buffer between site and highway bridge, however shallow gravel mining would leave site similar in appearance to existing floodplain.*

Water Quality *There is potential for significant negative impact due to flooding, aufeising, etc. - will be dependent on method of mining. This area aufeises over entire floodplain; aufeis is present from early December to July.*

Fish

Wildlife *Peregrine falcon nest is located within one mile - activity at site may prevent nesting or cause nest abandonment if nest selection does occur.*

Timber N/A

Hydraulics

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

We recommend that RMS 8P-1 be moved to the recently revegetated bar on the east bank of the Johnson River and that this bar be scraped no deeper than the high water level. The bar should be revegetated with willow after termination of construction. Access to this bar can be the old road along the east bank (same access as for Centerline Drilling Program). This would eliminate the effects of aufeising on the hydraulics and fish in the Tanana River below Johnson River.

Field Investigators		Date
D. Shideler	M. Sigman	1/5/79
J. Glaspell	N. Hemming	1/5/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 8P-2 Reconnaissance Date 7/5/78

Ownership State (TA)

Alaska Highway Milepost 1379

Photographs Air Photo 8-13, Shideler: Roll G011, #1-4

SITE DESCRIPTION

Access Access was on an existing gravel road through an ADOT/PF material site. The road leads to a commune along Dry Creek, and is an access road to the Macomb Plateau.

Geomorphology Upland, alluvial

Slope/Aspect 0-5 degrees, toward north

Drainage System Although no drainages are apparent, area drains into Dry Creek

Terrestrial Habitat Site is a mixed black spruce/aspen stand with understory of aspen and black spruce saplings, and ground cover of sphagnum and Ledum in a low tussock formation. In isolated pockets willow understory and grass ground cover dominate.

Aquatic Habitat N/A

Fish and Wildlife Observations Fresh cow and calf moose tracks along access road.

EVALUATION OF IMPACTS

Aesthetics The site is well screened from highway by topography and intervening vegetation, therefore, visual impact will be negligible. A significant negative aesthetic impact will occur which will affect residents (which currently number approximately 100) of the religious commune who built the access road, and to recreational users of the Macomb Plateau area.

Water Quality The southeast corner of the RMS may be encroached into a 500' buffer strip to be left along waterways. Possible siltation into Dry Creek could occur during high water if a buffer were not left.

Fish

Wildlife Dependent on the type of revegetation, local moose populations could be temporarily enhanced by the temporary increase in forage abundance, however, this positive impact could be offset by increased moose-auto collisions, and increase availability to hunters.

Timber There is negligible commercial-sized timber on RMS, however, smaller diameter trees could be salvaged locally for firewood.

Hydraulics

Other Some negative impact on local residents caused by property trespass, access road destruction, and other infringements on their "lifestyle" can be expected. However this impact is likely to be temporary.

RECOMMENDATION

Based on biological data currently available we recommend that RMS 8P-2 be included in the exploration phase.

Field Investigators	Date
D. Shideler	1/16/79
M. Sigman	1/16/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 8P-3 Reconnaissance Date 7/5/78

Ownership USA (State Selection)

Alaska Highway Milepost 1375.5

Photographs Aerial Photo 8-11

SITE DESCRIPTION

Access Through a material site (possible GSA) immediately adjacent to the Sears Creek Pumping Station for the Haines Pipeline. Access is a gravel road, that could be considered for use as permanent access.

Geomorphology Upland, alluvial

Slope/Aspect 0-5 degrees, toward north

Drainage System No active drainages, but site appears to drain into intermittent drainages, hence into Johnson Slough

Terrestrial Habitat Mature, open, white spruce/aspen forest, with scattered willow understory and ground cover of bearberry on the xeric locations and Ledum spp. and lowbush cranberry on the mesic locations.

Aquatic Habitat N/A

Fish and Wildlife Observations Old set of moose tracks

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics The RMS as drawn, extends to within 100' of highway. The negative visual impact would be great.

Water Quality N/A

Fish

Wildlife (1) Loss of mature white spruce habitat would adversely effect goshawks, great horned owls, and spruce grouse which use this habitat for nesting. An unknown, but probably small, number of these birds would be affected. (2) Depending on the type of revegetation, local moose populations could be temporarily enhanced because of an increase in forage abundance.

Timber Much of this site has trees (spruce and aspen) of commercial-size. Accessibility of these trees is excellent.

Hydraulics

Other

RECOMMENDATION

Based on biological data currently available we recommend that RMS 8P-3 be included in the exploration phase.

Field Investigators	Date
D. Shideler	1/15/79
M. Sigman	1/15/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 9P-1 Reconnaissance Date 5/31/78

Ownership State (TA & Selection Pending)

Alaska Highway Milepost 1370

Photographs Air Photo 8-8; Shideler: Roll 1 G004, #9-10

SITE DESCRIPTION

Access No direct access; reconnaissance access to upland portion is through an existing ADOT/PF MS, then on foot ¼ mile to site. Access to lowland portion is on foot from west end of existing pit.

Geomorphology Site "A" is an upland area consisting of two ridgetops which are separated by a side drainage to Berry Creek. Site "B" is a lowland area encompassing the old pit, and extending west.

Slope/Aspect Site "A" - 25 degrees to north and south; site "B" - 5 degrees to west.

Drainage System Site "A" drains into Berry Creek; site "B" is a lowland area with no clear drainage system.

Terrestrial Habitat Site "A" is an upland mature white spruce/birch forest with a sphagnum and bearberry ground cover. Site "B" is a young stand of birch/poplar interspersed with a few scattered spruce, and an understory of willow and alder.

Aquatic Habitat None, although a drainage (thermokarst) pond is within a few hundred feet of the west boundary of site "B".

Fish and Wildlife Observations 1. Evidence was found of utilization by black bears and moose; 2. a Canada Goose family was observed at the confluence of the unnamed side drainage and Berry Creek.

EVALUATION OF IMPACTS

Aesthetics The extreme northern portion of site "A", which is on the north side of the hill closest to the highway, may be visible from the road. Other portions of site "A" are likely screened adequately by vegetation and topography. Site "B" can be screened by leaving a vegetation buffer, however, the portion nearest to and including the existing ADOT pit may be ~~Water Quality~~ within the buffer strip.

Water Quality: No anticipated effects from site "B". However site "A", located on steep slopes along a tributary of Berry Creek, has great potential for siltation into Berry Creek due to erosion from the site itself and an access road.

Fish Possible siltation problems (see above) could affect fish over-wintering and spawning.

Wildlife (1) Upper Berry Creek is an important moose rutting area, and there are extensive north-south movements to timberline between Dot Lake and Berry Creek. Construction during pre and post-rut could interrupt these movements and possibly disrupt rutting. (2) This mature spruce forest is also good spruce grouse habitat; this habitat would be lost ~~Timber~~ following removal of mature spruce. (3) Loss of lowland tall shrub community in site "B" will remove a vegetative community that is one of the most productive songbird habitat types.

Timber: Site "A" contains a large amount of mature spruce and birch of merchantable size. Road construction to reach ~~Hydraulics~~ this timber may be more damaging than the loss of the timber itself. Site "B" contains no merchantable timber.

Hydraulics: Although neither site, as drawn on the identification ~~Other~~ sheet, should directly effect a stream, the secondary effects of siltation from road construction and gravel mining have the potential to alter the hydraulics of the northernmost tributary of Berry Creek, and likely Berry Creek itself.

Other:

RECOMMENDATION

We recommend that 9P-1A (the upland sites) be deleted from further consideration as a MS. The probability of significant negative impact on a tributary of Berry Creek (hence Berry Creek itself) due to erosion and siltation from road construction and gravel mining seems too high. We recommend that site 9P-1B, can be included in the exploration phase, however, final approval would depend on a final mining plan. We feel that the site should be developed from the existing pit toward the west, beyond the stipulated visual buffer (500') between the highway and this site. After further field evaluation, the western ¼ of the site may have to be deleted because of possible siltation of the small pond.

Field Investigators	Date
D. Shideler	12/11/78
T. Booth	12/11/78

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 10P-1a, 1b Reconnaissance Date 7/7/78

Ownership State T.A.

Alaska Highway Milepost 1365.8 - 1367.2

Photographs Air photo 8-5, Shideler: Roll G009, #22-25

SITE DESCRIPTION

Access On foot off highway at MP 1366, and via existing ADOT/PF material site, which is also Woodward-Clyde access road #94-591.4. The surface of the road is pea gravel and silt. With some minor upgrading to accomodate heavy equipment, this raod may be suitable for permanent access.

Geomorphology Both "a" and "b" are upland areas, probably alluvial

Slope/Aspect Less than 5 degrees, slightly to north (site "a") and south (site "b")

Drainage System There is no clearly defined drainage, although most of site "a" appears to drain north into Sam Creek and site "b" appears to drain east toward Sam Creek, but through intervening wetlands.

Terrestrial Habitat Vegetation in both sites is similar - an overstory of predominately open mature aspen/white spruce, with some dense inclusions of black spruce-tussock and pure aspen along the southern edge of site "b"; an understory of scattered saplings of the dominant overstory species; and ground cover of Ledum spp. and Vaccinium vitis-idaea. There is also a lowland grass-sedge meadow on the southern boundary of site "b".

Aquatic Habitat N/A

Fish and Wildlife Observations 1. Grouse droppings 2. Moose tracks

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *If a sufficient undisturbed buffer is left the site can be adequately visually shielded from the highway because of topography and characteristic vegetation.*

Water Quality *No active or intermittent drainages were observed, however, the occurrence of several sedgegrass meadows on the southern boundary of the site suggests that there could have been a drainage in the distant past. Nevertheless, the nearest apparent drainage is Sam Creek located 1500' north and 1000' east of the site. The potential for siltation into Sam Creek is present but appears negligible. Because of the site's location at the base of Alaska Range foothills, there is also a minor potential for erosion into the site due to flooding by intermittent drainages off the foothills in years of abnormally high water.*

Fish:

Wildlife *(1) Because aspen stands are important ruffed grouse wintering areas, destruction of this site will have a detrimental affect on grouse populations. (2) Depending on the type of revegetation, development of this site may temporarily enhance local moose population by increasing forage abundance. (3) The proximity and interspersion of grass meadow, tall shrub and mixed deciduous/coniferous forest provide excellent nesting and feeding habitat for migratory passerines. Destruction of this habitat will have a detrimental affect on an unknown number of these birds.*

Timber: *The only commercially-sized timber on the RMS is a thin stand of poplar along the southern edge of site "b".*

Hydraulics

Other

RECOMMENDATION

Based on biological data currently available we recommend that RMS 10P-1a,b be included in the exploration phase. Site development should proceed from the existing ADOT/PF material site in site "a". In order to protect the areas adjacent to the sedge grass meadow south of site "b", development of this site should proceed from northwest to southeast.

Field Investigators	Date
D. Shideler	1/23/79
M. Sigman	1/23/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 11P-1 Reconnaissance Date 8/23/78

Ownership Dot Lake Native Corporation

Alaska Highway Milepost 1359.5

Photographs Air Photo 7-8, Shideler: Roll G013, #8-10

SITE DESCRIPTION

Access On foot along an existing brushed trail at 1359.6

Geomorphology Upland, alluvial area

Slope/Aspect Less than 5 degrees, to northeast

Drainage System Area is drained by an ill-defined wetland system which empties into Dot Lake.

Terrestrial Habitat Area is an upland aspen/spruce forest (predominately aspen) in an open to semi-open stand. Ground cover is grass, bearberry, and buffalo berry. Site is in an area which appears to be an old burn.

Aquatic Habitat N/A

Fish and Wildlife Observations 1. Flock of black-capped chickadees feeding in aspen branches. 2. Flock of 50 white-fronted geese, flying southeast.

EVALUATION OF IMPACTS

Aesthetics Topography and intervening vegetation are sufficient to minimize aesthetic impact if sufficiently wide buffer is left.

Water Quality Although there is no obvious drainage, the 1955 USGS topographic maps indicate a drainage through the western third of the site-this drainage flows into Dot Lake. Development of this portion of the site could cause siltation of Dot Lake and its tributary. Dot Lake contains northern pike and may serve as an important pike spawning area. In addition, ~~Fish~~ Dot Lake is the water supply for the village. These areas could be severely impacted by siltation.

Fish:

Wildlife 1. Upland aspen habitat is an important winter habitat for Ruffed Grouse-loss of this will adversely effect resident Ruffed Grouse. 2. Revegetated burns with aspen overstory are one of the most productive vegetative types used by small mammals in the Interior. 3. This site is along an important moose migration corridor between the Tanana River and fall ~~Timber~~ rutting areas in the foothills of the Alaska Range. Disturbance could disrupt movements immediately adjacent to the site.

Timber: There are scattered stands of commercial-sized aspen present, however, the dispersion is such that extraction may ~~Hydraulics~~ cause more environmental damage than the value of the timber.

Hydraulics: If the minor drainage on the western 1/3 of the site is still in existence, development of this portion may effect the hydraulics of the drainage. Seepage into the pit may cause ponding, and siltation downstream may disrupt the flow Other into Dot Lake.

RECOMMENDATION

Based on biological data currently available we recommend that RMS 11P-1 be included in the exploration phase. We further recommend that if the site is to be developed, a suitable undisturbed vegetation buffer be left between the eastern portion of the site, and the intermittent drainage through that area.

Field Investigators	Date
D. Shideler	1/3/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 11P-2 Reconnaissance Date 8/23/78

Ownership Dot Lake Native Corporation

Alaska Highway Milepost 1359

Photographs Air photo 7-7, Shideler: Roll G013, #11-12

SITE DESCRIPTION

Access Through old ADOT/PF MS at 1359.0, then on foot through site. Existing material site runs directly from highway to site.

Geomorphology Upland, on alluvial area between foothills and Tanana River; old revegetated floodplain.

Slope/Aspect Less than 5 degrees, to south

Drainage System Chief Creek

Terrestrial Habitat Old burn; overstory is primarily aspen in very open and closed stands. Understory is willow, spruce (4-6' tall), and aspen saplings. Ground cover primarily lowbush cranberry, buffalo-berry and grass.

Aquatic Habitat N/A

Fish and Wildlife Observations N/A

EVALUATION OF IMPACTS

Aesthetics *Topography and intervening vegetation would visually shield most of the site from the highway, providing a suitable buffer is left. Impact will be negative on the private landowner across highway from RMS.*

Water Quality *Western tip of site is within 300' of Chief Creek. Development of RMS may cause erosion and siltation into Chief Creek, adversely effecting water quality and fish habitat.*

Fish

Wildlife *1. As with RMS 11P-1, destruction of this site will remove productive small mammal habitat and Ruffed Grouse wintering habitat. 2. This area is along an important moose migration corridor to fall rutting areas-disturbance during development could disrupt these movements adjacent to the site.*

Timber: *Virtually no commercial-sized timber is present on site.*

Hydraulics

Other

RECOMMENDATION

Based on biological data currently available we recommend that RMS 11P-2 be included in the exploration phase. We further recommend that at least a 500' undisturbed buffer be left along the east edge of the RMS bordering on Chief Creek. We recommend that development of the site proceed from the northenmost corner.

Field Investigators	Date
D. Shideler	12/28/78

Note: RMS 11P-2 deleted by Michael Baker, Inc.

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 12P-1 Reconnaissance Date 8/23/78

Ownership Dot Lake Native Selection

Alaska Highway Milepost 1357

Photographs Air photo 7-5, Shideler: Roll G013, #13-15

SITE DESCRIPTION

Access Through an existing ADOT/PF material site at 1357.1. This could be considered for permanent access to this RMS. Should the site be developed it will require some revegetation to provide a visual buffer.

Geomorphology On alluvial deposits above Bear Creek and Tanana River vegetated floodplain.

Slope/Aspect Less than 5 degrees, to north-northeast

Drainage System Either directly into lowland area near Tanana River, or into Bear Creek

Terrestrial Habitat Upland white spruce/aspen forest; old burn appearing to have revegetated with aspen. Well developed understory of willow and spruce/aspen saplings. Ground cover only partial, mostly bearberry and grass.

Aquatic Habitat N/A

Fish and Wildlife Observations 1. Big game (probably moose) trail through site. 2. Black bear scat. .3. Fox scats with snowshoe hare fur. 4. Snowshoe hare runways across Haines ROW adjacent to site.

EVALUATION OF IMPACTS

Aesthetics *Topography and vegetation could screen area from highway providing suitable vegetative buffer is left, and road is doglegged through material site.*

Water Quality *The western portion of the site is within 500' of Bear Creek. Although located ca. 20' above the Bear Creek floodplain, if improper mining techniques are used seepage into the pit and erosion and sedimentation into Bear Creek could occur.*

~~Fish~~ *Negative impacts on water quality and fisheries resources could occur due to siltation, and possible fish entrapment following flooding.*

Fish:

Wildlife *Dependent on type of revegetation, local moose populations may temporarily be enhanced because of temporary increase in forage abundance.*

Timber *Only scattered trees of commercial size are present. Scavenging of these for firewood or house logs would probably cause less surface disturbance than a logging operation.*

Hydraulics

Other

RECOMMENDATION

Based on biological data currently available we recommend that RMS 12P-1 be included in the exploration phase. Development of the site should start as an expansion of the existing site, however, in an easterly direction away from Bear Creek. The access road to the current site should be revegetated with willow after the site has been mined-this would provide a visual buffer.

Field Investigators	Date
D. Shideler	12/18/78

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 12P-2 Reconnaissance Date 6/16/78

Ownership USA (Dot Lake Selection)

Alaska Highway Milepost 1352.5

Photographs Air Photo 7-3, Shideler: Roll G008, #23-24

SITE DESCRIPTION

Access Through an old ADOT material site, then along an existing 4WD road through southern edge. This 4WD road has a sandy-silt substrate, and is likely a 2WD road during dry periods of the year.

Geomorphology Upland, alluvial; southeastern portion is mature floodplain.

Slope/Aspect Less than 5 degrees, to northeast

Drainage System Into Tanana River through intermittent drainages.

Terrestrial Habitat 1. Most of site is old logged area which has also burned; Overstory is open stand of aspen mixed with spruce, with dense inclusions of almost pure aspen. Understory is aspen saplings and willow, and groundcover is decadent sphagnum and bearberry. 2. On extreme southeastern edge of site is a mature white spruce stand paralleling the old floodplain of a drainage that now appears to be intermittent of disappearing.

Aquatic Habitat N/A

Fish and Wildlife Observations 1. Black bear tracks along 4WD road; 2. Evidence of moose and snowshoe hare browsing.

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics There are two large ADOT material sites in the 500' buffer strip between the highway and edge of the site. A 500' buffer strip from the roadway would leave only 150-200' of vegetation as a visual screen, because of the flat terrain, this may be an adequate visual buffer.

Water Quality: A small drainage area flows adjacent to the southeast boundary of the RMS. Development of this corner of the site may adversely affect water quality and change the hydrology of this minor drainage.

Fish

Wildlife (1) Southeastern portion of this site contains a mix of mature floodplain forest, tall shrub, open aspen, and sedge meadow habitats. This interspersion of types represents good quality passerine and small mammal habitat. Although no documentation of actual use was made during the site visit, loss of this area could effect an unknown number of these species. (2) Dependent upon type of revegetation, local moose populations could temporarily benefit from increased forage production. (3) The eastern portion of this site is within 1½ miles of an endangered raptor nest site.

Timber: Small amount of commercial-sized spruce scattered on site, particularly in southern portion.

Hydraulics

Other

RECOMMENDATION

This site can be included in the Exploration Phase, with the following restrictions placed on further development: (A) A 500' buffer should be maintained between the minor drainage and the southern portion of the site. (B) Ground activities may be restricted during the raptor nesting season. Development of the site should begin from the less environmentally sensitive western portion which is also near the large existing material site. The 500' visual buffer stipulation may have to be waived.

Field Investigators	Date
D. Shideler	

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 13P-1 Reconnaissance Date 7/6/78

Ownership State Selection

Alaska Highway Milepost 1348.0

Photographs Air Photo 6-6, Shideler: Roll G011, #22-25

SITE DESCRIPTION

Access Originally, access was to be a trail at AHMP 1348.6, however, this trail proved to be too overgrown to use. Therefore actual reconnaissance access was at AHMP 1348.0 - this is also an access for the Centerline Drilling Program (Woodward-Clyde I.D. #609.7).

Geomorphology Upland glacial till area, traversed by shallow esker ridges, and dotted with thermokarst ponds and lakes.

Slope/Aspect 5-10 degrees, toward south

Drainage System Toward Robertson River, but no direct drainage

Terrestrial Habitat 1. Vegetation on the ridgetops consists of an open white spruce/birch forest with scattered willow understory, and primarily sphagnum ground cover. 2. The lowland areas (esker troughs) vary from black spruce bogs to shrubby tussock community, with ground cover of Ledum, sphagnum lichens, and Vaccinium vitis-idaea. 3. The slopes around the thermokarst ponds consist of a band of dense alder separated from the sedge-grass-Equisetum meadow by a stand of mature birch and white spruce.

Aquatic HabitatThere are several thermokarst ponds within the RMS, which have sedge Equisetum margins, and floating vegetation ("pond lillies"), surrounded by steep forested slopes.

Fish and Wildlife Observations Recent moose tracks, and evidence of moose feeding on Equisetum stands.

EVALUATION OF IMPACTS

Aesthetics *Topography and intervening vegetation provide a visual screen from the highway.*

Water Quality *Because of distance and elevation of RMS from Robertson River, no impact on the river is anticipated. However, development of the site will severely impact adjacent ponds by increasing siltation and erosion.*

Fish

Wildlife *1. During certain periods of the year, these ponds may serve as resting and nesting areas for various shorebirds and waterfowl. Loss of this habitat would directly impact a small number of these birds. 2. The interspersion of tall shrub (especially alder) deciduous forest, and sedge meadow pond vegetation results in good quality habitat for small mammals and migratory passerines - this habitat would be lost after development. 3. Dependent on the type of revegetation, local moose populations could be temporarily enhanced by a temporary increase in forage abundance.*

Timber *Merchantable-sized white spruce and birch occur on the RMS, and should be salvaged.*

Hydraulics

Other

RECOMMENDATION

Based on biological data currently available we recommend that RMS 13P-1 be included in the exploration phase. We further recommend that if the site is to be developed, clearing, mining, and access construction begin from the northeastern corner, and that a 500' undisturbed buffer be left arbund the pond at the southern edge of the site. Because of proximity to endangered raptor ~~essential~~ habitat, seasonal restrictions on use may be implemented. Restrictions will be those imposed by the U.S.F.W.S.

Field Investigators	Date
D. Shideler	12/28/78
M. Sigman	12/28/78

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 13P-2 Reconnaissance Date 7/6/78

Ownership State Selection

Alaska Highway Milepost 1347.3

Photographs Air Photo 6-6, Shideler: Roll G011, #10-15

SITE DESCRIPTION

Access On a gravel road through an old Alcan Highway material site on the east side of the highway. The access road leaves the Alaska Highway at AHMP 1347.3. This road should be evaluated for permanent access to the RMS.

Geomorphology Alluvial or colluvial deposit above the confluence of the Robertson and Tanana Rivers

Slope/Aspect 3-5 degrees, toward east

Drainage System No observable drainages through site, however, site generally drains east toward Tanana River.

Terrestrial Habitat RMS has been heavily impacted during construction of the Alcan-- part of site is an old material site. This impacted area has revegetated with alder, willow, and aspen. Vegetation in the undisturbed areas is an open black spruce, and pure aspen. Understory is either nonexistent, or is alder and willow. There are several small (less than 0.25 acre) sedge-grass meadows which appear to be old ponds. Ground cover consists of Ledum and Vaccinium vitis-idaea, and low tussocks in some of the black spruce stands.

Aquatic Habitat N/A

Fish and Wildlife Observations 1. Tracks or scats of the following animals were noted on this site visit, and later visits in conjunction with other NAPLINE programs - ptarmigan, spruce grouse, ruffed grouse, snowshoe hare, red fox, coyote, moose, black bear, and lynx. 2. An active endangered raptor nest was located within one mile of this site.

EVALUATION OF IMPACTS

Aesthetics Part of the RMS has received recent (and probably illegal) use as a camp site for mineral exploration crews. However, this area is also not visible from the highway. In general the RMS can easily be visually screened from the road by leaving an adequate buffer of undisturbed vegetation.

Water Quality N/A

Fish

Wildlife 1. Because the area is within one mile of a peregrine falcon nest site, development of the site could induce failure to re-nest, or cause nest abandonment. 2. Although this site is obviously utilized by numerous mammal species, some of this use is transient and likely noncritical. However, development of this site would adversely effect spruce grouse, which depend ~~Timber~~ on black and white spruce (especially the latter); 3. Depending on the type of revegetation local moose and snowshoe hare populations could be temporarily enhanced by temporary increased forage abundance. 4. The interspersion of numerous vegetation types and the occurrence of Tall Shrub habitat, result in excellent songbird habitat - loss of this habitat ~~Hydrology~~ will adversely affect an unknown number of individuals of these species.
Timber: Some timber of commercial-size is scattered through the RMS - probably because of numerous access trails, this timber could be salvaged with minimum environmental damage.

Other

RECOMMENDATION

Based on biological data currently available we recommend that RMS 13P-2 be included in the exploration phase. Before development of the site is initiated, restriction on operations imposed by the U.S.F.W.S., must be adhered to.

Field Investigators	Date
D. Shideler	1/3/79
M. Sigman	1/3/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 14P-1 Reconnaissance Date 8/23/78

Ownership State

Alaska Highway Milepost 1343.8 (access)

Photographs Air Photo 6-4, Shideler: Roll G013, #19-21

SITE DESCRIPTION

Access Reconnaissance access was a narrow ill-defined trail through dense willow and black spruce/aspen near AHMP 1343.8. This did not appear to be an old material site, although there were several large areas which had been scraped to mineral soil.

Geomorphology Site is an alluvial river terrace approximately 20-30' higher than the mature floodplain along the Tanana River.

Slope/Aspect Slope generally less than 5 degrees, toward northeast.

Drainage System Drains directly into Tanana River.

Terrestrial Habitat Upland black spruce/aspen forest varying from very dense to open, with inclusions of black spruce muskeg. Ground cover consists of predominantly lichen (Stereocaulon and Cladonia) in the drier sites and sphagnum moss and Ledum in the more mesic sites.

Aquatic Habitat An intermittent drainage borders the extreme west edge of the site - this drainage is overgrown with sedges and willow seedlings at the upper portion near the highway, but lower portions become an incised drainage into a slough off the Tanana River. Banks are vegetated; the bottom is sandy-silt and gravel.

Fish and Wildlife Observations (1) Evidence of recent and past moose use in the black spruce area. (2) A Great-Horned Owl flew from a spruce in the western end of the site. (3) Snowshoe hare pellets and browsed twigs.

EVALUATION OF IMPACTS

Aesthetics *The site is visually screened from the road because of a buffer strip of 500-800' of thick vegetation, and because the site slopes gently away from the road.*

Water Quality *Because it is buffered from the Tanana River by elevation and distance there likely will be little effect directly on the Tanana River. The intermittent drainage at the extreme west end could flood the site during high water periods. Likewise, if mined below the river level, subsurface percolation could also flood the site and eventually effect (or be effected by) the intermittent drainage. The slough looks as though it could be northern pike habitat, although no fish were observed because of extreme turbidity.*

Fish

Wildlife *1. If revegetated with browse forage species, site may enhance local moose population by temporarily increasing forage abundance. 2. This lichen-woodland habitat type is characteristic of many caribou winter ranges - this area is within the historical (but not current) winter range of the Fortymile caribou herd, and therefore, may become important should a major range extension or population expansion occur in the next several decades.*

Timber

Timber: No timber of commercial-size is present on the site.

Hydraulics

Other

RECOMMENDATION

Based on biological data currently available we recommend that RMS 14P-1 be included in the exploration phase with the following provisions: Development of the site should proceed from the southeast corner, and avoid the western edge of the site so that the hydraulics of the intermittent drainage along this edge will not be effected. A 500 foot undisturbed buffer must be left between the site boundary and the drainage.

Field Investigators	Date
D. Shideler	1/5/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 14P-2 Reconnaissance Date 6/16/78

Ownership State

Alaska Highway Milepost 1340.8

Photographs Air Photo 5B-18, Shideler: Roll G008, #20-22

SITE DESCRIPTION

Access Access for reconnaissance was up a dry stream bed at AHMP 1340.9

Geomorphology Upland, esker ridges paralleling the direction of slope

Slope/Aspect approximately 10 degrees, toward east northeast

Drainage System directly into Tanana River

Terrestrial Habitat (1) Spruce/aspen/birch overstory, with inclusions of pure aspen and spruce, an understory of willow and aspen saplings, and ground cover of sphagnum on moist sites and bearberry on the drier aspen sites. (2) Dense white spruce/willow, with ground cover predominantly Ledum.

Aquatic Habitat Intermittent stream is wide, braided, and the bed is primarily cobble and gravel below the RMS; within the RMS, the stream is incised, with riparian willow and poplar along banks, and bed is gravel and sand. Extensive bank undercutting and debris suspended in trees suggests that during periods of high water, there is considerable flow through here.

Fish and Wildlife Observations Fresh fox tracks heading up the stream bed.

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *This site is visually buffered from the highway due to topography and intervening vegetation.*

Water Quality *The extent of undercutting and size of the apparent bed load suggest that a large flow of water occurs at least sporadically. This high flow rate can be expected to create serious erosion problems both at the RMS and downstream from the RMS, and is likely to result in sedimentation problems and severe channel changes. This stream may not be important to fish, hence these changes may not affect the fish population, but there will likely be negative water quality effects.*

Fish

Wildlife *(1) The removal of riparian habitat along the intermittent drainage will adversely affect the seasonal use by passerine birds who utilize this vegetation type for nesting and feeding. (2) Depending on the type of revegetation, local moose populations may benefit from an increase in forage abundance.*

Timber *Timber: Only scattered trees of commercial-size are present.*

Hydraulics

Other

RECOMMENDATION

Due to the great potential for serious erosion problems presented by development of this site, and because virtually the entire site is within the 500' buffer from waterbodies stipulated in the ROW lease agreement, we recommend that this site be deleted from further consideration.

Field Investigators	Date
D. Shideler	

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 15P-1 Reconnaissance Date 6/15/78

Ownership Tanacross Village Selection

Alaska Highway Milepost 1337

Photographs Air Photo 5B-16

SITE DESCRIPTION

Access Proposed access was on foot through overgrown material site, at AHMP 1337.8

Geomorphology Upland, low esker ridges

Slope/Aspect 5-10 degrees, to north

Drainage System Cathedral Creek

Terrestrial Habitat Upland black spruce/aspen/birch, mostly spruce, with bearberry and lichen ground cover.

Aquatic Habitat N/A

Fish and Wildlife Observations 1. Black bear (cinnamon phase) along Haines ROW. 2. Fox scats containing snowshoe hare bones and fur.

EVALUATION OF IMPACTS

Aesthetics *Topography and intervening vegetation provide an adequate visual screen from the road.*

Water Quality *The RMS is an upland slope and located approximately one quarter mile from the nearest waterway, which is Cathedral Creek (an intermittent stream with no known fish population).*

Fish

Wildlife *1. Blasting could have detrimental effects on Dall Sheep, which lamb in the vicinity. 2. Dependent on the type of revegetation, local moose population could be enhanced by temporary increase in forage abundance. 3. These lichen-forest areas are potential winter range for caribou, however, caribou of either the Fortymile or Macomb Plateau herds have not used this area in recent times.*

Timber ~~xxxx~~

Timber: Very few trees of commercial-size, however, there are smaller trees which could be salvaged for firewood.

Hydraulics

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 15P-1 be included in the exploration phase.

Field Investigators

D. Shideler

Date

1/15/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 15P-2 Reconnaissance Date 6/15/78

Ownership Tanacross Village Selection

Alaska Highway Milepost 1333.6

Photographs Air Photo #5B-14, Shideler: Roll G007, #16,19

SITE DESCRIPTION

Access Reconnaissance access was on foot up the floodplain of Yerrick Creek. Access to southern portions for Northwest Investigators was to be by helicopter.

Geomorphology Alluvial fan from Yerrick Creek, intermixed with glacial till.

Slope/Aspect 10 degrees, to north

Drainage System Yerrick Creek, although no direct drainage into Yerrick Creek.

Terrestrial Habitat Medium dense upland black spruce forest, with ground vegetation consisting of bearberry and Cladonia and Stereocaulon lichens.

Aquatic Habitat N/A

Fish and Wildlife Observations Old moose tracks

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Topography and intervening vegetation visually screen RMS from highway.*

Water Quality *Site is on an alluvial plateau adjacent to Yerrick Creek. By maintaining a suitable buffer between the creek and the site, seepage and erosion can be prevented and effects on water quality, fish and hydraulics of Yerrick Creek can be mitigated.*

Fish *Fish:*

Wildlife *1. Depending on type of revegetation, local moose population may be enhanced by temporary increase in forage abundance. 2. Proximity of site to potential Dall Sheep lambing areas may result in negative impact if blasting is done during lambing season.*

Timber *Little or no commercial-sized timber is located on this RMS, however, smaller diameter spruce could be salvaged for firewood.*

Hydraulics

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 15P-2 be included in the exploration phase. Potential Dall sheep lambing areas should be located, and restrictions on blasting established.

Field Investigators	Date
D. Shideler	12/12/78

MATERIAL SITE RECONNAISSANCE

Site Identification Number *RMS 16P-1* Reconnaissance Date *6/9/78*

Ownership *Tanacross Village Selection*

Alaska Highway Milepost *1332*

Photographs *Air photo #5B-13, Shideler: Roll G007, #4-7, 9-10*

SITE DESCRIPTION

Access *Proposed access was to be through existing ADOT/PF site at 1332.3, however actual access was via an old road, driveable for ½ mile by 2WD vehicle. Road traverses center of RMS.*

Geomorphology *Upland area consisting of shallow esker ridges draining the foothills on the north slope of the Alaska Range.*

Slope/Aspect *Ca. 10 degrees, toward north.*

Drainage System *The area drains into intermittent tributaries of Moon Lake.*

Terrestrial Habitat *Above the Haines ROW, the overstory is a mature mixed birch/white spruce forest (birch dominant), the understory is alder and a few birch and spruce saplings, and ground cover is bearberry on the esker tops and Ledum/Sphagnum in the troughs. Below the Haines ROW, the vegetation is an open stand of predominately small birch with scattered aspen and spruce, no understory, and ground cover similar to area along the Haines ROW.*

Aquatic Habitat *A small intermittent humic stream runs down the western third of the site - stream has a gravel/sand substrate, incised, with no evidence of ice scouring. Crosses Haines ROW at AHMP 443.*

Fish and Wildlife Observations *1. A fresh black bear scrape along the Haines ROW. 2. Scattered willow browsed by moose. 3. Moose tracks.*

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics Topography and vegetation are such that with suitable vegetation barrier, little chance for visual impact unless NAPLINE plans to expand the existing material site at northwest corner, along the highway. The southern third of the site may be visible from the highway, east of Moon Lake, therefore there may be visual impact if this area is mined.

Water Quality Potential exists for siltation of Moon Lake (a heavily-used State recreation area) if a suitable buffer is not left between the intermittent tributary on the east edge of the site, and the small intermittent stream along the eastern third of the site.

Fish: Neither intermittent tributary is a known fish stream, however, Moon Lake contains a small population of northern pike. Siltation of Moon Lake could effect the Moon Lake fishery.

Wildlife There may be little direct impact at the site itself, however, (1) the area is within several miles of Dall Sheep lambing areas - may require blasting restrictions during the lambing period, and (2) siltation of Moon Lake could adversely effect aquatic flora and fauna utilized by waterfowl (waterfowl were observed on Moon Lake at each visit during the ice-free period).

Timber There are numerous birch and spruce of commercial-size, however most of the large birch are senescent (crooked, and likely have heart rot), and the large spruce are scattered - may be more readily salvaged as firewood.

Hydraulics Mining of the northwest third of the site may disrupt the hydraulics of the small stream along the eastern third, as well as cause widespread erosion following excavation. This effect is likely to be most acute during periods of high water and saturated soil condition, when excess runoff occurs.

Other

RECOMMENDATION

Based on biological data currently available we recommend that RMS 16P-1 be included in the exploration phase, with the following provisions: Only the middle one-third of the site should be developed. A suitable buffer along both intermittent tributaries should be left to protect the watershed, and hence only the middle one-third would be available for development. The upper (southern) one-third should not be mined if found to be visible from the road - this determination should be made before inclusion in the exploration phase. Use of the existing ADOT/PF site should not (in this particular case) be encouraged because of the possible erosion/siltation by the intermittent stream in the western end of the site.

Field Investigators	Date
D. Shideler	12/12/78

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 17P-1 Reconnaissance Date 8/24/78

Ownership USA (Tanacross Selection)

Alaska Highway Milepost 1326

Photographs Air Photo 5B-9, Shideler: Roll G013, #22-24

SITE DESCRIPTION

Access Site is at corner of Alaska Highway and the road to Tanacross village - access was on foot from the Alcan. Several possible access routes (all on Native selections) on existing trails or old material sites.

Geomorphology Upland, alluvial

Slope/Aspect Less than 5 degrees, to northwest

Drainage System Directly into Tanana River

Terrestrial Habitat (1) Dense black spruce/aspen sapling stands, with an understory of shrubby cinquefoil and shrub willow, and ground cover of Ledum and Sphagnum; (2) Open stand of spruce/aspen overstory, understory of aspen and spruce saplings, willow, and Shepherdia, and ground cover of bearberry, lowbush cranberry and lichen; (3) Black spruce bog (especially at western end of site).

Aquatic Habitat N/A

Fish and Wildlife Observations (1) Black bear scat (2) Occasional recent moose tracks (3) Two Harlan's hawks circling above RMS (4) Snowshoe hare pellets and evidence of browsing

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics The site as drawn is only 300' from the Alaska Highway and Tanacross road, rather than 500' as proposed in the Right of Way stipulations. The topography is such that with a 500' buffer there should be an ample visual screen from either road. There will likely be some localized adverse aesthetic impact on nearby residents from noise and dust.

Water Quality There are no drainage systems or waterbodies within the proposed site.

Fish

Wildlife (1) There will be some loss of songbird nesting and feeding habitat caused by destruction of the aspen/shrub association. (2) Depending on type of revegetation used, the site may benefit local moose and hare populations by providing increased forage, however this advantage may be offset by increasing their accessibility to hunters in the immediate area, and also increasing the chance for moose-automobile collisions.

Timber: There is only a small amount of scattered timber of commercial-size available on the site. This timber could probably be scavenged for firewood by local residents.

Hydraulics:

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 17P-1 be included in the Exploration Phase.

Field Investigators

D. Shideler

Date

1/5/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number *RMS 17P-2* Reconnaissance Date *8/24/78*

Ownership *State*

Alaska Highway Milepost *1322*

Photographs *Air Photo 5B-7*

SITE DESCRIPTION

Access *Existing trails from the Alaska Highway to Haines ROW, and hence into the site. I entered the site at approximately AHMP 1321.9 (not an existing trail).*

Geomorphology *Upland, alluvial*

Slope/Aspect *Less than 5 degrees, to north*

Drainage System *North to Tanana River*

Terrestrial Habitat *1. Open stand of black spruce/aspen; 2. dense upland black spruce with sphagnum ground cover.*

Aquatic Habitat *N/A*

Fish and Wildlife Observations *1. Old moose tracks*

EVALUATION OF IMPACTS

Aesthetics *Little negative aesthetic impact is expected because of the topography and 500' vegetated buffer strip.*

Water Quality *N/A*

Fish

Wildlife *1. Some loss of songbird habitat due to destruction of aspen/willow association; 2. a possible positive impact on local moose population by increasing forage production (dependent on type of revegetation) may be offset by increased liklihood of moose - auto collisions and greater accessibility to hunters in nearby population centers.*

Timber *Timber: Only scattered timber of commercial-size could be salvaged for firewood.*

Hydraulics

Other

RECOMMENDATION

Based on biological data currently available we recommend that RMS 17P-2 be included in the exploration phase.

Field Investigators	Date
D. Shideler	1/5/79

Note: Field notes for this site were inadvertently recorded over and the notes lost, however this site is located adjacent to the current Tok Pumping Station, and is similar in topography and vegetation to RMS 17P-1.

MATERIAL SITE RECONNAISSANCE

Site Identification Number *RMS 18P-1* Reconnaissance Date *8/7/78*

Ownership *State Pat./Private*

Alaska Highway Milepost *1316.9 - 1317.7*

Photographs *Roll RMS 8, #0,1,2 - MJS*

SITE DESCRIPTION

Access *1316.6 via existing roads to corner of site.*

Geomorphology *Site is located on large lowland flats in Tok area. Soil is likely loess, supporting upland-type vegetation.*

Slope/Aspect *N/A*

Drainage System *No apparent drainages; soil well-defined*

Terrestrial Habitat *Conifer/decidous intermixtures exist within the site. The two main habitat types are a dense mature closed white spruce community and a dense mature closed aspen community. Many openings occur.*

Aquatic Habitat *None*

Fish and Wildlife Observations *1. One Red Squirrel, 2. Fox scats on trail contained hare hair and porcupine quills, 3. Winter moose pellets on trail. Mammal utilization appears low.*

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics A buffer strip would be necessary between the site and residences on the access road.

Water Quality N/A

Fish N/A

Wildlife The site is a portion of a large area of similar habitat. Revegetation could provide habitat for successional species.

Timber Climax spruce stands contain merchantable timber, and site is accessible.

Hydraulics N/A

Other This area is prime residential land for Tok residents, and the state may decide to make it available for private ownership. Non-merchantable timber should be made available to local residents as firewood before being disposed.

RECOMMENDATION

Based on biological data currently available we recommend that RMS 18P-1 be included in the exploration phase. From the standpoint of wildlife, excavation of a material site and subsequent revegetation would benefit many successional species and the loss of habitat by climax species would be mitigated by adjacent large areas of similar habitat. We recommend use of this site if (1) conflicts with desires for residential use of the land can be resolved, and (2) a buffer is established and (3) no suitable previously - disturbed alternate site exists.

Field Investigators	Date
Marilyn Sigman	12/12/78

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 19P-1 Reconnaissance Date 8/7/78

Ownership State T.A.

Alaska Highway Milepost 1314.7 - 1313.9

Photographs Roll RMS 8, #3,4,5 MJS

SITE DESCRIPTION

Access Via existing roads (Moosehorn Road) to southeast corner of site, unpaved road along southern boundary.

Geomorphology Part of large lowland flats area around Tok. Soils are likely loess, supporting upland vegetation.

Slope/Aspect N/A

Drainage System No apparent drainages, soils well-drained.

Terrestrial Habitat A great variety and interspersion of upland habitat types occur, including aspen-dominated stands, spruce dominated stands, and stands with the range of intermixture of conifer and deciduous species represented. Distribution of stands is clumped and many open areas occur.

Aquatic Habitat None

Fish and Wildlife Observations None. A large area covered by 4-6' regrowth willows occurs south of the site, but there is no evidence of browsing by moose.

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Vegetative buffer necessary on south as shield for residences.*

Water Quality *N/A*

Fish *N/A*

Wildlife *Excavation would provide habitat for seral species.*

Timber *Much of mature spruce appeared merchantable. Removal appears feasible because of acceptable access.*

Hydraulics *N/A*

Other *This site, similar to RMS 18P-1, is prime residential land. Non-merchantable timber should be made available as firewood.*

RECOMMENDATION

Based on biological data currently available we recommend that RMS 19P-1 be included in the exploration phase. From the standpoint of wildlife, excavation of a material site and subsequent revegetation would benefit seral species. We recommend use of this site if (1) an adequate buffer is left, and (2) conflicts with desires for residential use of the land can be resolved, and (3) no previously disturbed alternative site can be located.

Field Investigators,	Date
Marilyn Sigman	12/12/78

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 20P-1 Reconnaissance Date 6/15/78

Ownership USA (Tanacross Selection/State Contested)

Alaska Highway Milepost 1310.3

Photographs Air Photo #5-7 Shideler: Roll G008, #5,6

SITE DESCRIPTION

Access On foot through brush at AHMP 1310.3 to site north of highway, and by 2WD vehicle into ADOT/PF site south of highway.

Geomorphology Lowland site within one-half mile of Tok River floodplain but no active drainages near RMS.

Slope/Aspect 0-5 degrees, to north

Drainage System Tok River

Terrestrial Habitat 1. Open overstory composed of mature aspen and white spruce, and occasional pure aspen stands, with an understory of willow and spruce seedlings, and ground cover of bearberry in drier areas, sphagnum in wetter areas. 2. Open dwarf willow communities, with very scattered spruce saplings-ground cover primarily sphagnum and shrubby cinquefoil in a decadent tussock formation.

Aquatic Habitat N/A

Fish and Wildlife Observations A few old moose tracks and pellets

EVALUATION OF IMPACTS

Aesthetics *Topography and intervening vegetation on the 500' buffer between the site and the highway should minimize negative visual impact of the larger site. Part of the existing ADOT/PF site is visible from the road, primarily due to the access road, therefore revegetation and construction of an access road with a dogleg could mitigate this impact by interrupting a direct view of the site.*

Water Quality N/A

Fish

Wildlife *1. Interspersion of shrubs, and deciduous and coniferous trees results in good habitat for songbirds and small mammals - this habitat would be lost and affect an unknown number of these animals.*
2. Depending on type of revegetation, development could temporarily enhance local moose populations by temporarily increasing forage abundance.

Timber *There are isolated stands of aspen (18-20" dbh) which could be salvaged for firewood during site development.*

Hydraulics

Other

RECOMMENDATION

Based on biological data currently available we recommend that RMS 20P-1 be included in the exploration phase.

Field Investigators

D. Shideler

Date

1/5/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 20P-2 Reconnaissance Date 6/15/78

Ownership Tetlin Reservation

Alaska Highway Milepost 1306.5 - 1307.5

Photographs Air Photo 5-5, Shideler: Roll G008, #7,8

SITE DESCRIPTION

Access Through existing ADOT/PF sites at AHMP 1306.5 and 1307.3. These access roads are all-weather, and could be considered for permanent access.

Geomorphology Alluvial, river terrace above old Tanana River floodplain

Slope/Aspect Less than 5 degrees, toward northeast

Drainage System Tanana River

Terrestrial Habitat An old black spruce tussock area succeeding to a willow/dwarf birch shrub area with decadent sphagnum tussocks, some with extensive areas of thick lichen (Cladonia alpestris, and Stereocaulon spp.) mat. Also small stands of aspen saplings. Existing ADOT/PF sites are fringed by mature aspen stands.

Aquatic Habitat N/A

Fish and Wildlife Observations Fresh moose tracks on Haines ROW adjacent to site.

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Existing ADOT/PF sites are visible because access roads are not curved, but remainder of existing sites and the proposed expansion would be screened by vegetation in the 500' buffer strip and by topography.*

Water Quality *N/A*

Fish

Wildlife *1. Depending on type of revegetation, local moose populations may be enhanced due to temporarily increased forage abundance. 2. Destruction of lichen areas will remove potential wintering habitat for the Fortymile caribou herd. 3. Interspersion of shrub/woodland habitats results in favorable habitat for songbirds and small mammals-development of this site will destroy this habitat and affect an unknown number-of these animals.*

Timber *Timber: Only scattered trees (mostly aspen) are of commercial-size in the areas of site away from existing ADOT/PF sites. Trees of commercial-size do occur immediately adjacent to the ADOT/PF sites and could easily be salvaged for lumber or firewood.*

Hydraulics *Hydraulics:*

Other

RECOMMENDATION

Based on biological data currently available we recommend that RMS 20P-2 be included in the exploration phase.

Field Investigators	Date
D. Shideler	1/4/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number *RMS 21P-1* Reconnaissance Date *7/7/78*

Ownership *Tetlin Indian Reservation*

Alaska Highway Milepost *1304.1*

Photographs *Air photo 5-2, Shideler: Roll G009, #12-14*

SITE DESCRIPTION

Access *Through existing ADOT/PF material site; a short (200 yard) straight road beginning to show signs of serious erosion near the highway.*

Geomorphology *Upland site, located on a knoll above the Tanana River.*

Slope/Aspect *10 degrees, toward southeast and east.*

Drainage System

Terrestrial Habitat *The existing MS has sparsely revegetated with poplar saplings and foxtail. Southern portion of site is a mature white spruce forest with birch understory.*

Aquatic Habitat *N/A*

Fish and Wildlife Observations *1. Coyote and hare scats 2. Adult moose tracks in willow margin of MS 3. Adult common snipe in grass near edge of MS.*

EVALUATION OF IMPACTS

Aesthetics *Due to topography and an inadequate vegetation buffer, the existing site is a scar visible for several miles east of the site. It is doubtful that the situation will be improved by further excavation.*

Water Quality *The site is within 500' of the Tanana River; unless suitable measures are taken, possible erosion and siltation into the river could occur. Because of the elevation of the site above the Tanana River, it is doubtful that the hydraulics of the river would be affected.*

Fish

Wildlife *Adverse impacts on wildlife are likely to be minor.*

Timber *Although some commercially valuable timber is present, there is probably not enough to justify a large scale logging operation; local utilization for firewood or house logs could remove standing timber. There are patches of windthrown spruce which could serve as reservoir for bark beetles. These downed trees should be removed or burned.*

Hydraulics

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

RMS 21P-1 is the only site designated in the permit application material as a riprap site. The proximity of this site to the Tanana River crossing is an important feature, however expansion of the existing ADOT/PF site can only aggravate an aesthetically displeasing situation. Therefore although we recommend that RMS 21P-1 be included in the exploration phase, we further strongly urge that NAPLINE attempt to locate an alternate riprap site.

Field Investigators	Date
D. Shideler	12/28/78
M. Sigman	12/28/78

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 21P-2a, 2b Reconnaissance Date 7/7/78

Ownership Tetlin Indian Reservation

Alaska Highway Milepost 1302

Photographs Air Photo 5-2, Shideler: Roll G009, #4-9, 15-20

SITE DESCRIPTION

Access To site "a", along existing unimproved two-wheel drive road paralleling Tanana River downstream from the bridge, then on foot 500' to RMS (there is no known direct access to this site). Access to site "b" was by vehicle on Woodward-Clyde access road #654.9, a short steep road with a sand/silt base and badly eroding lower portions.

Geomorphology Geomorphology: Upland area consisting of steep loess-covered slopes 100-500' above the Tanana River floodplain.

Slope/Aspect Site "a", 25-30 degrees, to southwest; site "b", 30 degrees to south.

Drainage System No defined drainages run through RMS, however, entire area drains directly into Tanana River.

Terrestrial Habitat Site "a" includes a sidehill and ridgetop with three fairly well-defined overstory types. The lower slope supports a dense aspen/white spruce stand with virtually no understory, and ground cover dominated by Arctostaphylos uva-ursi and Calamagrostis spp. Above this elevational zone is a closed stand of white spruce, extending near the ridgetop. The ridgetop overstory is closed aspen with an understory of white spruce saplings. Site "a" includes a diversity of habitat types including interspersed shrubby areas (mostly willow and alder) and rocky outcrops. A large area along the ridgetop is covered by windthrown mature white spruce. Site "b" includes a diversity of habitat types including interspersed shrubby areas (mostly willow and alder) and rocky outcrops. A large area along the ridgetop is covered by windthrown mature white spruce. Site "b" has a simpler overstory dominated by mature aspen/white spruce in closed to open stands, interspersed pockets of alder and willow and ground cover consisting primarily of Arctostaphylos uva-ursi, Vaccinium vitis-idaea and Geocaulon lividum. Site "b" also has numerous rocky outcrops and is partially within the large area of windthrown white spruce.

Aquatic Habitat Aquatic Habitat:

Fish and Wildlife Observations 1. Male, female and young ruffed grouse along access road to site "a". 2. Heard a Harlan's hawk on July 6,7, in same area - this area is adjacent to the RMS, and there is likely a nest. 3. Tracks and scats of coyote, fox and snowshoe hare - coyote and fox scats were especially noticeable on the rocky outcrops, which are possibly loafing areas. 4. A fresh den of an unknown animal, probably a porcupine, was located in an open aspen stand on the southwest side of site "a".

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics Because of steepness of slope and location of RMS on the slope, part or all of these sites may be visible from the highway, and result in a negative visual impact.

Water Quality Although no drainages cross the RMS, the possibility of extensive sheet and gully erosion is great because of the steepness of slope and type of substrate. Little effect on the hydraulics of the Tanana River is anticipated.

Fish

Wildlife 1. Upland aspen is an important winter habitat type utilized by ruffed grouse - loss of aspen stands in this RMS will adversely affect an unknown number of ruffed grouse. 2. The interspersion of habitat types on site "a" in particular suggest a high quality habitat for birds and small mammals.

Timber Trees of commercial-size are present, however, the potential for environmental damage caused by their extraction may outweigh the economic benefits. The windthrown spruce would make excellent firewood; however, extraction would also be a problem.

Hydraulics

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 21P-2a and 2b be included in the exploration phase. We further recommend that site 21P-2b be developed first because it (a) is more accessible and closer to the pipeline ROW, and (b) does not contain the diversity of habitat types which RMS 21P-2a does.

Field Investigators	Date
D. Shideler	12/18/78
M. Sigman	12/18/78

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 21P-3 Reconnaissance Date N/A

Ownership USA (Tetlin Native Corp.)

Alaska Highway Milepost 1299.2 - 1300.2

Photographs None

SITE DESCRIPTION

Access 1299.0 - Initial portion of this access route has a 5' dropoff from the highway, then it follows the telephone line over ice-rich soils (low tussocks). It then ascends to the Haines ROW via a dirt road. The final portion of the road ascends a steep grade (15-20%). Approximately 1300.4 - existing road to gravel pit/dump (not one indicated).

Geomorphology Geomorphology: The site includes the top and side slopes of a ridge. At the limit of the pit, coarse gravel is overlain with 5-12' of sandy overburden.

Slope/Aspect Southern exposure-gravel pit/dump area, approximately 20 degrees. The site also includes slopes to the east, both a southern and eastern exposure, approximately 45 degree slope.

Drainage System Drainage: No drainages within site

Terrestrial Habitat Ridgetop has been burned, apparently quite a while ago, because much of the down wood is well-rotted. The burn was apparently spotty, and burned areas with standing dead trees, slash, and regrowth, as well as remnant stands and partially-burned areas occur within the site. Remnant stands are open climax white spruce/birch communities and regrowth is dominated by white spruce saplings and includes birch and alder. The garbage/dump gravel pit has been revegetated by scattered legumes and as aspen/birch/spruce stand occurs above the pit.

Aquatic Habitat N/A

Fish and Wildlife Observations 1. Moose tracks on Haines ROW within site; 2. family of Ruffed Grouse (4 young) flushed along ROW; 3. recent berry-filled bear scats and bear tracks along ROW; 4. bear and fox scats in gravel pit area; 5. a pair of Kestrels flew over me repeatedly as I examined the pit area and perched in a tree above the pit; 6. the next day, I saw a black bear in a gravel pit north of AHMP 1296.

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Excavating certain portions of the ridge top and sidehills would be highly visible from the highway, particularly the east-facing slope.*

Water Quality N/A

Fish N/A

Wildlife *The burn habitat should provide habitat for successional species (such as grouse, black bears and moose). It appears that a fire burned only the tops of ridges in this area, so such habitat is limited. The gravel pit area has been used as a garbage dump for some time and receives use by scavengers. Excavation of the area and disposal of the garbage would displace these animals and might lead to bear-human confrontations.*

Timber: *Timber in the climax white spruce stands is merchantable but access requires upgrading to remove it.*

Hydraulics N/A

Other *Area shown would require considerable slash disposal. The Haines (and NAPLINE) ROW passes through uphill portions of the site, so care would be necessary to avoid slumping onto the ROW.*

RECOMMENDATION

Based on biological data currently available we recommend that RMS 21P-3 be included in the exploration phase. We also recommend careful selection of aliquots to minimize aesthetic impacts (will require further field evaluation) and to select mature climax vegetative communities rather than regrowth areas. Enlargement of the already disturbed site is preferred, although stipulations should address potential bear-human conflicts. Use of the access at AHMP 1299.0 is unacceptable and considerable upgrading would be required if access is desired via this route.

Field Investigators	Date
Marilyn Sigman	12/12/78

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 22P-1 Reconnaissance Date 8/2-7/78

Ownership USA (Tetlin Corp.)

Alaska Highway Milepost 1295.8 - 1296.5

Photographs None

SITE DESCRIPTION

Access 1296.6, noted access overgrown by 5-6' willows.

Geomorphology Site includes ridgetop and sidehills of a single hill.

Slope/Aspect Sidehills included are northwestern, northern, and northeastern exposures, with slopes approximately 30-45°.

Drainage System Drainages at base of eastern and western slopes.

Terrestrial Habitat Lowland areas support open black spruce stands. The percentage of birch increases up sidehills and white spruce replaces black spruce. The ridgetop has been burned, but also supports remnant mature spruce/birch stands. The burn is regrowing as a birch/alder/spruce community. The Haines ROW also supports an alder regrowth community on the edges. Open areas within spruce dominated stands also support alder stands.

Aquatic Habitat N/A

Fish and Wildlife Observations Winter moose pellets and berry-filled bear scat on Haines ROW; recent tracks of adult moose, small black bear, and coyote, also along ROW. Numerous red squirrel middens, holes and den areas under tree roots in burned area.

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics West-facing slopes are highly visible from the highway.

Water Quality

Fish N/A

Wildlife Burned area appeared to be excellent habitat for squirrels, hares, grouse, and moose, although moose use was apparently low. Such habitat is limited in the general area.

Timber Mature white spruce is marketable, but access is poor.

Hydraulics N/A

Other Excavation of this site would require considerable slash disposal

RECOMMENDATION

Based on biological data currently available we recommend that RMS 22P-1 be included in the Exploration Phase. We further recommend careful selection of aliquots to minimize aesthetic impacts (use of northeastern portion) and to select mature climax vegetative communities rather than regrowth areas. We recommend use of this site only if previously-disturbed alternative sites cannot be located.

Field Investigators	Date
Marilyn Sigman	12/12/78

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 22P-2 Reconnaissance Date 8/2-7/78

Ownership USA (Tetlin Corp.)

Alaska Highway Milepost 1291.9 - 1292.8

Photographs Roll RMS 11 (slides), MJS

SITE DESCRIPTION

Access 1292.8, trail exists along northwestern edge of site, but on steep (60°) slope.

Geomorphology Area is top and upper side slopes of ridge system above extensive pond and lake dotted lowlands.

Slope/Aspect Side slopes include all exposures and are more gradually sloping (20-30°) sections of steep (45-60°) lower slopes.

Drainage System Area appears well-drained. Drainages exist below east and northwest slopes, which drain into the lowland marsh/lake system.

Terrestrial Habitat Cover is a fairly homogeneous climax white spruce/birch community. The northwest-facing sidehill supports a dense alder understory and scattered willow and aspen saplings. South-facing and east-facing slopes (not included in the site) support only heath mats or pure aspen stands.

Aquatic Habitat Willow Lake and several smaller lakes and ponds are located across the highway from the site. These ponds and lakes are very shallow but provide habitat for migratory waterfowl and recreation.

Fish and Wildlife Observations Moose tracks on the west-facing sidehills, several large red squirrel middens. Several of the mature birch trees had been girdled (porcupine?).

EVALUATION OF IMPACTS

Aesthetics *This is probably the major potential adverse impact. The eastern and western sidehills are extremely visible from the highway, as well as the south-facing segment.*

Water Quality

Fish N/A

Wildlife *Excavation and revegetation would probably slightly improve the use of the area by wildlife. Interspersion of deciduous and coniferous habitat is widespread through the area, although steep side slopes may not receive much use.*

Timber *Climax mature white spruce is merchantable.*

Hydraulics *Effect of excavation on drainage pattern requires further evaluation.*

Other *Excavation of this site would require slash disposal.*

RECOMMENDATION

We recommend that this site be deleted. The only aliquot which would entail minimal aesthetic impacts are the northern and northeastern sidehills, and good access does not exist. Willow Lake receives some recreational use, which compounds the impacts on users of the highway. Care should be exercised if overburden is stockpiled, so it does not end up in the poorly-drained lowland areas.

Field Investigators	Date
Marilyn Sigman	12/12/78

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 23P-1 Reconnaissance Date 8/2-7/78

Ownership USA (Tetlin Corp.)

Alaska Highway Milepost 1288.6 - 1289.3

Photographs None

SITE DESCRIPTION

Access

Geomorphology Site contains a series of knolls and a lowland area. The knolls are part of an area of rolling terrain above the extensive lowlands south of the highway.

Slope/Aspect The site includes north-facing and west-facing slopes. Sidehills are steep (20-45°).

Drainage System A drainage exists to the west of the upland portions. The site is above Midway Lake.

Terrestrial Habitat Climax mature white spruce communities of variable density interspersed with mature aspen/birch or aspen stands on sidehills.

Aquatic Habitat Midway Lake is an important molting area for waterfowl.

Fish and Wildlife Observations Moose tracks and scats of moose, bear, and fox on Haines ROW within site.

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Southern and eastern portions highly visible from road.*

Water Quality *Sidehills are steep (20-45°) and tree roots are visible on a west-facing slope, indicating that erosion has occurred. Slope stabilization would be necessary following excavation.*

Fish N/A

Wildlife *Revegetation would improve habitat for seral species.*

Timber *The mature white spruce is merchantable.*

Hydraulics N/A

Other *A native family was picking berries on the Haines ROW. Excavation will displace this "subsistence" activity.*

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 23P-1 be included in the exploration phase. We further recommend that northern aliquots are taken to minimize aesthetic impacts. The access along the western boundary appears visable with some upgrading. Slope stabilization will be necessary to avoid erosion into drainages.

Field Investigators

Marilyn Sigman

Date

12/15/78

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 23P-2 Reconnaissance Date 8/2-7/78

Ownership USA (Tetlin Corp.)

Alaska Highway Milepost 1287.5 - 1287.6

Photographs Roll RMS - 2 shots, MJS

SITE DESCRIPTION

Access 1287.6, U-driveway from Alaska Highway, suitable for 2WD.

Geomorphology Portion of upland area in system of hills above extensive lowlands.

Slope/Aspect Most of area is an excavated material site.

Drainage System None in site. Drainage pattern is into Midway Lake.

Terrestrial Habitat A narrow vegetated island exists between 2 pits which supports a balsam poplar/willow stand. The pits have scattered revegetation of small aspen, poplar, willow, spruce plants and herbs. The southeastern corner supports a closed mature poplar/white spruce stand.

Aquatic Habitat

Fish and Wildlife Observations None

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics A rock wall shields the site from view of the highway.

Water Quality

Fish N/A

Wildlife N/A

Timber N/A

Hydraulics N/A

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 23P-2 be included in the exploration phase. This site is very suitable for further excavation. From the standpoint of wildlife and aesthetics, this site is preferable to 23P-3B.

Field Investigators	Date
Marilyn Sigman	12/12/78

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 23P-3 Reconnaissance Date 8/2-7/78

Ownership USA (Tetlin Refuge)

Alaska Highway Milepost 1285.9 - 1286.2

Photographs Roll RMS 11 (4 Slides) - MJS

SITE DESCRIPTION

Access

Geomorphology The site consists of two upland areas in rolling terrain above the Tetlin Flats. Area A is west of Midway Lake.

Slope/Aspect Area B is relatively flat. Area A includes the south and west-facing slopes of a small hill.

Drainage System No drainages are located in the site, but lowland soils at the base of the hill are poorly drained.

Terrestrial Habitat A - Excavated gravel pit with an immature aspen/willow stand in the northeastern portion of the site, and a mature aspen/poplar and aspen/spruce/willow stands in the southeastern portion.
B - Ridgetop supports a homogeneous, dense mature white spruce stand with a pure aspen inclusion. The upper portions of the south-facing slope supports an open aspen/spruce stand while the lower portions support a dense spruce/willow stand. The area has considerable interspersion of habitat types.

Aquatic Habitat Midway Lake is an important molting area for waterfowl.

Fish and Wildlife Observations A- Harlan's hawk (?) circled over the pit and screamed repeatedly. A large number of small rodent bones were scattered over the pit. Also, numerous piles of moose winter pellets. B - Moose tracks on access road, numerous mushrooms had been fed upon.

EVALUATION OF IMPACTS

Aesthetics *The western portion of site A is visible from the road and from Midway Lake, which is used by local waterfowl hunters. A buffer exists in the southeastern portion of site B and should be left.*

Water Quality *Care must be exercised in stockpiling overburden and stabilizing slopes to avoid siltation of Midway Lake.*

Fish N/A

Wildlife *Further excavation of Area A would not change the nature of its use by wildlife species, which apparently include the hawk, moose, and possibly a predator that left the remains of the small rodents (?). The vegetation in Site B indicated poor soils which might hinder revegetation. However, if seral species were established, the habitat would be improved for seral wildlife species.*

Timber *Timber: White spruce appeared to be of marginal quality as merchantable timber.*

Hydraulics N/A

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available, we recommend that RMS 23P-3 be included in the Exploration Phase. NAPLINE has suggested that Area A is the preferred site. We recommend Area B as the preferred site because it involves an already-disturbed site and does not have the aesthetic impacts, potential impacts on Midway Lake, or poor access that exist if Area B is to be excavated.

Field Investigators,

Marilyn Sigman

Date

12/15/78

MATERIAL SITE RECONNAISSANCE

Site Identification Number *RMS 24P-1* Reconnaissance Date _____

Ownership *USA (Northway Corp.)*

Alaska Highway Milepost *1284.9 - 1285.2*

Photographs *Roll RMS 11 (4 Slides) - MJS*

SITE DESCRIPTION

Access *Existing road, grade down to ROW may exceed 12%. Entrance needs fill.*

Geomorphology *Lower portion of south slope of large hill. Continuation of soil type that has been excavated north of highway.*

Slope/Aspect *30-45°*

Drainage System *Slope appears well-drained*

Terrestrial Habitat *Southeast and southwest-facing portions support spruce-dominated mixed forest, while the central and steepest portion supports a pure aspen stand. To the west, growth is denser and black spruce occurs, while the eastern area supports an open white spruce/willow stand. Distribution of spruce-dominated and aspen-dominated stands is spotty with many open areas.*

Aquatic Habitat *N/A*

Fish and Wildlife Observations *Winter moose pellets on access road.*

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics N/A

Water Quality N/A

Fish N/A

Wildlife Negligible

Timber White spruce merchantable

Hydraulics N/A

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 24P-1 be included in the exploration phase.

Field Investigators

Marilyn Sigman

Date

12/15/78

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 24P-2 Reconnaissance Date 8/2-7/78

Ownership USA (Northway Corp.)

Alaska Highway Milepost 1281.8 - 1282.3

Photographs Roll RMS 11 (Slide) - MJS

SITE DESCRIPTION

Access 1281.9, overgrown trail with 7-8' alders.

Geomorphology Upland area, gently rolling terrain. Soil probably loess, some slumping.

Slope/Aspect Flat except for west-facing slope (10-20°) in eastern portion.

Drainage System Thick alder undergrowth indicate poorly drained soils.

Terrestrial Habitat Mature white spruce/alder stands interspersed with medium shrub communities of willow and alder with scattered clumps of mature aspen or spruce (may be regrowth from burn).

Aquatic Habitat None

Fish and Wildlife Observations Hampered by heavy downpour.

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics N/A - if buffer left

Water Quality N/A

Fish N/A

Wildlife The medium shrub community has relatively high value for seral wildlife species, particularly terrestrial birds.

Timber The mature white spruce is merchantable.

Hydraulics N/A

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 24P-2 be included in the exploration phase. We further recommend use of aliquots supporting mature spruce stands, particularly the raised bench in the south-east portion of the site.

Field Investigators

Marilyn Sigman

Date

12/15/78

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 24P-3 Reconnaissance Date 6/17/78

Ownership Northway

Alaska Highway Milepost 1280.3 and 1280.5

Photographs

SITE DESCRIPTION

Access For 1280.3, good access via abandoned segment of old Alaska Highway to ADOT Material Site. Can then traverse existing MS. Did not investigate 1280.5.

Geomorphology Upland sideridge - moderately steep. Rock outcrops consisting of weathered granite along ridgetop

Slope/Aspect Variable, generally 10-15 degrees; all aspects included; mostly southerly.

Drainage System Bitters Creek - Tanana River

Terrestrial Habitat Only ascended sideridge facing Bitters Creek (south exposure): aspen forest: aspen, 60% cover, 7-9 m. ht., 15-20 cm. DBH; white spruce, 2% cover, variable sizes (seedlings up to small trees 5-6 m. ht., and 10-20 cm. DBH); willow approximately 1% cover, 1-3 m. ht. Occassional balsam poplar. *Ground Cover: Linnaea borealis (8%), Epilobium angustifolium (3%), Mertensia paniculata (1%), Shepherdia canadensis (less than 1%). Balsam poplar and willow more prominent at lower elevations, with thick ground cover of Equisetum. Spruce more common on easterly and northerly exposures.

Aquatic Habitat None - Upland site

Fish and Wildlife Observations

* Estimated percent around cover in parentheses.

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics

Water Quality *Material removal and vegetation destruction from the southeastern portion of site (nearest Bitters Creek) will induce erosion which may impact Bitters Creek.*

Fish

Wildlife

Timber

Hydraulics

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that this site be included in the exploration phase. However, restrict to western portion of proposed area by expanding the existing ADOT MS (No. 621-019-5) in a northeast direction, maintaining a visual buffer. Prohibit use of southeastern portion of proposed area.

Field Investigators, Date

Tony Booth

Gretchen Keiser

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 25P-1A Reconnaissance Date 6/17/78

Ownership Northway

Alaska Highway Milepost 1275.9

Photographs

SITE DESCRIPTION

Access Short access off Alaska Highway onto good access road through existing ADOT/PF material site.

Geomorphology Gently sloping upland ridge

Slope/Aspect West exposure

Drainage System Tanana River

Terrestrial Habitat Upland forest: two forest types distinguishable on aerial photos: 1. Lighter green area of aerial photo = paper birch forest. P. birch, 65% cov., 3-10 m. ht., 8-15 cm. DBH; white spruce understory, 5% cov., 4-5 m. ht. and approximately 8 cm. DBH. Ground cover: Vaccinium vitis-idaea (60%), Rosa acicularis (2%), Mertensia paniculata (1%), unknown forb with large spatulate leaf (no flower) (5%), moss and lichens (3-4%). 2. Darker green, mottled area on aerial photo = Dense white spruce forest. White spruce, 65% cov., 8-10 m. ht., 10-15 cm. DBH; P. birch, 2% cov., generally about 8 m. ht., 12-15 cm. DBH; some small willows present, 3% cov., up to 5 m. ht. Ground Cover: Mostly thick moss with some lichens. Spruce forest in general occur on steeper slopes, and somewhat more northerly exposures than the birch forests.

Aquatic Habitat

Aquatic Habitat: None - upland habitat.

Fish and Wildlife Observations None recorded.

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Bad but maybe irrelevant since an active DOT MS already exists here. DOT's proposed Alaska Highway realignment/improvement project routed nearly through center of existing MS.*

Water Quality *Do not anticipate significant impacts.*

Fish *None anticipated.*

Wildlife *No observations*

Timber *No observations*

Hydraulics *MS extension may induce increased surface runoff and erosion that may pose some problems to new highway alignment.*

Other *Intend to relocate small power line?*

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 25P-1A be included in the Exploration Phase.

Field Investigators	Date
Gretchen Keiser	
Tony Booth	

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 25P-1B Reconnaissance Date 6/17/78

Ownership Northway

Alaska Highway Milepost 1275.6

Photographs

SITE DESCRIPTION

Access Problems; up small drainage; would require substantial brushing.

Geomorphology Primarily steep ridgeside

Slope/Aspect South exposure

Drainage System

Terrestrial Habitat Mixed aspen-white spruce forest. Aspen, 60% spruce, cover, up to 8 m. ht., 6-10 cm. DBH. White spruce, 15% cover, 5-7 m. ht., 15-30 cm. DBH. A few scattered paper birch, more common at lower elevations. Understory: Linnaea borealis (70%), Vaccinium vitis-idaea (clustered in stands up to 80% cover), Viburnum edule (2%), Epilobium angustifolium (1%), Equisetum (1%). Some slash and litter cover.

Aquatic Habitat Small stream. Humic colored water. Some aufeis persisting in upper drainage. Salix spp., Equisetum spp., and typical bog or aquatic vegetation abundant. Water = 5.0° C (41° F).

Fish and Wildlife Observations

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *No observations*

Water Quality *Would induce sedimentation.*

Fish *No fish stream.*

Wildlife *No observations*

Timber *No observations*

Hydraulics *Increased runoff probable.*

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 25P-1B be deleted from exploration phase due to its proximity to a small drainage, steep slopes, and access related problems.

Field Investigators — Date

Tony Booth

Gretchen Keiser

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 25P-2 Reconnaissance Date None; (no field data available). Information attained by stereoscopic examination of aerial photos.

Ownership

Alaska Highway Milepost 1273.5

Photographs

SITE DESCRIPTION

Access No observations

Geomorphology Upland ridge; steep slopes on side tapering out near top

Slope/Aspect Southwest exposure primarily

Drainage System Unnamed tributary of Tanana River

Terrestrial Habitat (Aerial photo interpretation). This large area encompasses 3 general forest cover types: 1. Predominately aspen forest along the cover elevations of the steep ridge side, with southwest exposure; Aspen generally small trees with a few scattered larger paper birch. 2. Higher up ridge, near top, and along easterly exposures: Mixed paper birch/white spruce forest, with only few aspen. Birch = dominant, but spruce very common. 3. Darker green bank, prominent on aerial photo, is predominantly white spruce forest.

Aquatic Habitat None

Fish and Wildlife Observations None

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Visible from Alaska Highway*

Water Quality *Possible*

Fish *No observations*

Wildlife *No observations*

Timber *No observations*

Hydraulics *No observations*

Other *Slopes generally quite steep and therefore susceptible to erosion problems. Accelerated erosion may pose some threat to the integrity of the buried gasline and the Alaska Highway, immediately downhill from the site.*

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 25P-2 be included in the exploration phase.

Field Investigators

None (done by Tony Booth in office)

Date

1/3/79

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 26P-1 Reconnaissance Date 6/17/78

Ownership

Alaska Highway Milepost 1270.6

Photographs

SITE DESCRIPTION

Access No existing access trail, but very near the highway

Geomorphology Low, gentle to moderately steep ridgeside

Slope/Aspect Southeast exposure

Drainage System Upper Tanana

Terrestrial Habitat Most of area consists of mixed aspen/spruce forest, aspen, 50% cover; white spruce, 25%; balsam poplar, 1%. Understory and Ground Cover: Seedling/sapling white spruce (20%), Rosa acicularis, Linnaea borealis, Epilobium angustifolium. Dark mottled area along base of ridge (near access) is mixed black and white spruce. small trees 4-6 m. ht., and 8-10 cm. DBH. Understory: seedling spruce, to 1 m. ht. (40%). Ground Cover: Predominantely Empetrum nigrum and moss. Vegetation comprises of more bog-like habitat along base of ridge.

Aquatic Habitat N/A

Fish and Wildlife Observations Grouse droppings

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Will leave prominent visual scar.*

Water Quality *Adequate distance from nearest water.*

Fish

Wildlife

Timber

Hydraulics

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

None

Field Investigators | Date

Gretchen Keiser

Tony Booth

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 26P-2 Reconnaissance Date 6/17/78

Ownership Northway

Alaska Highway Milepost 1268.6

Photographs Aerial 2-28

SITE DESCRIPTION

Access

Geomorphology Upland ridge

Slope/Aspect South and southeast exposures

Drainage System Upper Tanana River (to the south) and Beaver Creek (to the east)

Terrestrial Habitat Upland aspen forest with balsam poplar intermingled at lower elevations and white spruce at higher elevations on ridge. (1) Lower elevations in vicinity of existing MS. Dense aspen, 75% cover, average about 8-10 m. ht., and 12-20 cm. DBH; balsam poplar, 5% cover, generally about the same size as the aspen. Generally a sparse understory consisting of Vaccinium vitis-idaea, Arctostaphylos uva-ursi, occassional Lupinus spp. and moss. A few thick stands of Linnaea borealis. 19% ground covered with litter. (2) Higher elevations of ridge: Balsam poplar nearly absent and white spruce occurs in variable sizes ranging from seedlings up to trees, 12m. ht. and 40 cm. DBH. About 5% cover of spruce. At high elevations, aspen still dominant (about 65% canopy cover) and somewhat larger in size (8-10 m. ht. and average about 25. cm. DBH. A few poplar. Understory and Ground Cover: Cornus canadensis (25-30%), Shepherdia canadensis (3%), Calamagrostis canadensis (2-3%). Also common, Rosa acicularis, Epilobium angustifolium, Mertensia paniculata.

Aquatic Habitat: N/A

Fish and Wildlife Observations

EVALUATION OF IMPACTS

Aesthetics

Water Quality

Fish

Wildlife

Timber

Hydraulics

Other *Some erosion evident in existing ADOT MS. Some gullies have eroded at lower end where Haines pipeline crosses the pit (MS). Additional surface disturbances in this site. (i.e. expanding the MS) will likely induce additional erosion problems and may ultimately pose some problems to the buried gasline.*

RECOMMENDATION

Based on biological data currently available we recommend that this site be included in the exploration phase. However, due to erosion tendencies and proximity to the gasline route and the Tanana River, this site probably will require substantial and immediate stabilization and restoration efforts.

Field Investigators	Date
Tony Booth	
Gretchen Keiser	

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 26P-3A Reconnaissance Date 6/17/78

Ownership

Alaska Highway Milepost 1266.7

Photographs Aerial photos #2-26

SITE DESCRIPTION

Access Adjacent to Haines ROW

Geomorphology Low lying, slightly undulating terrain. Generally gentle slopes. Poorly drained

Slope/Aspect SW exposure; 1-30° slope

Drainage System Unnamed tributary of Chisana River.

Terrestrial Habitat Mixed white and black spruce forest. Much evidence of wood cutting, with much slash lying around and small trails. Spruce (both black and white), 55% cover and highly variable sizes, seedlings up to trees 12-15 m. ht. and 35-40 cm. DBH; Willow (3 different spp. one of which is Salix alaxensis), 25% cover, 2-4 m. ht.; balsam poplar, 1-2% cover. Some scattered paper birch, generally around 8 m. ht. and 12-15 cm. DBH. Understory/Ground Cover: Moss (85-90%), Ledum groenlandicum (15-20%), Vaccinium vitis-idaea (25%), unknow forb (10%), Salix reticulata (3%), Mertensia panniculata (2-3%), Empetrum nigrum (10-12%), Pyrola spp. (1%), and some lichens. A lot of wind falls and senescent trees.

Aquatic Habitat: Contained very small drainage. No apparent surface flow. Few small puddles of stagnant water.

Fish and Wildlife Observations Several squirrels, moose sign. Evidence of moose browsing.

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics

Water Quality

Fish

Wildlife *Shrubby regrowth of Salix spp. present and small birch and poplar trees comprise good moose browse whch would most likely be lost. Many squirrels in area.*

Timber *Presently harvested, probably for firewood.*

Hydraulics

Other

RECOMMENDATION

Based on biological data currently available we recommend that this site be included in the exploration phase. In addition this site is highly preferable to its alternate (RMS 26P-3B).

Field Investigators — Date

Tony Booth _____

Gretchen Keiser _____

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 26P-3B Reconnaissance Date 6/17/ 78

Ownership Northway

Alaska Highway Milepost 1266

Photographs Aerial photo 2-26

SITE DESCRIPTION

Access Trail traverses bog area, highly susceptible to disturbance. "Winter only" type trail. Crosses small drainage (containing some flowing water) near the MS.

Geomorphology Rolling ridges, containing a few rock outcrops at higher elevations

Slope/Aspect South

Drainage System Near small unnamed tributary

Terrestrial Habitat Mixed white spruce-aspen-paper birch forest. Highly variable canopy coverage. White spruce most commonly dominant, maximum of 15-16 m. ht. and 41 cm. DBH, but generally around 15-35 cm. DBH. (1) Dense spruce cover at darker areas on aerial photo. Some birch. Dominant ground cover on spruce forest is moss (80%). Also senescent stands with downed timber common, 15% litter cover; and scattered along side ridges are small open stands of small aspens with a few small birch trees. Aspen 10-15% cover, paper birch, 2-3% cover. Ground cover in these stands consists of Arctostaphylos and Calamagrostis canadensis (8-10%). Found occasionally or sparsely, cover of Viburnum edule, Empetrum nigrum, Shepherdia canadensis, ~~Aquatic Habitat~~ and Polygonum bistorta.

Aquatic Habitat: Small drainage near this site; 1-2 m. width, up to 2 m. deep. Discharge = 1-2 ft. 3/sec. Clear water, brown or humic colored. 5.0 (41° F.). Generally silty bottom.

Fish and Wildlife Observations

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics

Water Quality *Will probably increase turbidity of stream.*

Fish

Wildlife

Timber

Hydraulics

Other

RECOMMENDATION

Delete this site due to access problems, and threat to nearby drainages. RMS 26P-3 A is much preferred alternative to this site.

Field Investigators — Date

Tony Booth

Gretchen Keiser

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 27P-1 Reconnaissance Date 6/16/78

Ownership Northway

Alaska Highway Milepost 1262.5

Photographs Aerial photo #2-25

SITE DESCRIPTION

Access Good trail off Alaska Highway into large existing ADOT MS, though a little steep. Decent trail continuing out of top and of pit to RMS 27P-1.

Geomorphology Large ridge, slope increases in a downhill direction (NW to SE)

Slope/Aspect NE

Drainage System Small unnamed tributary of Chisana River (via Steve Lake)

Terrestrial Habitat Dense and seemingly productive paper birch forest with some white spruce. Paper birch, generally 8-10m. ht. and 12 cm. DBH. Understory: Willow (Salix spp.), 3-4m. ht., 5% cover; a few alders (Alnus spp.) up to 4m. ht., 2% cover; Ledum groenlandicum fairly common. Ground cover: Predominantly Vaccinium vitis-idaea.

Aquatic Habitat

Fish and Wildlife Observations

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *This site visually screened from highway.*

Water Quality *Little impact anticipated.*

Fish

Wildlife

Timber

Hydraulics

Other

RECOMMENDATION

Based on biological data currently available we recommend that this site be included in the exploration phase. The trail is steep in places; may require some improvements at entrance and top end of pit to accomodate large hauling equipment, but can be accomplished with little additional disturbance.

Field Investigators	Date
Gretchen Keiser	
Tony Booth	

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 27P-2 Reconnaissance Date 6/16/78

Ownership Northway

Alaska Highway Milepost 1260

Photographs Aerial 2-23

SITE DESCRIPTION

Access Through ADOT MS

Geomorphology Gently undulating or low rounded hills

Slope/Aspect Variable, considering the amount of area delineated
Generally gentle to nearly level slopes

Drainage System Silver Creek

Terrestrial Habitat Much diversity encountered. (Only investigated SE side of RMS 27P-2). Generally this site consists of swaths of burned areas among areas of dense, mixed black and white spruce forests (generally the darker areas of aerial photo). Spruce trees generally 8-12 m. ht. Ground Cover: Mostly moss with some Viburnum edule, under the spruce forest cover. Cleared (or burned) areas predominated by revegetation of white spruce, 2-4 m. ht. Also encountered areas of rather open or scattered cover of black and white spruce trees and shrubs in these areas. Understory in these areas consist primarily of Ledum groenlandicum, Empetrum nigrum, Salix reticulata, Shepherdia canadensis, Potentilla fruticosa, Streptopus amplexifolius (?).

Aquatic Habitat: N/A

Fish and Wildlife Observations

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics _____

Water Quality _____

Fish _____

Wildlife _____

Timber _____

Hydraulics _____

Other _____

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that this site be included in the exploration phase.

Field Investigators | Date

Tony Booth _____

Gretchen Keiser _____

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 28P-1 Reconnaissance Date 6/16/78

Ownership Northway

Alaska Highway Milepost 1257

Photographs Aerial 2-22

SITE DESCRIPTION

Access No observations

Geomorphology Steep upland ridges on hills.

Slope/Aspect Steep to very steep; southeast exposure

Drainage System Very small, unnamed drainage system to Yarger Lake.

Terrestrial Habitat Subjected only to "windshield survey" (viewed and photographed from highway). Predominantly aspen cover and probably mixed with paper birch down toward base of ridge.

Aquatic Habitat No observations

Fish and Wildlife Observations No observations

EVALUATION OF IMPACTS

Aesthetics *Very visible from highway.*

Water Quality *Very steep ridge and highly susceptible to erosion; and near small drainage. Erosion and increased runoff may seasonally degrade water quality of drainage, which leads into Yarger Lake.*

Fish *No observations*

Wildlife *No observations*

Timber *No observations*

Hydraulics *No observations*

Other *Highly susceptible to erosion.*

RECOMMENDATION

Based on biological data currently available we recommend that RMS 28P-1 be included in the exploration phase. However, the alternate site (RMS 28P-2) is preferable. If this site were deemed necessary, restrict mining to its SW portion (nearest highway), to avoid the steepest slope.

Field Investigators	Date
Tony Booth	
Gretchen Keiser	

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 28P-2 Reconnaissance Date 6/16/78

Ownership Northway

Alaska Highway Milepost 1255.6

Photographs Aerial 2-21

SITE DESCRIPTION

Access Only trail from NW; small brushy trail that crosses drainage. Suggest overland, directly from highway, may be better (proposed access as shown for Phase I).

Geomorphology Small undulating hills, soil brown silty loam.

Slope/Aspect Variable (all sides of a small hill).

Drainage System Small unnamed tributary of unnamed lake system about 1 mile Southeast of Yarger Lake.

Terrestrial Habitat Mixed aspen/black spruce forest; evidently an old burn area - much charred slash lying around. Aspen, 40% cover, 6-8 m. ht., and 6-12 cm. DBH. Black spruce, 30% cover, 6-8m. ht., and 6-10 cm. DBH. Occasional paper birch and alder occurring in somewhat open areas along the western slope, in vicinity of drainage. Spruce becomes dominant cover along base of ridge. Understory and Ground Cover: Rosa acicularis, Ledum groenlandicum (3%-4%), Viburnum edule (approximately 1%), Linnaea borealis, Arctostaphylas spp., Vaccinium vitis-idaea, Empetrum nigrum, an unknown forb. Abundance of spruce seedlings and moss and lichens where spruce cover dominant.

Aquatic Habitat: Adjacent drainage. Bog, no surface flow of water. Probably seasonal and of short duration.

Fish and Wildlife Observations

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics

Water Quality *If access used across drainage, may induce aufeising problems.*

Fish *None anticipated.*

Wildlife

Timber

Hydraulics

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that this site be included in the exploration phase. This site is preferable to its alternative (RMS 28P-1). Access situation needs more consideration.

Field Investigators	Date
Gretchen Keiser	
Tony Booth	

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 28P-3 Reconnaissance Date 6/16/78

Ownership Northway

Alaska Highway Milepost 1253.7

Photographs Aerial 2-20

SITE DESCRIPTION

Access Private

Geomorphology Series of gently undulating small hills and ridges scattered along low, nearly level (and poorly drained) bogs.

Slope/Aspect 2-6 degrees West and WSW.

Drainage System No distinct drainage, but to unnamed lake near Chisana River.

Terrestrial Habitat Mostly dense aspen forest. Aspen generally small in vicinity of Haines ROW (up to 10 m. ht.) and dense. Aspen generally larger toward western portion of site. Aspen, 60% cover, 10-15 m. ht. and 8-12 cm. DBH. A few white spruce. Pockets of white spruce-dominated areas visible as dark areas on aerial photo. Some alder. Generally spars understory: a few Shepherdia canadensis. Ground Cover: Vacinium vitis-idaea (95), Epilobium angustifolium (2%), and some Lupinus spp., and Arctostaphylos uva-ursi.

Aquatic Habitat N/A

Fish and Wildlife Observations None

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Visually obscured from highway.*

Water Quality *Probably not significant*

Fish *None*

Wildlife *No observations*

Timber *No observations*

Hydraulics *No observations*

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 28P-3 be included in the Exploration Phase.

Field Investigators, Date

Gretchen Keiser

Tony Booth

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 28P-4 Reconnaissance Date 6/16/78

Ownership Northway

Alaska Highway Milepost 1252.3

Photographs Aerial 2-19

SITE DESCRIPTION

Access New highway, but no existing trail; would have to "walk down" vegetation for a short distance

Geomorphology Low end of system of small undulating hills.

Slope/Aspect West

Drainage System Tenmile Creek

Terrestrial Habitat Relatively thick stand of small aspens. Aspen 55% cover, 2-5 m. ht., 5-8 cm. DBH. Many aspen seedlings in understory, probably sucker growth. Also in understory: Rosa acicularis (1%), Lupinus (1-2%). Ground cover: Arctostaphylos uva-ursi (65%), Vaccinium vitis-idaea (2-3%). Quite a bit of bare (exposed) ground.

Aquatic Habitat N/A

Fish and Wildlife Observations Rabbit

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Can be screened with sufficient buffer.*

Water Quality *Should be sufficiently buffered from Tenmile Creek.*

Fish *No observations*

Wildlife *No observations*

Timber *No commercial timber.*

Hydraulics *No observations*

Other

RECOMMENDATION

Based on biological data currently available we recommend that RMS 28P-4 be included in the exploration phase.

Field Investigators — Date

Gretchen Keiser

Tony Booth

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 29-1A and B Reconnaissance Date 6/16/78

Ownership *Northway/State Selection*

Alaska Highway Milepost *1249.6-A; 1249.1-B*

Photographs *Aerial 2-17*

SITE DESCRIPTION

Access *Both adjacent to Haines ROW. Haines ROW readily accessible via access road to Deadman Lake. Would require short use of ROW.*

Geomorphology *On a system of small, narrow parallel ridges, bisecting a large area of poorly drained bogs. Soils - approximately 2 cm. organic material, then a light reddish glacial loess.*

Slope/Aspect *Ridges run in a NW-SE direction (NE and SW aspects).*

Drainage System *Nebulous, undefined. May ultimately get to Deadman Lake. Much is subterranean.*

Terrestrial Habitat *Area A: 1. Southwest facing slopes: Fairly open stands of small aspens. Aspens, 20-25% cover, 4-6 m. ht., and 5-15 cm. DBH. Fairly dense ground cover of Arctostaphylos spp. and Vaccinium vitis-idaea. Intermittent Shepherdia canadensis. 2. Northeast exposure (and darker areas of aerial photo): Dense stands of small black spruce. Black spruce, 60% cover, 4-5 m. ht., intermingled with a few small paper birch, and senescent or dead aspen. Ground Cover: Dense layer of moss overlaid with a 30-40% cover of Vaccinium vitis-idaea and a little Ledum groenlandicum. Area B: Variable habitats. 1. Pockets of low lying, poorly drained black spruce bog. Relatively open stand of spruce, 15-20% cover; and highly variable in sizes, from seedlings up to small trees, 5 m. ht. Ground cover consists of a relatively dense cover of moss and lichens overlaid with Ledum groenlandicum, Cassiope spp., and Arctostaphylos spp. 2. Higher areas on small ridges (that show up on aerial photo as the darker banks) contain some larger and fairly dense spruce forest, with some scattered paper birch. Black spruce particularly prevalent on north exposures. Black spruce 55-60% cover; white spruce, 20-35% cover, 8-10 m. ht., and 6-10 cm. DBH. Some scattered aspens on south exposures. Ground cover: Vaccinium vitis-idaea (20%), Oxycoccus microcarpus (5%), Shepherdia canadensis (4%), Rosa acicularis (1-2%), litter/slash (15%). 3. Bands of light areas of aerial photo consist of portions of southwesterly exposures containing rather open or broken canopy coverage of small aspen trees. Generally, a light understory consisting of Arctostaplylos spp. (8%, dominant) Calamagrostis canadensis (3%), Rosa acicularis (2%), and a few or scattered Lupinus spp., Iris setosa, Geranium spp.*

Aquatic Habitat

Fish and Wildlife Observations

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Probably visible from highway and on access road to Deadman Lake. Area A more conspicuous.*

Water Quality *Negligible.*

Fish *None*

Wildlife *No observations*

Timber *No observations*

Hydraulics *None*

Other

Aquatic Habitat: N/A

Fish and Wildlife Observations: Moose in a bog adjacent to Area A.

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 29P-1A and 1B be included in the Exploration Phase.

Field Investigators

Gretchen Keiser

Tony Booth

Date

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 30P-1 Reconnaissance Date 6/8/78

Ownership State Selection

Alaska Highway Milepost 1244.5

Photographs Aerial 2-14

SITE DESCRIPTION

Access

Geomorphology Small hill or ridge. Undulating ridges; generally steep sides.

Slope/Aspect Both variable; overall, a SSW exposure.

Drainage System Secondary tributary of Chisana River. Much subterranean.

Terrestrial Habitat Aspen forest. Aspen, 25-30% cover, 5-7 m. ht. Rather open understory. Most abundant plant was Arctostaphylos spp., 75-80% ground cover. Site also supported a little Shepherdia canadensis, Rosa acicularis, Geranium spp., and a few scattered tufts of Calamagrostis canadensis. Darker appearing banks of vegetation on aerial photo consists of areas of black spruce forest, usually occurring in poorly drained swales near hilltops and on north facing slopes. These areas possess about a 30-40% cover of black spruce, ranging in size from saplings to small trees 5m. in height.

Aquatic Habitat N/A

Fish and Wildlife Observations None

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Eastern portion of site would be highly visible from road.*

Water Quality *No observations*

Fish *No observations*

Wildlife *No observations*

Timber *No observations*

Hydraulics *No observations*

Other *Erosion susceptibility of steep ridges on eastern side.*

RECOMMENDATION

Based on biological data currently available we recommend that RMS 30P-1 be included in the Exploration Phase. However, we recommend that mining be restricted to southwestern portion of delineated area, to avoid the higher and steeper side ridges (to avoid erosion problems) and to minimize aesthetic problems.

Field Investigators — Date

Tony Booth

Gretchen Keiser

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 30P-2 Reconnaissance Date 6/8/78

Ownership U.S.; Proposed Tetlin NWR (O-2)

Alaska Highway Milepost 1241.3

Photographs Aerial 2-12

SITE DESCRIPTION

Access Good access for the very short distance from the highway to the Haines ROW. From the Haines ROW to the site, no trail; must traverse open bog.

Geomorphology Mosaic of undulating and often isolated ridges or small hills and relatively level, poorly drained bogs.

Slope/Aspect Both variable

Drainage System Unnamed tributary of Chisana River.

Terrestrial Habitat Primarily mixed paper birch and white spruce forest. Paper birch dominant. Also some aspen occurring. Lot of alder occurring along lower sides of the ridges. Black spruce bog contained in this ridge system, in the undrained or poorly drained swales.

Aquatic Habitat Small drainage nearby that contained intermittent surface flow (generally less than 1 cfs). Generally beaded characteristics.

Fish and Wildlife Observations Ruffed grouse flushed on one of the ridges. Wolf tracks observed on Haines ROW.

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *North end of this system easily visible from highway.*

Water Quality *No observations*

Fish *No observations*

Wildlife *No observations*

Timber *No observations*

Hydraulics *No observations*

Other

RECOMMENDATION

Based on biological data currently available we recommend that RMS 30P-2 be included in the exploration phase. However, we recommend that mining be restricted from the more eastern portions to retain the buffer between the site and the adjacent drainage system. Restrict from northern end to retain visual buffer.

Field Investigators	Date
Tony Booth	
Gretchen Keiser	

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 31P-1A Reconnaissance Date 6/8/78

Ownership U.S., Proposed Tetlin Refuge (D-2)

Alaska Highway Milepost 1238.3

Photographs Aerial 2-10

SITE DESCRIPTION

Access Fairly good existing access trail that winds around up to back of hill. Should surface with only minor improvements.

Geomorphology System of large rolling, and sometimes steep, hills.

Slope/Aspect Mostly SE

Drainage System Unnamed tributary of Chisana River

Terrestrial Habitat (1) Light and grayish areas visible on aerial photo consist of a burned area, probably only a few years old. Consists of the charred remains of what appeared to be a white spruce forest, but appears to be revegetating rapidly with alder and willow. (2) Green island visible near ridgetop nearly adjacent to the existing borrow site, is a remnant paper birch forest. Dense canopy of paper birch, 70-75% cover, 12-14 m. ht., 20-30 cm. DBH. Understory: Alnus spp., 30-40% cover, 3-4 m. ht. Ground Cover: Dense leaf litter overlying thick layer of moss. (3) Dark areas consist of spruce forest.

Aquatic Habitat N/A

Fish and Wildlife Observations None

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *No observations*

Water Quality *No observations*

Fish *None*

Wildlife *Burned area revegetating with good moose browse. Will loose this habitat.*

Timber *Majority already burned off.*

Hydraulics *No observations*

Other *Some erosion probable.*

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 31P-1A be included in the exploration phase.

Field Investigators	Date
Tony Booth	
Gretchen Keiser	

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 31P-1B Reconnaissance Date 6/8/78

Ownership U.S., Proposed Tetlin Refuge (D-2)

Alaska Highway Milepost 1238.9

Photographs Aerial 2-10

SITE DESCRIPTION

Access No existing trail. Suggest look at possibility of seeking access to Haines ROW from bend in highway about 1250 feet to southeast of presently proposed access.

Geomorphology Generally undulating terrain containing mosaic of small hills or ridges

Slope/Aspect SW

Drainage System None apparent (subterranean)

Terrestrial Habitat Mixed white spruce/paper birch forest: White spruce, 55-60% cover, 8-10 m. ht., sometime locally dense stands (some what clumped distribution). Paper birch, 55-60% cover, 10-12 m. ht. A 20-30% cover of alder understory generally associated more with birch canopy coverage. Other understory: Viburnum edule (15%), Rosa acicularis (2-3%), Ledum groenlandicum (1%). Ground Cover: Moss, nearly 100%; litter = 5-8%.

Aquatic Habitat Small undrained lakes nearby.

Fish and Wildlife Observations Signs of moose use and hare droppings.

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Unlikely impact. Site buffered from highway.*

Water Quality *No observations*

Fish *None*

Wildlife *No observations*

Timber *No observations*

Hydraulics *No observations*

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 31P-1B be included in the Exploration Phase.

Field Investigators — Date

Gretchen Keiser

Tony Booth

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 31P-2 Reconnaissance Date 6/8/78

Ownership U.S. Proposed Tetlin Refuge (D-2)

Alaska Highway Milepost 1235

Photographs Aerial 2-8

SITE DESCRIPTION

Access Two trails into this site. The one delineated crosses a small drainage system. The alternative to this one is a trail from Alaska Highway, beginning about 2500' further down the highway (south). This trail does not cross any streams, but does cross a long stretch of moist ~~Geomorphology~~ bog. Access to this site will be a problem.

Geomorphology: Large rolling hills. Fairly steep ridgeside.

Slope/Aspect South

Drainage System Sweetwater Creek and unnamed secondary drainage.

Terrestrial Habitat Upland mixed paper birch/white spruce forest. Paper birch dominant, 70% cover, 8-10 m. ht., 15-20 cm. DBH. White spruce, 5% cover, highly variable sizes ranging from seedlings up to large trees, 12 m. ht. A few willow occurring, 6-8 m. ht., up to 10 cm. DBH.

Aquatic Habitat N/A

Fish and Wildlife Observations None.

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Ridgeside quite visible from road.*

Water Quality *May induce some turbidity problems in nearby drainage.*

Fish *No observations*

Wildlife *No observations*

Timber *No observations*

Hydraulics *No observations*

Other *Mined areas susceptible to erosion.*

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 31P-2 be included in the exploration phase. Access problems need more consideration. If trail to existing DOT/PF MS (No. 621-022-5) is used, will necessitate some measures to protect the draindge system nearby. If deemed appropriate to use this trail, expand DOT/PF MS in ESE direction and insure forested buffer between the borrow site and nearby drainage.

Field Investigators	Date
Gretchen Keiser	
Tony Booth	

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 32P-1A ~~and B~~ Reconnaissance Date 6/7/78

Ownership U.S. Proposed Tetlin Refuge (D-2)

Alaska Highway Milepost 1233.2 (A) and 1233.0 (B)

Photographs Aerial 2-7

SITE DESCRIPTION

Access No trail to Area A, must traverse undisturbed forests and muskeg valley bottom. Area B next to highway, but must ascend steep road cut.

Geomorphology Rolling upland hills; frequent steep ridges.

Slope/Aspect Slope: A = ? B ~ 2-4° Aspect: A = South and West B = North

Drainage System A = Island Lake - Desper Creek B = Tributary of Sweetwater Creek

Terrestrial Habitat Area A: Lower end of ridge containing dense forest of relatively small paper birch. Paper birch, 15-80% cover, 6-8 m. ht. and 10-12 cm. DBH. Lot of white spruce understory, 60-65% cover, consisting of seedlings/saplings up to 4 m. ht. Toward north end of Area A (uphill), habitat type becomes mixed paper birch/white spruce forest with larger trees. Area B: Contains a ADOT/PF site (No. 619-005-5). Generally a mixed white spruce/paper birch forest.

Aquatic Habitat N/A

Fish and Wildlife Observations None

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Neither will be readily visible from highway. B will be well concealed.*

Water Quality *No observations*

Fish *No observations*

Wildlife *No observations*

Timber *No observations*

Hydraulics *No observations*

Other *High erosion potential at Area A.*

RECOMMENDATION

Based on biological data currently available we recommend that RMS 32P-1A and 1B be included in the Exploration Phase. Area B highly preferred to Area A. Access and potential erosion problems at Area A. Recommend expand the existing ADOT/PF MS in a southwesterly direction.

Field Investigators	Date
Gretchen Keiser	
Tony Booth	

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 32P-2 Reconnaissance Date 6/7/78

Ownership U.S., Proposed Tetlin Refuge (D-2)

Alaska Highway Milepost 1226.4

Photographs Aerial 2-4

SITE DESCRIPTION

Access Good and short trail from highway to the existing ADOT/PF Material Site (MS).

Geomorphology Rolling upland ridges or hills

Slope/Aspect Have delineated both sides of ridge: SW and NE.

Drainage System Desper Creek

Terrestrial Habitat Ground truthed SW slope. Upland mixed paper birch/white spruce forest, with some aspen. Paper birch, 65% cover, 8-10m. ht., and 15-20 cm. DBH. White spruce, 60% cover, variable sizes ranging from seedlings to large trees 12 m. ht., and 30-35 cm. DBH. Aspen, 5-10% cover, 8-10 m. ht., and 15-20 cm. DBH. Fairly dense understory containing: Alnus spp. (15-20% cover), Ledum groenlandicum (3-5%), and Viburnum edule (less than 1%), Rosa acicularis (1%). Ground Cover: Vaccinium vitis-idaea (2%), a few Arctostaphylos uva-ursi. Nearly 100% ground cover of moss.

Aquatic Habitat N/A

Fish and Wildlife Observations None

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Very visible from highway and already scarred from ADOT/PF MS.*

Water Quality *Probably negligible*

Fish *No observations*

Wildlife *No observations*

Timber *No observations*

Hydraulics *No observations*

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 32P-2 be included in the Exploration Phase.

Field Investigators

Gretchen Keiser

Tony Booth

Date

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 33P-1A Reconnaissance Date 6/7/78

Ownership U.S., Proposed Wildlife Refuge (D-2)

Alaska Highway Milepost 1222

Photographs Aerial 2-1

SITE DESCRIPTION

Access This site adjoins existing ADOT/PF MS (No. 621-001-5). Good trail from highway up steep hill to ADOT/PF MS.

Geomorphology Large rolling hills

Slope/Aspect 3^{o} - 5^{o}; mostly south

Drainage System Little Scottie Creek

Terrestrial Habitat Existing borrow pit revegetating with alder, birch and willow. Undisturbed sites consist of mixed paper birch/white spruce forest intermingled with areas of black spruce forests.

Aquatic Habitat N/A

Fish and Wildlife Observations None

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Existing site obscured from view from highway.*

Water Quality *Significant impacts doubtful.*

Fish *No observations*

Wildlife *No observations*

Timber *No observations*

Hydraulics *No observations*

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

This site much preferred over its alternate (RMS 33P-1B). Less access problem and this site already substantially disturbed. The existing ADOT/PF material site contains a disposal site utilized by the Border Station, which should be avoided.

Field Investigators — Date

Gretchen Keiser

Tony Booth

MATERIAL SITE RECONNAISSANCE

Site Identification Number RMS 33P-1B Reconnaissance Date 6/7/78

Ownership U.S. Proposed Tetlin Wildlife Refuge (D-2)

Alaska Highway Milepost 1222

Photographs Aerial 2-1

SITE DESCRIPTION

Access Good access from highway to ADOT/PF MS near border station; then traverse through the borrow side where narrow trail leads to Haines ROW; then down ROW for about 3250'. No trail from the Haines ROW to the site, must cross black spruce bog or muskeg. Poses some access problems.

Geomorphology Rolling hills.

Slope/Aspect Relatively steep; south.

Drainage System Secondary tributary to Little Scottie Creek.

Terrestrial Habitat Forested ridgeside containing mixed aspen/white spruce/paper birch forest. Aspen, 45-50% cover, 14-15 m. ht., and 35-40 cm. DBH. White spruce, 40% cover, 10-12 m. ht., 30-35 cm. DBH. Paper birch, 20-25% cover, 10-12 m. ht., 30-35 cm. DBH. Relatively dense understory containing Alnus spp. [3-5% cover], Salix spp. [3%, its occurrence progressively decreases in an uphill direction], Ribes triste, Rosa acicularis, and Ledum groenlandicum. Ground cover contains a lot of Cassiope spp. Darker bank of vegetation around base of ridge [visible on aerial photo] consists of a dense strip of white spruce.

Aquatic Habitat N/A

Fish and Wildlife Observations None

MATERIAL SITE RECONNAISSANCE

EVALUATION OF IMPACTS

Aesthetics *Not visible from highway. Relatively concealed location.*

Water Quality *No observations*

Fish *Improbable*

Wildlife *No observations*

Timber *No observations*

Hydraulics *No observations*

Other

MATERIAL SITE RECONNAISSANCE

RECOMMENDATION

Based on biological data currently available we recommend that RMS 33P-1B be included in the Exploration Phase. We would prefer to avoid this site; prefer to use its alternate (RMS 33P-1A).

Field Investigators, Date

Gretchen Keiser

Tony Booth