

Environmental Assessment

for the

**Construction of a Type III Fuel Hydrant
System at the E-7, E-8, and E-9
Complexes
at
Eielson Air Force Base, Alaska**

**354th Fighter Wing
December 2003**

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**FINDING OF NO SIGNIFICANT IMPACT (FONSI)
and
FINDING OF NO PRACTICABLE ALTERNATIVE (FONPA)
for the
CONSTRUCTION OF A TYPE III HYDRANT FUELING SYSTEM AT
THE E-7, E-8, AND E-9 COMPLEXES**

Introduction

Eielson Air Force Base (Eielson) is proposing to upgrade their aircraft refueling capability to meet the demand that current mission requires. At the present time most of the refueling operations are conducted by out-of-date Type I Hydrant facilities built in the 1950s that have deteriorated to such an extent that Eielson could not meet the Air Force's 85 percent hydrant utilization requirement in the event of contingencies.

Description of the Proposed Action

The proposed action would result in the construction of a Type III hydrant fueling system that would include sixteen new hydrant outlets, two 10,000-gallon aboveground operating tanks, a pump house with a 2,400-gallon per minute pump, a new refueler truck stand, and a pantograph checkout facility. These proposed facilities would be constructed in the vicinity of parking ramps E-7, E-8, and E-9 near the Loop Taxiway. This project would replace portions of two existing Type I hydrant systems.

Alternatives to the Proposed Action

One alternative to the proposed action was identified. This alternative would result in the addition of twenty new R-11 refuelers to the existing fleet of fuel transport trucks. In addition, two new refueler warming facilities would be built to house trucks during cold winter temperatures.

No Action Alternative

This alternative would result in no upgrades to base refueling systems. Eielson's reduced refueling capacity would continue to exist resulting in the base not being able to meet its strategic mission requirements during Operation Plans.

Environmental Impacts of the Proposed Action

Wetlands and Floodplains

No wetlands or 100-year floodplains would be impacted by the proposed action.

Biological Resources

Few if any impacts to biological resources would result from the proposed project. Most of the project area is currently concrete or gravel surfaces with only a few small areas of grass. Little or no wildlife habitat exists in the area.

Threatened or Endangered Species

There are no threatened or endangered species in the project area. The project area is not suitable habitat for any of the threatened or endangered species occurring in the Alaskan interior.

Historical or Cultural Resources

Most archeological sites on Eielson lands have been identified and mapped. The proposed project is not associated with any known sites. In the event that historic or cultural sites are discovered during project construction, activities will be halted and a professional archeologist will evaluate the find.

Air Quality

The proposed actions will have minor air quality impacts during construction due to fugitive dust and machinery exhaust. Such impacts will be highly localized and temporary in nature.

Mitigation

No special conditions (mitigation) other than standard best management practices that are already incorporated into the project design, are required by any federal or state agency for impacts that may result from this project.

Public Comment

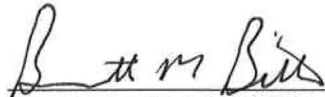
No public comment was received from the public noticing of the EA/FONSI for this project.

Findings

Pursuant to the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) implementing regulations for NEPA (40 CFR Part 1500-1508), and Air Force Instruction (AFI) 32-7061, *Environmental Impact Analysis Process* (32 CFR Part 989), the Air Force has prepared an EA for the installation of a new Type III hydrant fueling system in the vicinity of the E-7, E-8, and E-9 complexes. This FONSI has been developed pursuant to information provided in the accompanying EA.

Finding of No Significant Impact: Based on this environmental assessment, which was conducted in accordance with the requirements of NEPA, CEQ, and Air Force Instructions, I

conclude installation of a new Type III hydrant fueling system will not result in significant impacts to the environment. I also find that the preparation of an environmental impact statement is not warranted.



BENNETT M. BITLER
Colonel, USAF
Vice Commander

28 JAN 04

DATE

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1.0 Purpose and Need for the Action

Section 1.0 provides a description of the purpose and need for the proposed action and its alternatives.

1.1 Background and Objectives for the Proposed Action and Alternatives

1.1.1 The host unit at Eielson Air Force Base (Eielson), the 354th Fighter Wing, operates F-16 Fighting Falcon aircraft and OA-10 Thunderbolts. The 168th Air Refueling Wing (Air National Guard) is also based at Eielson and currently flies KC-135 aircraft. In addition, since Alaska ranges are the closest US-controlled tactical flying training areas available to Pacific Air Command Air Forces (PACAF) and US allies in the Pacific, large numbers of aircraft are frequently deployed to Eielson to participate in joint/combined training and Major Flying Exercises (MFE). Assigned aircraft, along with the transient aircraft that utilize the base airfield, account for more than 13,000 sorties (take-offs and landings) during an average year.

1.1.2 To support the fuel needs of these aircraft, Eielson has base facilities that store and handle large volumes of jet fuel. Tank farms containing large bulk storage tanks, pipeline distribution systems, and flight line hydrant facilities handle over 26 million gallons of JP-8 fuel annually. The Williams and North Star Refineries in North Pole, Alaska provides this fuel to Eielson via the 15.83-mile Williams to Eielson pipeline.

1.1.3 Eielson has four hydrant refueling systems that are used to refuel aircraft at various locations on the flight line. Three of these hydrant systems are Type I built in the 1950's with eight outlets each. The fourth system is a Type III built in 1994. The Type I systems have deteriorated significantly in recent years and the integrity of its explosion proof equipment has been compromised. Currently, one system has been partially abandoned and the other two are degraded to such an extent that only 22 percent of their original capacity is functional. As a result, some hydrant outlets are as much as three miles from aircraft parking ramps. This results in aircraft operations having to use tanker trucks to fuel aircraft, resulting in more chance of fuel spills.

1.1.4 The proposed upgrade in Eielson's hydrant fueling systems is required for it to meet its mission to support strategic in-route traffic per Operation Plans 50-27 and 80-44. These operations involve military traffic flying between Asia, North America, and Europe. Without the improvements, Eielson will not be able to meet its contingency requirements of refueling over 1,800 tanker and large-frame aircraft with over 50 million gallons of fuel in less than a 46-day period.

1.2 Location of the Proposed Action

1.2.1 Eielson is located in the Tanana River Valley on a low, relatively flat, floodplain terrace that is approximately 2 miles north of the active river channel. Other communities near Eielson include Moose Creek to the north and Salcha to the south.

1.2.2 Base lands include 19,790 contiguous acres bounded on the west by the Richardson Highway and on the north and east by Army lands (Yukon Training Area).

REGIONAL AND BASE LOCATION MAPS

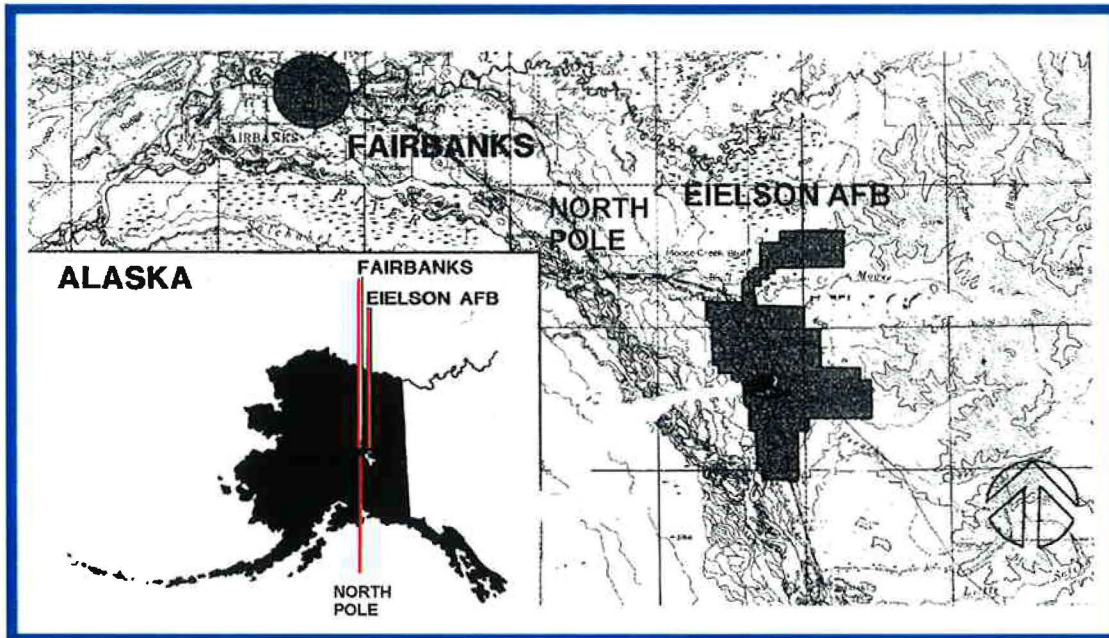


Figure 1-1 Base Location Map

To the south, the community of Salcha borders Eielson. The developed portion of Eielson is primarily an area filled by gravel to elevate potential building sites above the 100-year floodplain of nearby watersheds. In addition, more than 90 percent of the lands that constitute Eielson were at one time wetlands. Of the remaining undeveloped portions of the base, 70 percent are wetlands. As a consequence, land planning and utilization of Eielson lands becomes very difficult if one is to entirely avoid siting facilities in wetlands and floodplains.

1.3 Proposed Action

The proposed action would result in the construction of a Type III hydrant fueling system that would include the following:

- Sixteen hydrant outlets
- Two aboveground 10,000 barrel operating tanks and containment dikes
- Pump house with 2,400-gallon per minute capacity
- Two position truck fill stands
- Generator and generator shelter
- A pantograph checkout facility

These proposed facilities would be constructed in the vicinity of parking ramps E-7, E-8, and E-9 near the Loop Taxiway. This project would replace portions of two existing Type I hydrant systems.

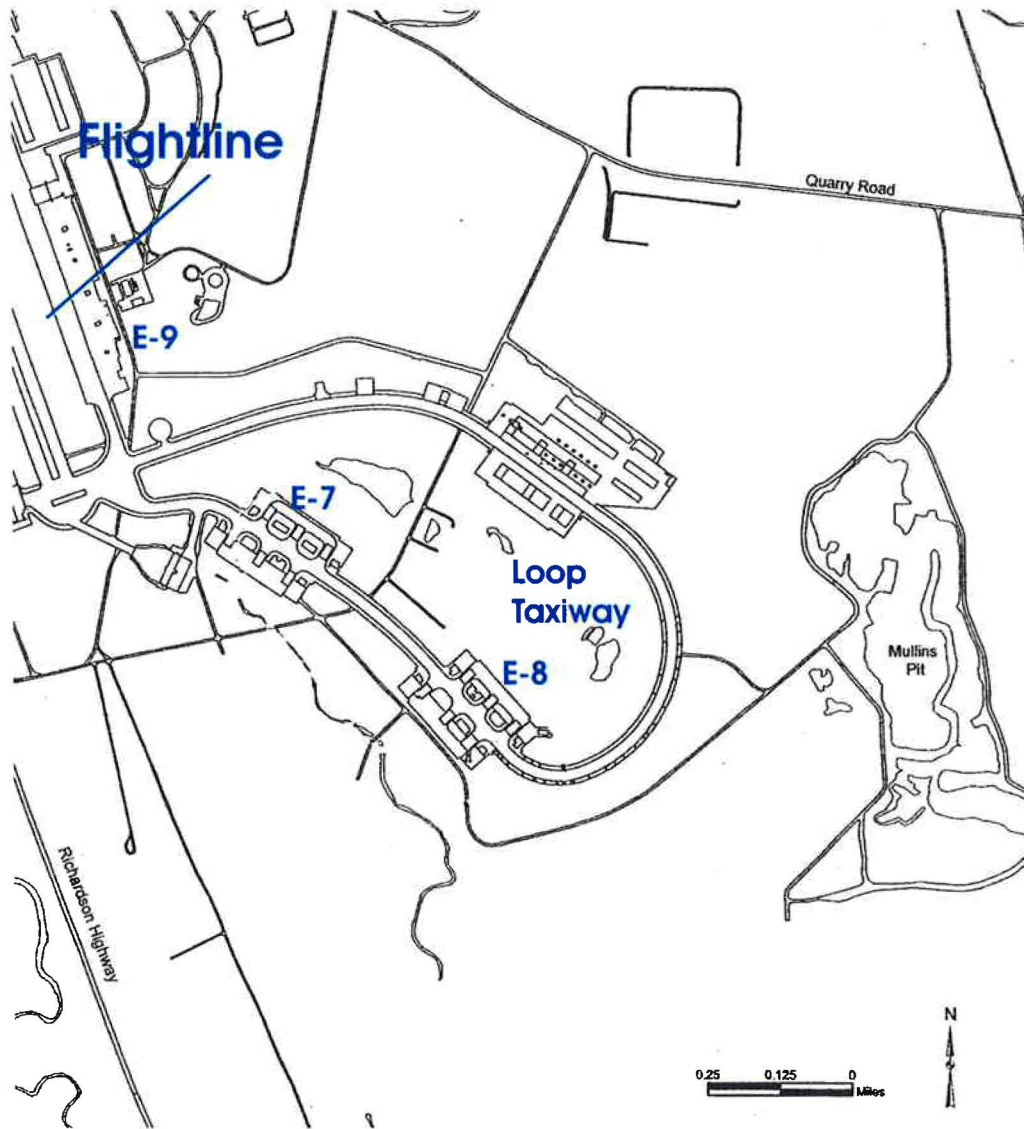


Figure 1-2 - Proposed Project Area

1.4 Alternative to the Proposed Action

Alternative 1 – Expand Fleet of R-11 Refuelers

This alternative would result in the addition of twenty new R-11 refuelers to the existing fleet of fuel transport trucks. In addition, two new refueler truck warming facilities would be built to house trucks during cold winter temperatures.

1.5 No Action Alternative

This alternative would result in no additional refueling capability for Eielson aircraft. The degraded Type I hydrant systems would be decommissioned and removed due to hazards associated with its continued operation.

1.6 Environmental Documentation that Influences the Scope of this Environmental Assessment

1.6.1 *Environmental Assessment of the Proposed Conversion to F-16C/D Squadron, Eielson AFB, AK, 1991.* In 1991 this EA was written to assess the impacts of converting A-10 aircraft, then currently assigned to Eielson, to F-16 C/D aircraft. Issues associated with this conversion were addressed including airspace, socio-economic impacts, aircraft noise, and military manning.

1.6.2 *Alaska Military Operations Areas-Environmental Impact Statement (EIS) 11th Air Force, 1995.* This EIS was prepared in 1995 to address the environmental impacts of restructuring the Air Force Special Use Airspace in Alaska. This document assesses several issues pertinent to the operation of Eielson, including airspace management, biological resources, land use, air quality, and noise as they relate to operation of military aircraft on and near Eielson.

1.7 Decision to be Made

1.7.1 As required by 32 CFR Part 989, the *Environmental Impact Analysis Process* will be used to determine what are the environmental consequences of the proposed installation of a Type III hydrant system in the Loop Taxiway area. This EA is intended to satisfy these requirements. The proposed action and all alternatives listed in Sections 1.3 - 1.5 and will be addressed in detail in Chapter 2.0 of this document. A description of the resources associated with the areas affected by all alternatives will be provided in Chapter 3.0 and the impacts that could result from each one are discussed in Chapter 4.0.

1.7.2 Based on the evaluation of impacts in the EA, a Finding Of No Significant Impact (FONSI) will be published if there is a finding of no significant environmental impacts for the proposed action. If it is determined that the proposed action will have significant environmental impacts, other alternatives will be considered for which impacts may not reach the threshold of significance.

1.7.3 The EA, a draft FONSI (if applicable), and all other appropriate planning documents will be provided to the Eielson Vice Commander, the decision maker, for review and consideration. If, based on a review by the decision maker of all pertinent information, a FONSI is proposed, a notice of intent (NOI) will be published in accordance with 40 CFR 1506.6. All interested parties will have 15 days to comment on the decision to the Air Force. If, at the end of the 15-day public comment period, no substantive comments are received, the decision maker will sign the FONSI.

1.8 Project Scoping/Significant Issues

This section provides a summary of major issues raised during the scoping process that were considered significant enough to be addressed in the EA. The scoping process typically involves a meeting of potentially interested parties. These may include state and federal regulatory agencies that have oversight authority, as well as base groups that have involvement in the management of Eielson's fuel systems and aircraft. For this project scoping process all potentially interested parties were contacted. However, no parties other than Eielson groups chose to participate. The following issues were identified during the scoping process:

There is an acute shortage of parking and refueling facilities on Eielson. The current number and configuration of parking and refueling facilities at Eielson creates significant delays in handling of aircraft during peak traffic times, especially during exercises and when Air Mobility Command's wide-bodied aircraft are utilizing Eielson's facilities. This project is intended to address this problem and would improve sortie turnaround time by 40 percent.

The existing Type I hydrant systems that operate at Eielson were built in the 1950's and are seriously degraded. There are significant safety issues associated with their operation as a result of compromised explosion proof equipment. One pit has already been abandoned and others will need to be in the near future.

The 168 ARW will not be able to meet their mission requirements without improved fuel handling capacity. During contingencies the 168 ARW is required to provide in-flight refueling support for the air bridge traffic during Operation Plans. Current refueling capability would not make this possible.

1.9 Federal, State, and Local Permits Needed for Project Implementation. An air permit from the state of Alaska will be needed for the back-up generator that would be constructed as part of the proposed project.

2.0 Description of the Proposed Action and Alternatives

Chapter 2.0 provides a description of alternatives considered for the purpose and need described in Chapter 1.0. The proposed action, one action alternative, and a no action alternative are addressed.

2.1 Proposed Action – Install a Type III Hydrant System in the Loop Taxiway Area

2.1.1 The proposed action would result in the installation of a Type III hydrant fuel system in the Loop Taxiway vicinity of the flight line. The system would include the following components:

- Construct sixteen new Type III hydrant outlets. These hydrant outlets would be constructed in the E-7 and E-8 parking ramp areas. In conjunction with another military construction funded project, the available parking and refueling areas would be expanded from six to sixteen.
- Construct two aboveground 10,000 barrel operating tanks and associated containment dikes. These additional tanks would give the system the needed storage capacity to handle the increased number of hydrant outlets.
- Install a new 2,400-gallon per minute capacity pump and pump house to handle the increased fuel loads.
- Construct a two-position truck fill stand to fill R-11 fuel trucks. This will decrease truck-refilling time.
- Construct a back-up generator and generator shelter for use when the base's power grid would be down.
- Construct a pantograph checkout facility for checking and maintaining fueling equipment. During cold winter months the extremely low temperatures that occur at Eielson can cause problems with fueling equipment resulting in increased risk of fuel spills.
- In conjunction with the installation of a new Type III hydrant system, the old Type I system would be removed. This would involve the removal of existing pipes and tanks that would no longer be used.

2.1.2 Portions of the area where the Type III hydrant system would be installed is in a contaminated site managed by Eielson's Environmental Restoration Program and designated as ST-20. Portions of the project area are contaminated with JP-4 fuel, both in the soil and in the groundwater. This contamination has resulted from leaking underground storage tanks and fuel pipelines. In the event that during excavation work contaminated soil is encountered certain procedures must be followed.

- All potentially contaminated soils encountered during excavation must be sampled and characterized. If they are removed from in situ, they must be stockpiled in accordance with the Alaska Department of Environmental Conservation regulations.
- If it is not necessary to permanently remove the soils, they can be returned to the same location from which they were excavated as long as the soils are capped to assure there are no exposure pathways.
- Any soils that must be removed from the site must be disposed of in a manner that is approved by the Alaska Department of Environmental Conservation.

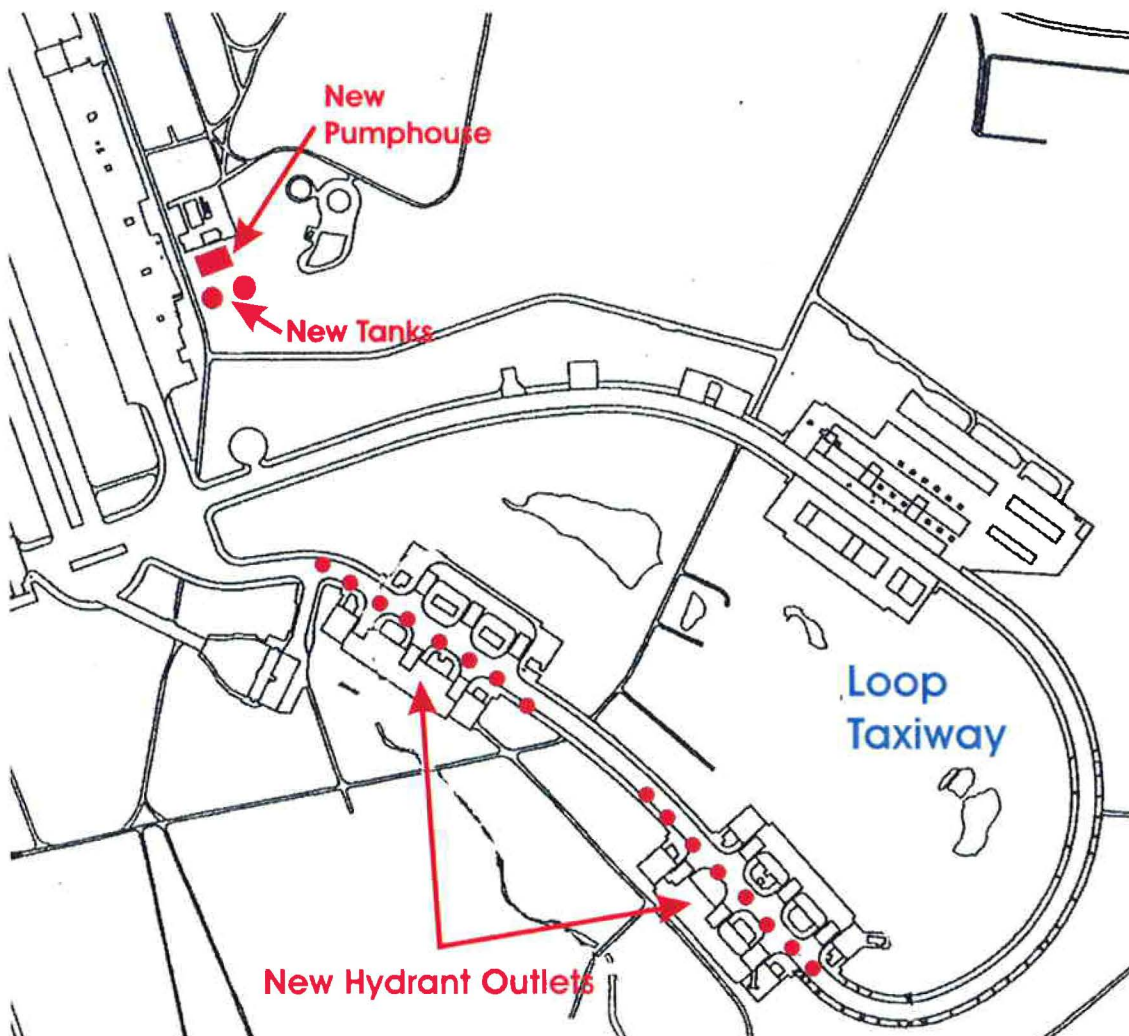


Figure 2-1 – Proposed Project

2.2 Alternatives to the Proposed Project

Alternative 1 – Expand Fleet of R-11 Refuelers

This alternative would result in the purchase of twenty new R-11 refuelers to add to Eielson's existing fleet, thereby increasing the base's refueling capability. In addition to the purchase of the new refuelers, two additional refueler truck-warming bays would be constructed along with a pantograph equipment checkout facility. Using this method of fueling (storage tank to truck to plane) does increase the handling of the fuel, and in turn increases the chance of fuel spills. This is especially true during the extremely cold temperatures that occur in the winter months.

2.3 No Action Alternative

This alternative would result in no new refueling capability being implemented. Existing shortfalls and inability to meet mission requirements would continue to occur.

3.0 Affected Environment

This section describes relevant resource components of the existing environment that might be impacted by the proposed project and its alternatives. Only environmental components relevant to the issues and objectives of this EA are described.

3.1 Physical Environment

Eielson encompasses approximately 19,790 acres and is isolated from major urban areas. The portion of Eielson that contains the project areas associated with the Proposed Action and Alternative 1 lies on the abandoned floodplain of the Tanana River, with elevations ranging from 525 to 550 feet above Mean Sea Level (MSL). The surface of the floodplain is relatively smooth and slopes gently downward to the northwest at a gradient of about 6 feet per mile

3.1.1 Geology

The area in the vicinity of Eielson was not glaciated during the last ice age. The majority of the subsurface geologic formations of the central plateau of Alaska are primarily from the Permian and Devonian periods of the Paleozoic era. The hills to the northeast of the base are composed of Precambrian and Paleozoic-age schists, micaceous quartzites, and subordinate phyllite and marble. These formations have been locally intruded by a series of Cretaceous lower tertiary intrusions.

3.1.2 Soils

3.1.2.1 Soils in the Tanana River Valley consist of unconsolidated silty sands and gravels, organic and sandy silts, and clays. Floodplain soils nearest the active channels are sandy with a thin silt loam layer on the surface. On higher terraces, the soils become predominately silt from the Salchaket series. Along older river terraces, silt loam soils, which contain significant organic components, often dominate. These soils tend to be cold and wet and are generally underlain by permafrost. Approximately two-thirds of Eielson is covered with soils containing discontinuous permafrost. This preponderance of permafrost soils contributes to the large percentage of vegetated wetlands occurring on undeveloped base lands.

3.1.2.2 Soils in the immediate area of the proposed project site do contain contamination that has resulted from fuel spills and underground pipeline and tank leaks. It is concentrated in the area of E-7, E-8, and E-9 complexes. A remediation program managed by Eielson's Installation Restoration Program (IRP) is in place and includes product recovery and bioventing. The bioventing program is in the process of being decommissioned and will be removed prior to the beginning of construction. Most, if not all, of the remaining contamination is in the form of JP-4 and is at a level that Federal and State agencies consider it a "no further action site". See Figure 3-1 for details of its distribution and movement.

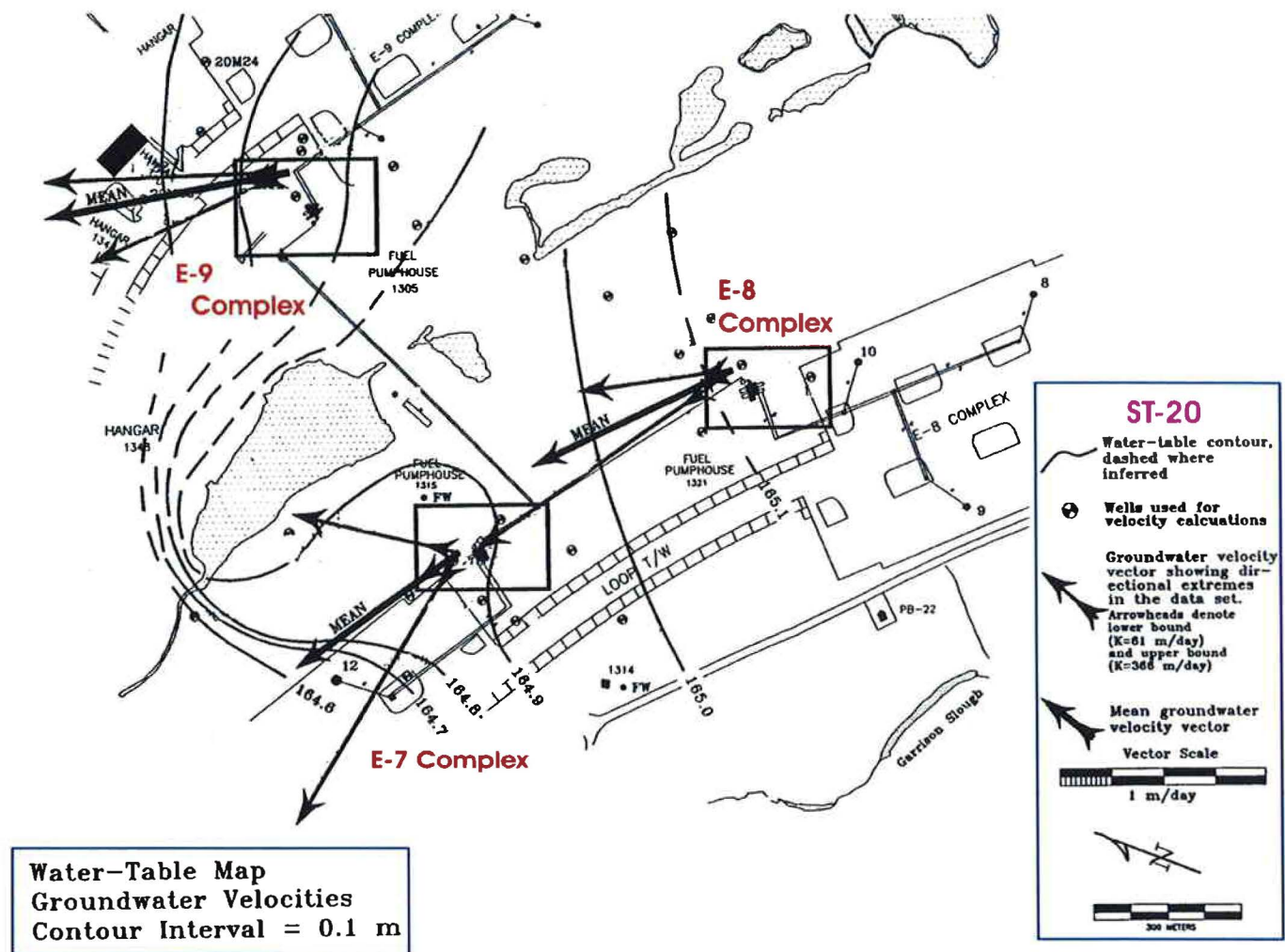


Figure 3-1 - Site Contamination and Groundwater Flow

3.1.3 Groundwater

3.1.3.1 Eielson is located over a shallow unconfined aquifer. The aquifer is approximately 250 feet thick, extends to bedrock, and has a regional gradient of about 5 feet per mile flowing to the north-northwest. The water table varies from the surface in adjacent wetlands to 10 feet below ground level in developed areas. The base uses the local aquifer for its drinking water and monitors groundwater quality in a number of locations as part of Eielson's IRP. Localized contamination of the aquifer has been identified in the industrial area of the base, but the overall quality of groundwater at Eielson is good. There is some contamination of groundwater in the project vicinity associated with the soil contamination depicted above. This contamination is being monitored by the IRP. None of the activities in the proposed construction area should result in any exposure to this contamination and this contamination is not considered an issue with respect to the proposed project.

3.1.4 Surface Water

3.1.4.1 Aquatic bodies on Eielson include streams, wetlands, and lakes. There are approximately 28 miles of streams; 10,133 acres of wetlands; 12 lakes (Lilly Lake is natural and the remaining 11 are man-made); 80 ponds (10 naturally-occurring and 70 man-made) totaling 560 acres; and 6,770 acres of floodplains on the main base. The man-made lakes and ponds were created during the excavation of gravel deposits for use as fill material for construction projects on base. Surface drainage on Eielson is generally in a north-northwest direction and parallel to the Tanana River. Five streams flow through the base and discharge into the Tanana River via Piledriver Slough.

3.1.4.2 Approximately 51 percent, or 10,133 acres, of Eielson is classified as wetlands, with 9,391 acres being vegetated wetlands and the remainder being lakes, ponds, and streams. Wetlands and low gradient alluvial streams comprise most of the surface water resources on Eielson, with wetlands dominating the low-lying areas within and surrounding the installation. Most wetland areas were created as a result of surface waters becoming trapped in the thawed layer over the permanently frozen subsurface (permafrost). Flood periods tend to occur during spring snowmelt and during the middle to late summer, when heavy rains or warm air quickly brings glacier fed mountain streams to flood capacity. Several lakes and extensive wetlands surround the airfield in the cantonment area. Among these are Bear, Polaris, Moose, Hidden, Pike, Rainbow, Scout, Grayling, and Tar Kettle lakes. Creeks that can be found in the vicinity of the airfield include French and Moose creeks.

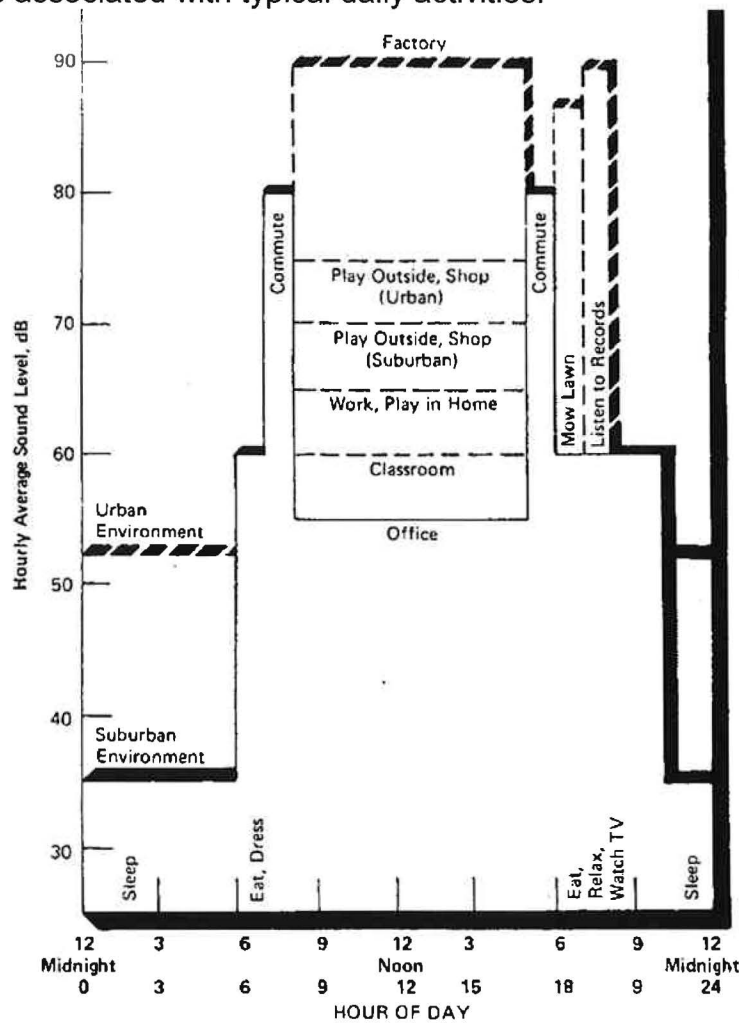
3.1.4.3 Piledriver and Garrison sloughs are the two largest streams in the vicinity of the airfield. Piledriver Slough, which discharges into the Tanana River, is located along the western edge of Eielson and approximately 4,000 feet west of the airfield and parallel to the runways. Approximately 12 miles of Piledriver Slough occurs on Eielson. The slough receives no runoff from the urban developed area of the base and has good water quality.

3.1.4.4 The water body closest to the project area is Garrison Slough, however it is at least 500 feet away from any proposed construction activities. In addition to Garrison Slough, there are some wetland potholes that retain water intermittently depending on summer rainfall. These wetland areas are even further away from the project area and it is unlikely that they would be impacted.

3.1.5 Noise

Aircraft generate by far the most noise on Eielson. Noise levels associated with aircraft during flying hours can exceed 80 decibels (dB) in the vicinity of the flight line; however, the decibel level drops off to a maximum of 70-dB in the closest residential area, Moose Creek, just north of the base. A 65-dB level is not recommended for housing areas by EPA standards (Noise Effects Handbook, US EPA, 1981). Construction noise is potentially another source of noise, but it is not considered to be a concern due to its

temporary nature and relatively low dB level. **Figure 3-1** is a chart that provides a scale of noise levels associated with typical daily activities.



Source: Noise Effects Handbook, U.S. EPA 1981

Figure 3-1 - Noise Levels

3.1.6 Air Quality

Air quality is generally good at Eielson. Although portions of the North Star Borough, of which Eielson is also a part, are in non-attainment for carbon monoxide (Fairbanks and North Pole), Eielson is far enough south to not be included or affected. The Clean Air Act designates areas as *attainment*, *non-attainment*, *maintenance*, or *unclassified* with respect to their compliance with National Ambient Air Quality Standards (NAAQS). Non-attainment and maintenance areas are locales that have recently violated one or more of the NAAQS and must satisfy the requirements of State or Federal Implementation Plans (SIPs or FIPs) to bring them back into conformity with the applicable air quality standards. Eielson is located in an *unclassified* area, and therefore activities that generate emissions do not need to satisfy the requirements of

the EPA ruling *Determining Conformity of General Federal Actions to the State or Federal Implementation Plans*.

3.1.7 Cultural Resources

In 1994, Eielson contracted for the preparation of a predictive model for the discovery of prehistoric cultural resources on base lands. The predictive model was then used to conduct an evaluation of cultural resources on Eielson as required by Section 110 of the National Historic Preservation Act. The areas associated with the proposed action and Alternative 1 have been determined to not contain cultural or archeological resources. In the event that during project excavation/construction any cultural resources were encountered, activities would cease until the resources were evaluated.

3.2 Biological Resources

3.2.1 Vegetation

3.2.1.1 The vegetation of the Tanana River Valley in the vicinity of Eielson is typical of boreal forest or taiga habitats. The boreal forests of Eielson are predominantly evergreen forests dominated by black spruce and white spruce (*Picea glauca*), but also include extensive stands of deciduous forests containing paper birch (*Betula papyrifera*), quaking aspen (*Populus tremuloides*), and balsam poplar (*P. balsamifera*). Extensive areas of shrub and herbaceous vegetation are found in wetlands, lowland areas, and the active floodplain, and are dominated by willows and other shrubs, sedges, and grasses. Bog areas are dominated by black spruce stands intermixed with peat moss (*Sphagnum* spp.) and cottongrass (*Eriophorum vaginatum*).

3.2.1.2 Vegetation in the project area has already been impacted by previous development and use. Most of the project area is a combination of asphalt and concrete. Other portions of it are grassed areas that are mowed on a regular basis during the growing season. Intact wetland vegetation still exists in areas adjacent to the E-7 and E-8 parking ramp and some of those areas will be filled as part of a separate ramp expansion project.

3.2.2 Aquatic/Fishery Resources

3.2.2.1 Lakes and streams on Eielson contain both native fish and fish stocked by the Alaska Department of Fish and Game. Native fish found in the Tanana River drainage include chinook salmon (*Oncorhynchus tshawytscha*), chum salmon (*O. keta*), silver salmon (*Oncorhynchus kisutch*), burbot (*Lota lota*), arctic grayling (*Thymallus arcticus*), northern pike (*Esox lucius*), chub (*Semotilus* spp.), several species of whitefish (*Coregonus* spp.), sheefish (*Stenodus leucichthys nelma*), rainbow trout (*Oncorhynchus mykiss*), and arctic char (*Salvelinus alpinus*).

3.2.2.2 The Alaska Department of Fish and Game stocks five lakes and one stream on Eielson: Grayling Lake, Hidden Lake, Polaris Lake, 28 Mile Pit, Moose Lake, and

Piledriver Slough. Fish stocked by the Alaska Department of Fish and Game includes rainbow trout, arctic grayling, arctic char, silver salmon, chinook salmon, chum salmon, and northern pike. There are no known federally listed threatened or endangered fish species, fish species proposed for listing, or critical fish habitats on Eielson.

3.2.3 Wildlife Resources

3.2.3.1 The surrounding Tanana Valley provides breeding habitat for a wide variety of migratory bird species. Bird species found on Eielson include spruce grouse (*Dendragapus canadensis*), ruffed grouse (*Bonasa umbellus*), northern goshawk (*Accipiter gentilis*), sharp-shinned hawk (*A. striatus*), great horned owl (*Bubo virginianus*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*). During winter, willow ptarmigan (*Lagopus lagopus*) and rock ptarmigan (*L. mutus*) are common on Eielson. Over 20 species of waterfowl, including geese, ducks, loons, grebes, and scoters use aquatic habitats on the installation.

3.2.3.2 There are 32 species of mammals found on Eielson. Common species include moose (*Alces alces*), black bear (*Ursus americanus*), grizzly bear (*U. arctos*), snowshoe hare (*Lepus americanus*), marten (*Martes americana*), red squirrel (*Tamiasciurus hudsonicus*), beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), mink (*Mustela vison*), meadow vole (*Microtus pennsylvanicus*), red-back vole (*Clethrionomys rutilus*), and meadow jumping mice (*Zapus hudsonius*).

3.2.4 Threatened and Endangered Species

No threatened or endangered species, as designated by the US Fish and Wildlife Service, typically occur in any of the project areas included in the two action alternatives. This was the conclusion of an Eielson contract study entitled *Biological Survey, Final Report 1994*, that addressed the potential for the presence of endangered species on base lands. Recent observations continue to support this likelihood.

4.0 Environmental Consequences

This section discusses the probable impacts for each alternative described in Section 2.0. This section is organized according to resources and a discussion of each alternative action is provided relative to resources identified as relevant in Section 3.

4.1 Physical Environment

4.1.1 Geology and Soils

4.1.1.1 *Proposed Action*: The proposed action would likely result in only minimal impacts to soils. The areas where the various components of the Type III hydrant system would be installed would be in areas that have already been previously impacted by construction of existing facilities. Most of the area that is involved is land that has been previously disturbed by excavation of native soils and then backfilled with alluvial gravels to serve as a base for construction of facilities.

4.1.1.2 *Alternative 1*: This alternative would require only minimal new construction in association with the refueler truck heated shelters and the pantograph checkout facility. As a result it would have only very minimal impacts to existing soils.

4.1.1.3 *No Action Alternative*: No direct impacts to soils would result from this alternative. This alternative could, however, result in increased chances of fuel spills during refueling due to deteriorating and/or substandard equipment

4.1.2 Groundwater

It is unlikely that impacts to groundwater would result from either the proposed action or alternative 1. The only remote possibility would be as a result of fuel spills by construction equipment during the construction phase. All contractors are required to have spill response capability on-site at all times during construction. In the event that a contractor was unable to adequately respond to a spill, an Eielson spill response team would be on call.

4.1.3 Surface Water

4.1.3.1 *Proposed Action*: The closest surface water is Garrison Slough, which is within 500 feet of the project area. Garrison Slough is a small stream whose headwaters originate in nearby wetlands. The slough runs through the industrial portion of the base and in some portions has been channelized, but in general, exhibits good water quality. Although the stream would be in relatively close proximity to construction that would occur with the proposed action, all measures would be taken to prevent any impacts to the stream. These would include minimum setbacks for all activities by construction equipment and the placement of silt fences to assure that no siltation from surface runoff would occur.

4.1.3.2 *Alternative 1 and the No Action Alternative:* No direct impacts to surface waters would occur from these alternatives. However, as previously mentioned, continuing to use existing refueling facilities and equipment could result in fuel spills. It is unlikely, even with a large spill, that it would enter any surface water systems. Spill response by the base would be very quick and containment of fuel on paved surfaces would occur quickly.

4.1.4 Noise

4.1.4.1 *Proposed Action:* Noise impacts associated with implementation of this action would be short-term and relatively low decibel compared to ambient noise levels that routinely occur with flight line aircraft operations. Noise would be associated with operation of construction machinery and would last only for the duration of the construction of the ramp.

4.1.4.2 *Alternative 1:* Noise related impacts from this alternative would be similar to those described for the proposed action, but on a much smaller scale due to the minimal amount of construction associated with this alternative.

4.1.4.3 *No Action Alternative:* No impacts from noise would result from this alternative.

4.1.5 Air Quality

4.1.5.1 *Proposed Action:* Some minor, short-term impacts from emissions associated with the operation of construction machinery would result from the proposed action.

4.1.5.2 *Alternative 1:* Impacts to air quality could result from the operation of construction machinery with this alternative.

4.1.5.3 *No Action Alternative:* No impacts to air quality would result from this alternative.

4.1.6 Cultural Resources

No impacts to cultural resources would result from any identified alternatives.

4.2 Biological Resources

4.2.1 Vegetation

4.2.1.1 *Proposed Action:* Little or no impacts to vegetation would occur as a result of construction of the proposed action. There currently exists only a few grassed areas with natural vegetation in the project area.

4.2.1.2 *Alternative 1:* Little if any vegetation would be impacted by this alternative.

4.2.1.3 *No Action Alternative*: No impacts to vegetation would result from this alternative.

4.2.2 Aquatic/Fishery Resources

4.2.2.1 *Proposed Action*: Since there are no surface water resources in the immediate project area, no direct impacts to aquatic or fishery resources would likely occur from project related activities. There is a remote chance that indirect impacts to Garrison Slough could occur in the event silt from the project site would be flushed by surface runoff into the stream. Since the distance from the project to Garrison Slough is approximately 500 feet or more, this is unlikely. In addition, silt fences will be constructed to prevent this from occurring.

4.2.2.2 *Alternative 1*: No impacts to aquatic/fishery resources would occur from this alternative.

4.2.2.3 *No Action Alternative*: No impacts to aquatic/fishery resources would occur from this alternative.

4.2.3 Wildlife Resources

4.2.3.1 *Proposed Action*: Minor impacts to small mammals and birds could occur from installation of the Type III hydrant system in this area. Most wildlife would likely be displaced to adjoining habitat, particularly to the south where large areas of intact wetlands are in close proximity to the proposed project area.

4.2.3.2 *Alternative 1*: Since there is no intact wildlife habitat in the project area, it is unlikely that there would be any impacts to wildlife as the result of alternative 1.

4.2.3.3 *No Action Alternative*: No impacts to wildlife would result from this alternative.

4.2.4 Threatened and Endangered Species

There are no threatened or endangered species on Eielson lands and no impacts to these species would result from any of the alternatives considered in this EA.

4.3 Cumulative Impacts

The National Environmental Policy Act (NEPA) process requires that the issue of cumulative impacts be addressed in an environmental assessment.

4.3.1 The Council on Environmental Quality (CEQ) has stated in their NEPA regulations (1508.7) that: "*Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to past, present, and reasonably foreseeable future actions. . .*" and "*. . . can result from individually minor, but collectively significant actions taking place over a period of time.*" Eielson has, over the

years, been very cognizant of the issue of cumulative impacts to wetlands. This is due to the fact that the base was, to a large extent, built by filling wetlands, and that expansion of Eielson facilities beyond the original footprint of the base often requires the use of additional wetlands. Of the 19,789 acres that constitute Eielson lands, 51 per cent are designated wetlands. Of the remaining undeveloped base lands, more than 70 per cent are designated wetlands.

4.3.2 Installation of a Type III hydrant system at the proposed location would not result in cumulative impacts. This conclusion is based mainly on the fact that the proposed project area has been previously impacted by construction of base facilities and little or no additional impacts would occur.

4.4 Unavoidable Adverse Impacts

4.4.1 *Proposed Action:* The proposed action would result in only minor impacts to an existing developed runway area.

4.4.2 *Alternative 1:* This alternative would not result in any unavoidable adverse impacts.

4.4.3 *No Action Alternative:* This alternative would not result in any unavoidable adverse impacts.

4.5 Relationship of Short-Term Uses and Long-Term Productivity

Since previously constructed facilities has removed most, if not all, natural habitat in the project area, there would be no loss of productivity from implementation of the project. Short-term uses would be for the installation and operation of a Type III hydrant system.

4.6 Irreversible and Irretrievable Commitments of Resources

The only irretrievable or irreversible commitments of resources would be the alluvial gravels mined from Mullins Pit for project construction.

4.7 Environmental Justice

4.7.1 President Clinton issued Executive Order (EO) 12898, *Environmental Justice in Minority Populations and Low-Income Populations*, on February 11, 1994. Objectives of the EO, as it pertains to the NEPA process, requires federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. To accomplish these requirements the Air Force must conduct an environmental justice analysis of all potential impacts that may result from the proposed actions.

4.7.2 The environmental justice analysis must first identify all adverse impacts associated with the project. The next phase is to delineate the potential area of impact for the resources affected. If, within this area of impact, population demographics are such that a disproportionate effect on minority or low-income populations may occur, it should be so identified. These impacts should be documented and mitigation should be developed that can be implemented by the Air Force.

4.7.3 The site for the proposed action is in an industrial portion of the base and does not exhibit any particular demographics. This project would have equally beneficial effects on a full cross-section of the demographics of Eielson's base population. Based on the environmental impacts identified in this EA and on a corresponding environmental justice analysis, it is felt that no disproportionate impact to minority or low-income populations would occur from implementation of this project.

4.8 Mitigation

No mitigation is proposed or required as a result of federal and state permits obtained for this project.

5.0 List of Persons and Agencies Consulted

Mr. Brent Koenen, USAF, 354 CES/CEVN, Eielson AFB, AK, ph: 377-5182.

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6.0 Glossary

Alluvial - Sediment deposited by flowing water.

Carbon Monoxide - A colorless, odorless gas resulting from the incomplete oxidation of carbon; found, for example, in automobile exhaust or mining operations; poisonous to animals.

Cantonment - The main operational area of a military base.

Culvert - A drain crossing under a road or an embankment.

Environmental Impact Analysis Process (EIAP) - is a set of guidelines (Air Force Instruction 32-7061) that the Air Force uses to comply with the NEPA process.

Decibel - A unit of measurement for describing sound intensity.

Executive Order 11990 - Mandate to federal agencies to follow the NEPA process to ensure the protection of wetlands.

Habitat - The area or environment in which an organism or ecological community normally occurs.

Hydro-axed - A large axing machine driven by hydraulics that cuts down and mulches shrubs and trees.

Installation Restoration Program (IRP) - An Air Force program mandated to identify, investigate, and clean up contamination associated with past Air Force activities.

Mean Sea Level (MSL) - The average surface level for all stages of the tide over a 19-year period, usually determined from hourly height readings from a fixed reference point.

National Environmental Policy Act (NEPA) - Legislation enacted in 1969 mandating that all federal agencies assess the environmental impacts of actions which may have an impact on man's environment.

National Historic Preservation Act - Federal mandate that requires the preservation of prehistoric and historic sites.

Non-Attainment Area - An area exceeding National Ambient Air Quality Standards for one or more criteria pollutants.

Permafrost - Permanently frozen subsoil occurring in perennially frigid areas.

Riparian - Living or located on a riverbank or a natural course of water.

SAFO 780-1 - Secretary of the Air Force Order and reference number.

Seasonally Persistent - Persistence is based on historical records and field evidence that indicates an area is seasonally inundated with water during non-frozen (spring/summer) portions of the year.

Turbidity - Cloudy or hazy appearance in a naturally clear liquid caused by a suspension of colloidal liquid droplets or fine solids.

Understory - A foliage layer occurring beneath and shaded by the main canopy of a forest.

Upland - An area of land of higher elevation, often used as the opposite of a wetland.

Wetlands - Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

404 Wetland - Wetland areas that have been determined "waters of the United States" and thus subject to Section 404 wetland permitting guidelines administered by the Army Corps of Engineers and the Environmental Protection Agency.

Wetland Functional Value - A methodology that identifies the type, quantity, and quality of an ecosystem, and uses or potential uses of wetlands in the vicinity of a proposed project.

100-Year Floodplain - Based on historical evidence, there is a high probability that the area within the 100-year floodplain will be flooded once every 100 years.

8.0 Public Notice

USAF ANNOUNCES an ENVIRONMENTAL ASSESSMENT

In accordance with the National Environmental Policy Act (NEPA), and Air Force Regulations, Eielson Air Force Base has completed an environmental assessment (EA) and Finding of No Significant Impact (FONSI) to evaluate the consequences of the following stated proposed action:

Install a new Type III hydrant fuel system in the vicinity of the E-7, E-8, and E-9 complexes. This new fuel system will significantly enhance the capability of Eielson to handle fuel while refueling aircraft.

PUBLIC COMMENT WELCOME

To review the draft EA and FONSI, copies are available at the Noel Wien Library in Fairbanks. The public is invited to review these documents and make comments during the 15-day comment period from now until January 10, 2004. To get a copy of the EA, to comment, or for more information contact Maj. Valerie Trefts, 354 FW/Public Affairs, at (907) 377-2116, 354 Broadway St., Unit 15A, Eielson AFB, AK 99702-1895.