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PROTECTION STRATEGIES FOR PEREGRINE FALCONS  
AND OTHER RAPTORS ALONG THE PLANNED  
NORTHWEST ALASKAN GAS PIPELINE ROUTE

VOLUME II

by

David G. Roseneau

C. Eric Tull

R. Wayne Nelson

Final Report

prepared for and funded by  
Northwest Alaskan Pipeline Company

administered by  
Fluor Northwest, Inc.

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June 1981



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Fluor Contract No. 478085-9-K127 Task II

June 1981

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**FLUOR**

4680-9-K127-9-000

## REPORT USE

This report contains detailed information on the nest locations of the endangered peregrine falcon and other raptor species in Alaska. This information is contained in Volume II of this report. Because of the sensitive nature of this information, we recommend that Volume II of this report be considered as confidential and be made available only on a need-to-know basis.

## FINAL REPORT

This report has been preceded by two interim reports.\* Because of the refinements, revisions and additions in this final version, it should be considered to supersede the earlier draft reports, and those reports should not be quoted.

This report should be cited as:

Roseneau, D.G., C.E. Tull and R.W. Nelson. 1981. Protection strategies for peregrine falcons and other raptors along the planned Northwest Alaskan gas pipeline route. Unpubl. rep. by LGL Alaska Res. Assoc., Inc., Fairbanks, for Northwest Alaskan Pipeline Co. and Fluor Northwest, Inc., Fairbanks. 2 volumes, 332 p.

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\* LGL Ecological Research Associates, Inc. 6 Oct. 1980. Development of protection strategies for peregrine falcons: a draft and preliminary version of a single chapter for an interim report. Unpubl. rep. for Northwest Alaskan Pipeline Co. and Fluor Northwest, Inc.

Roseneau, D.G., C.E. Tull and R.W. Nelson. 22 Nov. 1980. Synopsis of peregrine falcon populations and ecology, and development of protective measures with regard to the proposed Northwest Alaskan Gas Pipeline Company gas pipeline project in Alaska: interim report. Unpubl. rep. by LGL Ecol. Res. Assoc., Inc., Fairbanks, Alaska, for Northwest Alaskan Pipeline Co. and Fluor Northwest, Inc.

## ACKNOWLEDGEMENTS

Numerous people provided important information for this review. We particularly wish to thank U. Banasch and R. W. Fyfe, Canadian Wildlife Service, Edmonton; C. M. White, Brigham Young University, Provo; J. R. Haugh, U.S. Geological Survey, Anchorage; D. Money and R. E. Ambrose, U.S. Fish and Wildlife Service, Anchorage; D. Mossop, Yukon Game Branch, Whitehorse; C. Yanagawa and R. Schideler, Alaska Department of Fish and Game/State Pipeline Coordinator's Office, Fairbanks; and B. Kessel and D. D. Gibson, University of Alaska, Fairbanks. We are also grateful to all the other unnamed individuals who have provided useful information that was used in this report.

Many individuals at LGL Alaska Research Associates, Inc., aided in this study. P. J. Bente, J. J. Olson and J. M. Wright helped provide information from pipeline route alignment sheets and maps. A. M. Springer, S. R. Johnson and D. M. Troy reviewed and assisted in the editing of portions of the report. E. Kimbrough typed the report. She was assisted in the final typing by J. Higgins, who also typed the earlier drafts. C. H. Welling, D. Whitford and P. D. Hollingdale assisted in the preparation of the report.

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## 2. PEREGRINE FALCON

### 2.8 POTENTIAL PIPELINE CONFLICTS WITH NEST LOCATIONS

This section discusses, on a site-by-site basis, nesting locations that are found in the vicinity of the proposed Northwest Alaskan pipeline alignment (NWA Environmental Master Guide alignment sheets, April 1980). Potential conflicts between NWA plans and the USFWS restrictions (as we have interpreted them in Section 2.7) are discussed, and we have made a number of site-specific recommendations concerning these conflicts.

The 53 nest locations within 15 mi of the NWA pipeline right-of-way centerline are summarized in Table 17 according to their drainage basis, distance from the centerline and likelihood of occupancy. Twenty-six locations are along the Tanana River and seventeen along the Sagavanirktok River. The histories of occupancy of these locations are reviewed in Section 2.1.2.

The sites have been divided into three categories. Those nest sites within 1 mi of the centerline or within 1 mi of any other proposed activity or facility are discussed in Section 2.8.1; these are the sites to which all of the Sep. 1980 and Oct. 1979 USFWS recommended restrictions would apply. Nest sites that are located between 1 and 2 mi from the right-of-way or proposed activity or facility sites are discussed in Section 2.8.2; these are the sites to which Sep. 1980 restriction 2 and Oct. 1979 restriction II would apply. Nest sites that are 2 to 15 mi from the right-of-way or proposed activity or facility sites, to which only Oct. 1979 restriction II would apply, are discussed in Section 2.8.3. Sites more than 15 mi from any proposed pipeline activities are not discussed.

Within each section, sites are discussed on a south-to-north basis. Most sites are discussed individually, but in two cases (Sagwon Bluffs and Franklin Bluffs) the sites are discussed as a group. In both cases the nesting structure is a continuous zone of excellent nesting habitat,

TABLE 17. Peregrine falcon nest locations along the NWA pipeline corridor.

	Tanana River	Salcha River	Chena River	Globe Creek	Yukon River	Sagavanirktok River
<u>Within 1 mi</u>						
'likely' to be occupied*					1	16
'not likely' to be occupied	4					1
<u>Between 1 mi and 2 mi</u>						
'likely' to be occupied	1			1	1	
'not likely' to be occupied	6	1				
<u>Between 2 mi and 15 mi</u>						
	<u>15</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>—</u>
	26	2	1	2	5	17

\* As we have interpreted the likelihood of occupancy.



with a number of nest sites and several pairs of peregrines that may shift from one site to another. Both areas are unstable and naturally eroding, so that nest sites may change for natural reasons more rapidly than in interior Alaska nesting areas. Both areas are also important nesting habitat for gyrfalcons and rough-legged hawks; the nests built by rough-legged hawks are often used in later years by peregrines and gyrfalcons.

For each site (or group) the characteristics of the site that are necessary for an understanding of the conflicts are tabulated. Less detail is provided for those sites that are 2-15 mi from any proposed pipeline activity.

#### 2.8.1 Locations Within 1 mi

*Location NWA P-19a, Tanana River* -- Table 18 provides pertinent information on this nest location. The USFWS considers this location as 'not likely' to be occupied. We concur in their designation. The location may or may not have been used by peregrines in the past; no peregrines were present during surveys in 1970-80. The nest site is high, and the nest ledges are well protected.

Because the nest location is 'not likely' to be occupied, only restriction 4 would be applicable. Conflicts arise between this restriction and both the ROW, which runs to within 0.7 mi of the nest location, and material site EMS-15P-1, which is 0.9 mi from the nest location.

In this case we feel that specific authorization can be granted to permit both of these facilities, provided that the nest remains in the 'not likely' category (i.e., remains unoccupied by peregrines) until pipeline constructions occurs. We anticipate minimal impact to peregrines from these actions because we do not expect birds to be present and

TABLE 18. Characteristics of nest location NWA P-19a, Tanana River.

---

Status: pair reported nesting in this area, possibly this location  
no peregrines present during surveys 1970-80

USFWS Status: 'not likely' to be occupied

Location

Region: Interior

Locale: Cathedral Bluffs; T19N, R9E, Sec.29; USGS Tanacross B-6

Alignment Sheet (4/80): 4680-16-00-B-E-112

Elevation: 1700-1800 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.7 mi south to ROW

NWA Facility Sites: 2.7 mi east to CS#14

NWA Material Sites: EMS-15P-1 is 0.9 mi south

EMS-15P-2 is 2.0 mi east

EMS-14P-2 is 3.0 mi west

Other Developments: Haines Pipeline and Alaska Highway are 0.4 mi south  
state land sale in this area

Nest Characteristics

Nesting Substrate: riverfront rock cliff approximately 100-150 ft above river  
nest cliff is a stable rock exposure

Nest Type: on rock ledge or vegetated terrace, or in golden eagle nest

Nest Height: approximately 100-150 ft above river

Nest Characteristics Relative to NWA Developments

Nest Direction: nest location obliquely faces ROW

Presence of Screening Features: none, but ledges partially shielded by rock  
and vegetation

Hunting Range: Tanana River, probably east toward Moon Lake

---

because we do not envision long-term damage to the habitat in the vicinity of the nest location. We do not consider this materials site to be an important hunting area; if it is later allowed to form a pond, it may in fact provide better hunting habitat.

Should occupancy occur prior to or during construction, we believe specific authorization could still be granted to use this highway pass, provided that restrictions 1, 2 and 3 were applied during the sensitive period. The height of the nest site and the protected nature of the ledges suggest that little value would be gained by attempting to re-align the ROW 0.3 mi farther south, where construction would have to take place on steep slopes and would probably require longer construction time and more massive habitat alteration.

*Location NWA P-42a, Tanana River* -- Table 19 provides pertinent information on this nest location. The USFWS considers this location as 'likely' to be occupied; however, we consider the location as 'not likely' to be occupied. The only peregrine possibly present during 1970-80 was a lone adult in one year, and it is not known whether it actually occupied this nest location or location P-41a.

Under the assumption that this location is 'not likely' to be occupied, the only applicable restriction is restriction 4. The only conflict with restriction 4 is with materials site EMS-8P-1, which is 0.8 mi from the nest location.

In this case we recommend that specific authorization be sought to allow a special exception to restriction 4, because the material site is an open unvegetated gravel floodplain. We believe gravel removal from this area will not constitute major or long-term habitat alterations. The barren gravel floodplain is not an important source of prey in the sense that vegetated wetlands are. Instead, the floodplain is more important because it is a large open expanse with minimal vegetation. The open nature of the gravel floodplain of the Johnson River causes prey species

TABLE 19. Characteristics of nest location NWA P-42a, Tanana River.

---

Status: some evidence of use--probably used

no peregrines present 1970 - 80, with possible exception of  
lone adult one year

USFWS Status: 'likely' to be occupied

Location

Region: Interior

Locale: Johnson River; T14S, R16E, Sec. 3, 10; USGS Mt. Hayes C-2

Alignment Sheet (4/80): near 4680-15-00-B-E-104,105

Elevation: 1500 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 1.3 mi southwest to ROW

NWA Facility Sites: 2.6 mi south to proposed Sears Creek camp

NWA Material Sites: EMS-8P-1 is 0.8 mi southwest

Other Developments: Highway maintenance station is 1.7 mi southwest

Haines Pipeline and Alaska Highway are 1.6 mi southwest

Nest Characteristics

Nesting Substrate: riverfront rock cliff with some areas of soil banks  
soil areas are subject to erosion and moderately  
unstable

Nest Type: rock ledge or soil scrape, or possibly a sticknest

Nest Height: 100-150 ft above river

Nest Characteristics Relative to NWA Developments

Nest Direction: generally southwest overlooking Johnson River delta at  
confluence with Tanana River

Presence of Screening Features: none

Hunting Range: probably lowlands and lake areas in vicinity of nest cliff



to be easily noticed and highly vulnerable to attack by falcons when the prey attempt to cross it.

Should this location be occupied prior to or during construction, restrictions 1, 2 and 3 should apply during the sensitive period (15 April-31 August) in years when falcons are present and occupying it by 1 June.

*Location NWA P-63, Tanana River* -- Table 20 provides pertinent information on this nest location. The USFWS did not categorize this location. We feel that the location should be considered 'not likely' to be occupied. The location was last used by peregrines in 1968, and is now situated in an almost suburban environment. (A homestead is 0.6 mi west and others are a little farther west and southwest, a hiking trail leads to the top of the cliff, and homesteads occur within 1 mi downriver.)

Under the assumption that this location is 'not likely' to be occupied, the only applicable restriction is restriction 4. The only conflicts with restriction 4 are with material site EMS-96-0B, which is 0.3 mi from the nest location, and with the pipeline ROW, which is 0.7 mi from the nest location.

In this case we recommend that specific authorization be sought to allow a species exemption to restriction 4, because we feel that there is already major disturbance and habitat disruption in the area. We still recommend, however, that no actual physical damage be done to this cliff or the cliff top. It is still possible that a tolerant pair could return to the location. It is also possible that present human use of the cliff top may be curtailed. When pairs were present in about 1966-68, they tolerated highway traffic at that time, and the cliff was even occupied successfully after highway reconstruction had occurred.

TABLE 20. Characteristics of nest location NWA P-63, Tanana River.

---

Status: documented history of use

peregrines not present 1969-80

USFWS Status: not categorized

Location

Region: Interior

Locale: Big Delta; T9S, R10E, Sec. 6; USGS Big Delta A-4

Alignment Sheet (4/80): 4680-15-00-B-E-096

Elevation: 1000-1100 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.7 mi northeast to ROW

NWA Facility Sites: 1.3 mi to Delta Camp area

3.2 mi north to CS#12

NWA Material Sites: EMS-96-0B is 0.3 mi south

EMS-96-1 is 1.2 mi southeast

EMS-96-2 is 1.3 mi east

Other Developments: Big Delta and residential areas are 0.5 mi east  
(also see text)

Haines Pipeline is 0.2 mi east

TAPS and the Alaska Highway are 0.1 mi east

Nest Characteristics

Nesting Substrate: riverfront rock cliff approximately 200-300 ft above river  
nest cliff is a stable rock exposure

Nest Type: rock ledge or scrape in soil area on vegetated terrace

Nest Height: approximately 100-150 ft above the river

Nest Characteristics Relative to NWA Developments

Nest Direction: area of nest cliff used in past years faces south  
alternate locations may face more to the east

Presence of Screening Features: nest cliff screens nest site from ROW,  
but perch areas would overlook ROW

EMS-96-0B is not screened

Hunting Range: lowland and wetlands in areas surrounding the nest cliff,  
and open Delta River floodplain (H. Springer, pers. comm.)  
hunting areas are abundant at this location

---

*Location NWA P-63.1, Tanana River* -- Table 21 provides pertinent information on this nest location. The USFWS did not categorize this location. We feel that the location should be considered 'not likely' to be occupied. No clear documentation appears to exist that peregrines nested there in the past. It is an alternate cliff in conjunction with NWA P-63. In any event, this rock outcrop series on the hilltop is presently nearly surrounded by homesteads and actively farmed fields. Our only recommendation in regard to this location is similar to that given for NWA P-63. We recommend that the cliff area not be physically damaged.

*Location NWA P-95a, Yukon River* -- Table 22 provides pertinent information on this nest location. The USFWS considers this nest site as 'likely' to be occupied. We concur in their designation. Although the nest location has not been used since 1970, populations of peregrines along the Yukon River are undergoing an increase (Roseneau *et al.* 1980) and it is quite possible that the site will be reoccupied in the near future.

There is a conflict between restriction 4 and material site EMS-64-1, which is located 0.3 mi from the nest location. We believe that specific authorization can be granted for this material site to remain at this location, provided that the gravel sources include only the treeless portion of the 'island', provided that all large trees, whether alive or dead, are left standing as perches for peregrines, and provided that any access road constructed to the materials site is permanently closed when operations are complete so as not to provide additional access to the area. Under these conditions, we do not feel that such a material site would be an important long-term alteration to the habitat in the vicinity of the nest location.

The material site (EMS-64-1) should be subjected to restriction 3 during the sensitive period (15 April-31 August). The pipeline ROW, which is 1.6 mi from the nest location, and material sites EMS-64-0A

TABLE 21. Characteristics of nest location NWA P-63.1, Tanana River.

---

Status: no documentation, past status unknown

possibly alternate cliff in conjunction with NWA P-63

USFWS Status: not categorized

Location

Region: Interior

Locale: Big Delta; T9S, R10E, Sec. 7; USGS Big Delta A-4

Alignment Sheet (4/80): near 4680-15-00-B-E-096

Elevation: 1100-1200 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 1.2 mi northeast to ROW

NWA Facility Sites: 1.5 mi east to Delta Camp area

3.2 mi north to CS#12

NWA Material Sites: EMS-96-0B is 0.6 mi east

Other Developments: TAPS and Alaska Highway are 0.7 mi east  
(also see text)

Haines Pipeline is 0.9 mi east

Big Delta and residential areas are 1.0 mi east

Nest Characteristics

Nesting Substrate: rock cliff approximately 0.3 mi from river  
nest cliff is a stable rock exposure

Nest Type: rock ledge, vegetated terrace or unoccupied sticknest

Nest Height: 100-150 ft above the base of the cliff

Nest Characteristics Relative to NWA Developments

Nest Direction: east to southeast depending on nest location used

Presence of Screening Features: nest cliff overlooks nearby materials  
sites and ROW

Hunting Range: lowland and wetland areas near nest cliff, and open  
Delta River floodplain



TABLE 22. Characteristics of nest location NWA P-95a, Yukon River.

---

Status: documented history of use

no peregrines present 1975-80

USFWS Status: 'likely' to be occupied

Location:

Region: Interior

Locale: Sights Island; T12N, R11W, Sec. 14; USGS Livengood D-6

Alignment Sheet (4/80): near 4680-13-00-B-E-064

Elevation: 300-500 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 1.6 mi east to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-64-1 is 0.3 mi northeast

EMS-64-0A is 1.1 mi north

EMS-64-0B is 1.4 mi north

Other Developments: Haul Road is 1.7 mi east

TAPS ROW is 1.8 mi east

Pump station is 2.0 mi east

Five-Mile Camp is 3.2 mi north

Nest Characteristics

Nesting Substrate: riverfront rock cliff approximately 100 ft above river  
nest cliff is a stable rock exposure

Nest Type: rock ledge or vegetated terrace, or possibly use of unoccupied  
sticknest (raven)

Nest Height: 30-75 ft above river

Nest Characteristics Relative to NWA Developments

Nest Direction: nest cliff faces northeast

Presence of Screening Features: nest cliff overlooks EMS-64-1 and parts  
of the ROW in this area

Hunting Range: probably Yukon valley and nearby wetlands of Ray River

and EMS-64-0B, which are 1.1 mi and 1.4 mi, respectively, from the nest location, should be subject to restriction 2 during the sensitive period. These restrictions can be relaxed in any year in which the nest location is not occupied by 1 June.

The proposed material sites EMS-64-0A and EMS-64-0B are located in a relatively open area that is probably important hunting habitat. We recommend that the sites be allowed to fill with water to form ponds when the sites are no longer in use.

*Location NWA P-183a, Sagavanirktok River* -- Table 23 provides pertinent information on this nest location. The USFWS considers this location as 'not likely' to be occupied. We concur in their designation. Only one report of nesting peregrines in this area is known (1963), and no peregrines are known to have been present since then. The exact location of the nest site is unknown, as is its height; it may have been fairly high on the cliff or in a relatively well-shielded creek valley at the south end of Slope Mountain.

Because the site is 'not likely' to be occupied, conflicts arise only with restriction 4. Conflicts arise with the ROW which runs to within about 0.2 mi of the base of the cliff area. Conflicts also arise with material site EMS-22-1, which is on the lower slopes of the hill.

In this case we feel that specific authorization can be granted to permit both of these activities unless peregrines are found here prior to construction. We anticipate minimal impact to peregrines from these actions, because we do not expect peregrines to be present, and further, because we consider the documentation by which this site was designated as a peregrine nesting location to be somewhat questionable (Roseneau and Bente 1980a). The habitat would appear to be more suitable for and typical of gyrfalcons. If peregrines did indeed use this location at one time, the most likely area for them to have nested appears to be

TABLE 23. Characteristics of nest location NWA P-183a, Sagavanirktok River.

---

Status: some evidence of use in 1960's but no record of use since then

USFWS Status: 'not likely' to be occupied

Location

Region: Arctic Slope

Locale: Slope Mountain; T8S, R13E, Sec. 21, 22, 28; USGS Sagavanirktok C-4

Alignment Sheet (4/80): 4680-11-00-B-E-021,022

Elevation: 2500-3500 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.2 mi to west of ROW

NWA Facility Sites: --

NWA Material Sites: EMS-22-1 is located at the base of the nesting cliff

Other Developments: TAPS ROW is 0.2 mi east

Haul Road is 0.6 mi east

Nest Characteristics

Nesting Substrate: rock cliff exposure on the side of Slope Mountain  
nest cliff is a moderately stable rock exposure

Nest Type: possibly rock or soil ledge or unoccupied sticknest (golden eagle, rough-legged hawk or raven)

Nest Height: possibly 100-200 ft above base of cliff, but unknown

Nest Characteristics Relative to NWA Developments

Nest Direction: nest cliff faces southeast and east

Presence of Screening Features: none

Hunting Range: probably upland tundra areas and wetlands along the  
Sagavanirktok River

along the small creek near the center of section 28 (T85, R13E). Such a site would be at least 0.5 mi from the material site and would be screened by side slopes from both the material site and the ROW. We further recommend that, if the gravel mining operation cuts into the rock of the slope, cliff faces should be left with ledges on which raptors could build stick nests.

*Sagwon Bluffs, Sagavanirktok River* -- Table 24 provides pertinent information on this pooled group of nest locations. The USFWS has classified two locations (P-194 and P-205) as 'likely' to be occupied. We feel that all five locations (P-194, P-196, P-201, P-205 and P-206) should be considered as 'likely' to be occupied, and that these locations should be considered as a unit because of the changes of nest locations and the occupation of new locations that occur within the area as a result of the unstable and eroding bluff face. Distances should then be considered between facilities and the bluffs as a unit. As a unit, the area commonly has supported two peregrine pairs in most years.

Restriction 4 is in conflict with the proposed ROW centerline between mp 69.6 and mp 74.9, where the ROW is within 1 mi of the bluffs. Restriction 4 is also in conflict with material site EMS-13-1, which is 0.9 mi from the bluffs. If specific authorization were to be granted to permit these facilities at these locations, they would then be subject to restriction 1 (aircraft overflights must maintain 1500 ft above nest levels) and restriction 3 (no ground activity, with the exception of activity on the haul road, without specific authorization) during the sensitive period (15 April-31 August). Restriction 2 (blasting and excessive noise) applies during the sensitive period to material sites EMS-14-1, EMS-12-1, EMS-12-2A, EMS-12-2B and EMS-12-3, which are all 1-2 mi from the bluffs.



TABLE 24. Characteristics of nest locations at Sagwon Bluffs, Sagavanirktok River (sites NWA P-194, P-196, P-201, P-205 and P-206).

---

Status: Documented history of use by peregrines (1950's to present).

The bluffs commonly support two pairs of peregrines, and could potentially support more. A minimum of five different nesting locations are known to have been used.

USFWS Status: two sites 'likely' to be occupied (P-194, P-205)

Location

Region: Arctic Slope

Locale: Sagwon Bluffs; USGS Sagavanirktok B-3

Alignment Sheet (4/80): 4680-11-00-C-E-012, 013

Elevation: varies between 650 and 1100 ft asl

Distance and Direction from Developments

NWA ROW Centerline: Nesting locations vary from 0.5 mi (south end of bluff) to 1.1 mi (north end of bluff) eastward of the proposed ROW.

NWA Facility Sites: The nearest facility site, CS#2, is located about 6.5 mi south of the southern terminus of the bluff.

NWA Material Sites: Material Site EMS-14-1 is 1.8 mi south of the southern terminus of the bluff. Material site EMS-12-1 is 2.0 mi north of the northern terminus of the bluff. Three material sites EMS-12-2A, EMS-12-2B and EMS-12-3, are west of the bluff and 1.3 - 1.5 mi from the top of the bluff and the nesting locations.

Material site EMS-13-1 is 0.9 mi west of the bluff-top and a nesting location.

Other Developments: The Haul Road parallels and passes west of and behind the bluff top at distances between 0.5 mi (southern portion of bluff) and 1.5 mi (northern portion of bluff). The TAPS oil pipeline ROW parallels and passes east of and in front of the bluff at distances between 0.3 and 1.0 mi. The abandoned Sagwon Camp and airfield is located east of and within about 0.4 mi of the bluff face and directly opposite NWA P-201.

TABLE 24 (continued)

Nest Characteristics

Nesting Substrate: The nesting substrate consists of *unstable* sedimentary rock material and dirt. The face of the bluff is subject to natural landslides when dry and mud-rubble slides when wet. Much natural annual erosion occurs during spring run-off and rain storms. It is also prone to wind-caused erosion.

Nest Type: May vary. Most often the birds make a typical scrape on a dirt ledge behind screening vegetation (e.g., grasses, willows). Occasionally on more exposed 'noses' of partially vegetated dirt. Occasionally in soil against a rock or firm dirt face that is slightly overhanging.

Nest Height: Bluff face varies between about 50 and 350 ft in height. Nesting sites may vary from ~30 ft above the river and more than 200 ft below the bluff top to more than 250 ft above the river and only 30-50 ft below the bluff top.

Nest Characteristics Relative to NWA Developments

Nest Direction: The bluff face that contains the nest sites faces in the opposite direction from the proposed activities.

Presence of Screening Features: The relationship between the direction of the bluff faces and the location of the proposed activities functions as a protective feature. The proposed activities are behind the top of the bluff. Additional screening is provided by rising ground between the ROW and the back edge of the bluff over much of its length.

Hunting Range: Little is known about the hunting ranges of the pairs that use Sagwon Bluffs; however, some observations suggest the birds may hunt to the east for at least some part of the time (i.e., in the opposite direction from the proposed facilities and activities). An adult male was observed bringing food from the northeast and downriver, and adults have been seen flying above and along the low ridge about 1 mi east of the Sagwon airstrip (Roseneau, unpubl. data). Peregrines have also been observed leaving and returning from the east (Ambrose, pers. comm.). The

TABLE 24 (continued)

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presence of an area of wetlands east of the Sagavanirktok River and west of the Ivishak River further suggests that the most important hunting range for these birds may lie to the east of the bluffs. If this assumption is true, it does not preclude some use of the uplands west of the bluffs. Upland-nesting shorebirds, such as golden plovers, may attract peregrines to that area.

The critical question with regard to Sagwon Bluffs is whether specific authorization can be granted to contravene restriction 4 and thereby allow the ROW and one material site within 1 mi of the bluffs. Questions of timing of operations (restrictions 2 and 3) can only be addressed once restriction 4 has been addressed.

The situation at Sagwon Bluffs is complicated by several factors. The existing TAPS oil pipeline (buried section) and the haul road are much closer to the southern 3 mi of the bluffs than the 1-mi restricted zone that is recommended by the USFWS. Road traffic continued to occur behind the bluffs on a year-round basis, and TAPS low-level surveillance flights (light turbine helicopter and Cessna 185) occur directly in front of the bluffs on a regular basis of several times a day. Flights occur as close as 0.5 mi to NWA P-194 and P-196, and 0.4 mi to NWA P-206.

Based on current survey information, the peregrine falcon nesting habitat that occurs in the Sagavanirktok River drainage is important to the entire Alaskan population of *F. p. tundrius* (Roseneau *et al.* 1976; Roseneau *et al.* 1980). Production from the Sagavanirktok River nest sites could substantially add to the small number of fledgling peregrines that are produced each year on the Arctic Slope (Springer *et al.* 1979b). Sagwon Bluff is an important part of that habitat.

During construction of the haul road and the TAPS oil pipeline, production of young peregrines from this area reached an all-time low. It is likely that biocide contamination in the subpopulation, possibly in combination with impacts from construction, caused this low. All data suggest that the birds are still heavily contaminated with biocides; since 1975 only one pair has attempted to nest (usually unsuccessfully) on the bluff face itself, but another pair may have shifted to a nearby location east of the northern terminus of the bluff (NWA P-211) where it has successfully produced young.

The evidence that construction activities detrimentally affected the peregrines nesting at Sagwon Bluffs is inconclusive. The evidence that post-construction activities in this area affected the ability of peregrines to nest successfully on the bluff is also inconclusive. There seems to be reasonable cause to suspect biocides more than disturbance factors *per se* as the cause of the decline. However, additional activity associated with the NWA gas pipeline within 1 mi of Sagwon Bluff may increase the annual disturbance level in this area to a point that the bluff would become even less desirable as a place to attempt nesting than it may be now.

During construction of the NWA pipeline, the haul road will be subject to increased levels of traffic during the breeding season. Exception to restriction 3 for this increased traffic is contained in the USFWS recommended restrictions.

If specific authorization were not granted, so that the ROW had to remain at least 1 mi from the bluffs, this would ensure that the bluffs were better protected from low-level surveillance flights, and from any emergency or normal maintenance operations during the sensitive period (15 April-31 August), and conflicts would arise only with restriction 2.

However, surveillance flights along the currently proposed NWA ROW would occur behind the bluffs, and we doubt that light aircraft that fly at low level (an advantage in this case) behind the bluffs (where they would be partially screened) would constitute any more of a problem than current road traffic, including large tractor-trailer trucks. As long as proper contact with the responsible agencies is maintained, we also believe that normal maintenance operations would result in minimal disturbance.

A new realigned ROW 1 mi west of the southern bluffs (commencing about mp 69.5 and rejoining at about mp 75) would mean a greater loss of habitat in this area, but there is every reason to believe that the particular type and amount of habitat loss would have minimal effects, if any, on peregrines. If blasting is required during trenching operations (or at the materials site) during the period 15 April-31 August, realignment to a position 1 mi from the unstable bluffs would make that activity much less critical.

We believe that material site EMS-13-1 should not be permitted within 1 mi of the bluffs. Use of this site may in any case be restricted because an outcrop of rock near its center is a known nesting site that is used by rough-legged hawks and probably gyrfalcons.

Because of the complexities of this issue, and the lack of definite knowledge as to whether or not blasting would actually be required in this section, our recommendations are tentative at this time. We believe specific authorization *might* be warranted for the ROW to be within 1 mi of the bluffs (i.e., restriction 4). We believe that a meeting of ourselves, NWA or its representatives, and responsible agencies would be beneficial to discuss in detail the potential conflicts at this complex location. At such a meeting it would be possible to discuss the restrictions that should be imposed if specific authorization were to be granted for the ROW with respect to restriction 4 (including the need for careful monitoring of the peregrines at this location).

*Location NWA P-211, Sagavanirktok River* -- Table 25 provides pertinent information on this nest location. The USFWS considers this location as 'likely' to be occupied. It is an active location, and we concur in their designation. Another nest location NWA P-208a is ~ 0.4 mi from P-211 on the same bluff complex; it has been treated here as an alternate nest site for P-211.

TABLE 25. Characteristics of nest location NWA P-211, Sagavanirktok River.

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Status: documented history of use

pair present 1977-80

USFWS Status: 'likely' to be occupied

Location

Region: Arctic Slope

Locale: Sagwon east; T1N, R15E, Sec. 17, 18; USGS Sagavanirktok C-3

Alignment Sheet (4/80): 4680-11-00-B-E-011,012

Elevation: 650 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 1.1 mi west to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-12-1 is 0.8 mi northwest

Other Developments: TAPS ROW is 1.1 mi northwest

Haul Road is 1.3 mi northwest

pump station is 1.2 mi northwest

Nest Characteristics

Nesting Substrate: riverfront cliff approximately 75-100 ft above river  
nest cliff is sedimentary rock that is unstable

Nest Type: deep rock ledge protected by overhang from erosion of loose  
soil above

Nest Height: 50 ft above the river

Nest Characteristics Relative to NWA Developments

Nest Direction: nest cliff faces west

Presence of Screening Features: no screening

nest cliff overlooks northern portion of ROW

Hunting Range: probably upland tundra and wetlands along Sagavanirktok River  
and wetlands to north and east



There is a conflict between restriction 4 and material site EMS-12-1, which is located 0.8 mi from the nest location. We believe that specific authorization can be granted for the materials site to remain at this location because we do not consider that the removal of gravel from this floodplain site would constitute an important long-term habitat alteration unless large amounts of riparian vegetation were removed. The material site should, however, be subject to restriction 3 during the sensitive period (15 April-31 August). The pipeline ROW, which is 1.1 mi from the nest location, should be subject to restriction 2 during the sensitive period. These restrictions can be relaxed in any year in which the nest location is not occupied by 1 June.

*Franklin Bluffs, Sagavanirktok River* -- Table 26 provides pertinent information on this pooled group of nest locations. The USFWS has classified three locations (P-216, P-220 and P-223) as 'likely' to be occupied. We feel that all ten locations (P-212, P-215a, P-216, P-218.1, P-220, P-221, P-222, P-223, P-224, and P-225) should be considered as 'likely' to be occupied, and that these locations should be considered as a unit because of the changes of nest locations and the occupation of new locations that occur within the area as a result of the unstable and eroding bluff faces. Distances should then be considered between facilities and the bluffs as a unit. As a unit, the area supports several peregrine pairs each year.

There is a conflict between restriction 4 and material sites EMS-5-3B, 5-3A, 6-1, 6-2, 7-1, 8-1A and 8-1B. These sites are all within 1 mi of the bluffs. We believe, however, that specific authorization can be granted to permit these material sites, because we do not feel that they would be an important long-term habitat alteration unless large amounts of riparian vegetation were removed. The sites are in the Sagavanirktok River floodplain. The relatively barren gravel floodplain is not an important source of prey in the sense that tundra wetlands

TABLE 26. Characteristics of nest locations at Franklin Bluffs, Sagavanirktok River (sites NWA P-212, P-215a, P-216, P-218.1, P-220, P-221, P-222, P-223, P-224, P-225).

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Status: documented history of use by peregrines (1950's to present)

bluffs commonly support 2-3 pairs and have supported up to 5 pairs

10 nesting or attempted nesting locations are known

USFWS Status: three sites 'likely' to be occupied (P-216, P-220, P-223)

Location

Region: Arctic Slope

Locale: Franklin Bluffs: USGS Sagavanirktok D-3

Alignment Sheet (4/80): adjacent to 4680-11-00-B-E-005,006,007 and 008

Elevation: varies, approximately 200-500 ft asl

Distance and Direction from Developments

NWA ROW Centerline: nesting locations vary between 1.2 and 3.5 mi  
( $\bar{x}$  = 2.0) west of the proposed ROW centerline

NWA Facility Sites: none in general area

NWA Material Sites: proposed materials sites average about 0.8 mi from  
the bluff face and include EMS-5-1, 5-2, 5-3A,  
5-3B, 6-1, 6-2, 7-1, 8-1A and 8-1B

Other Developments: Haul Road parallels and passes west of and in front  
of the bluffs at distances between 1.2 and 2.0 mi  
from important sections of the bluff

TAPS ROW parallels and passes west of and in front  
of the bluff at distances between 1.2 and 1.8 mi  
of most of the bluff

the abandoned Franklin Bluffs construction camp lies  
about 3.0 mi southward of the southern terminus of  
the bluffs

Nest Characteristics

Nesting Substrate: poorly consolidated and unstable sedimentary rock  
and erodable soil-gravel banks

Nest Type: dirt ledge, vegetated platforms and unoccupied rough-legged  
hawk nests

Nest Height: nests vary from 30 to 350 ft above river

TABLE 26 (continued)

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Nest Characteristics Relative to NWA Developments

Nest Direction: P-220 faces east, all other locations face in a westerly direction

Presences of Screening Features:

The nest location at P-215a is sheltered in a relatively deep creek cut.

The nest location at P-220 does not overlook the ROW, but perches used by adults overlook the ROW and materials sites.

All other locations are not screened by local topography and face directly toward the ROW and materials sites.

Hunting Range:

Upland tundra on Franklin Bluffs, wetlands along the Sagavanirktok River and wetlands south and east of Franklin Bluffs. White (1974c) obtained some information on one pair. Hunting flights ranged between 2.5 - 9.1 mi, including about 120 mi<sup>2</sup>. 'The southeastern quarter of the hunting range over lakes and marshes received the greatest hunting effort; about 51% of all attempted kills occurred there. The western half of the hunting range, also over lakes and marshes, was used on about 36% of all attempted kills while the tussock-tundra habitat to the north and northeast of the eyrie was only used on 13% of the attempted kills. Clearly the areas containing lakes and marshes were preferred over the other habitat formations.'

are. Instead, the floodplain is probably more important because it is a large open expanse with minimal vegetation. As a result of the open nature of the floodplain, prey species are easily noticed and vulnerable to attack by falcons as they attempt to cross the floodplain.

Restriction 3 (no activity during 15 April-31 August) should apply to all of these materials sites. Materials sites EMS 5-1, 5-2, and 8-2, which are 1-2 mi from the bluffs, and that portion of the ROW that is within 2 mi of the bluffs (it is all more than 1 mi from the bluffs) should be subject to restriction 2 during the sensitive period. These restrictions can probably be relaxed for some materials sites after 1 June, when it is known which locations on the bluffs are occupied during that year; restriction 3 can be relaxed for materials sites that are more than 1 mi from an occupied nest location and restriction 2 can be relaxed for those materials sites that are more than 2 mi from an occupied nest location.

#### 2.8.2 Locations Between 1 mi and 2 mi

*Location P-21a, Tanana River* -- Table 27 provides pertinent information on this nest location. The USFWS considers this location as 'likely' to be occupied. We concur in their designation. This nesting location has been used steadily from at least 1968 to 1980. It is one of the few remaining successfully-producing nesting locations on the Tanana River, and deserves special attention.

The facilities and activities located within 2 mi of this nest location are the ROW, which runs to within 1.4 mi of the nest location, and material sites EMS-13P-2, EMS-13P-1B and EMS-13P-1A, which are 1.1 mi, 1.7 mi and 1.8 mi, respectively, from the nest location. Restriction 2 should apply to all of these facilities during the sensitive period

TABLE 27. Characteristics of nest location NWA P-21a, Tanana River.

---

Status: documented history of use

pair present 1968-80

USFWS Status: 'likely' to be occupied

Location

Region: Interior

Locale: Robertson River; T20N, R8E, Sec. 24, 25; USGS Tanacross B-6

Alignment Sheet (4/80): adjacent to 4680-15-00-B-E-110

Elevation: 1600 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 1.4 mi west to ROW

NWA Facility Sites: 9.2 mi southeast to CS#14

NWA Material Sites: EMS-13P-2 is 1.1 mi west

Other Developments: Haines Pipeline and Alaska Highway are 1.4 mi west

Nest Characteristics.

Nesting Substrate: riverfront rock cliff with approximately 300-400 ft  
of relief

nest cliff is a stable rock exposure

Nest Type: rock ledges, vegetated terraces, and possibly empty raven nest

Nest Height: approximately 100-200 ft above river, depending on site used

Nest Characteristics Relative to NWA Developments

Nest Direction: nests face west and overlook ROW and EMS-13P-2

Presence of Screening Features: none

Hunting Range: Robertson and Tanana river valleys, particularly the open  
Robertson River floodplain between its mouth and the  
bridge crossing, and important waterfowl wetlands north  
of the Tanana River and downstream of the nesting cliff.  
Falcons have been observed chasing prey as the prey  
crosses the open gravel plain of the Robertson River  
(Ambrose, pers. comm.).

(15 April-31 August). If there is a choice as to which material sites are used, sites EMS-13P-1B and EMS-13P-1A are preferable to site EMS-13P-2, because they are farther removed from the nest location, across the highway from it, and partially shielded by terrain features. The partial shielding might permit more lenient sound regulations under restriction 2 at EMS-13P-1A and EMS-13P-1B than would be permitted at EMS-13P-2.

*Location NWA P-25, Tanana River* -- Table 28 provides pertinent information on this nest location. The USFWS considers this location as 'not likely' to be occupied. We concur in their designation. Clear documentation of use by peregrines does not appear to exist for this site. A pair was reported to have nested in this locality, but the exact location is uncertain. No peregrines were present during surveys in 1970-80. The location should, however, be considered as a potential nesting location.

Because the location is considered 'not likely' to be occupied, and because the location is more than 1 mi from any proposed facility or activity, the USFWS restrictions do not apply to this location, with the exception of Oct. 1979 restriction II, primarily with respect to the use of pesticides. If the site should be reoccupied, restriction 2 would then apply with respect to material site EMS-12P-2, which is 1.2 mi from the nest location.

*Location NWA P-38a, Tanana River* -- Table 29 provides pertinent information on this nest location. The USFWS considers this location as 'not likely' to be occupied. We concur in their designation. Although this is a documented nesting location, peregrines have not been present during surveys in 1973-80.

TABLE 28. Characteristics of nesting location NWA P-25, Tanana River.

---

Status: pair reported in this area, possibly this location  
no peregrines present 1970-80

USFWS Status: 'not likely' to be occupied

Location

Region: Interior

Locale: Jan Lake; T21N, R8E, Sec. 27, 34; USGS Tanacross C-6

Alignment Sheet (4/80): near 4680-15-00-B-E-109

Elevation: 1500 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 1.4 mi southwest to ROW

NWA Facility Sites: 14 mi southeast to CS#14

NWA Material Sites: EMS-12P-2 is 1.2 mi west

Other Developments: Haines Pipeline and Alaska Highway are 1.5 mi southwest

Nest Characteristics

Nesting Substrate: small riverfront rock cliff approximately 75 ft high  
nest cliff is a stable rock exposure

Nest Type: probably a rock ledge, although one used by falcons was not seen

Nest Height: less than 75 ft

Nest Characteristics Relative to NWA Developments

Nest Direction: nest faces east, overlooking river

Presence of Screening Features: the hill at this site screens ROW and  
materials sites

Hunting Range: probably the Tanana River valley, especially wetlands  
to north and/or east



TABLE 29. Characteristics of nest location NWA P-38a, Tanana River.

---

Status: documented use

no peregrines present 1973-80

USFWS Status: 'not likely' to be occupied

Location

Region: Interior

Locale: Johnson Slough; T22N, R5E, Sec. 2; USGS Mt. Hayes C-1

Alignment Sheet (4/80): near 4680-15-00-B-E-106

Elevation: 1400-1500 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 1.7 mi south to ROW

NWA Facility Sites: 3.3 mi southwest to proposed Sears Creek camp

NWA Material Sites: EMS-9P-1 is 2.0 mi southeast

EMS-8P-3 is 3.5 mi southwest

Other Developments: Berry Creek gauging station is 1.8 mi south

Nest Characteristics

Nesting Substrate: riverfront rock cliff approximately 250 ft above river  
nest cliff contains stable and moderately unstable  
nesting locations

Nest Type: rock ledge or unoccupied golden eagle nest

Nest Height: approximately 150-200 ft above river

Nest Characteristics Relative to NWA Developments

Nest Direction: nest cliff faces south overlooking river flats to ROW

Presence of Screening Features: none

Hunting Range: probably nearby wetlands, especially to the east

Because the location is considered 'not likely' to be occupied, and because the location is more than 1 mi from any proposed facility or activity, the USFWS restrictions do not apply to this location, with the exception of Oct. 1979 restriction II, primarily with respect to the use of pesticides. If the site should be reoccupied, restriction 2 would then apply with respect to material site EMS-9P-1, which is 2.0 mi from the nest location, and the proposed ROW, which is 1.7 mi from the nest location.

*Location NWA P-41a, Tanana River* -- Table 30 provides pertinent information on this nest location. The USFWS did not categorize this location. We believe it should be classified as 'not likely' to be occupied, because this location appears to offer fair nesting potential, and because it may have been the location where at least one adult was seen in 1975 (see Section 2.8.1, Location NWA P-42a).

No conflict occurs at this location, provided that the boundaries of the proposed Sears Creek camp site remain 2 mi from the nest location.

*Location NWA P-47a, Tanana River* -- Table 31 provides pertinent information on this nest location. The USFWS considers this location as 'likely' to be occupied. We disagree; we believe it should be considered as 'not likely' to be occupied. It is a documented nesting location, but we have no records that it has been occupied since 1968.

On the assumption that the location is considered 'not likely' to be occupied, and because the location is more than 1 mi from any proposed facility or activity, the USFWS restrictions do not apply to this location, with the exception of Oct. 1979 restriction II, primarily with respect to the use of pesticides. If the site should be reoccupied, restriction 2 would then apply to two material sites and the ROW.

TABLE 30. Characteristics of nest location NWA P-41a, Tanana River.

---

Status: some evidence of use

no peregrines present 1977-80

USFWS Status: not categorized

Location

Region: Interior

Locale: Johnson Slough; T14S, R16E, Sec. 12; USGS Mt. Hayes C-2

Alignment Sheet (4/80): near 4680-15-00-B-E-105

Elevation: 1600 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 2.1 mi southwest to ROW

NWA Facility Sites: 2.0 mi southwest to proposed Sears Creek camp

NWA Material Sites: EMS-8P-3 is 2.6 mi southeast

EMS-8P-2 is 2.3 mi southwest

Other Developments: Alaska Highway maintenance station at Johnson River  
is 2.6 mi west

Nest Characteristics

Nesting Substrate: riverfront rock cliff approximately 100 ft above river  
nesting cliff includes stable and moderately unstable  
nesting locations

Nest Type: rock ledge, soil scrape or unoccupied golden eagle nest

Nest Height: 50-75 ft above river

Nest Characteristics Relative to NWA Developments

Nest Direction: south to southeast, depending on location, overlooking  
river to ROW

Presence of Screening Features: none

Hunting Range: probably Tanana valley and nearby lakes located north of  
the Johnson River

TABLE 31. Characteristics of nest location NWA P-47a, Tanana River.

---

Status: documented history of use

no peregrines present 1970-80

USFWS Status: 'likely' to be occupied

Location

Region: Interior

Locale: George Lake; T13S, R15E, Sec. 13; USGS Mt. Hayes D-2

Alignment Sheet (4/80): near 4680-15-00-B-E-103

Elevation: 1250-1300 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 1.1 mi south to ROW

NWA Facility Sites: 2.5 mi west to CS#13

NWA Material Sites: EMS-7P-1 is 1.7 mi southeast

EMS-7P-2 is 2.4 mi southeast

EMS-6P-3B is 1.4 mi northwest

EMS-6P-3A is 2.0 mi west

Other Developments: George Lake Lodge (now closed) is 2.5 mi southeast

Alaska Highway and Haines Pipeline are 1.1 mi south

Nest Characteristics

Nesting Substrate: small rock cliff facing George Creek

nest cliff is a stable rock exposure

Nest Type: rock ledge near the top of cliff

Nest Height: 50-75 ft above creek

Nest Characteristics Relative to NWA Developments

Nest Direction: south or east depending on nest location used

Presence of Screening Features: east facing nest location does not  
overlook river valley or ROW

south facing nest location overlooks river and ROW,  
but is partially screened by large poplar trees on  
island in the river

Hunting Range: probably river valley and lake areas, especially locations  
south of the nest cliff

*Location NWA P-48a, Tanana River* -- Table 32 provides pertinent information on this nest location. The USFWS considers this location as 'not likely' to be occupied. We concur with their designation. It is a documented nesting location, but peregrines have not been present since 1970.

Compressor station CS #13 is proposed for a location 1.9 mi south of the nest location. Because the nest location is considered 'not likely' to be occupied, none of the four restrictions are applicable to the compressor station. However, if peregrines do return to the nest location, restriction 2 (concerning excessive noise) might apply to it during the sensitive period (15 April-31 August). In that case, sound abatement might be required for the compressor station; it would depend on the noise levels produced by the station.

*Location NWA P-61, Tanana River* -- Table 33 provides pertinent information on this nest location. The USFWS considers this location as 'not likely' to be occupied. We concur with their designation. The only record of peregrines at this location was obtained in 1979, when a single adult was flushed from the cliff. Although that is an important consideration, no birds were present in 1980. Furthermore, and more importantly, the cliff is small and provides marginal nesting habitat when compared to the documented, but presently unoccupied, nesting locations and many of the other potential nesting cliffs along the Tanana River. It is also a semi-suburban area and we perceive a potential problem of molestation if peregrines were to nest here. Consequently, we believe that this is not a good location at which to encourage peregrines to nest. Because of these circumstances, and because we foresee little impact to a recovering Tanana River peregrine subpopulation if birds were unable to nest here, we do not see the need for protective measures at this location. In fact, because the location is considered 'not likely' to be occupied, and because the nearest facility or activity is more than 1 mi from the location, none of the Sep. 1980 USFWS restrictions would apply to this location. If a realignment were to encroach closer to this location, we would still have little concern.

TABLE 32. Characteristics of nest location NWA P-48a, Tanana River.

---

Status: documented history of use

no peregrines present 1971-80

USFWS Status: 'not likely' to be occupied

Location

Region: Interior

Locale: Little Gerstle River; T12S, R15E, Sec. 33, 34; USGS Mt. Hayes D-2

Alignment Sheet (4/80): near 4680-15-00-B-E-103

Elevation: 1250-1350 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 1.9 mi south to ROW

NWA Facility Sites: 1.9 mi south to CS#13

NWA Material Sites: EMS-6P-3A is 2.1 mi south

EMS-6P-3B is 1.3 mi southeast

Other Developments: Alaska Highway and Haines Pipeline are 2.2 mi southwest

Nest Characteristics

Nesting Substrate: riverfront rock cliff approximately 150 ft above river  
nest cliff is a stable rock exposure

Nest Type: rock ledge and/or unoccupied stick nests (raven)

Nest Height: approximately 75-100 ft above river

Nest Characteristics Relative to NWA Developments

Nest Direction: east to southeast

Presence of Screening Features: nest cliff hill screens western portion  
of ROW

CS#13 and materials sites are still visible

Hunting Range: probably the area of small lakes south of the nest cliff

TABLE 33. Characteristics of nest location NWA P-61, Tanana River.

---

Status: no documentation of use early 1960's-1978, single bird present  
in 1979, no peregrines present 1980

USFWS Status: 'not likely' to be occupied

Location

Region: Interior

Locale: Big Delta; T8S, R10E, Sec. 32; USGS Big Delta A-4

Alignment Sheet (4/80): near 4680-15-00-B-C-096

Elevation: 1000 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 1.2 mi southwest to ROW

NWA Facility Sites: Delta Camp is 1.5 mi southwest

NWA Material Sites: EMS-95-5C is 1.1 mi west

EMS-96-0B is 2.0 mi southwest

EMS-96-1 is 2.2 mi south

EMS-96-2 is 1.6 mi south

Other Developments: Big Delta and residential areas are within 0.5 mi

TAPS is 1.8 mi southwest

Alaska Highway and Haines Pipeline are 1.9 mi southwest

Nest Characteristics

Nesting Substrate: small rock cliff on slough (side channel) of Tanana River  
nest cliff includes some potentially unstable nesting  
areas

Nest Type: rock ledge or vegetated terraces

Nest Height: 50-75 ft above river

Nest Characteristics Relative to NWA Developments

Nest Direction: nest cliff faces east

Presence of Screening Features: landform and nest cliff screen northwest  
portion of ROW

southern areas of ROW may be visible from nesting  
locations

Hunting Range: probably includes Shaw Creek flats and/or Goodpaster flats  
and Tanana River valley



*Location NWA P-79, Salcha River* -- Table 34 provides pertinent information on this nest location. The USFWS considers this location as 'not likely' to be occupied. We concur with their designation. It is a documented nest location, but peregrines have not been present during 1974-80.

Because the location is considered 'not likely' to be occupied, and because the location is more than 1 mi from any proposed facility or activity, the USFWS restrictions do not apply to this location, with the exception of Oct. 1979 restriction II, primarily with respect to the use of pesticides. If the site should be reoccupied, restriction 2 would then apply with respect to material site EMS-89-2B, which is 1.8 mi from the nest location and to the ROW, which is 1.4 mi from the nest location.

*Location NWA P-86, Globe Creek-Elliott Highway* -- Table 36 provides pertinent information on this nest location. The USFWS considers this location as 'likely' to be occupied. We concur in their designation. It is a newly documented nesting location; a pair successfully nested there in 1979. In 1980, a pair returned to this area and nested successfully at a new location nearby (NWA P-88.1; Section 2.8.3).

The facilities and activities located within 2 mi of this nest location are the ROW, which runs to within 1.5 mi of the nest location, and material sites EMS-75-1A and EMS-75-1B, which are 1.8 and 1.9 mi, respectively, from the nest location. Restriction 2 (excessive noise) would apply to these facilities during the sensitive period (15 April-31 August). However, we feel that specific authorization could be granted with respect to restriction 2, because this pair has shown a high degree of tolerance to both human activity and local noise, and because there is a well-screened alternate nesting cliff in the area.

*Location NWA P-97, Yukon River* -- Table 37 provides pertinent information on this nest location. The USFWS did not categorize this location because no record of peregrine use existed for it until 1980. In 1980 a

TABLE 34. Characteristics of nest location NWA P-79, Salcha River.

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Status: documented history of use

no peregrines present 1971-80

USFWS Status: 'not likely' to be occupied

Location

Region: Interior

Locale: Salcha Bluff; T5S, R5E, Sec. 15; USGS Big Delta B-6

Alignment Sheet (4/80): near 4680-15-00-B-C-089

Elevation: 750-900 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 1.4 mi northeast to ROW

NWA Facility Sites: 7.8 mi northwest to CS#11

NWA Material Sites: EMS-89-2B is 1.8 mi northeast

EMS-89-2A is 2.5 mi northeast

Other Developments: TAPS ROW is 1.7 mi northeast

pump station is 5.8 mi northwest

Nest Characteristics

Nesting Substrate: riverfront bluff of some rock and exposed soil areas  
nest cliff includes stable rock and moderately unstable  
soil areas

Nest Type: dirt ledges are probably preferred although rock ledges may  
be used

Nest Height: approximately 100 ft above river

Nest Characteristics Relative to NWA Developments

Nest Direction: nest cliff faces southeast, generally away from ROW

Presence of Screening Features: bluff area screens ROW to north

Salcha River crossing area is probably visible from the  
nest cliff

Hunting Range: Salcha and Tanana river valleys

TABLE 36. Characteristics of nest location NWA P-86, Globe Creek.

---

Status: new peregrine nesting location

successful pair present in 1979

USFWS Status: 'likely' to be occupied

Location

Region: Interior

Locale: Grapefruit Rocks; USGS Livengood B-3

Alignment Sheet (4/80): near 4680-14-00-B-E-075

Elevation: 1400-1500 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 1.5 mi southwest to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-75-1A is 1.8 mi west

EMS-75-1B is 1.9 mi west

EMS-75-2 is 2.0 mi south

Other Developments: TAPS is 1.5 mi southwest

Elliott Highway is 0.4 mi southwest

Nest Characteristics

Nesting Substrate: rock cliff exposed on side of hill

nest cliff is a stable rock exposure

Nest Type: soil ledge at base of cliff

Nest Height: approximately 700 ft above Elliott Highway

Nest Characteristics Relative to NWA Developments

Nest Direction: nest cliff faces south to southwest

Presence of Screening Features: southwest portions of ROW are visible  
from the nest cliff

Hunting Range: Probably centered along the Tatalina River located west of  
nest cliff, or out into the Tolovana River drainage.  
Falcons have been observed flying toward the wetlands  
of the Tatalina River (Ambrose, pers. comm.).

TABLE 37. Characteristics of nest location NWA P-97, Yukon River.

---

Status: new location

successful pair present in 1980

USFWS Status: not categorized

Location

Region: Interior

Locale: Big Salt; T12N, R11W, Sec. 22; USGS Livengood D-6

Alignment Sheet (4/80): near 4680-13-00-B-E-064

Elevation: 300 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 2.7 mi northeast to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-64-1 is 1.9 mi northeast

EMS-64-0A is 2.5 mi north

EMS-64-0B is 2.8 mi north

Other Developments: TAPS is 2.6 mi east

pump station is 2.7 mi west

Five-Mile camp is 4.8 mi north

Haul Road is 2.8 mi east

Nest Characteristics

Nesting Substrate: small riverfront rock cliff approximately 75-100 ft  
above river

nest cliff is a stable rock exposure

Nest Type: large vegetated ledge near base of cliff

Nest Height: 20 ft above river

Nest Characteristics Relative to NWA Developments

Nest Direction: nest cliff faces north to northeast

Presence of Screening Features: landform screens nest location from ROW

Hunting Range: probably Yukon valley and wetlands of Ray River

successful pair was present. Accordingly, we believe that this location should be considered as 'likely' to be occupied.

The only restriction that would apply is restriction 2 (excessive noise) with respect to material site EMS-64-1, which is 1.9 mi from the nest location. This is the same material site that was considered for nest location NWA P-95a (Section 2.8.1, Table 21), and our recommendations made under that site discussion should apply here.

### 2.8.3 Locations Between 2 mi and 15 mi

We are aware of 21 documented or reported nest locations that are 2-15 mi from the nearest portion of the pipeline ROW or any facility or activity. The characteristics of these nest locations are briefly listed in Appendix 5.7.

These nest locations are not subject to any restrictions under the Sep. 1980 USFWS recommended restrictions (Table 15). Consequently, the designation as to whether such locations are 'likely' or 'not likely' to be occupied is not important, and we have not made the distinction for these locations.

The only restriction that would apply to these locations is restriction II of the Oct. 1979 USFWS recommended restrictions (Table 16). This restriction would prohibit large-scale habitat disruptions that could affect peregrine prey sources. We do not feel that any of the presently proposed pipeline activities of which we are aware constitute large-scale habitat disruptions of this type, and hence we see no conflicts with this portion of restriction II.

The other portion of restriction II would prohibit the use of pesticides and other pollutants detrimental to peregrines within 15 mi of

nest locations. This restriction would divide the pipeline ROW into a complex pattern of regions in which such substances could or could not be applied. A significant portion of the pipeline ROW would be ruled out for the use of such substances, and application of the restriction only to those portions within 15 mi of nest locations would be a very complicated process. In order to simplify the application of the restriction for those pesticides and pollutants that are ruled out by USFWS within 15 mi of nest locations, we would instead recommend that NWA not use these particular substances at all. This recommendation would also provide additional environmental protection against chemical contamination.

#### 2.8.4 Realignment and Relocation

Any realignment of the pipeline ROW and any relocation of facility or activity sites could alter the distances from peregrine falcon nest locations, and hence the restrictions to be applied in these areas, our evaluation of the potential conflicts, and our recommendations concerning them. Accordingly, we recommend that any such realignment or relocation be evaluated in the same process as has been done in this section. This should apply in particular to the revisions in alignment sheets that have been made since the April 1980 set of alignment sheets on which our evaluations are based.

## 2.9 RECOMMENDATIONS

### 2.9.2 Recommendations re Potential Conflicts

Tables 39 and 40 summarize the potential conflicts between peregrine nest locations and the NWA pipeline. Table 39 lists the conflicts for nest locations within 1 mi of the pipeline or facilities (to which restrictions 1-4 and II would apply) and Table 40 lists the conflicts for nest locations between 1 and 2 mi from the pipeline or facilities (to which restrictions 2 and II would apply). Conflicts are determined according to the distance from the nest location and the likelihood of occupancy of the nest location. Tables 39 and 40 also contain our recommendations as to whether site-specific exemptions can be granted for the various conflicts. Additional comments on some of these recommendations are provided below (see also Section 2.8).

*Nest Location NWA P-95a* -- Specific authorization can be granted for material site EMS-64-1, provided that the gravel sources include only the treeless portion of the island, provided that all large trees, whether alive or dead are left standing, and provided that any access road is permanently closed when operations are complete. Material sites EMS-64-OA and EMS-64-OB should be allowed to fill with water to form ponds when the sites are no longer in use.

*Nest Location NWA P-183a* -- If the gravel mining operation for material site EMS-22-1 cuts into the rock of the slope, cliff faces should be left with ledges on which raptors could build stick nests.

*Sagwon Bluffs* -- A special meeting should be held between ourselves, NWA or its representatives, and the responsible agencies to discuss in detail the potential conflicts at this complex location. The meeting would discuss whether or not special authorization should be granted to permit the pipeline ROW within 1 mi of Sagwon Bluffs, and what other restrictions would apply once this decision was made.



TABLE 39. Nest locations within 1 mi of facilities, etc. and recommendations re potential conflicts.

<u>Nest Location</u>	<u>P-19a</u>			<u>P-42a</u>	
Alignment Sheet (4/80) 4680-	16-00- B-E-112			15-00- B-E-104,105	
Our Status Agreement with USFWS	not likely yes			not likely no	
<u>Facility, ROW, etc.</u>	ROW	EMS-	EMS-	EMS-	ROW
Closest Distance (mi) to Nest Location	0.7	15P-1 0.9	15P-2 2.0	8P-1 0.8	1.3
<u>Conflict with Restriction 4</u> (location within 1 mi)	yes	yes	no	yes	no
Should exemption be made?	yes	yes		yes	
<u>Restriction 3</u> (no human activity <sup>b</sup> )					
Applicability <sup>c</sup>	no	no	no	no	no
Should exemption be made?					
<u>Restriction 1</u> (aircraft altitude <sup>b,d</sup> )					
Applicability <sup>c</sup>	no	no	no	no	no
Should exemption be made?					
<u>Restriction 2</u> (blasting, noise, etc. <sup>b</sup> )					
Applicability <sup>c</sup>	no	no	no	no	no
Should exemption be made?					
<u>Special Conditions, Comments</u> (see text)					

- <sup>a</sup> Restriction II (primarily concerning pesticides, etc.) applies within 15 mi of all nest locations.
- <sup>b</sup> During the sensitive period (15 April - 31 August) with provision for relaxation after 1 June if location is not occupied.
- <sup>c</sup> Provided the nest location maintains its present status.
- <sup>d</sup> Aircraft must maintain 1500 ft above nest levels.

TABLE 39. (continued)

Nest Location	P63					P63-1		
Alignment Sheet (4/80) 4680-	15-00- B-E-096					15-00- B-E-96		
Our Status	not likely					not likely		
Agreement with USFWS	no					no		
Facility, ROW, etc.	EMS-	ROW	EMS-	EMS-	Delta	EMS-	ROW	Delta
Closest Distance (mi) to Nest Location	96-0B 0.3	0.7	96-1 1.2	96-2 1.3	Camp 1.3	96-0B 0.6	1.2	Camp 1.5
Conflict with Restriction 4 (location within 1 mi)	yes	yes	no	no	no	yes	no	no
Should exemption be made?	yes	yes				yes		
Restriction 3 (no human activity <sup>b</sup> )								
Applicability <sup>c</sup>	no	no	no	no	no	no	no	no
Should exemption be made?								
Restriction 1 (aircraft altitude <sup>b,d</sup> )								
Applicability <sup>c</sup>	no	no	no	no	no	no	no	no
Should exemption be made?								
Restriction 2 (blasting, noise, etc. <sup>b</sup> )								
Applicability <sup>c</sup>	no	no	no	no	no	no	no	no
Should exemption be made?								
Special Conditions, Comments (see text)								

<sup>a</sup> Restriction II (primarily concerning pesticides, etc.) applies within 15 mi of all nest locations.

<sup>b</sup> During the sensitive period (15 April - 31 August) with provision for relaxation after 1 June if location is not occupied.

<sup>c</sup> Provided the nest location maintains its present status.

<sup>d</sup> Aircraft must maintain 1500 ft above nest levels.

TABLE 39. (continued)

<u>Nest Location</u>	<u>P-95a</u>				<u>P-183a</u>	
Alignment Sheet (4/80) 4680-	13-00- B-E-064				11-00- B-E-021,022	
Our Status Agreement with USFWS	likely yes				not likely yes	
<u>Facility, ROW, etc.</u>	EMS-	EMS-	EMS-	ROW	EMS-	ROW
Closest Distance (mi) to Nest Location	64-1 0.3	64-0A 1.1	64-0B 1.4	1.6	22.1 0.0	0.2
<u>Conflict with Restriction 4</u> (location within 1 mi)	yes	no	no		yes	yes
Should exemption be made?	yes				yes	yes
<u>Restriction 3</u> (no human activity <sup>b</sup> )						
Applicability <sup>c</sup>	yes	no	no	no	no	no
Should exemption be made?	no					
<u>Restriction 1</u> (aircraft altitude <sup>b,d</sup> )						
Applicability <sup>c</sup>	yes	no	no	no	no	no
Should exemption be made?	no					
<u>Restriction 2</u> (blasting, noise, etc. <sup>b</sup> )						
Applicability <sup>c</sup>	yes	yes	yes	yes	no	no
Should exemption be made?	no	no	no	no		
<u>Special Conditions, Comments</u> (see text)	yes	yes	yes		yes	

<sup>a</sup> Restriction II (primarily concerning pesticides, etc.) applies within 15 mi of all nest locations.

<sup>b</sup> During the sensitive period (15 April - 31 August) with provision for relaxation after 1 June if location is not occupied.

<sup>c</sup> Provided the nest location maintains its present status.

<sup>d</sup> Aircraft must maintain 1500 ft above nest levels.

TABLE 39. (continued)

<u>Nest Location</u>	<u>Sagwon Bluffs</u>				<u>P-211</u>	
Alignment Sheet (4/80) 4680-	11-00- C-E-012,013				11-00- B-E-011,012	
Our Status	likely				likely	
Agreement with USFWS	yes				yes	
<u>Facility, ROW, etc.</u>	ROW	EMS-	ROW	5 materials	EMS-	ROW
Closest Distance (mi)	0.5-	13-1		(see text)	12-1	
to Nest Location	1.0	0.9	1-2	1-2	0.8	1.1
<u>Conflict with Restriction 4</u> (location within 1 mi)	yes	yes	no	no	yes	no
Should exemption be made?	yes?	no			yes	
<u>Restriction 3</u> (no human activity <sup>b</sup> )						
Applicability <sup>c</sup>	yes	yes	no	no	yes	no
Should exemption be made?	?	no			no	
<u>Restriction 1</u> (aircraft altitude <sup>b,d</sup> )						
Applicability <sup>c</sup>	yes	yes	no	no	yes	no
Should exemption be made?	?	no			no	
<u>Restriction 2</u> (blasting, noise, etc. <sup>b</sup> )						
Applicability <sup>c</sup>	yes	yes	yes	yes	yes	yes
Should exemption be made?	?	no			no	no
<u>Special Conditions, Comments</u> (see text)	yes <sup>e</sup>					

<sup>a</sup> Restriction II (primarily concerning pesticides, etc.) applies within 15 mi of all nest locations.

<sup>b</sup> During the sensitive period (15 April - 31 August) with provision for relaxation after 1 June if location is not occupied.

<sup>c</sup> Provided the nest location maintains its present status.

<sup>d</sup> Aircraft must maintain 1500 ft above nest levels.

<sup>e</sup> Special meeting should be held to discuss whether restriction 4 will be exempted. Other restrictions cannot be addressed until this is decided.

TABLE 39. (continued)

<u>Nest Location</u>	<u>Franklin Bluffs</u>		
Alignment Sheet (4/80) 4680-	11-00- B-E-005,006,007,008		
Our Status	likely		
Agreement with USFWS	yes		
<u>Facility, ROW, etc.</u>	7 materials	ROW	3 materials
<u>Closest Distance (mi)</u> to Nest Location	(see text) within 1 mi	1-2	(see text) 1-2
<u>Conflict with Restriction 4</u> (location within 1 mi)	yes	no	no
Should exemption be made?	yes		
<u>Restriction 3</u> (no human activity <sup>b</sup> )			
Applicability <sup>c</sup>	yes	no	no
Should exemption be made?	no		
<u>Restriction 1</u> (aircraft altitude <sup>b,d</sup> )			
Applicability <sup>c</sup>	yes	no	no
Should exemption be made?	no		
<u>Restriction 2</u> (blasting, noise, etc. <sup>b</sup> )			
Applicability <sup>c</sup>	yes	yes	yes
Should exemption be made?	no	no?	no?
<u>Special Conditions, Comments</u> (see text)	yes		

<sup>a</sup> Restriction II (primarily concerning pesticides, etc.) applies within 15 mi of all nest locations.

<sup>b</sup> During the sensitive period (15 April - 31 August) with provision for relaxation after 1 June if location is not occupied.

<sup>c</sup> Provided the nest location maintains its present status.

<sup>d</sup> Aircraft must maintain 1500 ft above nest levels.

TABLE 40. Nest locations between 1 mi and 2 mi from facilities, etc. and recommendations re potential conflicts.<sup>a</sup>

<u>Nest Location</u>	<u>P-21a</u>				<u>P-25</u>		<u>P-38a</u>	
Alignment Sheet (4/80) 4680-	15-00- B-E-110				15-00- B-E-109		15-00- B-E-106	
Our Status Agreement with USFWS	likely yes				not likely yes		not likely yes	
<u>Facility, ROW, etc.</u>	EMS-	ROW	EMS-	EMS-	EMS-	ROW	ROW	EMS-
Closest Distance (mi) to Nest Location	13P-2		13P-1B	13P-1A	12P-2			9P-1
	1.1	1.4	1.7	1.8	1.2	1.4	1.7	2.0
<u>Restriction 2</u> (blasting, noise, etc. <sup>b</sup> ) (only restriction that applies)								
Applicability <sup>c</sup>	yes	yes	yes	yes	no	no	no	no
Should exemption be made?	no	no	no	no				
<u>Special Conditions, Comments</u> (see text)	yes							

<sup>a</sup> Restriction II (primarily concerning pesticides, etc.) applies within 15 mi of all nest locations.

<sup>b</sup> During the sensitive period (15 April - 31 August) with provision for relaxation after 1 June if location is not occupied.

<sup>c</sup> Provided the nest location maintains its present status.

TABLE 40. (continued)

<u>Nest Location</u>	<u>P-41a</u>	<u>P-47a</u>				<u>P-48a</u>		
Alignment Sheet (4/80) 4680-	15-00- B-E-105	15-00- B-E-103				15-00- B-E-103		
Our Status Agreement with USFWS	not likely no	not likely no				not likely yes		
<u>Facility, ROW, etc.</u>	Sears Creek	ROW	EMS-	EMS-	EMS-	EMS-	ROW	CS
Closest Distance (mi) to Nest Location	Camp 2	1.1	6P-3B 1.4	7P-1 1.7	6P-3 2.0	6P-3B 1.3	1.9	#13 1.9
<u>Restriction 2</u> (blasting, noise, etc. <sup>b</sup> ) (only restriction that applies) Applicability <sup>c</sup> Should exemption be made?	no	no	no	no	no	no	no	no
<u>Special Conditions, Comments</u> (see text)								yes

<sup>a</sup> Restriction II (primarily concerning pesticides, etc.) applies within 15 mi of all nest locations.

<sup>b</sup> During the sensitive period (15 April - 31 August) with provision for relaxation after 1 June if location is not occupied.

<sup>c</sup> Provided the nest location maintains its present status.

TABLE 40. (continued)

<u>Nest Location</u>	<u>P-61</u>					<u>P-79</u>	
Alignment Sheet (4/80) 4680-	15-00- B-C-096					15-00- B-C-089	
Our Status Agreement with USFWS	not likely yes					not likely yes	
<u>Facility, ROW, etc.</u>	EMS-	ROW	Delta	EMS-	EMS-	ROW	EMS-
Closest Distance (mi) to Nest Location	95-5C 1.1	1.2	Camp 1.5	96-2 1.6	96-0B 2.0	1.4	89-2B 1.8
<u>Restriction 2</u> (blasting, noise, etc. <sup>b</sup> ) (only restriction that applies) Applicability <sup>c</sup> Should exemption be made?	no	no	no	no	no	no	no
<u>Special Conditions, Comments</u> (see text)	yes						

<sup>a</sup> Restriction II (primarily concerning pesticides, etc.) applies within 15 mi of all nest locations.

<sup>b</sup> During the sensitive period (15 April - 31 August) with provision for relaxation after 1 June if location is not occupied.

<sup>c</sup> Provided the nest location maintains its present status.



TABLE 40. (continued)

<u>Nest Location</u>	<u>P-86</u>				<u>P-97</u>
Alignment Sheet (4/80) 4680-	14-00- B-E-075				13-00- B-E-064
Our Status Agreement with USFWS	likely yes				likely no
<u>Facility, ROW, etc.</u>	ROW	EMS-	EMS-	EMS-	EMS-
Closest Distance (mi) to Nest Location		75-1A	75-1B	75-2	64-1
	1.5	1.8	1.9	2.0	1.9
<u>Restriction 2</u> (blasting, noise, etc. <sup>b</sup> ) (only restriction that applies)					
Applicability <sup>c</sup>	yes	yes	yes	yes?	yes
Should exemption be made?	yes	yes	yes	yes	no
<u>Special Conditions, Comments</u> (see text)	yes				yes

<sup>a</sup> Restriction II (primarily concerning pesticides, etc.) applies within 15 mi of all nest locations.

<sup>b</sup> During the sensitive period (15 April - 31 August) with provision for relaxation after 1 June if location is not occupied.

<sup>c</sup> Provided the nest location maintains its present status.

*Franklin Bluffs* -- Franklin Bluffs should be treated as a unit and all restrictions should apply until 1 June. Relaxation of these restrictions could be permitted at some facilities once it is known which nest locations on the bluffs are occupied.

*Nest Location NWA P-21a* -- If there is a choice as to which material sites are used, sites EMS-13P-1B and EMS-13P-1A are preferable to site EMS-13P-2.

*Nest Location NWA P-48a* -- If peregrines should return to this nest location, sound abatement might be required at compressor station CS #13 if its sound levels were sufficiently high to disturb nesting peregrines.

*Nest Location NWA P-97* -- See nest location NWA P-95a for recommendations re material site EMS-64-1.

*Realignment and Relocation* -- Any realignment of the pipeline ROW or any relocation of facility or activity sites should be evaluated in terms of conflicts with peregrine nest locations under the recommended restrictions. This should apply in particular to the revisions in alignment sheets that have been made since the April 1980 set of alignment sheets on which our evaluations are based.

### 3. OTHER RAPTORS

#### 3.8 POTENTIAL PIPELINE CONFLICTS WITH NEST LOCATIONS

This section discusses, on a site-by-site basis, the nest locations of the other raptors that are found within 1/2 mi of the proposed Northwest Alaskan pipeline alignment or any material or facility sites (according to the NWA Environmental Master Guide alignment sheets dated April 1980). Potential conflicts between NWA plans and the State of Alaska protective measures (as modified according to our recommendations in Section 3.7) are discussed, and we have made a number of site-specific recommendations concerning these conflicts.

The 27 nest locations within 1/2 mi of the NWA pipeline right-of-way or any material sites are summarized in Table 50 according to distance, species, and general section of the pipeline. (No nests are within 1/2 mi of any facility site [i.e., any compressor station, metering station or camp].) There are seven golden eagle nests, four gyrfalcon nests, thirteen rough-legged hawk nests, and three bald eagle nests. There are no known osprey nests within 1/2 mi of the ROW or any material or facility sites.

The sites are discussed separately for each species on a south-to-north basis. For each site, the characteristics of the site that are necessary for an understanding of the conflicts are tabulated. The information on nest occupancy is from Roseneau and Bente (1979, 1980a, unpubl. data).

##### 3.8.1 Golden Eagle

Those pipeline activities that are scheduled to occur within 1/2 mi of golden eagle nest sites are subject to the major ground activity and aerial activity restrictions during the sensitive period (1 April-31 August)\* and to the permanent facility siting restriction. Those activities scheduled to occur within 1/4 mi of nests are also subject to

---

\* Our recommended timing.

TABLE 50. Nest locations of golden eagles, gyrfalcons, rough-legged hawks and bald eagles along the NWA pipeline corridor.<sup>1</sup>

	Distance from ROW or Material Sites		
	Within 1/8 mi	1/8 to 1/4 mi	1/4 to 1/2 mi
<u>U.S.-Canada border to Fairbanks</u>			
golden eagle			1
bald eagle	1		1
<u>Fairbanks to Yukon River</u>			
golden eagle			1
bald eagle			1
<u>Yukon River to Atigun Pass</u>			
golden eagle			4
gyrfalcon	1		
<u>Atigun Pass to Prudhoe Bay</u>			
golden eagle		1	
gyrfalcon	2		1
rough-legged hawk	5	3	5

<sup>1</sup> Only nests within 1/2 mi of the ROW or facility or material sites have been listed. There are no osprey nest locations within this 1/2 mi distance.

the minor ground activity restriction during the sensitive period. The activities that are scheduled to occur within 1/8 mi of nests should be further subject to the habitat alteration restriction.

*Location NWA-78, Salcha River* -- Table 51 provides pertinent information on this nest location. The location was unoccupied in both 1979 and 1980.

The only restrictions that are applicable to this location are the major ground and aerial activity restrictions with respect to the ROW, which approaches to ~ 0.3 mi from the nest. These restrictions apply during the sensitive period, but they can be relaxed if the nest location is unoccupied by 1 June.

*Location NWA-87, Globe Creek* -- Table 52 provides pertinent information on this nest location. The location was unoccupied in 1979.

The pipeline ROW, which is the closest pipeline activity to the nest location, approaches only to ~ 0.5 mi from the nest. Consequently, none of the state restrictions apply to the proposed pipeline activities at this location, provided that these activities do not encroach into the 1/2-mi radius of the nest.

*Location NWA-98, Ray River* -- Table 53 provides pertinent information on this nest location. The nest, which was possibly built by golden eagles, was occupied by great horned owls in 1979 and 1980.

The pipeline ROW, which is the closest pipeline activity to the nest location, approaches only to ~ 0.5 mi from the nest. Consequently, none of the state restrictions apply to the proposed pipeline activities at this location, provided that these activities do not encroach into the 1/2-mi radius of the nest.

TABLE 51. Characteristics of golden eagle nest location NWA-78.

---

Status: unoccupied in 1979 and 1980

Location

Region: Interior

Locale: Salcha River; T5S, R5E, Sec. 13,14; USGS Big Delta B-6

Alignment Sheet (4/80): near 4680-16-00-B-E-089

Elevation: 750-900 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.3 mi east to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-89-3A is 2.4 mi east

Other Developments: TAPS oil line is 0.6 mi to east  
cabin is ~ 0.2-0.3 mi southwest

Nest Characteristics

Nesting Substrate: river cliff

Nest Characteristics Relative to NWA

Nest Direction: faces south

Presence of Screening Features: ROW obscured by east end of cliff

TABLE 52. Characteristics of golden eagle nest location NWA-87.

---

Status: unoccupied in 1979, no data 1980

Location

Region: Interior

Locale: Globe Creek; USGS Livengood B-3

Alignment Sheet (4/80): near 4680-14-00-B-E-075

Elevation: 950 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.5 mi southeast to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-75-1A and 1B are 0.9 mi west

Other Developments: TAPS oil line is 0.6 mi southwest

Elliott Highway is 0.4 mi northwest

Nest Characteristics

Nesting Substrate: rock outcrop

Nest Characteristics Relative to NWA

Nest Direction: faces south

Presence of Screening Features: partially shielded from ROW by cliff  
to southwest

shielded from Elliott Highway by hilltop  
and trees

TABLE 53. Characteristics of golden eagle nest location NWA-98.

---

Status: nest possibly built by golden eagles

occupied by great horned owls in 1979 and 1980

Location

Region: Interior

Locale: Ray River; T14N; R12W, Sec. 28; USGS Bettles A-1

Alignment Sheet (4/80): near 4680-13-00-B-E-061

Elevation: 400 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.5 mi northeast to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-61-1B is 0.8 mi north

EMS-61-2 is 0.8 mi southeast

Other Developments: TAPS oil line is 0.5 mi to east

Haul Road 0.3 mi northeast

Nest Characteristics

Nesting Substrate: rock outcrop

Nest Characteristics Relative to NWA

Nest Direction: faces northwest to north

Presence of Screening Features: partially shielded by hillside and trees



*Location NWA-108, Chapman Island Area* -- Table 54 provides pertinent information on this nest location. The location was occupied by golden eagles in 1979.

The only restrictions that are applicable to this location are the major ground and aerial activity restrictions with respect to the ROW, which approaches to ~ 0.4 mi from the nest. These restrictions apply during the sensitive period, but they can be relaxed if the nest location is unoccupied by 1 June.

In this case we recommend that an exemption could be granted for low-level survey and surveillance flights along the ROW, provided that the flights remain at least 500 ft below the nest level. The nest sites are sufficiently high (~ 900 ft) above the valley floor that low-level surveillance flights should have minimal effects on eagles nesting at this location.

We also recommend that an exemption could be requested to permit major ground activity along the ROW after 20 June (by which time eggs should have hatched), provided that this activity can be done fairly quickly. The height of the nest above the valley floor should be sufficient to protect the nest from impacts while the short section of pipeline within 1/2 mi of the nest is constructed.

*Location NWA-109, Chapman Island Area* -- Table 55 provides pertinent information on this nest location. The location was unoccupied in 1979. It may be an alternate nest location for NWA-108.

The only restrictions that are applicable to this location are the major ground and aerial activity restrictions with respect to the ROW, which approaches to ~ 0.4 mi from the nest. These restrictions apply during the sensitive period, but they can be relaxed if the nest location is unoccupied by 1 June.

TABLE 54. Characteristics of golden eagle nest location NWA-108.

---

Status: active in 1979, no data 1980

Location

Region: Brooks Range

Locale: Chapman Island area; T25N, R13W, Sec. 14; USGS Bettles D-1

Alignment Sheet (4/80): near 4680-13-00-B-E-047

Elevation: 2200-2300 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.4 mi southeast to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-47-2 is 0.6 mi southeast

EMS-47-1 is 0.9 mi northeast

Other Developments: TAPS oil line is 0.4 mi southeast

Haul Road is 0.5 mi southeast

Nest Characteristics

Nesting Substrate: mountainside cliff

Nest Characteristics Relative to NWA

Nest Direction: faces east to southeast

Presence of Screening Features: none, but 900-950 ft above valley floor

TABLE 55. Characteristics of golden eagle nest location NWA-109.

---

Status: two unoccupied nests in 1979, no data 1980  
may be alternate location for NWA-108

Location

Region: Brooks Range

Locale: Chapman Island area; T25N, R13W, Sec. 13; USGS Bettles D-1

Alignment Sheet (4/80): near 4680-13-00-B-E-047

Elevation: 1900-2000 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.4 mi southeast to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-47-1 is 0.7 mi east

EMS-47-2 is 0.7 mi south

Other Developments: TAPS oil line is 0.4 mi southeast

Haul Road is 0.5 mi southeast

Nest Characteristics

Nesting Substrate: mountainside cliff

Nest Characteristics Relative to NWA

Nest Direction: faces east

Presence of Screening Features: none, but 700 ft above valley floor

In this case we recommend that an exemption could be granted for low-level survey and surveillance flights along the ROW, provided that the flights remain at least 500 ft below the nest level. The nest sites are sufficiently high ( $\sim 700$  ft) above the valley floor that low-level surveillance flights should have minimal effects on eagles nesting at this location.

We also recommend that an exemption could be requested to permit major ground activity along the ROW after 20 June, provided that this activity can be done fairly quickly. The height of the nest above the valley floor should be sufficient to protect the nest from impacts while the short section of pipeline within 1/2 mi of the nest is constructed.

*Location NWA-151, Dietrich Camp* -- Table 56 provides pertinent information on this nest location. The location was occupied by golden eagles in 1979.

The pipeline ROW, which is the closest pipeline activity to the nest location, approaches only to  $\sim 0.5$  mi from the nest. Consequently, none of the state restrictions apply to the proposed pipeline activities at this location, provided that these activities do not encroach into the 1/2-mi radius of the nest.

*Location NWA-175, Atigun River* -- Table 57 provides pertinent information on this nest location. There were three unoccupied golden eagle nests on the cliff, and a flying eagle was observed in the course of the survey.

Material site EMS-29-1.1 is  $\sim 0.2$  mi from the nest location. The aerial activity and the major and minor ground activity restrictions are applicable to this materials site during the sensitive period. The aerial activity and major ground activity restrictions are also applicable during the sensitive period to the ROW, which approaches to  $\sim 0.4$  mi of the

TABLE 56. Characteristics of golden eagle nest location NWA-151.

---

Status: active in 1979, no data 1980

Location

Region: Brooks Range

Locale: Dietrich Camp; T33N, R10W, Sec. 12; USGS Chandalar C-6

Alignment Sheet (4/80): near 4680-12-00-B-E-037

Elevation: 1700 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.5 mi west to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-37-2 is 0.6 mi northwest

Other Developments: TAPS oil line is 0.5 mi west

Haul Road is 0.4 mi west

north end Dietrich Airstrip is 1.0 mi southwest

Nest Characteristics

Nesting Substrate: creek cliff

Nest Characteristics Relative to NWA

Nest Direction: south

Presence of Screening Features: partially shielded by bend in creek canyon

TABLE 57. Characteristics of golden eagle nest location NWA-175.

---

Status: three unoccupied nests in 1979

one golden eagle observed flying, no data 1980

Location

Region: Brooks Range

Locale: Atigun River; T13S, R12E, Sec. 27,28; USGS Philip Smith Mtns. B-4

Alignment Sheet (4/80): near 4680-12-00-B-E-029

Elevation: 3900-4500 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.4-0.5 mi west to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-29-1.1 is 0.2 mi southwest

EMS-29-1A and 29-1C are 0.6-0.9 mi west

EMS-28-4 is 1.0 mi north

Other Developments: TAPS oil line is 0.6 mi west

Haul Road is 0.4 mi west

Nest Characteristics

Nesting Substrate: mountainside cliff

Nest Characteristics Relative to NWA

Nest Direction: faces generally west

Presence of Screening Features: none, but nests are 1000 ft above  
valley floor

nest location. All of these restrictions can be relaxed after 1 June if the nest location is unoccupied.

In this case we recommend that an exemption could be granted for low-level survey and surveillance flights along the ROW, provided that the flights remain at least 500 ft below the nest level. The nest sites are sufficiently high (~ 1000 ft) above the valley floor that low-level surveillance flights should have minimal effects on eagles nesting at this location.

We also recommend that an exemption could be requested to permit major ground activity along the ROW after 20 June, provided that this activity can be done fairly quickly. The height of the nest above the valley floor should be sufficient to protect the nest from impacts while the short section of pipeline within 1/2 mi of the nest is constructed.

### 3.8.2 Gyr Falcon

Those pipeline activities that are scheduled to occur within 1/2 mi of gyrfalcon nests are subject to the permanent facility siting restriction. Those activities scheduled to occur within 1/4 mi of nests are also subject to the aerial activity and the major and minor ground activity restrictions during the sensitive period (15 February-15 August). The activities that are scheduled to occur within 1/8 mi of nests should be further subject to the habitat alteration restriction.

*Location NWA-102, Fish Creek* -- Table 58 provides pertinent information on this nest location. The location was unoccupied in both 1979 and 1980.

The nest location is within material site EMS-53-3B, and there is a conflict with the habitat alteration restriction. We recommend that EMS-53-3B should not be used, and in particular, that the rock outcrop should not be altered. In this way the actual nest location can be protected.

TABLE 58. Characteristics of gyrfalcon nest location NWA-102.

---

Status: unoccupied in 1979 and 1980  
typical gyrfalcon nest site

Location

Region: Interior

Locale: Fish Creek; T20N, R15W, Sec. 2; USGS Bettles C-2

Alignment Sheet (4/80): near 4680-13-00-B-E-052

Elevation: 2000 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.06 mi west to ROW

NWA Facility Sites: --

NWA Material Sites: within EMS-52-3B

EMS-52-3A is 0.3 mi north

EMS-52-3C is 0.7 mi south

Other Developments: TAPS oil line is 0.06 mi west and northwest

Haul Road is 0.7 mi west

Nest Characteristics

Nesting Substrate: rock outcrop

Nest Characteristics Relative to NWA

Nest Direction: faces east away from ROW

Presence of Screening Features: backside of nest cliff screens ROW, but ROW  
is essentially on top of cliff



The ROW passes within  $\sim 0.06$  mi of the nest location, and is hence in conflict with the habitat alteration restriction. If an exemption were to be granted to this restriction, then the aerial activity and the major and minor ground activity restrictions would apply to the ROW during the sensitive period.

We recommend that exemptions could be granted to all of these restrictions for the ROW. The already existing TAPS ROW is also  $\sim 0.06$  mi from the nest location and the nest location is subject to a considerable volume of TAPS surveillance flights. We consider that the nest location is unlikely to be reoccupied unless the volume of aerial activity past the site is terminated or greatly reduced. If the nest location should be reoccupied, then the aerial activity and the major and minor ground activity restrictions would apply during the sensitive period.

No restrictions apply to EMS-52-3A, which is  $\sim 0.3$  mi from the nest location.

*Location NWA-183d, Slope Mountain* -- Table 59 provides pertinent information on this nest location. The location was unoccupied in 1980.

The nest location is within or very near material site EMS-22-1, and there is a conflict with the habitat alteration restriction. In this case we recommend that an exemption could be granted for the habitat alteration restriction because a material site already exists at the EMS-22-1 location. We further recommend that as the material excavation operation proceeds, a cliff with several ledges should be created and left along the foot of the mountain (i.e., at the back of the materials site). This action could create an alternate nesting cliff for gyrfalcons near one that was apparently affected during the TAPS construction.

The aerial activity and the major and minor ground activity restrictions would apply to this nest location during the sensitive period. These

TABLE 59. Characteristics of gyrfalcon nest location NWA-183d.

---

Status: reported gyrfalcon nest

area unoccupied 1980, not checked in 1979

Location

Region: Arctic Slope

Locale: Slope Mountain; T85, R13E, Sec. 22, 27; USGS Philip Smith Mtns. C-4

Alignment Sheet (4/80): near 4680-11-00-B-E-022

Elevation: 2500-3500 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.3 mi south to ROW

NWA Facility Sites: --

NWA Material Sites: probably in or very near EMS-22-1

Other Developments: TAPS material site in same locale

TAPS oil line is 0.3 mi south

Haul Road is 0.7 mi southeast

Nest Characteristics

Nesting Substrate: mountainside cliff

Nest Characteristics Relative to NWA

Nest Direction: faces east to southeast

Presence of Screening Features: none

restrictions can be relaxed after 1 June if the nest location is unoccupied.

The ROW approaches to ~ 0.3 mi from the nest location. None of the state restrictions apply to it, provided that it does not encroach into the 1/4-mi radius of the nest.

*Location NWA-187b, Sag River* -- Table 60 provides pertinent information on this nest location. The location was occupied by gyrfalcons in both 1979 and 1980.

The nest location is within or borders on material site EMS-17-2, and there is a conflict with the habitat alteration restriction. We recommend that this material site not be used because of its immediate proximity to the nest location (see also rough-legged hawk nest NWA-187a).

The ROW approaches to ~ 0.3 mi from the nest location. None of the state restrictions apply to it, provided that it does not encroach into the 1/4-mi radius of the nest.

*Location NWA-190b, Sag River* -- Table 61 provides pertinent information on this nest location. The location was occupied by gyrfalcons in 1979 and by rough-legged hawks in 1980.

Material site EMS-16-3, which is the closest pipeline activity to the nest location is ~ 0.5 mi from the nest. Consequently, none of the state restrictions apply to the proposed pipeline activities at this location.

TABLE 60. Characteristics of gyrfalcon nest location NWA-187b.

---

Status: active nest in 1979 and 1980

Location

Region: Arctic Slope

Locale: Sag River; T5S, R14E, Sec. 16; USGS Sagavanirktok A-4

Alignment Sheet (4/80): near 4680-11-00-B-E-017

Elevation: 1200 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.3 mi west to ROW

NWA Facility Sites: --

NWA Material Sites: within or bordering EMS-17-2

EMS-17-3 is 0.7 mi north

Other Developments: TAPS oil line and Haul Road are 0.3 mi west

Nest Characteristics

Nesting Substrate: river cliff

Nest Characteristics Relative to NWA

Nest Direction: faces west

Presence of Screening Features: none

TABLE 61. Characteristics of gyrfalcon nest location NWA-190b.

---

Status: active gyrfalcon nest in 1979  
active rough-legged hawk nest in 1980

Location

Region: Arctic Slope

Locale: Sag River; T4S, R14E, Sec. 16; USGS Sagavanirktok A-3

Alignment Sheet (4/80): near 4680-11-00-B-E-016

Elevation: 1100-1200 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 1.0 mi southwest to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-16-3 is 0.5 mi southeast

Other Developments: TAPS oil line and Haul Road are 1.0 mi southwest

Nest Characteristics

Nesting Substrate: river cliff

Nest Characteristics Relative to NWA

Nest Direction: faces southwest

Presence of Screening Features: none

### 3.8.3 Rough-legged Hawk

Those pipeline activities that are scheduled to occur within 1/2 mi of rough-legged hawk nests are subject to the permanent facility siting restriction. Those activities scheduled to occur within 1/4 mi of nests are also subject to the aerial activity and the major and minor ground activity restrictions during the sensitive period (normally 15 April-31 August, but commencing 15 February at nest locations likely to be occupied by gyrfalcons).<sup>\*</sup> The activities that are scheduled to occur within 1/8 mi of nests should be further subject to the habitat alteration restriction.

*Location NWA-183b, Slope Mountain* -- Table 62 provides pertinent information on this nest location. The location contains at least three rough-legged hawk nests, one of which was occupied by rough-legged hawks in 1980. These nests may be used by gyrfalcons in future years.

The pipeline ROW, which is the closest pipeline activity to the nest location, approaches only to ~ 0.4 mi from the nest. Consequently, none of the state restrictions apply to the proposed pipeline activities at this location.

*Location NWA-'YY', Sag River* -- Table 63 provides pertinent information on this nest location. The nest was discovered in 1980. The location did not have a nest at it in 1979, but a new nest was built and occupied by rough-legged hawks in 1980.

The nest location is only ~ 0.1 mi from material sites EMS-18-1 and EMS-18-1.1, and there are conflicts with the habitat alteration restriction. In this case we recommend that only those portions of the material sites that are farther than 1/8 mi from the nesting location be used. The material sites would be subject to the aerial activity and the major and minor ground activity restrictions during the sensitive period.

---

<sup>\*</sup> Our recommended timing.

TABLE 62. Characteristics of rough-legged hawk (gyrfalcon) nest NWA-183b.

---

Status: at least three rough-legged hawk nests  
one active nest in 1980, not checked in 1979  
nest may be used by gyrfalcons in future years

Location

Region: Arctic Slope

Locale: Slope Mountain; T8S, R13E, Sec. 28; USGS Philip Smith Mtns. C-4

Alignment Sheet (4/80): near 4680-11-00-B-E-022

Elevation: 2500 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.4 mi east to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-22-1 is 0.5 mi northeast

Other Developments: TAPS oil line is 0.4 mi southeast

Haul Road is 0.7 mi southeast

Nest Characteristics

Nesting Substrate: cliff

Nest Characteristics Relative to NWA

Nest Direction: faces east to southeast

Presence of Screening Features: none

TABLE 63. Characteristics of rough-legged location NWA-'YY' (new).

---

Status: active nest in 1980

Location

Region: Arctic Slope

Locale: Sag River; T5S, R14E, Sec. 28; USGS Philip Smith Mountain D-4

Alignment Sheet (4/80): near 4680-11-00-B-E-018

Elevation: 1150-1200 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.7 mi northwest to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-18-1 is less than 0.1 mi west

EMS-18-1.1 is 0.1 mi southwest

Other Developments: TAPS oil line and Haul Road are 0.7 mi northwest

Nest Characteristics

Nesting Substrate: soil/gravel river bank

Nest Characteristics Relative to NWA

Nest Direction: west to northwest

Presence of Screening Features: none



*Location NWA-186, Sag River* -- Table 64 provides pertinent information on this nest location. The location, which was previously used by rough-legged hawks, no longer had a nest at it in 1979. A new nest was built and occupied by rough-legged hawks in 1980.

Material site EMS-17-2 and the ROW are the closest pipeline activities to the nest location. Both are ~ 0.3 mi from the nest. Consequently, none of the state restrictions apply to the proposed pipeline activities at this location, provided that these activities do not encroach into the 1/4-mi radius of the nest.

*Location NWA-187a, Sag River* -- Table 65 provides information on this nest location. The location was occupied by rough-legged hawks in 1979. The nest may be used by gyrfalcons in future years.

The nest location is within or borders on material site EMS-17-2, and there is a conflict with the habitat alteration restriction. We recommend that this material site not be used because of its immediate proximity to the nest location (see also gyrfalcon nest NWA-187b).

The ROW approaches to ~ 0.3 mi from the nest location. None of the state restrictions apply to it, provided that it does not encroach into the 1/4-mi radius of the nest.

*Location NWA-188, Sag River* -- Table 66 provides pertinent information on this nest location. The location was unoccupied in 1979. The nest may be used by gyrfalcons in future years.

The nesting location is within a part of material site EMS-17-3, and there is a conflict with the habitat alteration restriction. In this case, because the nest location is within EMS-17-3, we recommend that this material site not be used.

TABLE 64. Characteristics of rough-legged hawk nest location NWA-186.

---

Status: active nest in 1980

Location

Region: Arctic Slope

Locale: Sag River; T5S, R14E, Sec. 21; USGS Philip Smith Mountains D-3

Alignment Sheet (4/80): near 4680-11-00-B-E-018

Elevation: 1200 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.3-0.4 mi west to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-17-2 is 0.3 mi northwest

Other Developments: TAPS oil line and Haul Road are 0.3-0.4 mi west

Nest Characteristics

Nesting Substrate: soil/gravel river bank

Nest Characteristics Relative to NWA

Nest Direction: faces west

Presence of Screening Features: none

TABLE 65. Characteristics of rough-legged hawk (gyrfalcon) nest NWA-187a.

---

Status: active nest in 1979, no data 1980  
nest may be used by gyrfalcons in future years

Location

Region: Arctic Slope

Locale: Sag River; T5S, R14E, Sec. 16; USGS Sagavanirktok A-4

Alignment Sheet (4/80): near 4680-11-00-B-E-017

Elevation: 1200 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.3 mi west to ROW

NWA Facility Sites: --

NWA Material Sites: within or bordering EMS-17-2

EMS-17-3 is 0.8 mi north

Other Developments: TAPS oil line and Haul Road are 0.3 mi west

Nest Characteristics

Nesting Substrate: river cliff

Nest Characteristics Relative to NWA

Nest Direction: faces west

Presence of Screening Features: none

TABLE 66. Characteristics of rough-legged hawk (gyrfalcon) nest NWA-188.

---

Status: unoccupied in 1979, no data 1980  
nest may be used by gyrfalcons in future years

Location

Region: Arctic Slope

Locale: Sag River; T5S, R14E, Sec. 9; USGS Sagavanirktok A-4

Alignment Sheet (4/80): near 4680-11-00-B-E-017

Elevation: 1250 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.8 mi west to ROW

NWA Facility Sites: --

NWA Material Sites: within EMS-17-3

EMS-17-2 is 0.8 mi south

Other Developments: TAPS oil line is 0.9 mi southwest

Haul Road is 0.6 mi southwest

Nest Characteristics

Nesting Substrate: rock outcrop above river

Nest Characteristics Relative to NWA

Nest Direction: nest faces west

Presence of Screening Features: none

*Location NWA 189, Sag River* -- Table 67 provides pertinent information on this nest location. The location was occupied by rough-legged hawks in 1979.

The ROW is ~ 0.2 mi from the nest location. The aerial activity and the major and minor ground activity restrictions are applicable to the ROW during the sensitive period. These restrictions can be relaxed after 1 June if the nest location is unoccupied.

In this case we recommend that an exemption could be granted for low-level survey and surveillance flights along the ROW during the sensitive period, because the pair that nested there has tolerated similar TAPS flights and road traffic. We further recommend that an exemption could be granted for minor ground activity during the sensitive period, provided that such activities are restricted to the ROW and Haul Road.

*Location NWA-190a, Sag River* -- Table 68 provides pertinent information on this nest location. The location was occupied by rough-legged hawks in 1979 and 1980. This nest may be used by gyrfalcons in future years.

Material site EMS-16-3, which is the closest pipeline activity to the nest location, is ~ 0.25 mi from the nest. Consequently, none of the state restrictions apply to the proposed pipeline activities at this location, provided that these activities do not encroach into the 1/4-mi radius of the nest.

*Location NWA-193, Sag River* -- Table 69 provides pertinent information on this nest location. The location was occupied by rough-legged hawks in 1979.

The nesting location is within or bordering on material site EMS-14-1, and there is a conflict with the habitat alteration restriction. In this

TABLE 67. Characteristics of rough-legged hawk nest location NWA-189.

---

Status: active nest in 1979, no data 1980

Location

Region: Arctic Slope

Locale: Sag River; T5S, R14E, Sec. 4; USGS Sagavanirktok A-4

Alignment Sheet (4/80): near 4680-11-00-B-E-017

Elevation: 1300 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.2 mi northwest to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-17-3 is 1.1 mi southeast

Other Developments: TAPS oil line is 0.2 mi northwest

Haul Road is 0.3 mi northwest

Nest Characteristics

Nesting Substrate: soil/gravel river bank

Nest Characteristics Relative to NWA

Nest Direction: nest faces east

Presence of Screening Features: ROW obscured by upper portion of soil bank

TABLE 68. Characteristics of rough-legged hawk (gyrfalcon) nest NWA-190a.

---

Status: active nest in 1979 and 1980

nest may be used by gyrfalcons in future years

Location

Region: Arctic Slope

Locale: Sag River; T4S, R14E, Sec. 16; USGS Sagavanirktok A-3

Alignment Sheet (4/80): near 4680-11-00-B-E-016

Elevation: 1100-1200 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 1.2 mi west southwest to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-16-3 is 0.25 mi south

Other Developments: TAPS oil line and Haul Road are 1.2 mi southwest

Nest Characteristics

Nesting Substrate: river cliff

Nest Characteristics Relative to NWA

Nest Direction: faces southwest

Presence of Screening Features: none

TABLE 69. Characteristics of rough-legged hawk nest location NWA-193.

---

Status: active in 1979, no data 1980

Location

Region: Arctic Slope

Locale: Sag River; T1S, R14E, Sec. 35; USGS Sagavanirktok B-3

Alignment Sheet (4/80): near 4680-11-00-B-E-014

Elevation: 750-800 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.9 mi west to ROW

NWA Facility Sites: --

NWA Material Sites: within or bordering EMS-14-1

Other Developments: TAPS oil line and Haul Road are 0.9-1.0 mi west

Nest Characteristics

Nesting Substrate: soil/gravel river bank

Nest Characteristics Relative to NWA

Nest Direction: faces west

Presence of Screening Features: none



case, because the nest location is in EMS-17-3, we recommend that this material site not be used.

*Location NWA-202.1, Sag River* -- Table 70 provides pertinent information on this nest location. The location was occupied by rough-legged hawks in 1979, and the nest may be used by gyrfalcons in future years.

The nesting location is within material site EMS-13-1, and there is a conflict with the habitat alteration restriction. In this case, because the nest location is within EMS-13-1, we recommend that this material site not be used.

*Location NWA-214, Franklin Bluffs* -- Table 71 provides pertinent information on this nest location. The location was occupied by rough-legged hawks in 1979.

Material site EMS-8-1A, which is the closest pipeline activity to the nest location, is ~ 0.4-0.5 mi from the nest. Consequently, none of the state restrictions apply to the proposed pipeline activities at this location, although the peregrine restrictions will apply (see Section 2.8.1).

*Location NWA-216.1, Franklin Bluffs* -- Table 72 provides pertinent information on this nest location. The location was discovered in 1980, when it was occupied by rough-legged hawks.

Material site EMS-8-1B is ~ 0.2 mi from the nest location. The aerial activity and the major and minor ground activity restrictions are applicable to EM-8-1B. These restrictions can be relaxed after 1 June if the nest location is unoccupied.

The portion of EMS-8-1B that is more than 1/4 mi from the nesting location could be utilized during the sensitive period, provided that there is no conflict with the peregrine restrictions (see Section 2.8.1 and Table 26).

TABLE 70. Characteristics of rough-legged hawk (gyrfalcon) nest NWA-202.1.

---

Status: active nest in 1979, no data 1980

nest may be used by gyrfalcons in future years

Location

Region: Arctic Slope

Locale: Sag River; T1S, R14E, Sec. 4; USGS Sagavanirktok B-3

Alignment Sheet (4/80): near 4680-11-00-C-E-013

Elevation: 900 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.5 mi east to ROW

NWA Facility Sites: --

NWA Material Sites: within EMS-13-1

Other Developments: Haul Road is 0.5 mi east

Nest Characteristics

Nesting Substrate: rock outcrop

Nest Characteristics Relative to NWA

Nest Direction: westerly, but sits on top of rock and takes in most of 360°

Presence of Screening Features: shielded from ROW by low hill

TABLE 71. Characteristics of rough-legged hawk nest location NWA-214.

---

Status: active nest in 1979, unoccupied in 1980

Location

Region: Arctic Slope

Locale: Franklin Bluffs; T5N, R14E, Sec. 21; USGS Sagavanirktok A-3

Alignment Sheet (4/80): near 4680-11-00-B-E-008

Elevation: 400-450 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 1.6 mi southwest to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-8-1A is 0.4-0.5 mi west

Other Developments: TAPS oil line and Haul Road are 1.6 mi southwest

Nest Characteristics

Nesting Substrate: soil/gravel river bluff

Nest Characteristics Relative to NWA

Nest Direction: west

Presence of Screening Features: none

TABLE 72. Characteristics of rough-legged hawk nest location NWA-216.1 (new).

---

Status: active nest in 1980

Location

Region: Arctic Slope

Locale: Franklin Bluffs; T5N, R14E, Sec. 16; USGS Sagavanirktok D-3

Alignment Sheet (4/80): near 4680-11-00-B-E-007

Elevation: 400-450 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 1.5 mi west southwest to ROW

NWA Facility Sites: --

NWA Material Sites: EMS 8-1B is 0.2 mi southwest

Other Developments: TAPS oil line and Haul Road are 1.5 mi southwest

Nest Characteristics

Nesting Substrate: soil/gravel river bluff

Nest Characteristics Relative to NWA

Nest Direction: west

Presence of Screening Features: none

*Location NWA-218.1, Franklin Bluffs* -- Table 73 provides pertinent information on this nest location. The location contains a nest that was built by rough-legged hawks but that was not discovered in 1979. In 1980, when the nest was found, peregrine falcons were attempting to nest there.

Material site EMS-7-1, which is the closest pipeline activity to the nest location, is ~ 0.3 mi from the nest. Consequently, none of the state restrictions (with respect to rough-legged hawks) apply to the proposed pipeline activity at this location, provided that this activity does not encroach into the 1/4-mi radius of the nest. Restrictions with regard to peregrine falcons do apply to Franklin Bluffs and should protect any rough-legged hawk nests (see Section 2.8.1 and Table 26).

*Location NWA-223, Franklin Bluffs* -- Table 74 provides pertinent information on this nest location. The location contains a rough-legged hawk nest that was occupied by peregrine falcons in 1979 but unoccupied in 1980 because of spring snow conditions.

Material site EMS-6-1, which is the closest pipeline activity to the nest location, is ~ 0.3 mi from the nest. Consequently, none of the state restrictions (with respect to rough-legged hawks) apply to the proposed pipeline activity at this location, provided that this activity does not encroach into the 1/4-mi radius of the nest. Restrictions with regard to peregrine falcons do apply to Franklin Bluffs and should protect any rough-legged hawk nests (see Section 2.8.1 and Table 26).

#### 3.8.4 Bald Eagle

Those pipeline activities that are scheduled to occur within 1/2 mi of bald eagle nests are subject to the permanent facility siting restriction. Those activities scheduled to occur within 1/4 mi of nests are also subject to the aerial activity and the major and minor ground activity restrictions

TABLE 73. Characteristics of rough-legged hawk nest location NWA-218.1 (new).

---

Status: rough-legged hawk nest

occupied by peregrine falcons in 1980 (see Table 26)

Location

Region: Arctic Slope

Locale: Franklin Bluffs; T6N, R14E, Sec. 29; USGS Sagavanirktok D-3

Alignment Sheet (4/80): near 4680-11-00-B-E-007

Elevation: 400-450 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 1.3 mi west to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-7-1 is 0.3 mi west

Other Developments: TAPS oil line and Haul Road are 1.3 mi west

Nest Characteristics

Nesting Substrate: soil/gravel river bluff

Nest Characteristics Relative to NWA

Nest Direction: west

Presence of Screening Features: none

TABLE 74. Characteristics of rough-legged hawk nest location NWA-223.

---

Status: rough-legged hawk nest, unoccupied in 1980 (snow-covered)  
occupied by peregrine falcons in 1979 (see Table 26)

Location

Region: Arctic Slope

Locale: Franklin Bluffs; T7N, R14E, Sec. 33; USGS Sagavanirktok D-3

Alignment Sheet (4/80): near 4680-11-00-B-E-006

Elevation: 250-300 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 2.2 mi west to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-6-1 is 0.3 mi southwest

Other Developments: TAPS oil line is 1.5 mi west  
Haul Road is 2.2 mi west

Nest Characteristics

Nesting Substrate: soil/gravel river bluff

Nest Characteristics Relative to NWA

Nest Direction: west

Presence of Screening Features: none

during the sensitive periods (usually 15 March-31 August, but commencing 1 March for nest locations between North Pole and the Gerstle River).<sup>\*</sup> The activities that are scheduled to occur within 1/8 mi of nests are further subject to the habitat alteration restriction.

*Location NWA-1, Little Scottie Creek* -- Table 75 provides pertinent information on this nest location. The location was occupied by bald eagles in 1979 and 1980.

The pipeline ROW, which is the closest pipeline activity to the nest location, approaches only to ~ 0.5 mi from the nest. Consequently, none of the state restrictions apply to the proposed pipeline activities at this location.

*Location NWA-64 and 64.1, Shaw Creek* -- Table 76 provides pertinent information on these nest locations, which should probably be considered as alternates for the same location. Location 64 was occupied by bald eagles in 1979, but not in 1980. Location 64.1 was unoccupied in 1979, but occupied by bald eagles in 1980.

These nesting locations are located in material site EMS-94-1, and there is a conflict with the habitat alteration restriction. Because these nest locations are within EMS-94-1, we recommend that this material site not be used.

*Location NWA-85.1, Chatanika River* -- Table 77 provides pertinent information on this nest location. The location was occupied by bald eagles in 1980, when it was discovered.

The pipeline ROW, which is the closest pipeline activity to the nest location, approaches only to ~ 0.3 mi from the nest. Consequently, none of the state restrictions apply to the proposed pipeline activities at this location, provided that these activities do not encroach into the 1/4-mi radius of the nest.

---

<sup>\*</sup> Our recommended timing.



TABLE 75. Characteristics of bald eagle nest location NWA-1.

---

Status: active nest in 1979 and 1980

Location

Region: Interior

Locale: near Little Scottie Creek; T10N, R23E, Sec. 4; USGS Nabesna C-1

Alignment Sheet (4/80): near 4680-16-00-B-E-130

Elevation: 1810-1830 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.5 mi west to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-33P-1B is 0.8 mi south

Other Developments: Alaska Highway is 0.3 mi southwest

Nest Characteristics

Nesting Substrate: spruce tree

Nest Characteristics Relative to NWA

Nest Direction: basically eastward

Presence of Screening Features: screened by zone of trees parallel to  
Alaska Highway

TABLE 76. Characteristics of bald eagle nest location NWA-64 and NWA-64.1.

---

Status: NWA-64 active nest in 1979

NWA-64.1 active nest in 1980

Location

Region: Interior

Locale: Shaw Creek; T8S, R8E, Sec. 2; USGS Big Delta B-5

Alignment Sheet (4/80): near 4680-15-00-B-E-094

Elevation: 900 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 1.1 mi northeast to ROW

NWA Facility Sites: --

NWA Material Site: within EMS-94-1

Other Developments: TAPS oil line is 1.2-1.3 mi northeast

Alaska Highway and Shaw Creek Lodge are 0.4 mi north

Nest Characteristics

Nesting Substrate: poplar trees

Nest Characteristics Relative to NWA

Nest Direction: one faces south and one basically north

Presence of Screening Features: screened by zone of trees parallel to  
Alaska Highway and Tanana River

TABLE 77. Characteristics of bald eagle nest location NWA-85.1 (new).

---

Status: active in 1980

Location

Region: Interior

Locale: Chatanika River; T4N, R1W, Sec. 30; USGS Livengood A-2

Alignment Sheet (4/80): near 4680-14-00-B-E-079

Elevation: ~ 525 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 0.3-0.4 mi northeast to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-79-2 is 1.8 mi southeast

Other Developments: TAPS oil line is 0.2-0.3 mi east

Nest Characteristics

Nesting Substrate: spruce tree

Nest Characteristics Relative to NWA

Nest Direction: basically eastward

Presence of Screening Features: ROW is screened by trees in river valley

### 3.8.5 Realignment and Relocation

Any realignment of the pipeline ROW and any relocation of facility or material sites could alter the distances from raptor nest locations, and hence the restrictions to be applied in these areas, our evaluation of the potential conflicts, and our recommendations concerning them. Accordingly, we recommend that any such realignment or relocation be evaluated in the same process as has been done in this section. This should apply in particular to the revisions in alignment sheets that have been made since the April 1980 set of alignment sheets on which our evaluations are based. All of the known nest locations in the corridor that may be within 1/2 mi of the pipeline or any facility or material sites should be considered in this process.

### 3.9 RECOMMENDATIONS

#### 3.9.2 Recommendations re Potential Conflicts

Tables 80, 81, 82 and 83 summarize the potential conflicts between NWA pipeline plans and the nest locations of golden eagles, gyrfalcons, rough-legged hawks and bald eagles, respectively, under the State of Alaska protective measures and our recommendations. There are no potential conflicts between the current pipeline plans and the nest locations of ospreys. These tables also contain our recommendations as to whether site-specific exemptions can be granted for the various conflicts. Additional comments on some of these recommendations are provided below (see also section 3.8).

*Golden Eagle Nest Locations NWA-108, 109 and 175* -- Exemptions can be granted for low-level survey and surveillance flights along the ROW, provided that these flights remain at least 500 ft below the nest levels. It may also be possible to grant exemptions for major ground activity along the ROW after 20 June, provided that the activities within 1/2 mi of the nest locations can be done quickly.

*Gyrfalcon Nest Location NWA-102* -- No restrictions need be applied to the ROW provided that the nest location remains unoccupied.

*Gyrfalcon Nest Location NWA-183d* -- In the course of material extraction at EMS-22-1, a cliff with several ledges should be created and left along the foot of the mountain at the back of the material site.

*Realignment and Relocation* -- Any realignment of the pipeline ROW or any relocation of facility or material sites should be evaluated in terms of conflicts with gyrfalcon, rough-legged hawk, golden eagle, bald eagle and osprey nest locations under the state restrictions.

TABLE 80. Golden eagle nest locations within 1/2 mi of facilities, etc. and recommendations re potential conflicts.

<u>Nest Location</u> NWA-	<u>78</u>	<u>87</u>	<u>98</u>	<u>108</u>	<u>109</u>	<u>151</u>
<u>Facility, ROW, etc.</u>	ROW	ROW	ROW	ROW	ROW	ROW
<u>Closest distance (mi)</u> to nest location	0.3	0.5	0.5	0.4	0.4	0.5
<u>Facility Siting Restriction</u>						
Conflict?	no	no	no	no	no	no
Should exemption be made?						
<u>Habitat Alteration Restriction</u>						
Conflict?	no	no	no	no	no	no
Should exemption be made?						
<u>Aerial Activity Restriction</u>						
Applicability <sup>a</sup>	yes	no	no	yes	yes	no
Should exemption be made?	no			yes	yes	
<u>Major Ground Activity Restriction</u>						
Applicability <sup>a</sup>	yes	no	no	yes	yes	no
Should exemption be made?	no			yes?	yes?	
<u>Minor Ground Activity Restriction</u>						
Applicability <sup>a</sup>	no	no	no	no	no	no
Should exemption be made?						
<u>Special Conditions, Comments</u> (see text)				yes	yes	

<sup>a</sup> During the sensitive period (1 April - 31 August) with provision for relaxation after 1 June if location is not occupied.

TABLE 80. (continued)

<u>Nest Location</u> NWA-	175	
<u>Facility, ROW, etc.</u>	ROW EMS-29-1.1	
Closest distance (mi) to nest location	0.4	0.2
<u>Facility Siting Restriction</u>		
Conflict?	no	no
Should exemption be made?		
<u>Habitat Alteration Restriction</u>		
Conflict?	no	no
Should exemption be made?		
<u>Aerial Activity Restriction</u>		
Applicability <sup>a</sup>	yes	yes
Should exemption be made?	yes	no
<u>Major Ground Activity Restriction</u>		
Applicability <sup>a</sup>	yes	yes
Should exemption be made	yes?	no
<u>Minor Ground Activity Restriction</u>		
Applicability <sup>a</sup>	no	yes
Should exemption be made?		no
<u>Special Conditions, Comments</u> (see text)	yes	yes

<sup>a</sup> During the sensitive period (1 April - 31 August) with provision for relaxation after 1 June if location is not occupied.

TABLE 81. Gyr Falcon nest locations within 1/2 mi of facilities, etc. and recommendations re potential conflicts.

<u>Nest Location</u>	<u>102</u>			<u>183d</u>		<u>187b</u>		<u>190b</u>
<u>Facility, ROW, etc.</u>	ROW	EMS-	EMS-	ROW	EMS-	ROW	EMS-	EMS-
<u>Closest distance (mi)</u>		53-3B	52-3A		22-1		17-2	16-3
<u>to nest location</u>	0.06	0	0.3	0.3	0?	0.3	0?	0.5
<u>Facility Siting Restriction</u>								
<u>Conflict?</u>	no	no	no	no	no	no	no	no
<u>Should exemption be made?</u>								
<u>Habitat Alteration Restriction</u>								
<u>Conflict?</u>	yes	yes	no	no	yes	no	yes	no
<u>Should exemption be made?</u>	yes	no			yes		no	
<u>Aerial Activity Restriction</u>								
<u>Applicability <sup>a</sup></u>	yes	yes	no	no	yes	no	yes	no
<u>Should exemption be made?</u>	yes	no			no		no	
<u>Major Ground Activity Restriction</u>								
<u>Applicability <sup>a</sup></u>	yes	yes	no	no	yes	no	yes	no
<u>Should exemption be made?</u>	yes	no			no		no	
<u>Minor Ground Activity Restriction</u>								
<u>Applicability <sup>a</sup></u>	yes	yes	no	no	yes	no	yes	no
<u>Should exemption be made?</u>	yes	no			no		no	
<u>Special Conditions, Comments</u>	yes				yes			
<u>(see text)</u>								

<sup>a</sup> During the sensitive period (15 February - 15 August) with provision for relaxation after 1 June if location is not occupied.



TABLE 82. Rough-legged hawk nest locations within 1/2 mi of facilities, etc. and recommendations re potential conflicts.

Nest Location NWA-	183b*		'YY'		186		187a*	
	ROW	EMS- 22-1	EMS- 18-1	EMS- 18-1.1	ROW	EMS- 17-2	EMS- 17-2	ROW
Facility, ROW, etc Closest distance (mi) to nest location	0.4	0.5	<0.1	0.1	0.3	0.3	0?	0.3
<u>Facility Siting Restriction</u>								
Conflict?	no	no	no	no	no	no	no	no
Should exemption be made?								
<u>Habitat Alteration Restriction</u>								
Conflict?	no	no	yes	yes	no	no	yes	no
Should exemption be made?			no	no			no	
<u>Aerial Activity Restriction</u>								
Applicability <sup>a</sup>	no	no	yes	yes	no	no	yes	no
Should exemption be made?			no	no			no	
<u>Major Ground Activity Restriction</u>								
Applicability <sup>a</sup>	no	no	yes	yes	no	no	yes	no
Should exemption be made?			no	no			no	
<u>Minor Ground Activity Restriction</u>								
Applicability <sup>a</sup>	no	no	yes	yes	no	no	yes	no
Should exemption be made?			no	no			no	
<u>Special Conditions, Comments</u> (see text)								

<sup>a</sup> During the sensitive period (normally 15 April - 31 August, but commencing 15 February if the nest is likely to be used by gyrfalcons in future years) with provision for relaxation after 1 June if location is not occupied.

\* Likely to be used by gyrfalcons in future years.

TABLE 82. (continued)

<u>Nest Location</u>	NWA-	<u>188<sup>*</sup></u>	<u>189</u>	<u>190a<sup>*</sup></u>	<u>193</u>	<u>202.1<sup>*</sup></u>	<u>214</u>
<u>Facility, ROW, etc.</u>		EMS-	ROW	EMS-	EMS-	EMS- ROW	EMS-
<u>Closest distance (mi)</u>		17-3		16-3	14-1	13-1	8-1A
<u>to nest location</u>		0?	0.2	0.25	0?	0 0.5	0.4
<u>Facility Siting Restriction</u>							
<u>Conflict?</u>		no	no	no	no	no	no
<u>Should exemption be made?</u>							
<u>Habitat Alteration Restriction</u>							
<u>Conflict?</u>		yes	no	no	yes	yes no	no
<u>Should exemption be made?</u>		no			no		
<u>Aerial Activity Restriction</u>							
<u>Applicability <sup>a</sup></u>		yes	yes	no	yes	yes no	no
<u>Should exemption be made?</u>		no	yes		no		
<u>Major Ground Activity Restriction</u>							
<u>Applicability <sup>a</sup></u>		yes	yes	no	yes	yes no	no
<u>Should exemption be made?</u>		no	no		no		
<u>Minor Ground Activity Restriction</u>							
<u>Applicability <sup>a</sup></u>		yes	yes	no	yes	yes no	no
<u>Should exemption be made?</u>		no	yes		no		
<u>Special Conditions, Comments</u>							
<u>(see text)</u>			yes				

<sup>a</sup> During the sensitive period (normally 15 April - 31 August, but commencing 15 February if the nest is likely to be used by gyrfalcons in future years) with provision for relaxation after 1 June if location is not occupied.

<sup>\*</sup> Likely to be used by gyrfalcons in future years.

TABLE 82. (continued)

<u>Nest Location</u> NWA-	<u>216.1</u>	<u>218.1</u>	<u>223</u>
<u>Facility, ROW, etc.</u>	EMS-	EMS-	EMS-
Closest distance (mi)	8-1B	7-1	6-1
to nest location	0.2	0.3	0.3
<u>Facility Siting Restriction</u>			
Conflict?	no	no	no
Should exemption be made?			
<u>Habitat Alteration Restriction</u>			
Conflict?	no	no	no
Should exemption be made?			
<u>Aerial Activity Restriction</u>			
Applicability <sup>a</sup>	yes	no	no
Should exemption be made?	no		
<u>Major Ground Activity Restriction</u>			
Applicability <sup>a</sup>	yes	no	no
Should exemption be made?	no		
<u>Minor Ground Activity Restriction</u>			
Applicability <sup>a</sup>	yes	no	no
Should exemption be made?	no		
<u>Special Conditions, Comments</u>			
(see text)	yes	yes	yes

<sup>a</sup> During the sensitive period (normally 15 April - 31 August, but commencing 15 February if the nest is likely to be used by gyrfalcons in future years) with provision for relaxation after 1 June if location is not occupied.

\* Likely to be used by gyrfalcons in future years.

TABLE 83. Bald eagle nest locations within 1/2 mi of facilities, etc. and recommendations re potential conflicts.

<u>Nest Location</u> NWA-	<u>1</u>	<u>64 and 64.1<sup>*</sup></u>	<u>85.1</u>
<u>Facility, ROW, etc.</u>	ROW	EMS-	ROW
Closest distance (mi) to nest location	0.5	94-1 0	0.3
<u>Facility Siting Restriction</u>			
Conflict?	no	no	no
Should exemption be made?			
<u>Habitat Alteration Restriction</u>			
Conflict?	no	yes	no
Should exemption be made?		no	
<u>Aerial Activity Restriction</u>			
Applicability <sup>a</sup>	no	yes	no
Should exemption be made?		no	
<u>Major Ground Activity Restriction</u>			
Applicability <sup>a</sup>	no	yes	no
Should exemption be made?		no	
<u>Minor Ground Activity Restriction</u>			
Applicability <sup>a</sup>	no	yes	no
Should exemption be made?		no	
<u>Special Conditions, Comments</u> (see text)			

<sup>a</sup> During the sensitive period (normally 15 March - 31 August, but commencing 1 March along the Tanana River between North Pole and the Gerstle River) with provision for relaxation after 1 June if location is not occupied.

<sup>\*</sup> Along the Tanana River between North Pole and the Gerstle River.

## 5. APPENDICES

### 5.7 CHARACTERISTICS OF PEREGRINE FALCON NEST LOCATIONS BETWEEN 2 AND 15 MILES FROM THE ROW

The following tables briefly list the characteristics of the 21 peregrine falcon nest locations that are 2-15 mi from the nearest portion of the pipeline ROW or any pipeline facility or activity.

Characteristics of nest location NWA P-16a, Tanana River

Status: reported pairs

USFWS Status: 'not likely' to be occupied

Location

Region: Interior

Locale: near Tanacross; T19N, R12E, Sec. 20, 21; USGS Tanacross  
B-5

Alignment Sheet (4/80): --

Elevation: 1800 ft asl

Distance and Direction from Closest Development

NWA ROW Centerline: Nesting location is located 7.8 mi north of  
the ROW

Characteristics of nest location NWA P-29b, Tanana River

Status: active pair 1979, 1980

USFWS Status: 'likely' to be occupied

Location

Region: Interior

Locale: Round Lake; T21N, R8E, Sec. 10; USGS Tanacross C-6

Alignment Sheet (4/80): near 4680-15-00-B-E-108 and 109

Elevation: 1500-1700 ft asl

Distance and Direction from Closest Development

NWA ROW Centerline: 3.1 mi southwest to ROW

Characteristics of nest location NWA P-34a, Tanana River

Status: documented site, pair present as recently as 1978

USFWS Status: 'likely' to be occupied

Location

Region: Interior

Locale: Billy Creek; T21N, R8E, Sec. 10; USGS Mt. Hayes C-1

Alignment Sheet (4/80): near 4680-15-00-B-E-107 and 108

Elevation: 1500-1700 ft asl

Distance and Direction from Closest Development

NWA Material Sites: EMS-10P-1 is 3.3 mi southwest

Characteristics of nest location NWA P-35a, Tanana River

Status: possible habitat for peregrines

USFWS Status: not categorized

Location

Region: Interior

Locale: Billy Creek; T21N, R8E, Sec. 10; USGS Mt. Hayes C-1

Alignment Sheet (4/80): near 4680-15-00-B-E-107

Elevation: 1400-1500 ft asl

Distance and Direction from Closest Development

NWA ROW Centerline: 3.0 mi south to ROW

Characteristics of nest location NWA 'C', Tanana River

Status: single peregrine present in 1979

USFWS Status: not categorized

Location

Region: Interior

Locale: Billy Creek west; T21N, R8E, Sec. 1; USGS Mt. Hayes C-1

Alignment Sheet (4/80): near 4680-15-00-B-E-107, 108

Elevation: 1500 ft asl

Distance and Direction from Closest Developments

NWA ROW Centerline: 2.9 mi south

NWA Material Sites: EMS-10P-1 is 2.9 mi south

Characteristics of nest location NWA P-50, Tanana River

Status: single adult at cliff in 1980

USFWS Status: 'likely' to be occupied

Location

Region: Interior

Locale: Gerstle River; T12S, R15E, Sec. 22; USGS Mt. Hayes D-2

Alignment Sheet (4/80): near 4680-15-00-B-E-102

Elevation: 1250-1350 ft asl

Distance and Direction from Closest Development

NWA Material Site: EMS-6P-3B is 3.9 mi south



Characteristics of nest location NWA P-52, Tanana RiverStatus: unsuccessful pair 1980USFWS Status: not categorizedLocation

Region: Interior

Locale: Moose Lake; T12S, R15E, Sec. 9; USGS Mt. Hayes D-2

Alignment Sheet (4/80): --

Elevation: 1250-1350 ft aslDistance and Direction from Closest Development

NWA Material Sites: EMS-6P-2A is 5.4 mi southwest

Characteristics of nest location NWA P-55, Tanana RiverStatus: documented site, pair present in 1970USFWS Status: not categorizedLocation

Region: Interior

Locale: Gerstle River complex; T10S, R13E, Sec. 2, 11; USGS  
Big Delta A-3

Alignment Sheet (4/80): --

Elevation: 1100-1250 ft aslDistance and Direction from Closest Development

NWA ROW Centerline: 14 mi east to ROW

Characteristics of nest location NWA P-60a, Tanana River

Status: reported pair, not used recently

USFWS Status: 'not likely' to be occupied

Location

Region: Interior

Locale: Indian Creek; T8S, R10E, Sec. 25, 26; USGS Big Delta A-4

Alignment Sheet (4/80): near 4680-15-00-B-E-096

Elevation: 1000-1100 ft asl

Distance and Direction from Closest Developments

NWA Facility Sites: 4.2 mi southwest to Delta Camp area

NWA Material Sites: EMS-96-2 is 4.2 mi southwest

Characteristics of nest location NWA P-68a, Tanana River

Status: treat as a historical site

USFWS Status: not categorized

Location

Region: Interior

Locale: Shaw Creek area; T7S, R7E, Sec. 36; USGS Big Delta B-5

Alignment Sheet (4/80): near 4680-15-00-B-E-093

Elevation: 1100 ft asl

Distance and Direction from Closest Development

NWA Material Sites: EMS-94-1 is 4.5 mi east

Characteristics of nest location NWA P-69a, Tanana River

Status: treat as a historical site

USFWS Status: not categorized

Location

Region: Interior

Locale: Shaw Creek area; T7S, R7E, Sec. 35; USGS Big Delta B-5

Alignment Sheet (4/80): --

Elevation: 900-1000 ft asl

Distance and Direction from Closest Development

NWA Material Sites: EMS-94-1 is 5.4 mi east

Characteristics of nest location NWA P-70, Tanana River

Status: documented site, peregrines present in 1963

USFWS Status: not categorized

Location

Region: Interior

Locale: Birch Lake; T7S, R6E, Sec. 22; USGS Big Delta B-6

Alignment Sheet (4/80): --

Elevation: 900-1000 ft asl

Distance and Direction from Closest Development

NWA ROW Centerline: 14.1 mi south to ROW

Characteristics of nest location NWA P-73b, Tanana RiverStatus: treat as a historical siteUSFWS Status: not categorizedLocation

Region: Interior

Locale: Little Delta River; T7S, R5E, Sec. 25, 26, 36; USGS  
Big Delta B-6

Alignment Sheet (4/80): --

Elevation: 800-900 ft aslDistance and Direction from Closest Development

NWA Material Sites: EMS-89-4 is 13.5 mi north

Characteristics of nest location NWA P-74a, Tanana RiverStatus: unsuccessful pairs present in 1979, 1980USFWS Status: not categorizedLocation

Region: Interior

Locale: Scout Camp; T7S, R5E, Sec. 23; USGS Big Delta B-6

Alignment Sheet (4/80): --

Elevation: 800-900 ft aslDistance and Direction from Closest Development

NWA Material Sites: EMS-84-4 is 12.6 mi north

Characteristics of nest location NWA P-'K', Tanana River

Status: probably J. Haugh's site No. 15; peregrines present prior to 1963

USFWS Status: not categorized

Location

Region: Interior

Locale: Birch Lake; T7S, R5E, Sec. 9; USGS Big Delta B-6

Alignment Sheet (4/80): --

Elevation: 750-850 ft asl

Distance and Direction from Closest Development

NWA ROW Centerline: 12 mi south to ROW

Characteristics of nest location NWA P-80, Salcha River

Status: treat as a historical site

USFWS Status: not categorized

Location

Region: Interior Alaska

Locale: Salcha Bluff; T5S, R5E, Sec. 15; USGS Big Delta B-6

Alignment Sheet (4/80): near 4680-15-00-B-E-089

Elevation: 750-900 ft asl

Distance and Direction from Developments

NWA ROW Centerline: 2.4 mi northeast to ROW

NWA Material Sites: EMS-89-2B is 2.3 mi to northeast

Characteristics of nest location NWA P-84, Chena River.

---

Status: documented history of use

no peregrines apparently present since late 1950's - early 1960's

USFWS Status: not categorized

Location

Region: Interior

Locale: Mullen Slough; T1S, R3E, Sec. 22; USGS Fairbanks D-1

Alignment Sheet (4/80): near 4680-14-00-B-E-082

Elevation: 550-650 ft asl

Distance and Direction from Closest Development

NWA Material Sites: EMS-84-1C is 5.1 mi southwest

Characteristics of nest location NWA P-88.1, Globe CreekStatus: successful pair 1980USFWS Status: not categorizedLocation

Region: Interior

Locale: Grapefruit Rocks; USGS Livengood B-3

Alignment Sheet (4/80): near 4680-14-00-B-E-075

Elevation: 1100 ft aslDistance and Direction from Developments

NWA ROW Centerline: 2.1 mi southwest to ROW

NWA Facility Sites: --

NWA Material Sites: EMS-75-1A is 2.2 mi west

EMS-75-1B is 2.4 mi west

EMS-75-2 is 2.5 mi south

Other Developments: TAPS is 2.0 mi southwest

Elliott Highway is 0.8 mi south

Characteristics of nest location NWA P-92.1, Yukon RiverStatus: unsuccessful pair 1979, 1980USFWS Status: not categorizedLocation

Region: Interior

Locale: Ft. Hamlin; T12N, R8W, Sec. 17; USGS Livengood D-5

Alignment Sheet (4/80): --

Elevation: 500 ft aslDistance and Direction from Closest Development

NWA Material Sites: EMS-66-2 is 6.7 mi southwest

Characteristics of nest location NWA P-97.1, Yukon RiverStatus: active 1974-80USFWS Status: not categorizedLocation

Region: Interior

Locale: Kalka Island; T11N, R12W, Sec. 20; USGS Tanana D-1

Alignment Sheet (4/80): --

Elevation: 300 ft aslDistance and Direction from Closest Development

NWA ROW Centerline: 12.8 mi southwest to ROW

Characteristics of nest location NWA P-97.2, Yukon RiverStatus: active 1974-80USFWS Status: not categorizedLocation

Region: Interior

Locale: Crescent Island; T10N, R11W, Sec. 22; USGS Livengood C-6

Alignment Sheet (4/80): --

Elevation: 300-500 ft aslDistance and Direction from Closest Development

NWA ROW Centerline: 9 mi southwest to ROW