TCWDF 2.1.41

ROUTINE REPLY, ENDORSEMENT, TRANSMITTAL OR INFORMATION SHEET

OPNAV 5216/158 (Rev. 7-78) *A WINDOW ENVELOPE MAY BE USED*
SN 0107-LF-052-1691 *Formerly NAVEXOS 3789*

CLASSIFICATION (*UNCLASSIFIED when detached from enclosures, unless otherwise indicated*)

FROM (*Show telephone number in addition to address*)
Douglas Thelm, EFA NW CODE 09ER4
Silverdale WA 98383 (206)(476)5775

DATE
23 March 1990

SUBJECT
Saint Lawrence Island, Preliminary Assessment (Draft)

SERIAL OR FILE NO.

TO:
Mr. Douglas Johnson
Environmental Protection Agency
Alaska Operations
222 West 7th Avenue
Box 19
Anchorage AK 99513

REFERENCE

ENCLOSURE
Draft PA for
St Lawrence Island
Navy Land

VIA:

ENDORSEMENT ON
———

☒ FORWARDED ☐ RETURNED ☐ FOLLOW-UP, OR TRACER ☐ REQUEST ☐ SUBMIT ☐ CERTIFY ☐ MAIL ☐ FILE

GENERAL ADMINISTRATION	CONTRACT ADMINISTRATION	PERSONNEL
☐ FOR APPROPRIATE ACTION	☐ NAME & LOCATION OF SUPPLIER OF SUBJECT ITEMS	☐ REPORTED TO THIS COMMAND:
☐ UNDER YOUR COGNIZANCE	☐ SUBCONTRACT NO. OF SUBJECT ITEM	
☒ INFORMATION	☐ APPROPRIATION SYMBOL, SUBHEAD, AND CHARGEABLE ACTIVITY	☐ DETACHED FROM THIS COMMAND
☐ APPROVAL RECOMMENDED ☐ YES ☐ NO	☐ SHIPPING AT GOVERNMENT EXPENSE ☐ YES ☐ NO	☐ OTHER
☐ APPROVED ☐ DISAPPROVED	☐ A CERTIFICATE, VICE BILL OF LADING	
☐ COMMENT AND/OR CONCURRENCE	☐ COPIES OF CHANGE ORDERS, AMENDMENT OR MODIFICATION	
☐ CONCUR	☐ CHANGE NOTICE TO SUPPLIER	
☐ LOANED, RETURN BY:	☐ STATUS OF MATERIAL ON PURCHASE DOCUMENT	
☐ SIGN RECEIPT & RETURN		
☐ REPLY TO THE ABOVE BY:		
☐ REFERENCE NOT RECEIVED		
☐ SUBJECT DOCUMENT FORWARDED TO:		
☐ SUBJECT DOCUMENT RETURNED FOR:		
☐ SUBJECT DOCUMENT HAS BEEN REQUESTED, AND WILL BE FORWARDED WHEN RECEIVED		
☐ COPY OF THIS CORRESPONDENCE WITH YOUR REPLY		
☐ ENCLOSURE NOT RECEIVED		
☐ ENCLOSURE FORWARDED AS REQUESTED		
☐ ENCLOSURE RETURNED FOR CORRECTION AS INDICATED		
☐ CORRECTED ENCLOSURE AS REQUESTED		
☐ REMOVE FROM DISTRIBUTION LIST		
☐ REDUCE DISTRIBUTION AMOUNT TO:		

RECEIVED
MAR 28 1990
EPA-AOO - ANCHORAGE

REMARKS (*Continue on reverse*)

Doug:
enclosed is a draft PA for the Navy owned land on St Lawrence Island. It gives background on why we have the land as well as results of NEESA's trip out there last summer. Look forward to working w/ you on this

USEPA SF
1429782

SIGNATURE & TITLE
Douglas Thelm Remedial Project Manager.

COPY TO:

CLASSIFICATION (*UNCLASSIFIED when detached from enclosures, unless otherwise indicated*)

14 transformer
& +1000 barrels of
possible

09EE1

DRAFT

PRELIMINARY ASSESSMENT REPORT

WHITE ALICE SITE, TIN CITY, AK
NAVY FIELD STATION, CAPE PRINCE OF WALES, AK
WHITE ALICE SITE NORTHEAST CAPE, SAINT LAWRENCE ISLAND, AK

EPA IDENTIFICATION:

NEESA 13-205
JANUARY 1990

DRAFT

PRELIMINARY ASSESSMENT REPORT

Activity Names: White Alice Site, Tin City, AK
Navy Field Station, Cape Prince of Wales, AK
White Alice Site, Northeast Cape, St. Lawrence Island, AK

UIC: N66001

EPA Region: 10

EPA Identification: Note, neither the White Alice Sites nor the Navy Field Station have an EPA identification number.

Activity Locations:

Latitude:	Tin City	65° 35' 02" N
	Wales	65° 36' 30" N
	Northeast Cape	63° 17' 30" N
Longitude:	Tin City	167° 56' 26" W
	Wales	168° 03' 50" W
	Northeast Cape	168° 58' 47" W

Preliminary Assessment Team Members

Sherry K. Van Duyn, Environmental Engineer
Joseph E. Vogel, P.E., Environmental Engineer
Kevin L. Coons, Environmental Engineer - Sundeyo
Ronald E. Tickle, P.E., Environmental Engineer

Prepared By:

Naval Energy and Environmental Support Activity
Code 112E3
Port Hueneme, CA 93043-5014

NEESA 13-205
January 1990

Priority for Site Inspection:

1. INTRODUCTION.

1.1 ACTIVITY DESCRIPTION AND LOCATION.

1.1.1 White Alice Site, Tin City. The Tin City White Alice Radio Relay Site is located about 7,000 feet northeast of the Tin City Airport, and about two miles north of the Bering Sea (**Figure 1**). This area is the western most tip of the Seaward Peninsula, which forms the east side of the Bering Strait. The White Alice Site is about 50 miles southeast of Mys Uelen, Siberia. There are no roads leading to the area so access is either by sea or air, weather permitting.

The White Alice Radio Relay Site covers 6.3 acres on the south side of Cape mountain and overlooks the Bering Sea. The site consist of two abandoned buildings, four abandoned radio antennas, and four abandoned fuel tanks.

1.1.2 Navy Field Station, Cape Prince of Wales. The Navy Field Station is located on the Cape Prince of Wales adjacent to the Bering Sea and on the north side of Cape mountain as shown in **Figure 1.** The Naval Field Station is on the north side of the city of wales and 200 yards east of the Bering Sea. The Naval Field Station is about seven miles northwest of Tin City, and like Tin City, access is either by sea or air.

The Navy Field Station covers about acres and consist of two housing quarters, one large vehicle and miscellaneous storage building, generator/weather building, four small storage sheds, 13 large diesel fuel storage tanks, and two small gasoline tanks as shown in Figure 2.

1.1.3 White Alice Site Northeast Cape St. Lawrence Island. The White Alice Site at Northeast Cape is located on Saint Lawrence Island, Alaska. The island lies in the Bering Sea between 168° 30' and 172° 00' west longitude with its southern and northern limits marked by 62° 52' and 63° 52' north latitude, respectively. The island is approximately 100 miles in length and averages about 20 miles in width. The distance to the nearest point in Siberia, Cape Chaplin, is about 40 miles, while the distance to the nearest point on the Alaskan mainland at Cape Rodney on the Seward Peninsula is 118 miles. All travel to or from the area is accomplished by either sea or air if weather permits. **Figure** 3 shows the general location of the navy facilities at Northeast Cape.

The White Alice Site encompasses approximately 26 acres and consists of seven abandoned buildings, four abandoned radio antennas, an abandoned tramway leading up Kangukhsam Mountain, and four abandoned above-ground fuel tanks as shown in **Figure** 4.

1.2 ACTIVITY HISTORY AND MISSION.

1.2.1 White Alice Site, Tin City. Construction on the White Alice site began in 1952 on land that was transferred from the

Bureau of Land Management (BLM) to the Air Force. The White Alice Site was completed by Air Force contractors in 1954. During the construction of the Tin City White Alice Site, other White Alice sites were being built by the Air Force throughout Alaska and nearby islands. The White Alice Sites were used for tropospheric scatter sites operating on a high power pulse system for communication purposes in desolate parts of Alaska.

Before the Air Force built the White Alice site and Tin City Airforce base surrounding land belonged either to the Bureau of Land Management (BLM) or local mining companies. Tin City White Alice Site went into operation in 1954. While in operation the Tin City White Alice site was operated by seven to twelve civil service and contractor personnel. Personnel who worked at the White Alice site were stationed about one mile down the hill at Tin City Air Force Base. In 1975, the White Alice sites were decommissioned and replaced by satellite communications.

In February 1979, the Air Force transferred ownership of the 6.3 acre White Alice site over to the Navy, but control of the area was not accepted by the Navy until 1982. The Navy originally planed on using the old White Alice Sites for Arctic Experiments, but to this date the Navy has never used the site. In 1984, the Air Force removed the majority of electrical equipment and drained all fuel tanks, since then the site has sat abandoned.

1.2.2 Navy Field Station, Cape Prince of Wales. The exact date that the village of Wales was founded is unknown, but archaeological evidence from house pits and middens in the area date back to as far as 500 A.D.. More recent reports by the Russian Navy in 1827 cited the village of "Eidamoo", and in 1880 Captain Smith of the U.S. Revenue Cutter Service reported "Kingigamute", a village with 400 inhabitants. In 1890 the American Missionary Association established a mission and in 1902 the Wales post office was opened.

Wales was a major center for whaling due to its strategic location along the migratory path of whales. The whaling culture was destroyed in 1918 by a influenza epidemic which claimed the lives of Wales "finest whalers".

The Army established a post in wales in the 1940s to help supply the Russian Army during WWII. In 1947 the National Weather Service built a small weather station consisting of two houses for families who worked there. The weather station was turned over to the Navy Electronics Laboratory (NEL) in 1951 for use in conducting arctic experiments. NEL has changed their name to Naval Ocean Systems Command (NOSC), but the main objective of the field station has always been to conduct arctic experiments and gather weather information.

1.2.3 White Alice Site Northeast Cape, St. Lawrence Island. The facilities on St. Lawrence Island were constructed in 1952 for the Department of the Air Force and used as part of the high energy pulse system tropospheric scatter sites located throughout

coastal Alaska. Excess property of the original Air Force base, 16,213 acres, was relinquished to BLM on 14 March 1958 and conveyed to the Gamble and Savoonga Native Corporation on June 27, 1979. Northeast Cape was used by the Air Force until it was closed in 1975 when the White Alice radar sites became obsolete with the introduction of communication satellites. After its closure the remaining base property, 4854.93 acres, was relinquished to BLM on 20 August 1975, and then conveyed to the Gamble and Savoonga Native Corporation on June 27, 1979.

On July 12, 1982, 25.96 acres of property were transferred from the Department of Air Force to the Department of Navy. The Navy property consisted of the White Alice Site, the lower tram terminal, the tramway up Mount Kangukhsam, and the upper tram complex.

On July 29, 1982 the Naval Ocean Systems Center (NOSC) accepted control of the 26 acres of property. NOSC originally planned to use the facilities at Northeast Cape as part of experiments run by the Arctic Submarine Laboratory; however, to date no Navy use of the property has occurred.

1.3 SURROUNDING AREA.

1.3.1 White Alice Site, Tin City. The White Alice Site is on the west side of Cape mountain which is an area characterized by tundra. In the surrounding area of the abandoned White Alice Site there is a mining camp, the tin city trading post, and the Tin City Air Force Base. Within five miles of the site there is only one permanent resident who lives at the trading post, six to ten temporary personnel at the Tin City Air Force Base, and about a dozen miners who work the area in the summer months. Wales, an Eskimo village with 150 residents is about seven miles to the north east. Nome is about 100 miles to the south.

1.3.2 Navy Field Station, Cape Prince of Wales. The Navy Field Station is located in Wales, AK which is on the north side of Cape mountain and the south of Lopp Lagoon. Wales has a population of approximately 150, and is situated on costal sand on the east shore of the Bering Sea. Tin City is about seven miles southeast, and Nome is about 100 miles to south.

1.3.3 White Alice Site Northeast Cape, St. Lawrence Island. The White Alice Site at Northeast Cape is located on St. Lawrence Island at the northern base of Mount Kangukhsam. Of the 21,504 acres that encompassed the original Air Force base, 25.96 acres are under Department of Navy jurisdiction. The remaining property has been conveyed to the Gamble and Savoonga Native Corporation. The area surrounding the Navy property is characterized by isolated tundra-like wilderness; however, all original Air Force structures are currently present on disposed property. The nearest permanently inhabited village, Savoonga, is approximately 57 mile to the northwest. An Eskimo fishing camp located approximately 2.5 miles north of the White Alice Site is not permanently inhabited and reported to be used

infrequently during the summer months.

1.4 BIOLOGICAL FEATURES.

1.4.1 White Alice Site, Tin City, and Navy Field Station, Cape Prince of Wales. This area is characterized by wet tundra, especially in the low land areas. Moss, grasses, and occasional scrub willows are found from sea level up to about 800 feet, but the mountains are bare, and no trees are found in the area (Mulligan, 196x).

Numerous birds migrate through the area but none are reported to be endangered (FISH And GAME). Polar bears, arctic Foxes, and other small land animals are native to this area.

1.4.2 White Alice Site Northeast Cape, St. Lawrence Island.
Flora. The vegetation of the Northeast Cape area is classified as alpine tundra. This type of vegetation is dominated by white mountain avens, mat forming herbs, grasses, and sedges. Indigenous shrubs include; alpine bearberry, dwarf birch, Labrador tea, willows, heaths, and cassiopes. The lowland area is mainly wet tundra with lakes, bogs, and generally poorly drained soils. Vegetation at higher, drier areas become sparse to almost nonexistent. Steep slopes, lack of soils, and harsh climate make plant populations and densities low.

Terrestrial Fauna. Arctic fox will be found at sea on pack ice during the winter and are present on St. Lawrence Island year-around. Red fox are occasionally present. Short-tailed weasels (ermine) and arctic ground squirrels are permanent residents. Smaller mammals are numerous and provide the primary spring diet to migratory raptors, foxes, and jaegers when the snow first begins to leave the tundra. These small mammals include; the tundra shrew, Greenland collared lemming, the red-backed vole, and the tundra vole.

Marine Fauna. Walrus, sea lion, minke, beluga and killer whales, harbor porpoise, bearded seals, and possibly ribbon seals are present during open water (July - September). Walrus frequently haul out at Northeast Cape which is also a minor hauling out area for sea lions. Ringed seals breed and pup on shorefast ice during late winter (March - April) at Northeast Cape between Kangighsak Point and Apvawook Cape. Polar bears are likely to be present in winter on ice pack and/or on shore. There is a minor bowhead whale (April - May) and gray whale (May - June) northern migrations off the eastern coast of St. Lawrence Island. Gray whale summer feeding area is located northeast of the island. Walrus and bearded, ringed, and spotted seals are harvested in this area.

Avifauna. Most of St. Lawrence Island provides important summer/fall nesting and molting habitat for migratory waterfowl. It also provides habitat for a major part of the seabird population in the northern Bering Sea. The marine water surrounding the island are the major seabird concentration and

foraging area. The seabird colonies at the Northeast Cape area are limited. Three seabird colonies; Kinipaghulghat Mountain, Punuk Island, and Seevookhan Mountain each support only support a few pairs of a handful of species.

Endangered Species. There have been sightings of peregrine falcons on St. Lawrence Island and is listed as an irregular visitant and an accidental on the island. There is no known nesting of peregrines on the island and the habitat is not considered to be critical for their well being.

A small, few-flowered primula (Primula tschuktschorum) restricted to the Chukchi and Seward peninsulas and St. Lawrence Island is listed as a Category 2 candidate taxa. Category 2 includes those taxa for which current knowledge suggests that proposals for listing as threatened or endangered are appropriate, although data to fully support the proposals are not yet available.

Prehistory. (b)(3)
(b)(3)

1.5 GEOLOGY AND SOILS.

1.5.1 White Alice Site, Tin City, and Navy Field Station, Cape Prince of Wales. The oldest rocks in the Tin City, Wales area are the metasedimentary series of early Paleozoic or pre-Paleozic shales, fealties, schists, quartzites, and limy shales commonly referred to as "black slates" (**Figure__**). The Black slates are overlain by a series of gray middle to late Paleozoic metalimestone and marbles that either include or are overlain by relatively thin schist and quartzite beds.

Also, three distinct periods of igneous activity are present. The first is represented by mafic dikes, sills, and stocks, locally termed "greenstones" that intrude the black slates but apparently do not intrude the limestones. The greenstones are abundant a few miles east of Cape mountain. The Second period of igneous activity is represented by granitic stocks, sills, and dikes that intruded both the slate and limestones. Being more resistant to erosion than the surrounding rocks, the granitic stocks and the associated halo of dikes, sills, and contactmetamorphosed sediments tend to form mountains with an exposed granitic core. Cape mountain is a prominent and typical example. The third period of igneous activity is represented by hard black mafic dikes, up to 10 feet in width, that cut both the limestone and the granite near the head of cape creek. These mafic dikes do not appear to be either abundant or of great linear extent.

1.5.2 White Alice Site, Northeast Cape, St. Lawrence Island. The eastern part of St. Lawrence Island is a broad, wave-cut bedrock platform now elevated a few feet to nearly 100 feet above

sea level. The surface of the platform is dotted with countless small shallow lakes and blanketed by a thin veneer of water-soaked mossy turf and peat. Several isolated groups of talus-covered hills, which are bounded by ancient sea cliffs and probably represent former islands, rise 1,000 to 2,000 feet above the surface platform.

Preliminary geologic investigations in the eastern part of St. Lawrence Island indicate the presence of a heretofore unreported sedimentary sequence possibly as much as 8,000 feet thick. The oldest strata are a thick sequence of Devonian dolomite and dolomitic limestone exposed along the Seknak River. On the Ongoveyuk River these strata appear to be succeeded disconformably by at least 1,000 feet of Upper Mississippian limestone and cherty limestone which inturn are overlain disconformably by a 400 foot shaly sequence that is definitely of Middle to Late Triassic age in the upper part and probably of Early Triassic or Permian age in the lower part. The youngest sedimentary rocks appear to be a thick section of Graywacke and mudstone along the Ongoveyuk River, tentatively assigned a Jurassic or Cretaceous age. The Paleozoic and Mesozoic sequences show strong lithologic and faunal similarities to coeval rocks in the Brooks Range; and some counterparts appear also to be present on the Seward and Chukotsky Peninsulas. **Table** A gives the suggested correlation of Paleozoic and Mesozoic sequences on eastern St. Lawrence Island, western Alaska, and the Chukotsky Peninsula in the USSR. **Figure** A shows the location of geologic units on the eastern part of St. Lawrence Island.

Soils at the eastern part of St. Lawrence Island consist of loose, well rounded, medium course granitic sand and gravel. Sand, silt and peat are found at lower elevations and along the coast. In the higher elevations, the Kangukhsam and Kinipaghulghat Mountains, quartz monzonite is present, and some small areas of undifferentiated volcanic rocks exist around Northeast Cape.

1.6 HYDROLOGY AND TOPOGRAPHY.

1.6.1 White Alice Site, Tin City.

1.6.2 Navy Field Station, Cape Prince of Wales.

1.6.3 White Alice Site Northeast Cape, St. Lawrence Island.

1.6.3.1 Topography. The Topography of Northeast Cape begins with a coastal plain at the Bering Sea. A transition of rolling terrain leads to the Kinipaghulghat Mountains with Kangukshsam Mountain at 1,820 feet above sea level as the highest local peak. The mountain side is steep, highly exposed and weathered talus slopes. The topographic features of Northeast Cape are shown in **Figure** B.

1.6.3.2 Surface Water. The principle surface water feature of St. Lawrence Island is the Bering Sea. The Sea is located

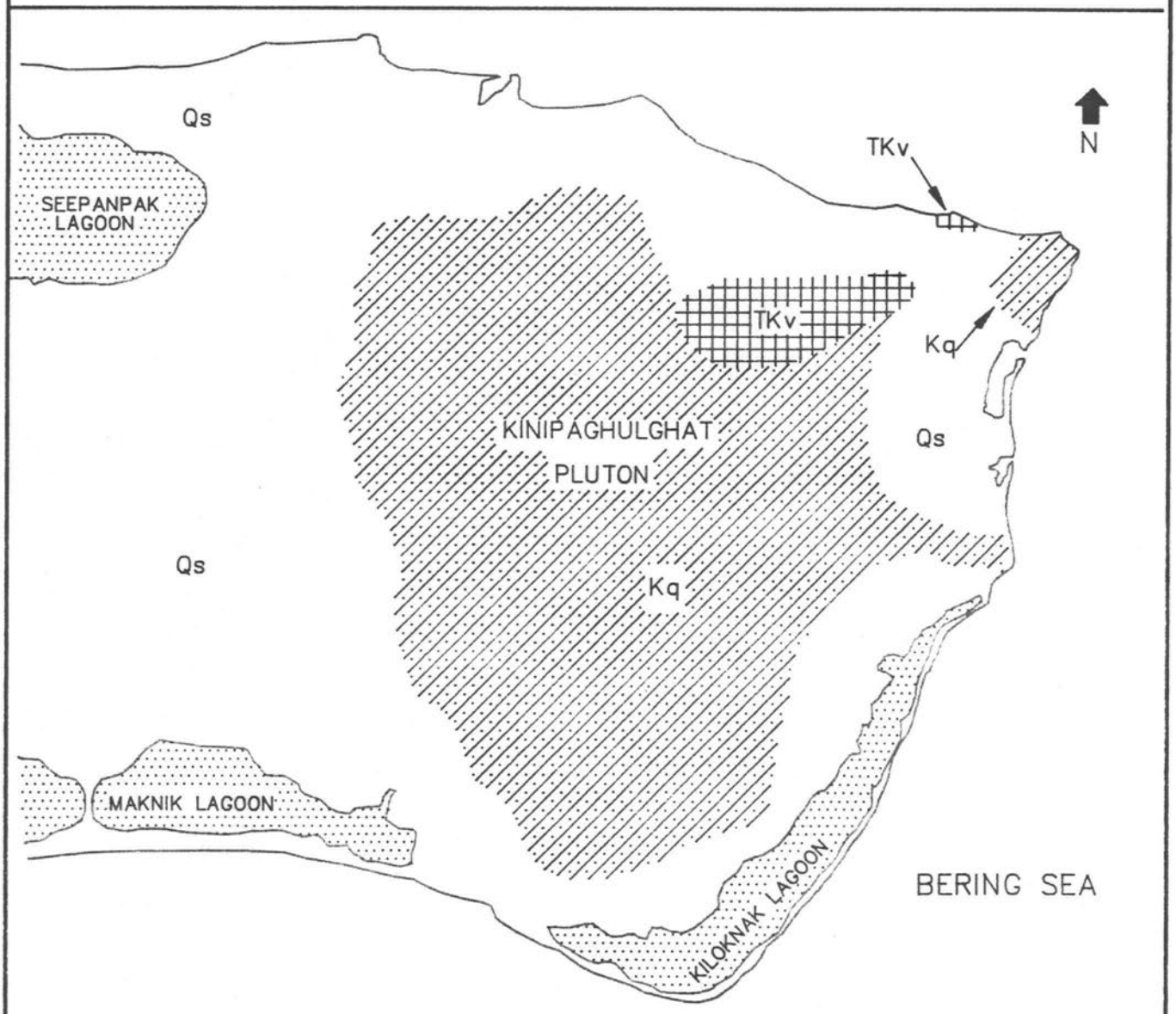
EXPLANATION:

Kq — CRETACEOUS QUARTZ MONZONITE

TKv — TERTIARY/CRETACEOUS UNDIFFERENTIATED VOLCANIC ROCKS

Qs — QUATERNARY SURFICIAL DEPOSITS

INLAND WATER



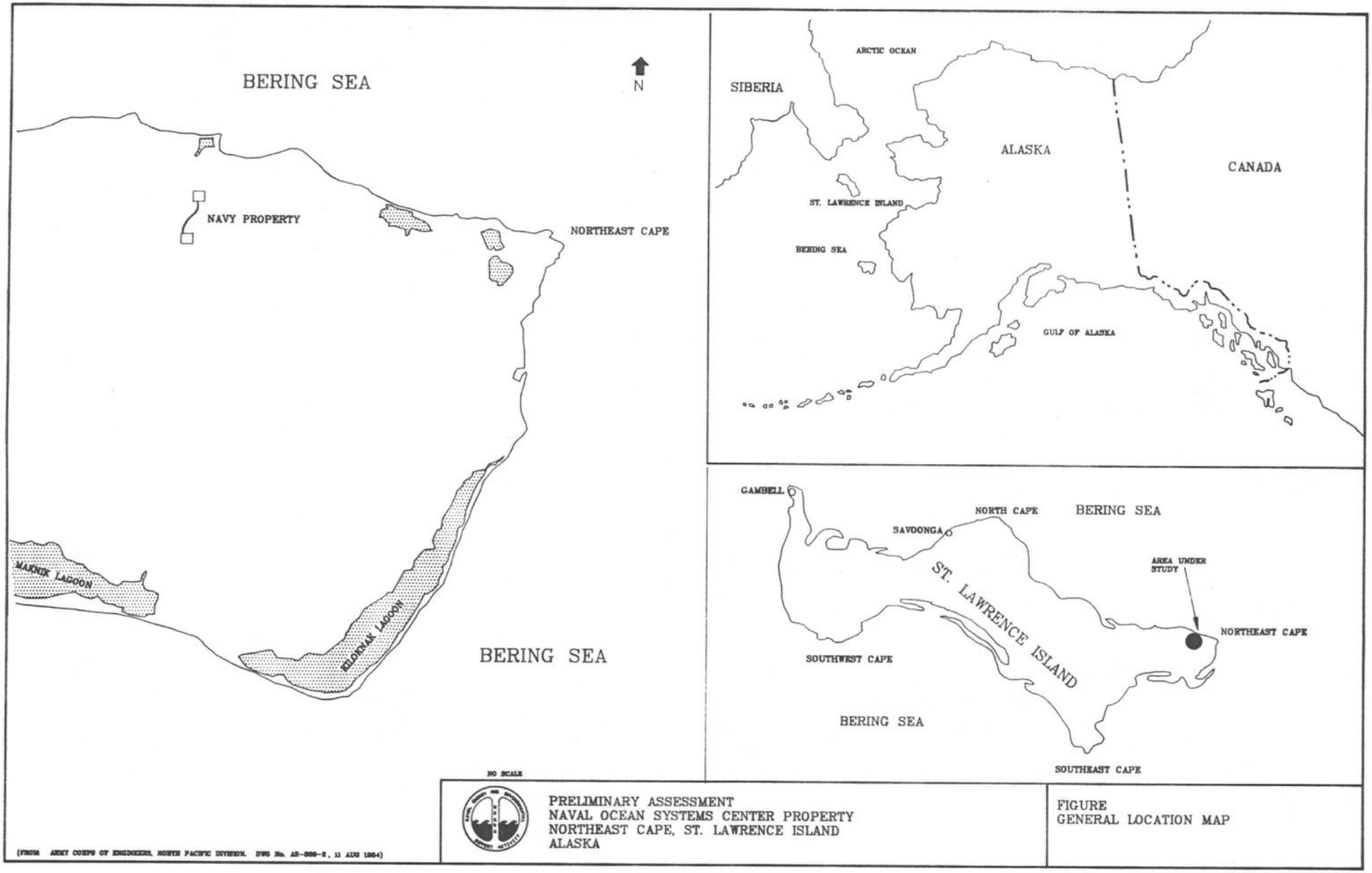
NO SCALE

(FROM: USGS MISCELLANEOUS INVESTIGATIONS SERIES, MAP 1-1203)

PRELIMINARY ASSESSMENT
NAVAL OCEAN SYSTEMS CENTER
NORTHEAST CAPE
ST. LAWRENCE ISLAND
ALASKA

FIGURE
GEOLOGICAL FORMATIONS
OF NORTHEAST CAPE

PRELIMINARY ASSESSMENT NAVAL OCEAN SYSTEMS CENTER NORTHEAST CAPE ST. LAWRENCE ISLAND ALASKA	FIGURE TOPOGRAPHY OF NORTHEAST CAPE



NO SCALE

(FROM: ARMY CORPS OF ENGINEERS, NORTH PACIFIC DIVISION. DWG No. AS-886-E, 11 AUG 1984)

PRELIMINARY ASSESSMENT
NAVAL OCEAN SYSTEMS CENTER PROPERTY
NORTHEAST CAPE, ST. LAWRENCE ISLAND
ALASKA

FIGURE
GENERAL LOCATION MAP

approximately 1.5 miles to the north and east of the Transmitter Building. All surface water run-off from the area investigated in this report is expected to discharge to the Bering Sea.

The lowland areas of Northeast Cape are typical of a subarctic coastal plain where flat topography, frozen soils, and wet tundra have created numerous shallow thaw lake basins and peat in-filled thaw lake basins. These lakes are clear and tanic in appearance. In addition, there are numerous glacial run-off streams running through the area. They have vegetated, incised banks, sandy gravelly streambeds, and are clear. The streams range from a few feet in width to streams 20 to 30 feet wide. These streams are beaded in the lowlands in contrast to high velocity streams in the mountainous areas.

1.6.3.3 Ground Water.

1.7 CLIMATE.

1.7.1 White Alice Site, Tin City, and Navy Field Station, Cape Prince of Wales. Tin City and Wales are located in a transitional climatic zone which is characterized by fewer days of cloudiness, less precipitation and humidity, and a more pronounced temperature variation than found in local maritime climatic zones. Table 1 list the average monthly temperature, precipitation and snow fall for Tin City and Wales.

TABLE 1
Mean monthly amounts for Tin City and Wales

	Tin City			Wales	
	Temp.	Precip.	Snow	Temp.	Precip. Snow
Jan	2.7	0.56	5.7	2.0	0.46 5.2
Feb	-5.3	0.29	2.6	-4.1	0.40 4.5
Mar	-1.0	0.36	3.4	-1.5	0.32 4.3
Apr	8.5	0.41	4.0	9.9	0.28 3.5
May	26.8	0.33	2.4	27.2	0.46 2.1
June	38.5	0.65	0.7	38.4	0.67 0.3
July	45.9	1.78	0.2	46.3	1.43

0.2					
Aug	45.6	2.41	0.3	46.3	2.73
0.0					
Sept	39.8	1.50	1.7	40.2	2.26
1.2					
Oct	27.6	1.86	13.4	29.0	1.23
6.3					
Nov	15.7	1.42	15.4	17.2	0.61
6.9					
Dec	3.0	0.51	4.9	3.7	0.39
5.3					
TOTAL	20.6	12.07	54.8	21.2	11.23
39.8					

Temperature is in Degrees F, Precipitation and snow are in inches

Source: Arctic Environmental Information and Data Center, University of Alaska. For periods (Tin City, 1966-1985), (Wales, 1925-1929 and 1944-1987).

1.7.2 <u>White Alice Site Northeast Cape, St. Lawrence Island</u>. The weather on St. Lawrence Island is characterized by typical arctic maritime climate, with a relatively milder winter than arctic continental areas and a relatively cooler summer. Precipitation as rain or snow is recorded on 300 days out of the year. The greatest precipitation is recorded during the months of August and September. The means for these months are 1.82 and 1.63 inches, respectively. The months with the lowest mean precipitation are November, March, and April with means of .31, .34, and .43 inches respectively.

Winter temperatures seldom fall below -10^{o} Farenheight (F.), and summer temperatures above 55^{o} F. are infrequent and of short duration. The record minimum temperature for the villages of Gamble and Savoonga is -31^{o} F. recorded in February, and the maximum is 65^{o} F. recorded in July.

Lying in a stormy sea that varies only a few degrees from 32^{o} F. throughout the year, the island is particularly characterized by cold winds of gale and occasionally hurricane force. Commonly, the chill factor caused by high winds, up to 100 miles per hour (mph), produce effective temperatures of 70^{o} below zero, and severe winter blizzards cause whiteout conditions. Prevailing winds are southwest and northwest in summer and northerly in winter. The average annual hourly wind velocity is 17.8 mph. The average velocity in January is 19.4 mph and in July the average is 11.0 mph.

The growing season extends from early June through late August,

but there may be snow and freezing temperatures in any month. The first autumnal snowfall and formation of fresh-water ice generally occur in October, and sea ice usually forms in late November. The spring icepack breakup occurs in the first two weeks of June, and some ice and snow may remain until July or later in certain localities (Fay and Cade, 1959).

2. FINDINGS

2.1 GENERAL. Naval Ocean System Center, San Diego, California requested NEESA to perform a Preliminary Assessment at the White Alice Sites at Northeast Cape and at Tin City, and the Navy Field Station at Cape Prine of Wales in Commander, Naval Ocean Systems Center letter ser 19/105 of 17 November 1988.

The Preliminary Assessment team visited the White Alice Sites and Navy Field Station on July 16 through 22, 1989. Information in this report is current as of these dates.

2.2 PERMITS.

2.2.1 White Alice Site, Tin City.

2.2.2 Navy Field Station, Cape Prince of Wales.

2.2.3 White Alice Site Northeast Cape, St. Lawrence Island. The White Alice Site at Northeast Cape is an inactive facility and has no working population. The base has no permits.

2.3 STORAGE TANKS.

2.3.1 White Alice Site, Tin City.

2.3.2 Navy Field Station, Cape Prince of Wales.

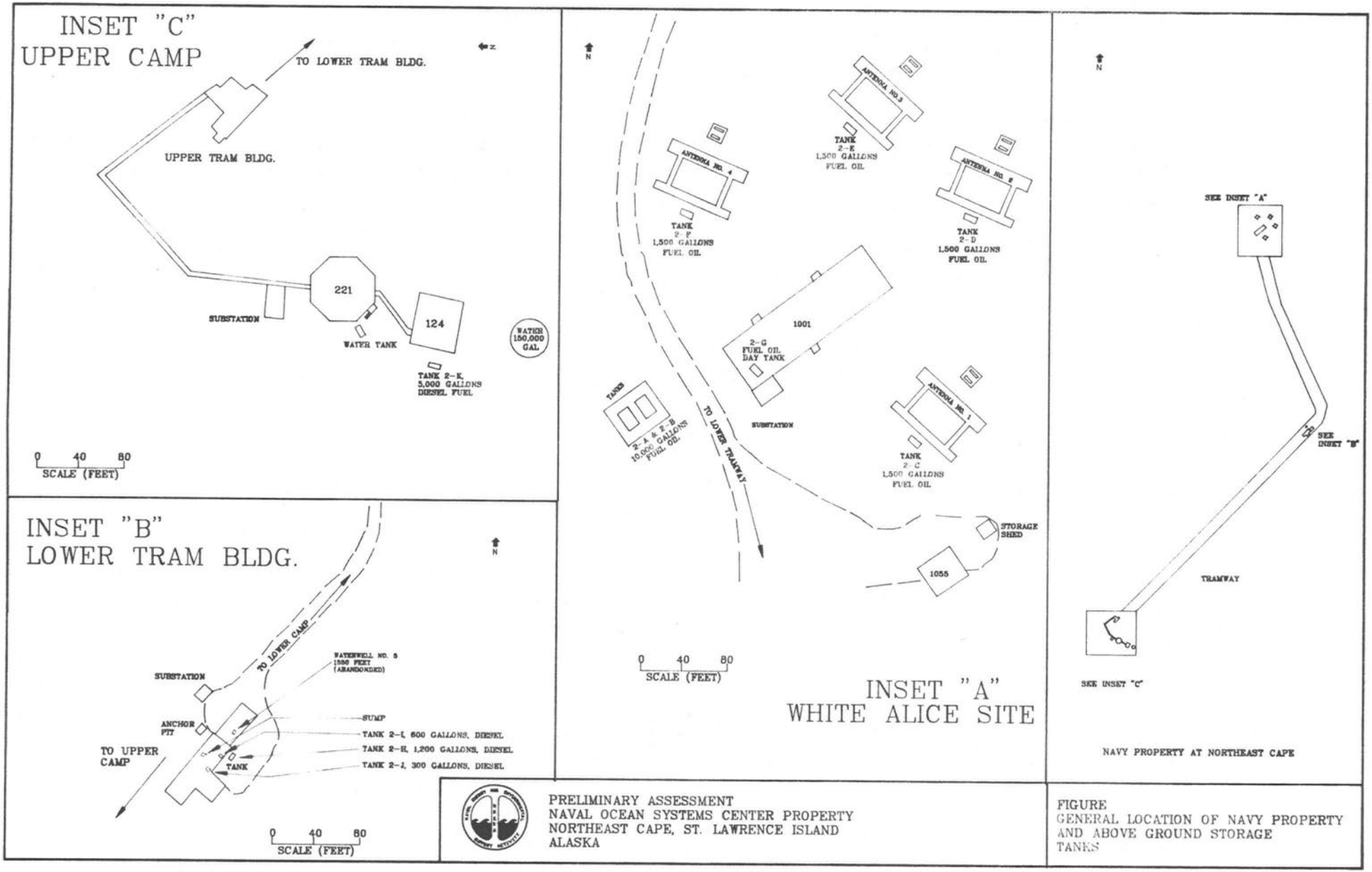
2.3.3 White Alice Site Northeast Cape, St. Lawrence Island. Eleven above ground fuel tanks were identified on the present Navy property during the site visit and from drawings obtained from the Army Corps of Engineers. **Table** B summarizes the current available information regarding each tank. A sump was located on Riblet Tramway Company drawing number 8837 of the lower tram terminal as shown in **Figure** 4. The sump was not located by the NEESA site visit team. It is assumed this sump received oil and diesel fuel waste from the motor room of the building. The presence of the sump and any possible outfall from the sump should be investigated.

2.4 WATER, SEWER, AND SOLID WASTE.

2.3.1 White Alice Site, Tin City.

2.3.2 Navy Field Station, Cape Prince of Wales.

2.3.3 White Alice Site Northeast Cape, St. Lawrence Island.



PRELIMINARY ASSESSMENT
NAVAL OCEAN SYSTEMS CENTER PROPERTY
NORTHEAST CAPE, ST. LAWRENCE ISLAND
ALASKA

FIGURE
GENERAL LOCATION OF NAVY PROPERTY AND ABOVE GROUND STORAGE TANKS

TABLE B

SUMMARY OF STORAGE TANK SURVEY

TANK ID NUMBER	LOCATION	CONTENTS	CONSTRUCTION INFORMATION	ESTIMATED AGE	COMMENTS AND CURRENT TANK CONDITION
2-A	Transmitter Area	Fuel Oil	Steel-10,000 gallons	38 years	Tank is currently empty and in good condition. See Figure 4 for exact location.
2-B	Transmitter Area	Fuel Oil	Steel-10,000 gallons	38 years	Tank is currently empty and in good condition. See Figure 4 for exact location.
2-C	Transmitter Area	Fuel Oil	Steel-1,500 gallons	38 years	Tank is currently empty and in good condition. See Figure 4 for exact location.
2-D	Transmitter Area	Fuel Oil	Steel-1,500 gallons	38 years	Tank is currently empty and in good condition. See Figure 4 for exact location.
2-E	Transmitter Area	Fuel Oil	Steel-1,500 gallons	38 years	Tank is currently empty and in good condition. See Figure 4 for exact location.
2-F	Transmitter Area	Fuel Oil	Steel-1,500 gallons	38 years	Tank is currently empty and in good condition. See Figure 4 for exact location.
2-G	Transmitter Area	unknown	unknown (day tank)	unknown	Tank was not located during the site visit. Tank is specified as "day tank" is Army Corps drawing somewhere inside of Bldg. 1001.
2-H	Lower Tram Terminal	Diesel Fuel	Steel-1,200 gallons	38 years	Tank is currently empty and in good condition. See Figure 4 for exact location.

B

TABLE ~~4~~ (cont.)
SUMMARY OF STORAGE TANK SURVEY

TANK ID NUMBER	LOCATION	CONTENTS	CONSTRUCTION INFORMATION	ESTIMATED AGE	COMMENTS AND CURRENT TANK CONDITION
2-I	Lower Tram Terminal	Diesel Fuel	Steel-600 gallons	38 years	The tank is located inside Tram terminal bldg. See Figure 4 for exact location.
2-J	Lower Tram Terminal	Diesel Fuel	Steel-300 gallons	38 years	The tank is located inside Tram terminal bldg. See Figure 4 for exact location.
2-K	Upper Camp	Diesel Fuel	Steel-5,000	38 years	The tank is in good condition and located south of Bldg 124. See Figure 4 for exact location.

Northeast Cape's water needs were provided by five wells located on the original Air Force facility. Only one of these wells is located on present Navy property as shown in **Figure 4**. Well No. 5 is emplaced in the northern end of the Lower Tram Terminal at a depth of 1,550 feet. All of the wells have been abandoned since the facility was closed in the late 1970s. There was no wastewater treatment facility at Northeast Cape. All domestic sewage went to individual building septic tanks or was incinerated. All domestic solid wastes generated were hauled to a landfill located on excessed Air Force property.

2.5 HAZARDOUS WASTE GENERATION.

2.3.1 White Alice Site, Tin City.

2.3.2 Navy Field Station, Cape Prince of Wales.

2.3.3 White Alice Site Northeast Cape, St. Lawrence Island. Since Northeast Cape was abandoned in the late 1970s, no generation of hazardous waste has taken place since that time.

3. SITE SPECIFIC FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

3.1 INTRODUCTION. This chapter summarizes the Preliminary Assessment team's significant findings, conclusions, and recommendations on potential contaminant migration pathways, the potential contaminant receptors, and characteristics of past disposal sites identified at the Navy Field Station and the White Alice Sites at Tin City and Northeast Cape. The general location of the areas under study is shown in **Figure 3**.

3.2 POTENTIAL FOR CONTAMINANT MIGRATION.

3.2.1 White Alice Site, Tin City.

3.2.2 Navy Field Station, Cape Prince of Wales.

3.2.3 White Alice Site Northeast Cape, St. Lawrence Island. Contaminants at the White Alice Site on St. Lawrence Island may potentially migrate in the surface water, ground water, and air. Of the three, erosion and sediment transport in the surface water has the greatest potential to transport contaminants off-site.

3.2.3.1 Surface Water. At Northeast Cape, numerous natural drainage channels receive rapid flow from snow melt and summer storms. The surface water run-off from the area investigated in this report potentially could carry noxious materials off-site where the contaminants have been exposed and/or released to the environment.

The drainage channels either discharge to multiple, seasonal small ponds and lakes in the low-lying coastal plain where the water evaporates or percolates down to the ground water or to the Bering Sea approximately 1.5 miles north of the White Alice Site.

3.2.3.2 Ground Water. There is little known about the ground water in the Northeast Cape area. Further investigations will need to be conducted.

3.2.3.3 Air. Wind transport potentially could move contaminants off-site at locations where they are exposed to open air. Friable asbestos thermal system insulation and siding shingles were noted throughout the entire area and potentially could release fibers to the environment.

3.3 POTENTIAL CONTAMINANT RECEPTORS.

3.3.1 White Alice Site, Tin City.

3.3.2 Navy Field Station, Cape Prince of Wales.

3.3.3 White Alice Site Northeast Cape, St. Lawrence Island.

3.3.3.1 Receptors of Surface Water. Users of surface water at Northeast Cape include several species of vegetation and indigenous animals. Surface water run-off in the streams and ponds are used as the primary source of drinking water by the seasonal tenants of the eskimo fishing village located about 1.5 miles north of the White Alice Site on the coast of the Bering Sea.

The fish and animals of the Bering Sea are commercially harvested and are the primary source of food and livelihood for the eskimos of St. Lawrence Island. Any contaminants reaching the sea from surface water run-off potentially could contaminate the food chain.

3.3.3.2 Receptors of Ground Water. Ground water is not utilized as a potable source within a sixty mile radius of Northeast Cape.

3.3.3.3 Receptors of the Air Exposure Route. The White Alice Site at Northeast Cape has no permanent base personnel; however, there is evidence that the island natives may be conducting salvaging operations on abandoned equipment. Anyone entering the buildings would be a possible receptor of known asbestos contamination.

3.4 SITE SPECIFIC FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS.

3.4.1 Site 1 - Asbestos Hazards.

3.4.1.1 Findings. Due to harsh year-round environmental conditions experienced at Northeast Cape, most of the buildings at the White Alice Site were insulated. The current facilities at Northeast Cape were constructed in 1952 for the United States Air Force.

Friable and nonfriable asbestos containing materials (ACM) were located throughout the entire base facilities during the site

visit. Six of the nine buildings located on Navy property contain possible asbestos hazards. The Automobile Maintenance Shop (Building 1055), the Lower Tram Terminal Transformer Building, the Upper Camp Transformer Building, and the Upper Camp Tram Building contain no asbestos.

Possible sources of asbestos include thermal system insulation (TSI) on the steam and hot water lines, asbestos mud on the steam and hot water pipe elbows, transite wall board, ceiling tiles, asphalt-asbestos floor tiles, floor glue, batt insulation in the ceiling and walls, fire doors, cement-asbestos siding shingles, flooring felts, and heating, ventilation and air-conditioning (HVAC) system insulation.

On 22 September 1988, Naval Ocean Systems Center (NOSC) personnel obtained samples from the TSI on the steam pipes in Building 1001, the Main Transmitter Building. The samples were analyzed by a Navy laboratory by polarized light microscopy (PLM) and were determined to be positive for chrysotile and amosite. A copy of these results are included in **Appendix A**.

Due to safety, time, and equipment constraints no samples were collected during the NEESA site visit. The majority of the suspected ACM was matrix bonded composite surfacing materials and was nonfriable. However, severe water damage observed on the asbestos TSI has created a potentially dangerous situation inside buildings 1001, 124, and 221. Some of the buildings appear to have been forcibly entered by unknown parties. Reportedly, island natives conduct salvaging operations on the abandoned facilities and would expose themselves to the carcinogenic effects of asbestos upon entering any buildings containing friable ACM.

3.4.1.2 Conclusions. Any Naval building containing asbestos building materials is regulated by the Occupational Health and Safety Administration, 29 CFR 1910.1001 and OPNAV 5100.23V. This also includes possible exposure to occupants of buildings which contain ACM. Site 1 is recommended for further action under the Navy Installation Restoration program due to the possible exposure of trespassers to airborne asbestos fibers at the White Alice Site on Northeast Cape.

At present most of the suspected asbestos identified is nonfriable matrix bonded composite surfacing materials and therefore, is not a direct hazard to human health or the environment. However, if the buildings are demolished or the asbestos is disturbed or physically damaged, it will become friable and an environmental hazard. The National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 61 Part M mandates the removal of friable ACM before a building may be demolished. Under NESHAP, no visible emissions of dust to the outside environment are permitted during removal, renovation, demolition, collection, transportation, or deposition of ACM waste.

3.4.1.3 Recommendations. With special approval from the Environmental Protection Agency (EPA) dry removal of ACM is permitted under certain circumstances. Due to the relative isolation of the facilities at Northeast Cape and the large cost savings associated with dry removal, this option should be investigated. The specific recommendations include the following.

1) Due to the significant and continuing water damage to the TSI on all exposed steam and hot water lines in Buildings 1001, 124, and 221, immediate removal or encapsulation is recommended to effectively prevent further exposure to trespassers entering the building.

2) Seal all openings from all buildings to the outside environment, restrict access, and post signs warning of asbestos contamination hazards. The signs should be posted so that they can be easily seen and read from all directions around all buildings.

3) Random sampling of suspected "homogeneous" ACM to determine the extent of the contamination. A homogeneous area contains asbestos material that is uniform in texture and color and appears identical in every other respect. The number of samples to be collected depends on the size of the area to be sampled.

Size of Area	Number of Asbestos Samples to be Collected
Less than 1000 square feet	3
Between 1000 & 5000 square feet	5
Greater than 5000 square feet	7

The number of samples and sample location for TSI will depend on the local circumstances of the insulation. At least three samples must be taken in each sample area. For long pipe runs or risers, more samples should be taken. All sampling must be done in accordance with the appropriate OSHA and OPNAV regulations.

4) The cement-asbestos shingles on the outside walls and those lying on the ground should be collected and disposed of in accordance with 29 CFR 1910.1001 and 40 CFR 61 Part M.

3.4.2 Site 2 - Abandoned Electrical System.

3.4.2.1 Findings. A relatively simple electrical system was installed when the White Alice facilities at Northeast Cape were constructed for the Air Force in 1952. A drawing indicating the primary distribution of electrical services (Department of the Air Force, 1963) shows that a total of fourteen transformers were installed on the present Navy property during the establishment of the base. All transformers were mounted inside of permanent structures on concrete floors to protect them from the outside environment.

Electricity for the White Alice Site was obtained from the main power plant located in the housing and operations area on excessed government property. On the present Navy property, power was delivered to three separate transformer banks located in the substation of Building 1001, the Lower Tram Transformer Building, and the Upper Camp Transformer Building as shown in **Figure** C. For emergency service in case of normal power source failure there were two diesel-engine-driven emergency alternators located near each of the transformer banks. The electrical system was abandoned in place in 1975 when the Air Force ceased operations at Northeast Cape. **Table** C details the different transformer banks, their supporting dielectric fluid-filled equipment, and their condition during the NEESA site visit.

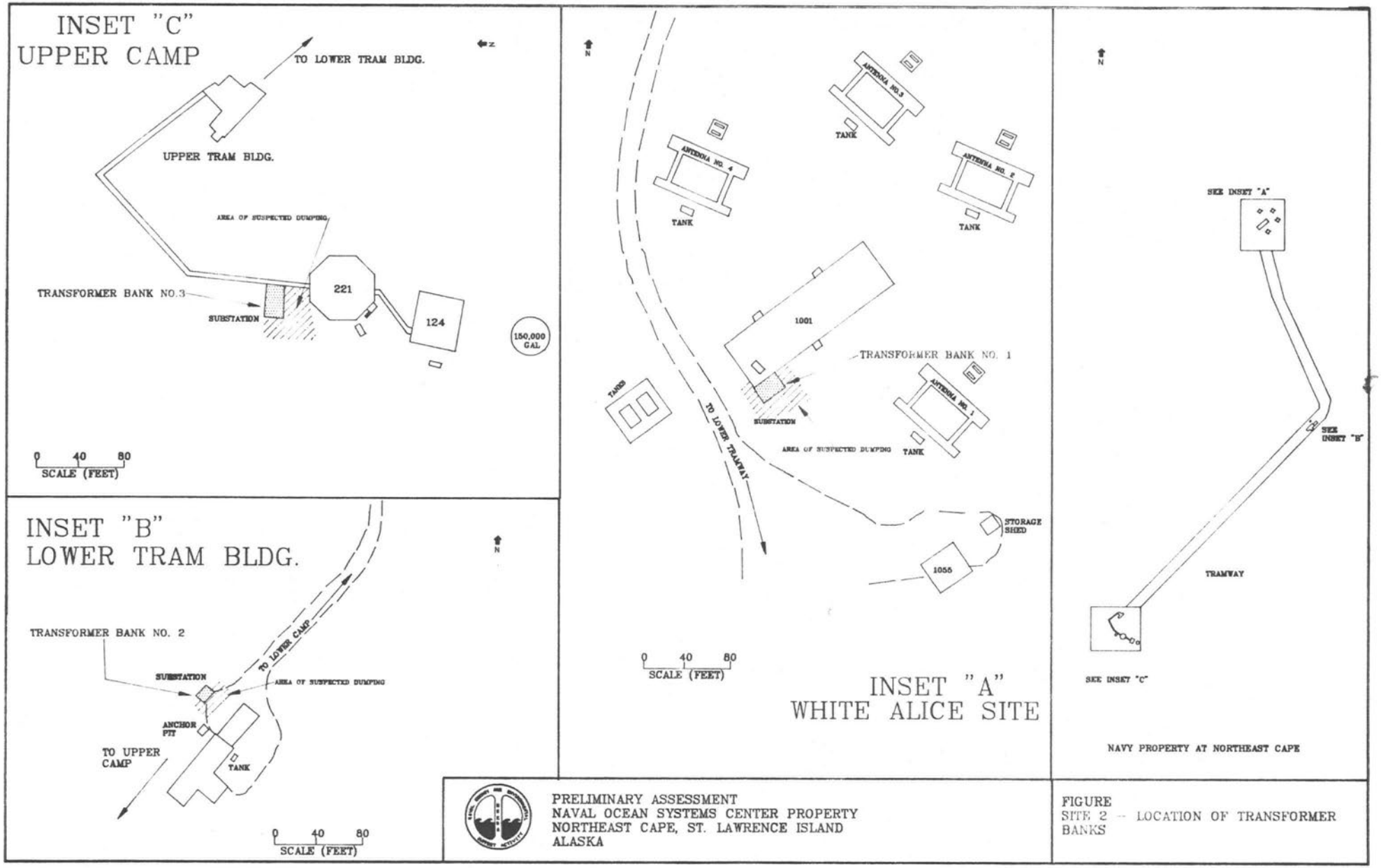
The White Alice Sites were high power pulse systems. Reportedly, the system would occasionally overheat or a transformer fire would occur. When this would happen, the burned dielectric fluid was "dumped onto the ground outside the building" and the transformer was flushed with a solvent (trichloroethylene) and refilled with oil. It is not known if any of the dielectric fluid contained polychlorinated biphenyls (PCBs) or the amount(s) or location(s) of these reported releases.

PCBs are inert, thermally and chemically stable compounds with dielectric properties. In 1974, use of PCBs in the United States was limited to closed systems with approximately seventy percent of the PCBs produced used in capacitors and the remaining thirty percent were utilized in transformers (USAF, 1989).

The environmental behavior of PCB mixtures is a direct function of their relative composition with respect to the individual chlorinated biphenyl species. In general, as chlorine content increases, sorption increases while transport and transformation processes decrease. Absorption into soils and sediments is the major fate process affecting PCBs in the environment. In general, the rate of absorption in soil materials is rapid. Soil material absorption capacity was highly correlated with organic content, surface area, and clay content (USAF, 1989).

Trichloroethylene (TCE) was widely used as an industrial solvent. It is highly volatile in aqueous solutions, moderately soluble in water, and not strongly absorbed or bioaccumulated. TCE on the soil surface is likely to volatilize, but that portion not removed by volatilization is likely to become mobile in ground water.

3.4.2.2 Conclusions. Federal law mandates PCB compounds are prohibited in any discharge from any manufacturer of PCBs, electrical capacitors or electrical transformers. Both PCBs and TCE are designated hazardous substances, and the United States Environmental Protection Agency (EPA) considers PCBs to be a Class 2B carcinogen (USAF, 1989). Site 2 is recommended for further action under the Navy Installation Restoration program



PRELIMINARY ASSESSMENT
NAVAL OCEAN SYSTEMS CENTER PROPERTY
NORTHEAST CAPE, ST. LAWRENCE ISLAND
ALASKA

FIGURE
SITE 2 – LOCATION OF TRANSFORMER BANKS

TABLE C
TRANSFORMER DATA
FROM
NORTHEAST CAPE, ST. LAWRENCE ISLAND, ALASKA

Transformer Bank No. 1, White Alice Substation Site

3 ea Transformers:

SER NUM:	142525, 142524, 1425290	Hill Transformer Co.
KVA:	100 KVA (Single Phase)	San Carlos, CA
TYPE:	DA 2	
FORM:	S-1	
IMP:	75 Deg 3.3	
OIL:	62 gals	
WEIGHT:	1960 lbs	

1 ea Oil Fused Disconnects:

CAT NUM:	FC61BK-FC	G&W Electric Speciality Co.
SER NUM:	6-57	3500 W. 127th Street
VOLTS:	8000 VAC	Blue Island, IL
AMP:	1000 Amps	

1 Set Pot Heads:

CAT NUM:	3BXFC61B-EC-T	G&W Electric Speciality Co.
SER NUM:	C8096-293	
VOLTS:	8000 VAC	
AMPS:	100 Amps	

Transformer Bank No. 2, Lower Tram Terminal

3 ea Transformers:

SER NUM:	9730748, ?, ?	G.E. Spirakore Transformers
KVA:	37.5 KVA	
TYPE:	HS	
WEIGHT:	850 lbs	
OIL:	?	

1 ea Transformer:

SER NUM:	?	Moloney Electric
KVA	15 KVA	
TYPE:	CL-2	
WEIGHT:	335 lbs	
OIL:	12.5 gal M-2I oil	

1 ea G&W Oil Fused Disconnect and set of Pot Heads as described for Transformer Bank No. 1.

TABLE C (cont.)
TRANSFORMER DATA
FROM
NORTHEAST CAPE, ST. LAWRENCE ISLAND, ALASKA

Transformer Bank No. 3, Upper Camp

3 ea Transformers: G.E. Spirakore Transformers
SER NUM: B 511418A, ?, ?
KVA: 37.5 KVA
TYPE: HS
WEIGHT: 850 lbs
OIL: ?

4 ea Transformers: G.E. Spirakore Transformers
SER NUM: 9669460, ?, ?, ?
KVA: 75 KVA
TYPE: HS
WEIGHT: 1400 lbs
OIL: ?

2 ea G&W Oil Fused Disconnects and two sets of Pot Heads as described for Transformer Bank No. 1.

due to the possible PCB contamination from leaking transformers and capacitors and possible PCB and TCE releases to the environment at Northeast Cape.

3.4.2.3 Recommendations. A grid coordinate should be established over the areas indicated in **Figure** 2 to allow for the random selection of sampling points. No specific regions were designated as the areas where burned dielectric fluid and solvents were disposed. Therefore, areas were chosen where oil could have been easily disposed of from the transformer rooms.

Once the grid is established a statistically viable number, eighty percent confidence level, of soil core samples should be collected at the 0 to 6 inch and 6 to 12 inch levels. Variation can only be accounted for with random sampling since most wastes are heterogeneous with regards to chemical composition and their on-site distribution (EPA SW846, 1982). This method is appropriate when the area to be sampled is large, contamination is evenly dispersed, or when there is no information to indicate where the areas of contamination might be located.

Care should be exercised to prevent losses during sample collection and storage. Samples should be collected in glass containers; extraction of samples should be completed within seven days of sampling and analysis completed within 40 days for PCB's. In addition to targeted samples, field blanks and duplicates should be obtained for Quality Assurance/Quality Control (QA/QC) purposes. At a minimum, the samples collected from Site 2 should be analyzed for PCBs, EPA Method 8080 and 8250, and TCE, EPA Methods 8010 and 8240.

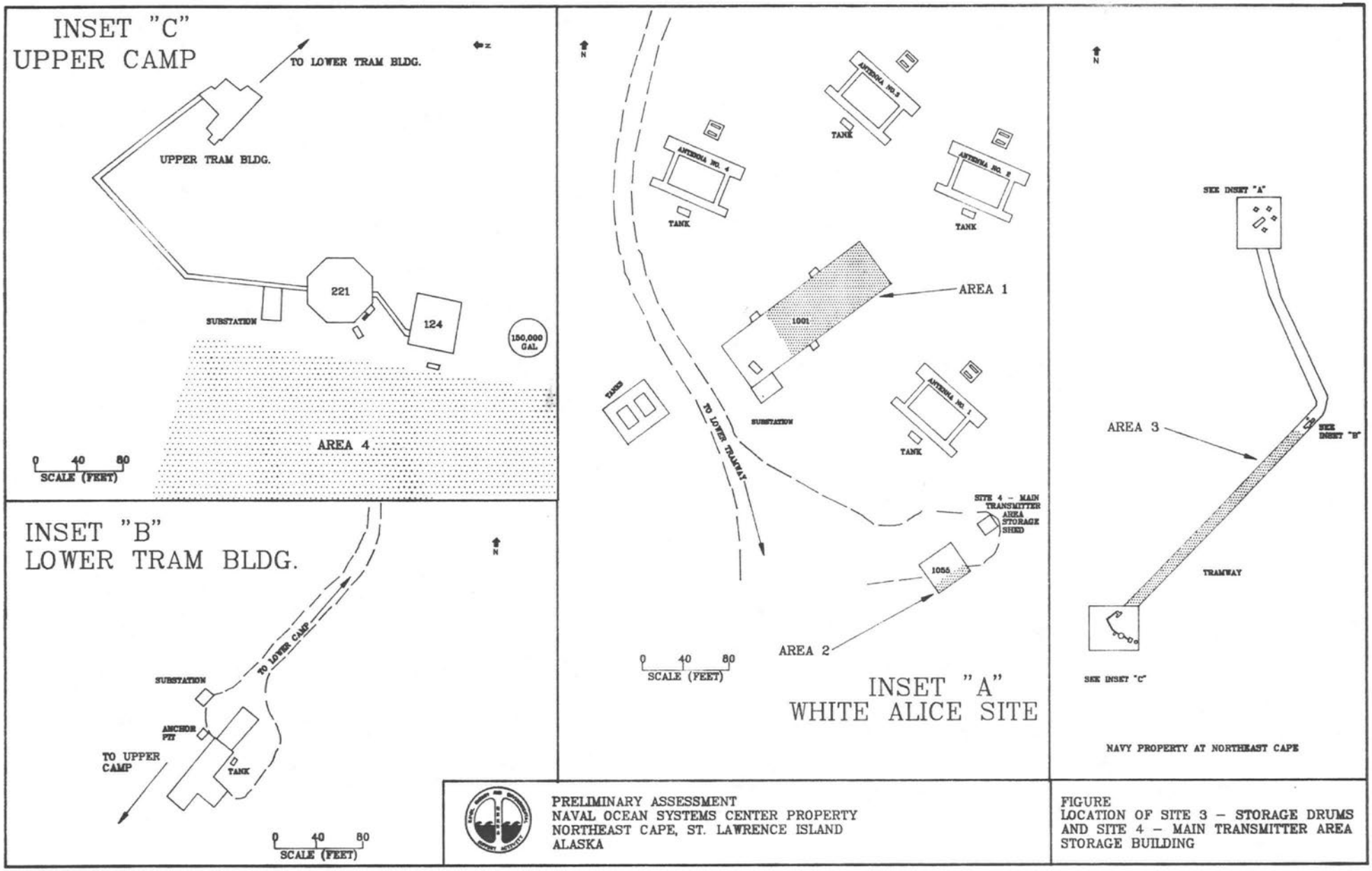
The dielectric equipment and the surrounding concrete located in Building 1001, the Lower Tram Transformer Building, and the Upper Camp Transformer Building should be sampled for PCBs by the appropriate EPA methods, drained, and disposed of in accordance with applicable State of Alaska and Federal Laws.

3.4.3 Site 3 - Storage Drums.

3.4.3.1 Findings. Due to the remote and isolated location of Northeast Cape, virtually all supplies were shipped to the base in 55 gallon drums. When the base was closed in 1975 it was abandoned in place and all storage and waste disposal drums were left behind. Site 3, Storage Drums, consists of four separate areas as shown in **Figure** 3.

Area 1 is located in Building 1001, Main Transmitter Building, and consists of 132 55-gallon drums. All of the drums are full of product and stored on their sides. The drums were marked turbine fuel aviation, fuel oil diesel, engine oil crankcase, and antifreeze arctic grade. None of the drums were leaking; however, five were bulging and show signs of corrosion damage.

Area 2 is located in the rear of Building 1055, Automobile Maintenance Shop, and embodies ten 55-gallon drums labeled engine



PRELIMINARY ASSESSMENT
NAVAL OCEAN SYSTEMS CENTER PROPERTY
NORTHEAST CAPE, ST. LAWRENCE ISLAND
ALASKA

FIGURE
LOCATION OF SITE 3 – STORAGE DRUMS AND SITE 4 – MAIN TRANSMITTER AREA STORAGE BUILDING

oil crankcase, and two 55-gallon drums marked leaded gasoline. Both of the gasoline storage drums and eight of the crankcase oil drums were full of product. All of the drums are in good condition and show no signs of leaking.

Area 3 is defined as the Navy property beneath the tramway leading up the mountain. During the NEESA site visit, over two hundred 55-gallon storage drums were noted littering the entire length of the tramway. All of the drums were severely damaged and bullet holes were observed in some of the drums. Approximately forty percent of the storage drums investigated still contained liquid, and fifteen of the drums showed signs of bulging and rupturing. A majority of the drums were rusted and the labels could not be read to determine the contents; however, labels that could be read were trichloroethylene, antifreeze arctic grade, fuel oil diesel, and de-icing fluid.

Area 4 is positioned eighty feet southwest of Building 221 and 224 in the Upper Camp Complex as shown in **Figure D**. Greater than six hundred 55-gallon drums are stacked in an area encompassing approximately 60,000 square feet. A majority of the drums contained product, but were too rusted to read the labels. Labels that could be read were fuel oil diesel, trichloroethylene, antifreeze arctic grade, and waste oil. Some of the drums appear to have ruptured, and others have bullet holes in them.

In addition to the above mentioned chemicals, the station also reportedly handled PCB dielectric fluids, dibenzofuran, carbon tetrachloride, DDT, Trichlorophenoxy acetic acid (2,4,5-T), alcohols, and sulfuric acid. No drums or containers were noted that were labeled as such. However, with the exception of Area 1, a majority (greater than ninety percent) of the drums were too rusted to read their labels and determine the contents.

The environmental behavior of the chemicals known to be at North East Cape (crankcase oil, TCE, ethyleneglycol, leaded gasoline, diesel fuel, and aviation fuel) are discussed below.

Crankcase oils are expected to be highly immobile in the soil/ground water environment. Bulk quantities of the oil from a spill or improper disposal might be carried slowly through the unsaturated zone to the top of the water table, but the high viscosity and low water solubility would mitigate this. Most likely, at least with moderate to small spills, the oil would remain entrained in the pores of the soil near the surface. This would be more likely for low porosity and high organic carbon content soils, and less likely for sandy, porous soils (USAF, 1989).

Trichloroethylene (TCE) is highly volatile in aqueous solutions, moderately soluble in water, and not strongly absorbed or bioaccumulated. TCE on the soil surface is likely to volatilize, but that portion not removed by volatilization is likely to become mobile in ground water (USAF, 1989).

Ethlyene glycol is expected to be highly mobile in the soil/ground water system when present at relatively low concentrations or as a separate organic phase resulting from a spill of significant quantities of the chemical. Data on ethylene glycol volatilization from soils is not available. Ethylene glycol is not strongly sorbed to soil and is highly soluble in water. Although some volatilization may occur at the surface, it is suggested that vapor concentrations in soil will be low whenever water is present and volatilization will be minimal (USAF, 1989).

The environmental behavior of petroleum based fuels (gasoline, diesel fuel, and aviation fuel) will be limited to a discussion of the major hydrocarbon components and not to the many trace elements and diverse additives. Transport and transformation of individual constituents will depend on physicochemical and biological properties of the constituents. Some constituents will dissolve more quickly, be sorbed less strongly on soils, and may be more or less susceptible to degradation by chemical or biological action. The relative concentrations of constituents of the fuel will vary with time and distance from the site of contamination. This effect known as weathering is used to describe the changes following spills where differential volatilization, dissolution, and degradation are all involved. Lateral spreading along the surface increases the initial contaminated area while facilitating evaporative removal of the low molecular weight hydrocarbons. Vertical penetration mediated by gravitation and capillary forces decreases evaporation, reduces the importance of some transformation pathways, and may lead to ground water contamination (USAF, 1989).

3.4.3.2 Conclusions. Site 3 is recommended for further action under the Navy Installation Restoration program due to the unknown nature of the majority of the substances stored in the drum areas. The storage drums in the four separate areas are recommended for a "time critical" removal action to mitigate the eminent environmental hazard. Further sampling will be required after the removal action to determine potential contaminant releases and migration in the storage areas.

3.4.3.3 Recommendations. A staging area should be established in an open region near each of the four drum storage areas. A fork-lift should be used to transfer the drums on pallets from where they are stored to the staging areas via a bermed corridor lined with plywood and plastic (Visqueen). The plywood will help protect the plastic from breakage due to rocks on the ground. The plastic will cover the plywood and protect against potential spills onto unprotected ground. The staging area should also be bermed and protected from potential spills.

Following rearrangement of the drums to allow unrestricted access to each drum, trained personnel should label each drum, open and monitor the headspace for volatile vapors, visually classify the contents, and collect a representative sample for later

categorization. After sampling, each drum should be closed until analytical results have been reviewed and the proper disposal method has been determined. Additionally, the Hazardous Material Categorization (Hazcat) analysis will attempt to characterize the wastes for consolidation into bulk storage containers for disposal, recycling, or for other options identified during hazcatting operations.

In addition to the tasks associated with drum sampling and waste categorization, a grid should be established to allow for the random sampling of soil cores in Area 4 where the drums were stored. Surface water samples should be obtained in snow run-off directly below the tramway and Area 3. At a minimum, samples should be analyzed for the compounds determined to be present at the sites upon review of Hazcat results.

3.4.4 Site 4 - Main Transmitter Area Storage Building.

3.4.4.1 Findings. Site 4, Main Transmitter Area Storage Building, is an eight foot by twelve foot structure located approximately 160 feet southeast of Building 1001, Main Transmitter Building, and 30 feet east of Building 1055, Automobile Shop, in the White Alice antenna area as shown in **Figure 4**.

The structure was constructed in 1952 for the United States Air Force and used to store various small containers of supplies for use in buildings 1001 and 1055. The door to the building is missing, allowing easy access to the contents inside.

Fifteen compressed gas cylinders were observed inside the structure and all are in good condition. The contents of the gas cylinders are unknown. Other potentially hazardous materials stored in the building include seven lead-acid type automobile batteries, two 5-gallon containers of creosote "C", five 5-gallon containers of grease, one 15-gallon drum of an unknown substance, and possible asbestos wallboard (see Site 1). All containers are in good shape and show no signs of leaking or damage. The possible asbestos wallboard is in poor condition and is falling apart.

3.4.4.2 Conclusions. Site 4 is recommended for further action under the Navy Installation Restoration program due to the unknown contents and associated explosive hazard of the compressed gas cylinders, and the easy accessibility to trespassers of other known hazardous materials stored in the building.

3.4.4.3 Recommendations. The compressed gas cylinders and all containers housed in the Main Transmitter Area Storage Building should be removed and disposed of in accordance with applicable State of Alaska and Federal regulations. The possible asbestos wallboard should be sampled in accordance with procedures outlined in Site 1 and disposed of properly depending on analytical results. The door to the structure should be replaced

and secured to prevent entry by trespassers.

4.0 BACKGROUND, AUTHORITY AND SCOPE

4.1 PROGRAM BACKGROUND. Past hazardous waste disposal methods, though acceptable at the time, have often caused unexpected long-term problems by releasing hazardous pollutants into the soil and ground water. In response to these problems, the United States Congress directed the United States Environmental Protection Agency, the EPA, to develop a program, commonly referred to as "Superfund", to manage and control past disposal sites. This program is outlined in the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) of 1980 and Superfund Amendments and Reauthorization Act (SARA) of 1986.

4.1.1 DOD Program. Department of Defense (DOD) efforts in this area preceded the nationwide CERCLA program. In 1975, the United States Army developed a pilot program for DOD to investigate past disposal sites at military installations. In 1980, DOD named this program the Installation Restoration (IR) Program and instructed the services to comply with program guidelines.

4.1.2 Navy Program. Under the Navy IR Program, a Preliminary Assessment/Site Inspection identifies and investigates potentially hazardous disposal sites and contaminated areas caused by past hazardous substance storage, handling, or disposal practices at Naval activities. These sites are then individually evaluated with respect to their threat to human health or to the environment. The PA and the SI can be completed concurrently or separately. Once the presence of contamination is verified in the SI, the Remedial Investigation (RI) is the mechanism for collecting data for site and waste characterization and for conducting treatability studies as necessary to evaluate the performance and cost of the treatment technologies and support the design of potential remedies. The Feasibility Study is the method used for the development, screening, and detailed evaluation of potential remedial alternatives. The RI and the FS are conducted concurrently (RI/FS) and the data collected in the RI influence the development of remedial alternatives in the FS, which in turn affects the data needs and scope of treatability studies and additional field investigations.

4.2 AUTHORITY. Section 211 of the Superfund Amendments and Reauthorization Act of 1986 (SARA 211) provides continued authority for the Department of Defense Environmental Restoration Account (DERA). The Navy Installation Restoration program is authorized by Chief of Naval Operations instruction (OPNAVINST) 5090.1 of 26 May 1983. The Naval Facilities Engineering Command (NAVFACENGCOM) manages the Navy program. NAVFACENGCOM tasked the Naval Energy and Environmental Support Activity (NEESA) to conduct a preliminary assessment (PA) for each Navy and Marine Corps facility listed on the Federal Agency Hazardous Waste Compliance Docket as required by SARA 120.

PAs are conducted in accordance with Environmental Protection

Agency (EPA) draft guidance on "Pre-Remedial Activities at Federal Facilities" forwarded by EPA memorandum of 8 September 1987. PA recommendations are consistent with the National Contingency Plan (NCP). Based on these recommendations, NAVFACENGCOM schedules a SI for those sites determined by scientific and engineering judgment to be potential hazards to human health or to the environment.

4.3 PRELIMINARY ASSESSMENT

4.3.1 Record Search. The PA begins with investigation of activity records followed by a records search at various government agencies including EFD's and United States Geological Survey Offices. In this initial step, PA team members review records to assimilate information about the activities past missions, industrial processes, waste disposal records, and known environmental contamination. Typical examples of records include activity master plans and histories, environmental impact statements, cadastral records, and aerial photographs.

4.3.2 On-Site Survey. After the records search, the study team conducts an on-site survey to complete documentation of past operations and disposal practices for the sites identified as potentially contaminated. The team inspects the identified sites and surrounding areas, and interviews long term employees and retirees.

APPENDIX A

REQUEST FOR AND RESULTS OF TESTS

PAGE NO. | NO. OF PAGES

SECTION A - REQUEST FOR TEST

1. TO:

[illegible]
NAVAL STATION, BOX 145
SAN DIEGO, CA. 92136-5145

2. FROM:

NOSC Code 19
San Diego 92152-5000

3. PRIME CONTRACTOR AND ADDRESS

CONTRACT NUMBER

4. MANUFACTURING PLANT NAME AND ADDRESS

P. O. NUMBER

5. END ITEM AND/OR PROJECT	6. SAMPLE NUMBER	7. LOT NO.	8. REASON FOR SUBMITTAL	9. DATE SUBMITTED
	3		R & D ASSESSING	

10. MATERIAL TO BE TESTED	10a. QUANTITY SUBMITTED	11. QUANTITY REPRESENTED	12. SPEC. & AMEND AND/OR DRAWING NO. & REV. FOR SAMPLE & DATE
			ASBESTOS [illegible]

13. PURCHASED FROM OR SOURCE	14. SHIPMENT METHOD	15. DATE SAMPLED AND SUBMITTED BY
	HAND CARRIED	7 Nov 88 LCDR Cox/Wales

16. REMARKS AND/OR SPECIAL INSTRUCTIONS AND/OR WAIVERS.

1 1 — Nosc Facility, Northeast area, S. Lawrence Island, Bering Sea, Alaska

2 10 - Nosc Bldg 371

3 11 - Nosc Bldg 371

[illegible]

17. SEND REPORT OF TEST TO

NOSC

SECTION B - RESULTS OF TEST *(Continue on plain white paper if more space is required)*

1. DATE SAMPLE RECEIVED	2. DATE RESULTS REPORTED	3. LAB REPORT NUMBER
07 Nov 88	07 Nov 88	03-379-88

4 TEST PERFORMED	RESULTS OF TEST	SAMPLE RESULT	REQUIREMENTS
[illegible]			

1 Positive for chrysotile and amosite asbestos

2 Negative for asbestos Positive for mineral wool

3 Positive for chrysotile and amosite asbestos

DATE	TYPED NAME AND TITLE OF PERSON CONDUCTING TEST	SIGNATURE
07 Nov 88	[illegible] NAVAL STATION, BOX 145 SAN DIEGO, CA. 92136-5145	[illegible] USN

DD FORM 1 FEB 62 1222 REPLACES DD FORM 1222, 1 JUL 58, WHICH IS OBSOLETE.

SAMPLES TAKEN FROM WHITE ALICE SITE
AT
NORTHEAST CAPE, ST. LAWRENCE ISLAND, ALASKA

Sample Number	Description/Location
1	Lagging sample taken from material which had fallen off of a pipe running thru the transformer room.
	RESULTS: Positive for chrysotile and amosite asbestos
2	Surface water just outside the transformer room.
	RESULTS: 0.0039 mgm/liter
3	Suspected fuel sample taken from leak in line leading into building.
	RESULTS: None Detected
4	Soil sample taken inside the garage building next to the furnace with possible fuel oil.
	RESULTS: 1.24 mgm/kgm **
5	Soil sample taken in front outside the garage building.
	RESULTS: 0.6168 mgm/kgm **
6	Water sample taken inside the Propane building.
	RESULTS: None detected
7	Soil sample taken outside main building on NE corner.
	RESULTS: 1.47 mgm/kgm **
8	Oil taken from leaky capacitor located in transmitters.
	RESULTS: Not measured
9	Drippings from insulator feedthrough in the transmitter cabinets.
	RESULTS: Not measured

** Level at which concentration considered hazardous is 5 mgm/kgm