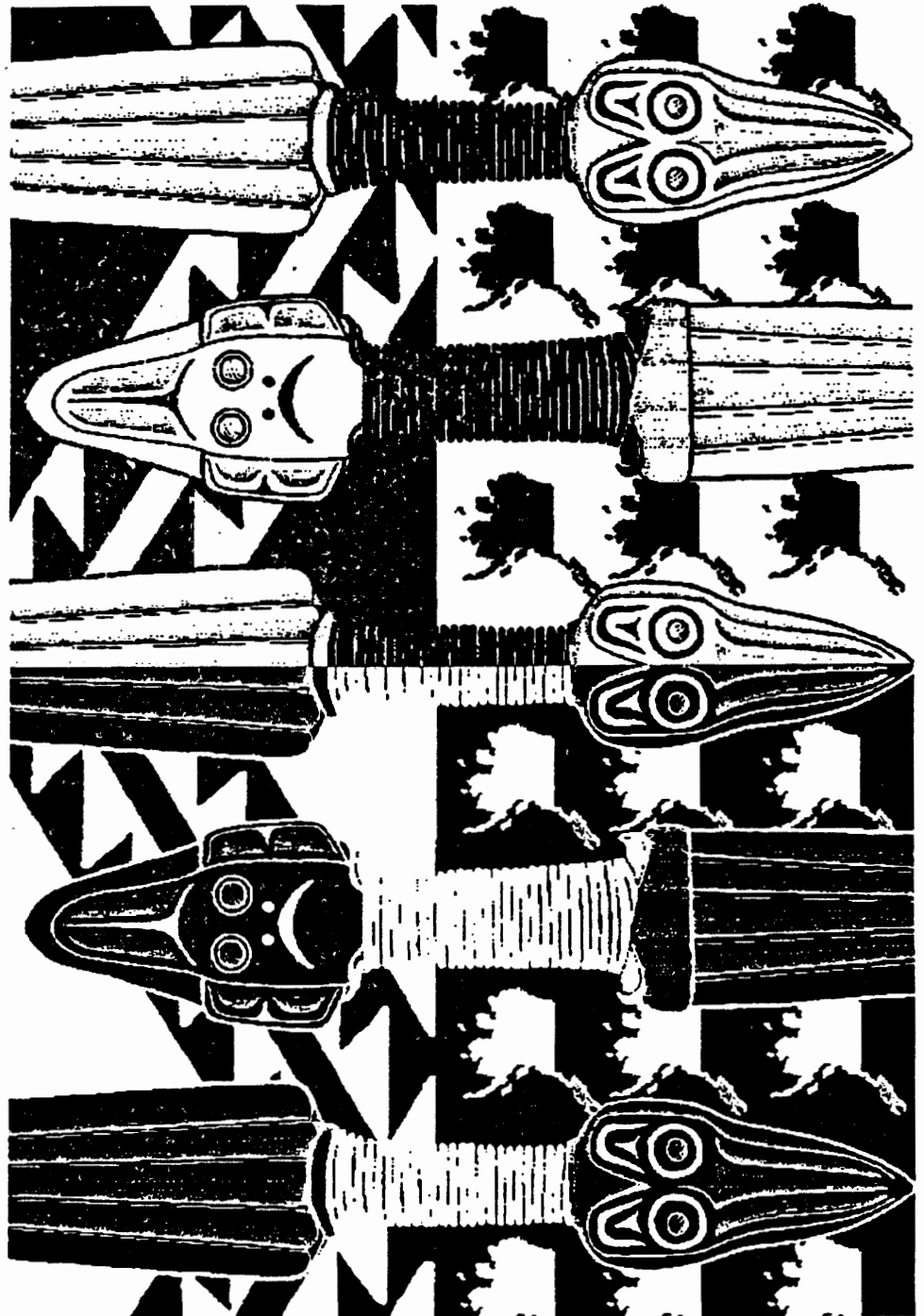


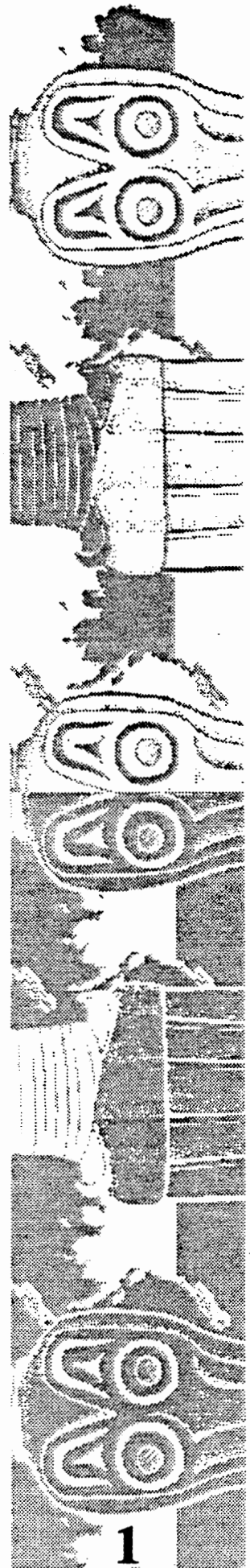


# The Alaska Military Sites Project



# The Alaska Military Sites Project

Environmental Protection Agency - Region 10  
Environmental Justice Program/Office for Innovation  
Gary Idleburg - Project Manager





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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10

1200 Sixth Avenue  
Seattle, Washington 98101

Reply To  
Attn Of: OI-085

MEMORANDUM

To: The Alaska Military Sites Review Group

From: Gary Idleburg; Joyce Kelly  
Office of Environmental Justice

Subject: Many thanks to everyone

On behalf of the Environmental Justice Program and the Office for Innovation at the Environmental Protection Agency-Region 10 (EPA), we would like to extend sincere thanks and appreciation to each of you (inside and outside the agency) for your assistance on our Alaska Military Sites Project. Your time, efforts, support and input has made this project a success. We also believe that our interactions were good examples of intra and inter-agency partnership and cooperation. We would especially like to extend thanks to Ray Peterson for sharing his time and expertise in developing and generating our maps, to Beth Garza for her research on Alaska military history and to Matt Ganley (Bering Straits Native Corporation) for his research on traditional land-use. Their help was invaluable.

Members of the Alaska Military Sites Project Review Group:

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Individuals and Agencies outside of the Review Group:

Greg Smith - U.S. Army Corps of Engineers  
Tim Hansen - U.S. Air Force  
Robert Deering - U.S. Coast Guard  
Ken Lauzen - Federal Aviation Administration  
Dax Jolly - North Slope Borough - Barrow, Ak  
Robert Wolfe - Alaska Department of Fish & Game  
Patricia Cochran - Alaska Native Science Commission



# Executive Summary

The project began to fulfill three main purposes: 1) to fill in gaps of information on the location of all military sites across the State of Alaska (contaminated or not) and traditional land-use, 2) begin to identify which sites may be impacting traditional land-use activities across the state and 3) educate the U.S. military, state, local agencies, the Alaska public and EPA - Region 10 employees about the spatial distribution of contaminated military sites in Alaska. This project was initiated at the suggestion of people involved in environmental justice in Alaska and the Environmental Protection Agency-Region 10.

This project provides three main products 1) a geographic information system (GIS) map (roughly 1:2,500,000 scale), 2) a report that provides details of the project and 3) a spatial statistical analysis of the distribution of the military sites across the state (software and results included in report).

The map depicts the location of 649 military sites (information provided by the Army Corps of Engineers, U.S. Air Force, U.S. Coast Guard and Federal Aviation Administration). One hundred-sixty two of these sites are being actively mitigated by one of the mentioned organizations. The map also contains the administrative boundaries of the Alaska Native Corporations and traditional land-use information from the Arctic Slope region provided by the North Slope Borough GIS office - Barrow, Ak.

A 'Nearest-neighbor statistical analysis' was performed on the 649 military sites. This provided information on how clustered or how dispersed the military sites were within each of the twelve Native Corporation boundaries within the state. The clustering indices ranged from .03 to .11 all of which represent "very clustered" patterns military sites. (A value of 0.0 represents a "completely clustered" pattern and a value of 2.15 represents a completely dispersed pattern.)

The two main limitations of our map information were: 1) we could not depict the range of influence that any one particular site might have in its area and 2) traditional land-use information is very limited in GIS format...only the North Slope Borough was able to provide us with this type of information. The limitations with the map information also limited our ability to be more interpretive with our spatial statistics.

From our research, it is still obvious that the ambient environment, health, and way of life of many people in Alaska has been and continues to be threatened by abandoned contaminated military waste sites. Based on our research, we make the following recommendations:

- 1) *The State, local governments, Tribal governments, Native Corporations, Native nonprofit organizations plus all other interested parties should make the development of a statewide G.I.S. with detailed and specific traditional land-use information a top priority.*
- 2) *The U.S. military, State, local governments, Tribal governments, Native Corporations, Native nonprofit organizations plus all other interested parties should make the development of a statewide G.I.S. that allows on-going updating and documentation of the status of all abandoned military sites a top priority.*
- 3) *On-going (multivariate) health risk assessment matrices should be developed for all regions of the state.*
- 4) *Congress, Department of Defense, and EPA should be focused on providing the regulatory flexibility, monetary and technical resources to allow more contaminated military sites to be remediated faster.*
- 5) *EPA, the U.S. military and State of Alaska should jointly publish quarterly progress reports and outreach literature to educate and inform the public, especially rural Alaska Natives, as to the dangers that the contaminated sites pose in the various regions and as to what progress is being made toward remediation.*
- 6) *It is imperative that local concerns and life-styles receive serious consideration in the site identification and remediation process (e.g. more Restoration Advisory Boards (RABs) due to the closeness of the native people to the land in both proximity and ideology.*

# I. Introduction

Environmental Justice is the fair treatment of people of all races, cultures, incomes and education levels with respect to the development of environmental laws, regulations and policies. Fair treatment implies that no population of people should be forced to shoulder a disproportionate share of negative environmental impacts of pollution or environmental hazards due to a lack of political or economic strength. The main Environmental Protection Agency-Region 10 (EPA) environmental justice goal is to serve as a focal point for ensuring that communities comprised predominantly of people of color, minorities, low income populations or native tribes receive fair protection under environmental laws and have increased access to EPA.

The Alaska Military Sites Project was begun essentially because a number of people involved in environmental justice in the State of Alaska and at EPA-Region 10 had identified the lack of locational information on abandoned and/or contaminated military facilities as a critical information gap that needed to be filled. In depth research and action on this information should serve to better protect and improve health and quality of life for all Alaskans especially rural Alaskan Natives.

This project is important because it provides statewide spatial distribution information about former and present military sites in Alaska and may be used as a tool for exploring environmental and health risks in any part of the state. This project is also important because Native Alaskan communities and organizations throughout the state will have general knowledge of where contaminated military sites are relative to their homes and areas of traditional land-use. Knowing the location of contaminated sites relative to the areas of traditional use is critically important because it not only concerns environmental/public health, but also preservation of Alaska's native cultural traditions and ways of life. Providing this knowledge is a major component in the EPA-Region 10 Environmental Justice goal of serving as a focal point for ensuring that communities comprised predominantly of people of color, minorities, low income populations and/or native tribes receive fair protection under environmental laws and have increased access to EPA.

This report is to serve as a foundation of information that begins to depict where abandoned military sites may be impacting health and the environment in Alaska including traditional land-use.





## II. Background

### A. GENERAL HISTORY

The study of the impact of abandoned military sites across the State of Alaska is a study of a spatial distribution question -i.e. the spatial distribution of abandoned military sites across the state. In order to begin to understand the situation we must first understand something of the environmental geography of Alaska and the sites history relative to military activity.

Alaska is the largest state in the union - approximately one fifth the size of the lower 48 states. It's land area is 945,826 square kilometers (568,421 square miles) that are comprised of six distinct climate areas: the Southcentral Coastal areas, the Southeast, Southwest/Aleutians, Western/Bering Sea Coast, Arctic and Interior. Each supports distinctive types of human activities from fishing on the coasts and rivers to farming and hunting of caribou in the southcentral interior (tundra), to whaling and harvesting of other sea mammals in the Arctic. Climates in these areas are very diverse as well from high precipitation areas and somewhat moderate temperatures in the Southeast, to relatively dry constant winter-like conditions in the Arctic.

Human history began in Alaska between 6,000 and 11,000 years ago. The following timeline summarizes some significant events in Alaska's human history:

6,000 to 11,000 years ago	First human culture/society in Alaska: Southeast; Tlingit, Haida, Aleutians; Aleuts, Interior; Athabascan and Northwestern Arctic Alaska, Eskimo.
3,000 to 5,000 years ago	Human Culture present on Bering Sea Coast (Eskimo)
1725-1866	Russian influence in Alaska
1867	United states "buys" Alaska from Russia for \$7.2 million - beginning of U.S. presence and influence in Alaska
1887	Tsimshians enter Alaska
1879	U.S. Navy battles and defeats Tlingit tribe at Sitka Island, U.S. military presence begins.
1900-1901	Ft. Michael and Ft. Davis established in Nome.
1940-1941	U.S. Military buildup in Alaska increases with development of Ft. Richardson, Elmendorf Air Force Base, Kodiak Naval Air Station, Ft. Abercrombie and Ft. Greely. Weapons and material are also being sent to Soviet Union via Alaska.
1942	Dutch Harbor bombed, Attu & Kiska Islands are occupied by Japanese. ALCAN Highway was built (completed) by U.S. Army.
1943	Japanese forces are driven from Alaska. Amchitka Island facility is established.
1945	World War II ends, some military facilities are abandoned.



## II. Background

1952-1971

Cold War and Korean conflict take place, military build up continues, including Federal Aviation Administration landing facilities, Distant Early Warning (DEW) stations and ground troop winter exercises on a yearly basis at Fort Greely. Nuclear experiments take place between 1961 and 1971: Ft. Greely nuclear reactor, Three atomic test detonations on Amchitka Is. and Project Chariot (radio-active nucleotide movement tests on the tundra). Pesticide and biocide spraying parallels many of these activities. Chemical weapons storage facilities are also established.

1971

Alaska Native Claims Settlement Act (ANCSA) passed

1989-present

Expansion of military actively ends clean up of some military sites by the Army Corps of Engineers, U.S. Air Force, U.S. Coast Guard is initiated.

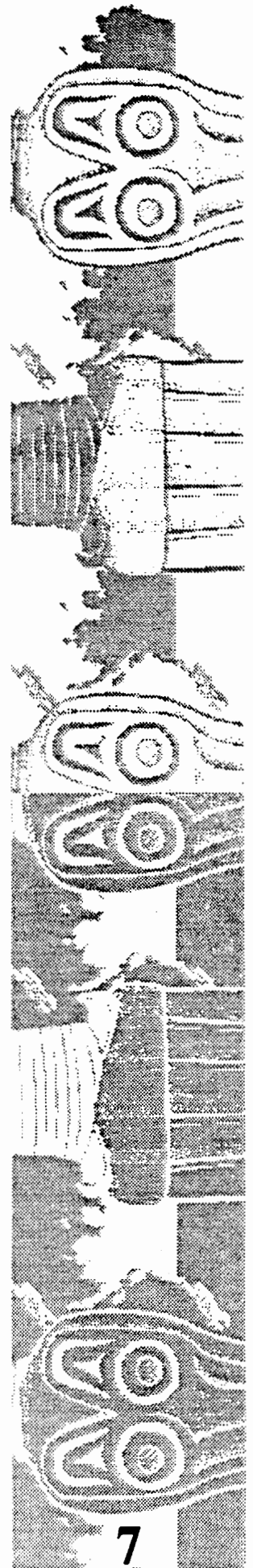
The segment of time where U.S. military build up occurred in Alaska is important to understand and study because many of the materials and instruments used to establish the defense facilities have become the current contaminants and environmental hazards at numerous locations across Alaska.

One of the most controversial and important environmental issues in Alaska is that of traditional land-use. The extent to which contaminants from abandoned military facilities have impacted traditional land-use areas has not been quantified on a regional or statewide basis. Understanding traditional land-use intrinsically is an important step toward fully understanding the impact that contaminated sites could have.

### B. TRADITIONAL LAND-USE

Traditional land-use by Alaskan Natives can be described as both a life-style and a world view. An Alaskan Native view of traditional land-use is that it is an eternal and sacred trust which includes responsibility for people to care for each other, the animals and the land. The life-style is highly variable, depending on the region, the resources available, and the Native group being discussed. To some outsiders, the existence of a cash economy is misconstrued to mean that people are no longer pursuing traditional uses of the lands or that the cash economy and traditional economy are separable spheres of daily life. In fact, modern Native communities represent complete units where people utilize all resources, whether they be fish or money, to fulfill a life style which is guided by a tradition of using all the available resources. While the means through which various Native groups fulfill this life-style varies greatly, the worldview shared by all groups has many strengths and tenets in common.

From the rainforests of southeast Alaska to the North Slope, Native people have survived and flourished for many thousands of years because of their understanding of and respect for the resources that have nurtured them. In one area, salmon may be the most important resource for sustenance, in another it may be caribou or whales. Regardless of the methods or resources, a deep respect for the spirituality of the animals and the lands has been maintained. This connection continues today despite the rapid changes wrought in the 20th century. Involvement in wage labor and corporate politics has changed the Native communities, but only at a superficial level. The majority of communities are remote and the people continue to depend







## II. Background

on the lands for their sustenance and cultural traditions. This is the most important factor that all Native groups have in common.

It is the sense of land and culture that was instrumental in the passage of the Alaska Native Claims Settlement Act (ANCSA) of 1971. In the process of its passage, Native leaders came together to consider the issues of land, heritage and their legal rights to these cultural imperatives. Since its passage ANCSA has been amended and problems with the act can still be seen at many levels. However, it is the land that was and still is recognized as an asset...not so much in monetary terms, but in terms of continuation of traditions and ways of life.

With ANCSA, Native groups and communities received title to some of the lands they have traditionally occupied. On these lands, military installations and activity areas present an unmeasured threat (as of yet) to the health of the ecosystems and people who live there. Now that Alaska's Native people have been rapidly thrust into the realm of the corporate world and government regulations, they must deal with the legacy of contaminated sites on lands conveyed to them pursuant to ANCSA.

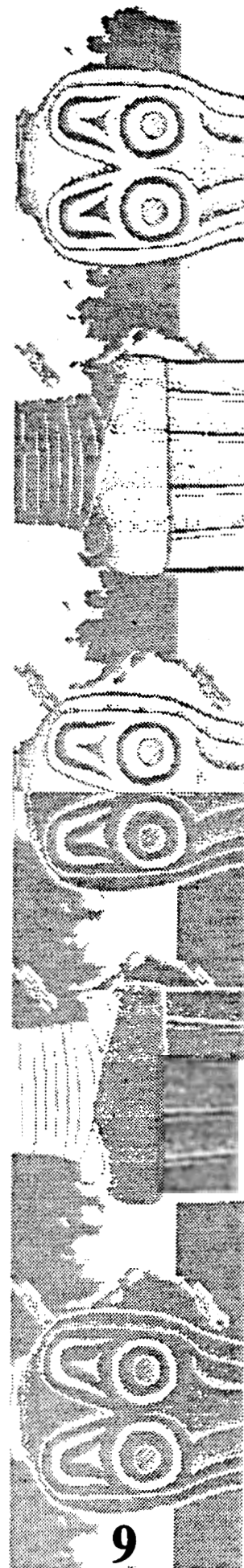
It is imperative that local concerns and life-styles receive serious consideration in the site identification and remediation process due to the closeness of the native people to the land in both proximity and ideology. The intimate knowledge and understanding of the land which has developed through thousands of years of Native stewardship can provide valuable insight to the impacts on the health and life-style of the Native people caused by the contamination of their natural resources. It is logical to assume that if contaminants in the environment cause traditional land-use to become an inviable way of life, then many unique cultures and societies will be destroyed as well.

Abandoned military facilities and equipment have caused documented contamination of the environment in Alaska. The total extent of the impact on flora, fauna, soil and water is not exactly known. Thus, one of this projects underlying objectives is to bring more attention to the potential hazards of abandoned military sites (and equipment) to human health and the way of life of many Alaskan Native people.

# III. Purpose of the Project

The three main purposes of the Alaska Military Sites Project are to: 1) fill in gaps of information on the location of contaminated (or potentially contaminated) military sites across the State of Alaska, especially those sites that could be impacting tribal communities, 2) begin to identify which sites may be impacting traditional land-use activities across the state and 3) educate the U.S. military, state, local agencies, the Alaska public and EPA-Region 10 employees about the spatial distribution of contaminated military sites in Alaska.

A number of technical objectives had to be accomplished in order to complete this project: 1) develop a geographic information system (GIS) data base that included locations of past and present military sites (especially those that have become known contaminated sites), the locations of all Alaska Native Villages and traditional land-use patterns, 2) perform a spatial analysis on the distribution of the military sites and 3) develop this summary package of information which includes map(s) plus recommendations for the future.



# IV. Map Development

## A. METHODOLOGY

The geographic information system (GIS) used to create this map was ARC/INFO. The spatial information presented is composed of five separate information files from various sources: 1) the State of Alaska outline (from preexisting ARC/INFO information), 2) the outline of the Native Corporation boundaries (from Alaska Department of Natural Resources (AKDNR)), 3) the locations of the Alaska Native Villages (from 1990 Census Tiger Data-U.S. Census Bureau), 4) locations of military sites (from the U.S. Army Corps of Engineers (ACOE), U.S. Air Force (USAF), U.S. Coast Guard (USCG) and the Federal Aviation Administration (FAA) 5) Traditional land-use information (from the North Slope Borough-GIS Office). A full listing of the latitudes and longitudes of the Alaska Native Villages and x and y coordinates translated from the latitudes and longitudes of the military sites are in appendices 1 and 2 respectively.

Most of the spatial information was relatively easy to obtain in compatible formats with our GIS. Written and/or verbal agreements were made with the appropriate military, state or local agency to obtain the locational data used. EPA worked with all the agencies (at separate times) to quality assure the locational data.

## B. RESULTS

In total, we have located and performed a subsequent spatial analysis on 649 military sites scattered across Alaska. One hundred-sixty two of these sites are being actively mitigated in some fashion according to the military. The map also contains the administrative boundaries of all the ANCSA Native Corporations and the traditional land-use boundaries in the Arctic Slope region. The following table summarizes the military sites data on the map.

### SUMMARY OF MILITARY SITES DATA DEPICTED ON G.I.S. MAP

TYPE OF FACILITY	NUMBER OF SITES BEING REMEDIATED*	NUMBER OF SITES WHERE NO ACTION BEING TAKEN	TOTAL NUMBER OF SITES
U.S. ARMY	96*	430	526
U.S. NAVY	1**	0	1
USAF	38	4	42
FAA	20	40	60
US COAST GUARD	11	9	20
TOTALS	166	483	649

\* This figure was accurate as of 01/09/96. All others are accurate as of 04/01/96.

\*\*Adak Naval Station is scheduled for closure in January 1998.

All sites in some phase of remediation have their names spelled out on the map in either magenta or blue. The magenta represents ACOE sites, the blue represents all others...USAF, USCG and FAA. A map key is provided giving all military site names. It should be noted that in some cases not all concerned parties have concurred as to the completeness of the mitigation efforts. Anyone interested in the status of a military site(s) should check with the appropriate military agency, Alaska Department of Environmental Conservation (ADEC) and EPA Region 10 to verify the status of a site that may or may not have been mitigated. A list of contact people is in Appendix 4.

# IV. Map Development

## B. RESULTS (continued)

### SUMMARY LIST OF POSSIBLE HAZARDS FOR 93 ACOE SITES

- Petroleum/Oil/Lubricants (POL) \*Most prevalent contaminant
- Low Level Radiation/Radioactive Waste
- Waste - Drums, Tanks, Bulk Containers
- Polychlorinated Biphenyl
- Pesticides
- Contaminated Fill
- Building/Demolition Debris
- Refuse Without Hazardous Waste
- Scrap Metal
- Non-Chlorinated Solvents
- Heavy Metals
- Above Ground Storage Tanks
- Asbestos
- Hazardous Materials
- Explosive Ordnance Components
- Dioxin
- Chlorinated Solvents
- Paint
- Transformers/Batteries
- Chemical Agents/Nerve Gas

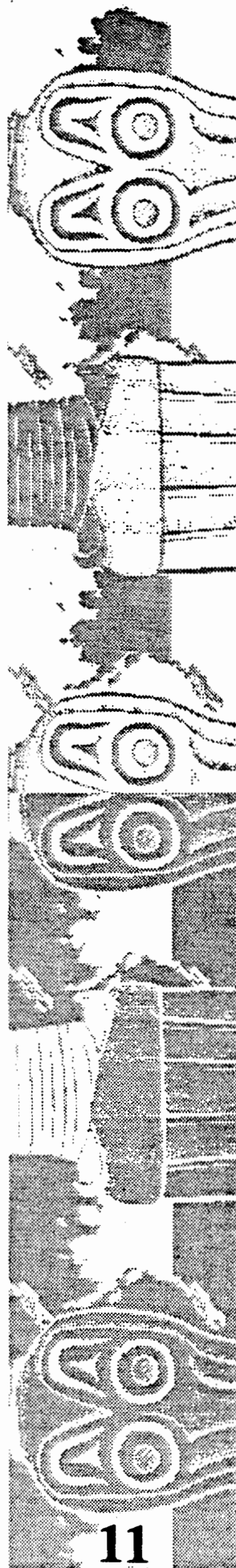
## C. LIMITATIONS

There are particulars about some of the data that the map reader should be aware of. With regard to the military sites data, our map shows each military site as one point in space. But, each point can represent many acres or miles of influence in its' area. Also each point may have more than one environmental remediation project going on at the location. This has been documented with the ACOE sites. Specific spatial, environmental and public health impacts of the individual sites have not been determined.

Spatial information on traditional land-use was very difficult to obtain. Most of the information available is in hard copy maps at the Alaska Department of Fish and Game (ADF&G). This information needs to be digitized before it can be used in a GIS. The only agency that was able to supply traditional land-use information in a GIS format was the North Slope Borough. Their data file provides summary information of all traditional land-use activities (including range) without specific breakdown by activity or animal and plant species. However, the overlay of this information on the military sites is very interesting. Most of the military sites in the North Slope area are completely overlapped by the traditional land-use areas. Their specific impact(s) on human health and the health of the various plant and animal species in the area (to our knowledge) has not been investigated on a regional scale. With regard to the project, overall, we now have a generalized idea of where contaminated military sites may be impacting traditional land-use in the Arctic Slope region but almost no idea for the rest of Alaska.

While our list of military sites is extensive, we acknowledge that there may be other military sites that we do not have record of. We also only have specific contaminant and hazard information for 93 of the military sites. These 93 are being remediated by the ACOE. So, we would encourage any interested parties to contact EPA Region 10 and the appropriate military agency if you have specific locational information that does not appear in this report (see Appendix 4 for contact people).

Lastly, we want to emphasize that our files only include contaminated sites from the military. Information on contaminated sites from nonmilitary sources such as mines, land fills and solid waste have not been investigated.



# V. Spatial Analysis

## A. METHODOLOGY

As military sites have been developed and subsequently abandoned in Alaska, so have contaminated sites developed. This phenomenon has caused distinct patterns of contaminated and non-contaminated waste sites across the state. For the purposes of this project, we are solely interested in how clustered or dispersed the pattern(s) of military sites are across the state and within individual Alaska Native Claims Settlement Act (ANCSA) Native Corporation boundaries. The recognition and measurement of pattern in these spatial contexts is very important because the measurements can serve as foundations for future public health studies, studies on traditional land-use and studies on changing socioeconomic/settlement patterns.

A 'Nearest-neighbor statistical analysis' was chosen to analyze the pattern of military sites across the state because it provides a concise measure of pattern in terms of a single value (index). We think this is important relative to Alaska especially given the complexity of the Alaskan environment. This one statistic can be used as a variable in other multivariate or correlative studies on a regional or statewide basis.

The 'Nearest-neighbor analysis' is a relatively straight forward analysis that calculates the average distances between all points in two or three dimensions and their nearest neighbor. By dividing the observed average nearest-neighbor distance by a theoretical average nearest-neighbor distance, a nearest-neighbor index (R) can be derived. Specifically, we have calculated 13 nearest-neighbor indices, one for all the military sites in the 12 ANCSA Native Corporation boundaries and 1 for the entire state of Alaska. Some computer software in the computer language 'Basic' was developed to accomplish this task. The code generated and all equations appear in Appendix 3. The nearest-neighbor equation used is the following:

$$R = \bar{D}_{obs} / \bar{D}_{exp}$$

$\bar{D}_{obs}$  = average observed nearest-neighbor distance  
 $\bar{D}_{exp}$  = average observed nearest-neighbor distance  
 R = the nearest-neighbor index

$$R = \bar{D}_{obs} / \bar{D}_{exp}$$

$\bar{D}_{obs}$  = average observed nearest-neighbor distance  
 $\bar{D}_{exp} = 1 / 2(p)^{.5}$  p = density of points per unit area  
 $\bar{D}_{obs} = \sum d / n$  d = nearest neighbor distance, n = number of pts

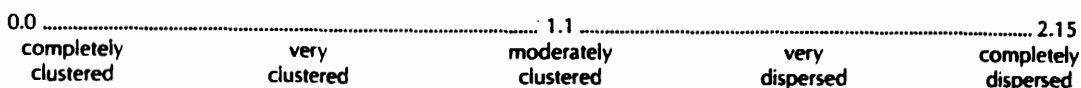
## B. RESULTS

### NEAREST-NEIGHBOR STATISTICAL ANALYSIS SUMMARY

REGION BEING ANALYZED	(R) CLUSTERING INDEX	LAND AREAS*	ADMINISTR. vs CONVEYED	TYPE OF PATTERN
ARCTIC SLOPE REGIONAL CORP	.08	34,827,008	21,328	very clustered
N.A.N.A. REGIONAL CORP	.04	11,214,266	5,919	very clustered
DOYON LTD	.06	52,276,671	48,635	very clustered
BERING STRAITS NATIVE CORPORATION	.07	18,963,197	8,214	very clustered
BRISTOL BAY NATIVE CORPORATION	.03	16,185,405	11,500	very clustered
ALEUT NATIVE CORP	.04	164,691,019	4,594	very clustered
KONIAG NATIVE CORP	.05	12,514,134	3,021	very clustered
COOK INLET REGION INC.	.06	11,698,294	7,310	very clustered
AHTNA INC.	.11	7,525,114	6,612	very clustered
CHUGACH ALASKA CORP	.03	10,263,875	1,791	very clustered
SEALASKA CORPORATION	.05	18,057,570	6,841	very clustered
CALISTA CORPORATION	.03	63,125,761	19,472	very clustered
STATE OF ALASKA	.05	277,160,000		very clustered

\* Areas are provided in square kilometers (land and water)

R - clustering index scale:





# V. Spatial Analysis

The Nearest-neighbor analysis clearly showed that the pattern or spatial distribution of the military sites is "very clustered" at the regional level and state wide relative to the areas of space they occupy. This would have any number of meanings and likely would have different significance in each of the 12 regions that were analyzed. However, the Nearest-neighbor analysis tells us the following fundamental things:

- 1) ***There are "very clustered" patterns of military sites across Alaska.*** This means that relative to the total area, there is a reasonably high concentration of military sites (either contaminated or uncontaminated). It should be noted that the nearest-neighbor analysis will identify patterns as clustered or dispersed in either an open space or in a relatively linear context such as along a coastline or river.
- 2) Despite the clustering indices (R) being between 0 and 1.1 for all the regions that were analyzed, ***there is enough variance in the R values to see differences in distributions of military sites region by region.***
- 3) ***The indices may be used as variables in other multivariate studies because of they are well defined as "very clustered".***

## C. LIMITATIONS

The Nearest neighbor analysis is very versatile and did not give us any technical restraints but our interpretation of the results relative to other factors was very limited. Most of the limitations were due to variables outside of our control:

- 1) The range of impact of each military site has not been quantified.
- 2) Hazard information was readily available only for the 93 ACOE sites.
- 3) Specific and detailed G.I.S. information on traditional land-use for the entire state is lacking. This was especially important because we were not able to even see the spatial relationship between the clusterings of military sites and traditional land-use areas except in the Arctic Slope region.
- 4) The Alaska area figures used in calculating the R values were the "administrative" areas that included land and water because of the long ranges over which traditional land-use activities are carried out. Total "administrative" land areas vs "conveyed" land areas (from federal government) summaries are provided for information comparison only. Native Corporations are legal land owners as well as administrators.



## VI. Recommendations

The political, social and ambient environments in Alaska are very complex and different from the lower 48 states. Despite the complexities one fact is certain: the ambient environment, health, and way of life of many people in Alaska has been and continues to be threatened by abandoned contaminated military waste sites. To address this problem, based on our experiences with this study, we make the following recommendations:

- 1) ***The State, local governments, Tribal governments, Native Corporations, Native nonprofit organizations plus all other interested parties should make the development of a statewide G.I.S. with detailed and specific traditional land-use information a top priority.*** Without comprehensive spatial information on traditional land-use and contaminated military sites, it will be very difficult to understand and mitigate the impacts contaminated military sites are having on traditional land-use activities. This includes public health issues of rural Alaskan Natives.
- 2) ***The U.S. military, State, local governments, Tribal governments, Native Corporations, Native nonprofit organizations plus all other interested parties should make the development of a statewide G.I.S. that allows on-going updating and documentation of the status of all abandoned military sites a top priority.*** This is a corollary of our first recommendation. It is only logical to monitor the progress of the mitigation of contaminated sites so that improvement in other related areas may be documented as well.
- 3) ***On-going (multivariate) health risk assessment matrices should be developed for all regions of the state.*** Given the unique and complicated nature of the Alaska environs, a multivariate health risk assessment matrix for each distinct area would be very useful. Variables such as intensity of traditional land-use activities and our clustering indices could be used as parts of a region specific health risk assessment matrix...with the objectives of either clarifying and resolving current problems or projecting and avoiding future problems.
- 4) ***Congress, Department of Defense, and EPA should be focused on providing the regulatory flexibility, monetary and technical resources to allow more contaminated military sites to be remediated faster.***
- 5) ***EPA, the U.S. military and State of Alaska should jointly publish quarterly progress reports and outreach literature to educate and inform the public, especially rural Alaska Natives, as to the dangers that the contaminated sites pose in the various regions and as to what progress is being made toward remediation.***
- 6) ***It is imperative that local concerns and life-styles receive serious consideration in the site identification and remediation process (e.g. more Restoration Advisory Boards (RABs)) due to the closeness of the native people to the land in both proximity and ideology.*** The intimate knowledge and understanding of the land which has developed through thousands of years of Native stewardship can provide valuable insight to the impacts on the health and life-style of the Native people caused by the contamination of their natural resources.

In addition to our recommendations, we would like to clearly state that we fully support and encourage the current efforts of the State of Alaska, Tribal governments, Native Corporations, U.S. military and all other involved parties in finding solutions to the problems of contaminated military sites through cooperative action.

In the future, EPA-Region 10 should build upon this project from three different aspects: 1) Environmental Justice, 2) Public Health/environmental management and 3) Environmental cleanup (remediation).



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## Sources of Spatial/Locational Data:

U.S. Army Corps of Engineers

U.S. Air Force

U.S. Coast Guard

U.S. Census Bureau

Federal Aviation Administration

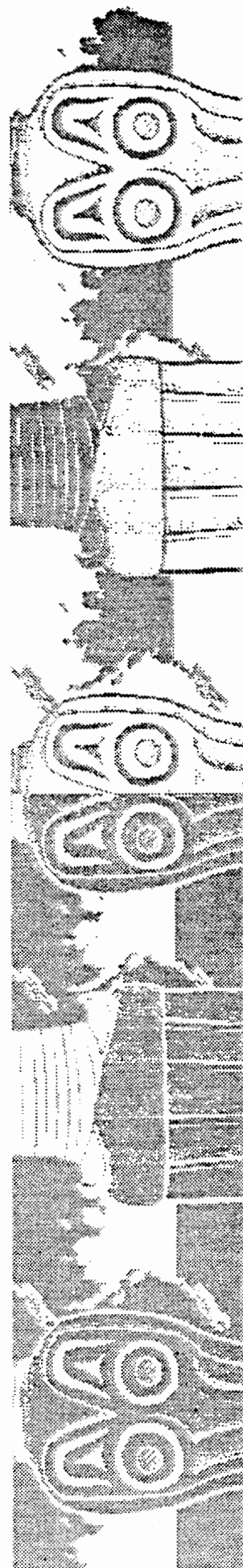
Alaska Department of Natural Resources

Alaska Department of Fish and Game

North Slope Borough - G.I.S. Office

# Appendix I

Locational Information - Military Sites



# Listing for Ray Peterson

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Ahtna Inc	109741	402950	118 SHUYAK STATION	N
Ahtna Inc	442932	1381899	100 GULKANA	N
Ahtna Inc	382129	1388985	17 LAKE LOUISE REC SITE	Y
Ahtna Inc	503490	1485768	55 LORAN STATION TOK	Y
Ahtna Inc	243440	1493822	76 SUMMIT	Y
Arctic Slope	-96544	2370679	34 BARROW	Y
Arctic Slope	-102307	2368191	78 BARROW	Y
Arctic Slope	398085	2270579	30 BARTER ISLAND	Y
Arctic Slope	275196	2257978	33 BULLEN PT	Y
Arctic Slope	-493609	2147510	20 CAPE LISBURN	Y
Arctic Slope	213050	2255142	95 DEADHORSE STATION	N
Arctic Slope	487278	2155683	112 NORTHWAY STAGING	N
Arctic Slope	155125	2284419	32 OLIKTOK	Y
Arctic Slope	27996	2325331	31 PT LONELY	Y
Arctic Slope	-353234	2223324	35 PT. LAY	Y
Arctic Slope	74054	2156445	124 UMIAT AFS	N
Arctic Slope	-229133	2302880	36 WAINWRIGHT	Y
Bering Strai	-541082	1669099	1 ANVIL MT/WHITE	Y
Bering Strai	-360865	1712507	3 BEAVER CREEK	N
Bering Strai	-333988	1735643	12 GRANITE MOUNTAIN	Y
Bering Strai	-644437	1766555	53 LORAN PORT CLARENCE	Y
Bering Strai	-383134	1660763	73 MOSES POINT	Y
Bering Strai	-546486	1663965	74 NOME	Y
Bering Strai	-541082	1669099	19 NOME FIELD TANK	Y
Bering Strai	-319154	1562145	16 NORTH RIVER	N
Bering Strai	-641636	1802031	29 TIN CITY	Y
Bering Strai	-332730	1564134	125 UNALAKLEET AIRPORT	N
Bristol Bay	-70818	1042148	5 BIG MOUNTAIN	Y
Bristol Bay	-257386	1014310	96 DILLINGHAM AIRPORT	N
Bristol Bay	-51245	1085071	104 ILIAMNA SITE	N
Bristol Bay	-165826	964944	38 KING SALMON APT	Y
Bristol Bay	-153016	967488	107 KING SALMON STATION	N
Bristol Bay	-69199	921005	18 NAKNEK REC ANNEX	Y
Bristol Bay	-280114	781228	40 PORT HEIDEN AFS	Y
Calista Corp	-424303	1224665	79 BETHEL	Y
Calista Corp	-417858	1224220	4 BETHEL	Y
Calista Corp	-386066	1155037	7 CANYON CREEK	N
Calista Corp	-466582	989795	21 CAPE NEWENHAM	Y
Calista Corp	-626572	1364638	22 CAPE ROMANZOF	Y
Calista Corp	-483127	1376770	116 SAINT MARYS	N
Calista Corp	-104776	1236873	28 SPARREVOHN	Y
Chugach Alas	449155	1199831	66 SUPPORT FACILITY CORDOVA	Y
Chugach Alas	404881	1160828	51 CAPE HINCHBROOK LIGHT	Y
Chugach Alas	634976	1176686	90 CAPE YAKATAGA FACILITY	N
Chugach Alas	466316	1187914	94 CORDOVA STATION	N
Chugach Alas	405496	1188906	70 JOHNSTONE (HINCH)	Y
Chugach Alas	433829	1076017	83 MIDDLETON ISLAND	Y
Chugach Alas	409090	1260736	64 MSO VALDEZ	N
Chugach Alas	433538	1182274	75 STRAWBERRY POINT	Y
Chugach Alas	252771	1134046	56 USCGC MUSTANG	N
Chugach Alas	449828	1201794	50 USCGC SWEETBRIER	N
Cook Inlet R	225886	1258368	86 AIR ROUTE TRAFFIC CTR	N
Cook Inlet R	213511	1294391	88 BIG LAKE VORTAC	N
Cook Inlet R	224610	1257353	10 ELMENDORF	Y
Cook Inlet R	202990	1244847	99 FIRE ISLAND AWS	N
Cook Inlet R	220972	1256938	43 FT. RICHARDSON	N
Cook Inlet R	141460	1073048	103 HOMER AIRPORT	N
Cook Inlet R	150489	1179364	106 KEKAI STATION	N
Cook Inlet R	213373	1251057	109 LAKE HOOD	N
Cook Inlet R	222173	1253464	65 MSO ANCHORAGE	N
Cook Inlet R	212481	1251003	113 PT WORONZOF RTR	N
Cook Inlet R	66044	1346500	115 PUNTILLA AIR NAV STATION	N
Cook Inlet R	146909	1335280	120 SKWENTA FACILITY	N
Cook Inlet R	201872	1377901	122 TALKEETNA AIRPORT	N
Cook Inlet R	145315	1070398	54 USCGC ROANOKE ISLAND	N
Cook Inlet R	145315	1070398	49 USCGC SEDGE	N

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Doyon Ltd	-272210	1636096	87 ANIAK AIRPORT	N
Doyon Ltd	105122	1702587	2 BEAR CREEK	Y
Doyon Ltd	108782	1886306	80 BETTLES	Y
Doyon Ltd	404961	1587372	67 BIG DELTA/JUNCTION	Y
Doyon Ltd	-129498	1640273	6 CAMPION	Y
Doyon Ltd	237605	1959050	91 CHANDALAR STATION	N
Doyon Ltd	233637	1599637	8 CLEAR AFS	Y
Doyon Ltd	359364	1635624	9 EIELSON	Y
Doyon Ltd	291381	1664127	98 FAIRBANKS STATION	N
Doyon Ltd	5765	1392710	81 FAREWELL	Y
Doyon Ltd	388754	1871455	68 FORT YUKON	Y
Doyon Ltd	390169	1871331	24 FORT YUKON	Y
Doyon Ltd	404576	1575070	45 FT. GREELEY	N
Doyon Ltd	308432	1600861	44 FT. WAINWRIGHT	N
Doyon Ltd	-139695	1644739	69 GALENA	Y
Doyon Ltd	-141241	1644497	37 GALENA AIRPORT	Y
Doyon Ltd	294293	1591560	11 GOLD KING CREEK	Y
Doyon Ltd	14373	1789927	25 INDIAN MOUNTAIN	Y
Doyon Ltd	-136325	1610780	13 KALAKAKET CREEK	Y
Doyon Ltd	-81149	1443584	110 MCGRATH	N
Doyon Ltd	83470	1547295	72 MINCHUMINA	Y
Doyon Ltd	267490	1676925	27 MURPHY DOME	Y
Doyon Ltd	235746	1633982	111 NORTH NENANA VORTAC	N
Doyon Ltd	557628	1463268	121 SLANA FACILITY	N
Doyon Ltd	90656	1690980	123 TANANA AFS	N
Koniag Inc	98767	869492	61 LORAN STATION KODIAK	Y
Koniag Inc	92886	867487	15 PILLAR MOUNTAIN	Y
Koniag Inc	89102	859951	60 SUPPORT CTR KODIAK	Y
Koniag Inc	99477	864855	126 WOODY ISLAND NAV STE	N
N.A.N.A. Reg	-376562	1906889	82 KOTZEBUE	Y
N.A.N.A. Reg	-377528	1905149	26 KOTZEBUE	Y
Sealaska Cor	1114630	936331	62 AIR STATION SITKA	Y
Sealaska Cor	1406693	798710	77 ANNETTE	Y
Sealaska Cor	1110026	915660	89 BIORKA ISLAND	N
Sealaska Cor	1110504	1090636	92 COGHLAN ISLAND	N
Sealaska Cor	1054529	1081775	101 GUSTAVUS AIRPORT	N
Sealaska Cor	1042539	1172797	102 HAINES AIR NAV SITE	N
Sealaska Cor	1116718	1094121	105 JUNEAU STATION	N
Sealaska Cor	1246468	945497	108 KUPREANOF, INDIAN PT, DUNCAN	N
Sealaska Cor	1266037	918615	71 LEVEL ISLAND	Y
Sealaska Cor	1407546	851052	63 LORAN SHOAL COVE	Y
Sealaska Cor	1262476	956772	114 PETERSBURG	N
Sealaska Cor	1084924	1062719	84 SISTERS ISLAND	Y
Sealaska Cor	1119939	941964	119 SITKA FACILITY	N
Sealaska Cor	1128190	1089807	59 STATION JUNEAU	N
Sealaska Cor	1260603	957919	52 USCGC ELDERBERRY	N
Sealaska Cor	1056479	1078456	58 USCGC LIBERTY	N
Sealaska Cor	1392214	827919	57 USCGC PLANETREE	Y
Sealaska Cor	802876	1143748	85 YAKUTAT	Y
The Aleut Co	-1533096	436096	46 ADAK	N
The Aleut Co	-554693	618549	23 COLD BAY	Y
The Aleut Co	-552189	612944	93 COLD BAY STATION	N
The Aleut Co	-838259	520420	42 DRIFTWOOD BAY	Y
The Aleut Co	-821367	509606	97 DUTCH HARBOR	N
The Aleut Co	-1343481	505450	39 EARECKSON AFS	Y
The Aleut Co	-1247627	605814	48 LORAN STATION ATTU	Y
The Aleut Co	-971529	913268	47 LORAN STATION ST. PAUL	Y
The Aleut Co	-992969	437764	14 NIKOLSKI	Y
The Aleut Co	-408561	685737	41 PORT MOLLER	N
The Aleut Co	-412920	609654	117 SAND POINT STATION	N

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Ahtna Inc	1057666	1208728	242 PT OF HAINES DRY DOCK	N
Ahtna Inc	456879	1412751	44 AUROPA RADIO RELAY	Y
Ahtna Inc	418327	1494611	81 FLDING LK REC	Y
Ahtna Inc	427766	1480293	143 PAXSON LK MAINT ANX	N
Ahtna Inc	332212	1328128	168 SHEEP MT RR	N
Ahtna Inc	350309	1334995	179 TAHNETA PASS RR	N
Ahtna Inc	405883	1371709	186 TOLSONA RADIO RELAY	N
Ahtna Inc	439566	1435361	251 GULKANA PREP & ARMY	N
Ahtna Inc	478492	1482071	350 CARLSON MICROWAVE REP	N
Ahtna Inc	630095	1325493	369 PALMER SAFE HAVEN STO	N
Ahtna Inc	430457	1471938	372 PAXSON LK RADIO RELAY	N
Ahtna Inc	522160	1475455	399 MENTASTA ACS RR SITE	N
Ahtna Inc	438914	1373271	439 GLENNALLEN ACS COMM	N
Ahtna Inc	381922	1390837	507 LAKE LOUISE	N
Arctic Slope	-498951	2065206	1 CAPE THOMPSON NAV SITE	Y
Arctic Slope	-430365	2139327	2 CAPE SABINE DEW(LIZ-A)	Y
Arctic Slope	-302834	2275829	3 ICY CPE DEW STA(LIZ-B)	Y
Arctic Slope	-167219	2321703	4 PEARD BAY DEW (LIZ-C)	Y
Arctic Slope	313632	2258745	5 BROWNLOW POINT DEW	Y
Arctic Slope	355646	2243973	6 COLLINSON POINT DEW	Y
Arctic Slope	404382	2267876	7 MANNING POINT DEW	Y
Arctic Slope	427888	2268029	8 GRIFFIN POINT DEW	Y
Arctic Slope	454309	2252195	9 NUWAGAPAK PT DEW(BAR A	Y
Arctic Slope	500371	2240310	10 DEMARCATION BAY DEW	Y
Arctic Slope	-96544	2370679	18 ELSON LAGOON	Y
Arctic Slope	-27193	2341683	19 CAPE SIMPSON DEW-POW A	Y
Arctic Slope	66324	2287814	20 KOGRU DEW (POW B)	Y
Arctic Slope	203400	2276878	21 MCINTYRE DEW STA(POW C	Y
Arctic Slope	-122681	2337313	172 SKULL CLIFF LORAN DEW	N
Arctic Slope	74054	2156445	194 UMIAT AFS	N
Arctic Slope	356643	2173853	209 LAKE PETERS	N
Arctic Slope	398721	2270679	216 BARTER ISL NGS	N
Arctic Slope	-511800	2090076	321 AFCACHE #1	N
Arctic Slope	-89625	2375859	376 POINT BARROW RADIO STA	N
Arctic Slope	-208232	2043637	481 NOATAK MILITARY CPS	N
Arctic Slope	-353082	2219607	486 POINT LAY DEW	N
Arctic Slope	74445	2156334	492 UMIAT POL DUMP	N
Arctic Slope	257564	2187795	505 JUNIPER CK FUEL DUMP	N
Bering Strai	-330978	1567073	29 UNALAKLEET AFSTA	Y
Bering Strai	-319154	1562145	30 NORTH RIVER RRS ANX	Y
Bering Strai	-550552	1661308	39 NOME AREA DEF REGION	Y
Bering Strai	-452355	1771494	48 LAVA LK WEATHER STA	Y
Bering Strai	-644984	1808445	57 CAPE PRINCE WALES AWS	Y
Bering Strai	-525364	1741829	68 DAVIDSON-S LANDING	Y
Bering Strai	-495296	1751874	110 KOUGAROK AFB	N
Bering Strai	-383120	1659013	126 MOSES POINT GARRISON	N
Bering Strai	-574559	1754457	184 TELLER SUPPLY	N
Bering Strai	-447758	1667563	212 WHITE MT NAT-L GUARD	N
Bering Strai	-523048	1650958	230 CAPE NOME ACS	N
Bering Strai	-588416	1685206	231 CAPE RODNEY (MIL SITE)	N
Bering Strai	-398496	1525928	240 FORT ST MICHAEL	N
Bering Strai	-342545	1566405	282 SOUTH RIVER REC SITE	N
Bering Strai	-521064	1701521	323 AFCACHE #3	N
Bering Strai	-552509	1705078	326 AFCACHE #6	N
Bering Strai	-540110	1761370	327 AFCACHE #7	N
Bering Strai	-424954	1745038	328 AFCACHE #8	N
Bering Strai	-437147	1639784	329 AFCACHE #9	N
Bering Strai	-294576	1649488	338 AFCACHE #20	N
Bering Strai	-615270	1811675	340 AFCACHE #22	N
Bering Strai	-655604	1740441	365 KING ISL NG SITE	N
Bering Strai	-516583	1713961	366 KOUGAROK RAILROAD	N
Bering Strai	-319602	1565930	454 UNALAKLEET REC ANX	N
Bering Strai	-326849	1559171	455 UNALAKLEET REC FISH CP	N
Bering Strai	-580499	1666701	461 SLEDGE ISL	N
Bering Strai	-861742	1650938	479 GAMBELL	N
Bering Strai	-595618	1760392	497 POINT SPENCER	N

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Bering Strai	-469269	1762794	498 NOXAPAGA AIR BASE(WEAT	N
Bering Strai	-544799	1765979	499 AM RIVER AIR BASE	N
Bering Strai	-597504	1758869	504 PT CLARENCE LORAN STA	N
Bering Strai	-742513	1569156	521 NE CPE (ST LAWREN ISL)	N
Bristol Bay	-282133	781369	24 PORT HEIDEN	Y
Bristol Bay	-57273	1000918	51 BIG MT RR	Y
Bristol Bay	-51343	1084700	95 ILIAMNA ACS	N
Bristol Bay	-246111	1008458	101 KANAKANAK RADIO REL AX	N
Bristol Bay	-181303	1004810	130 NAKNEK REC ANX #1 & 2	N
Bristol Bay	-278617	982685	140 NUSHAGAK AWS STA	N
Bristol Bay	-226954	876666	193 UGASHIK LK REC ANX	N
Bristol Bay	-70174	921022	249 KATMAI SEISMIC SURVEY	N
Bristol Bay	-165826	964944	252 NAKNEK STAGING	N
Bristol Bay	-257415	1011075	362 KANAKANAK RADIO STA	N
Bristol Bay	-51343	1084700	442 ILIAMNA PETROLEUM STO	N
Bristol Bay	-152262	966246	480 KING SALMON ACS COMMO	N
Calista Corp	-293391	1301660	37 ANIAK TACAN	Y
Calista Corp	-532859	1462058	111 KWIGUK AWS STA	N
Calista Corp	-446503	1028192	147 PLATINUM BATTALION	N
Calista Corp	-549472	1385458	322 AFCACHE #2	N
Calista Corp	-466094	1373096	343 AFCACHE #55	N
Calista Corp	-293391	1301660	394 ANIAK ARPT	N
Calista Corp	-426900	1224786	403 BETHEL BIA HDQRS	N
Calista Corp	-426900	1224786	404 BETHEL RR SITE	N
Calista Corp	-420522	1226096	405 BETHEL TACAN SITE&ANX	N
Calista Corp	-415378	1222054	406 BETHEL ARPT	N
Calista Corp	-419655	1224430	407 BETHEL ACS COMM STA	N
Calista Corp	-420749	1226748	408 BETHEL TACAN ANNEX	N
Calista Corp	-293391	1301660	409 ANIAK AIRWAY&AIR COMM	N
Calista Corp	-293391	1301660	410 ANIAK TOPOGRAPHIC BTLN	N
Calista Corp	-418078	1226498	424 BETHEL NG HANGER	N
Calista Corp	-419655	1224430	425 BETHEL NG WHSE	N
Chugach Alas	253924	1117310	31 CAINES HEAD, FT MCGILV	Y
Chugach Alas	262931	1105702	45 BARWELL ISLAND	Y
Chugach Alas	430680	1185374	54 BOSWELL BAY RR	Y
Chugach Alas	250806	1094678	60 CHEVAL ISL	Y
Chugach Alas	465910	1198199	66 CORDOVA AF	Y
Chugach Alas	412479	1167308	92 HINCHINBROOK ISL AWS	N
Chugach Alas	252233	1128404	117 LOWELL POINT BAT SITE	N
Chugach Alas	434211	1075999	122 MIDDLETON ISL AFS	N
Chugach Alas	258941	1112053	154 RENARD ISL	N
Chugach Alas	263308	1116099	155 RESURRECT PENN END STA	N
Chugach Alas	223353	1100393	189 TURNAGAIN ARM RNG	N
Chugach Alas	448793	1274940	196 GLENNALLEN-VALDEZ LLIN	N
Chugach Alas	362589	1111423	254 MONTAGUE ISL	N
Chugach Alas	412188	1257341	257 FORT LISCUM	N
Chugach Alas	252899	1132186	271 SEWARD STO ANX	N
Chugach Alas	253563	1135969	272 SEWARD ACS HSG NO. 1	N
Chugach Alas	253563	1135969	273 SEWARD US ENGRG OFFICE	N
Chugach Alas	252643	1135905	274 SEWARD ACS COMM CNTR	N
Chugach Alas	257347	1108205	275 HIVE ISL DEF SITE	N
Chugach Alas	415097	1263311	285 VALDEZ GARRISON SITE	N
Chugach Alas	413320	1263103	286 VALDEZ RESEARCH ANX	N
Chugach Alas	409979	1260838	287 VALDEZ SMALL BOAT HBR	N
Chugach Alas	408662	1264439	288 VALDEZ REC CNTR	N
Chugach Alas	415314	1261460	289 VALDEZ REC SITE	N
Chugach Alas	414642	1259504	290 VALDEZ STO ANX	N
Chugach Alas	418200	1259922	291 VALDEZ CEMETERY SITE	N
Chugach Alas	415314	1261460	292 VALDEZ RADIO STA	N
Chugach Alas	410654	1262793	293 VALDEZ ACS COMM STA	N
Chugach Alas	254948	1102434	314 FORT BULKLEY	N
Chugach Alas	254355	1137892	315 FORT RAYMOND	N
Chugach Alas	448924	1201681	316 CORDOVA CABLE LAND RES	N
Chugach Alas	450350	1201295	317 CORDOVA ACS COM FAC AX	N
Chugach Alas	358380	1135358	319 GIRDWOOD AFSTA	N
Chugach Alas	300424	1206846	347 BLACKSTONE BAY GUN	N
Chugach Alas	320188	1219781	356 ESTHER LK DEF SITE	N



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Chugach Alas	297693	1217842	370 PASSAGE CANAL DEF	N
Chugach Alas	302779	1222010	374 PIGOT BAY REC SITE	N
Chugach Alas	252643	1135905	378 SEWARD REC ANX BT DISP	N
Chugach Alas	252899	1132186	379 SEWARD REC BT DISP ANX	N
Chugach Alas	252899	1132186	380 SEWARD USO SITE	N
Chugach Alas	252643	1135905	401 SEWARD ACS HSG NO 2	N
Chugach Alas	436936	1194574	431 CORDOVA ACS REMOTE REC	N
Chugach Alas	464100	1197966	440 HAINES MIL CUTOFF ROAD	N
Chugach Alas	345182	1147198	449 PORT OF SEWARD	N
Chugach Alas	252643	1135905	451 SEWARD ARMY REC SITE	N
Chugach Alas	252643	1135905	452 SEWARD RADIO STA	N
Chugach Alas	638577	1174889	489 YAKATAGA RRS	N
Chugach Alas	419680	1258846	490 ROBE LAKE	N
Chugach Alas	362288	1189130	495 SMITH ISL	N
Chugach Alas	285829	1207527	515 WHITTIER GUN SITE #1	N
Chugach Alas	287337	1211388	522 PORT OF WHITTIER	N
Cook Inlet R	239853	1243404	35 ANCHORAGE USO	Y
Cook Inlet R	150680	1145229	65 CLAM GULCH RADIO RELAY	Y
Cook Inlet R	152783	1048314	72 DIAMOND RIDGE RR	Y
Cook Inlet R	243537	1281024	78 EKLUTNA ARMY SITES	Y
Cook Inlet R	257684	1301531	82 FISHHOOK RR ANX	Y
Cook Inlet R	139647	1096293	93 HOMER TACAN ANX	N
Cook Inlet R	251934	1324598	96 INDEPENDENCE MINE	N
Cook Inlet R	229227	1268856	98 INDIAN ACS	N
Cook Inlet R	158782	1149303	103 KENAI PET PROD STO ANX	N
Cook Inlet R	227499	1281820	107 KNIK OP AND RADAR	N
Cook Inlet R	217053	1249412	112 LK HOOD FLOAT PLANE BA	N
Cook Inlet R	37499	1246717	121 MERRILL PASS	N
Cook Inlet R	186786	1176759	131 NAPTOWNE RADIO RELAY	N
Cook Inlet R	253414	1304148	132 NEKLASON LK RRS	N
Cook Inlet R	154560	1162183	136 NIKISHKA ACS STA	N
Cook Inlet R	255442	1300557	142 PALMER ACS RR SITE	N
Cook Inlet R	274120	1212224	151 PORTAGE STO AND DISPER	N
Cook Inlet R	215499	1230642	158 RUSTY HILL	N
Cook Inlet R	212132	1286464	166 SAWMILL RADIO RELAY	N
Cook Inlet R	251517	1204965	169 SILVERTIP STO ANX	N
Cook Inlet R	190150	1169747	171 SKILAK LK REC SITE	N
Cook Inlet R	159471	1175456	176 SOLDOTNA RR	N
Cook Inlet R	213254	1267857	178 SUSITNA GUNNERY RNG	N
Cook Inlet R	7199	1218565	183 TELAQUANA LK	N
Cook Inlet R	146949	1180524	202 WILDWOOD AFS	N
Cook Inlet R	156616	1339529	204 WILLOW AC&W STA	N
Cook Inlet R	148159	1333561	210 SKWENTNA AIRCRAFT COM	N
Cook Inlet R	219499	1253298	213 ANCHORAGE AIR NG	N
Cook Inlet R	0	1063844	248 ILIAMNA TOPO BN SITE	N
Cook Inlet R	262793	1273062	250 PALMER ARMY RESERVE	N
Cook Inlet R	262692	1321655	253 PIONEER PEAK AFS	N
Cook Inlet R	238040	1276912	255 BIRCHWOOD ARMY SITE	N
Cook Inlet R	238630	1276952	258 BIRCHWOOD ACS STO SITE	N
Cook Inlet R	246175	1229821	259 BIRD CREEK MISSILE ANX	N
Cook Inlet R	244694	1264288	260 EAGLE RIV MISSILE ANX	N
Cook Inlet R	242776	1226786	261 BIRD CREEK ACS COM STA	N
Cook Inlet R	245517	1265279	262 EAGLE RIVER TRNG SITE	N
Cook Inlet R	229975	1324945	263 EKLUTNA AFSTA	N
Cook Inlet R	243794	1277305	264 FIRE LK ARMY RR	N
Cook Inlet R	245929	1284928	265 EKLUTNA, OBSERVE POST	N
Cook Inlet R	263906	1233890	318 GIRDWOOD ACS COMM STA	N
Cook Inlet R	53010	1098703	341 AFCACHE #25	N
Cook Inlet R	220275	1255213	345 ANCHORAGE NG	N
Cook Inlet R	222830	1257241	346 ANCHORAGE RADIO STA	N
Cook Inlet R	220621	1249632	353 CHUGACH ACS TEMP STO	N
Cook Inlet R	106956	1253723	354 COOK INLET AFRNG	N
Cook Inlet R	238725	1260143	373 PAXSON LK RESEARCH ANX	N
Cook Inlet R	231157	1239093	377 RABBIT CK RADIO RELAY	N
Cook Inlet R	203776	1246759	391 FIRE ISL AFSTA	N
Cook Inlet R	57273	1000918	393 ILIAMNA AIR BASE	N
Cook Inlet R	219499	1253298	411 90MM AAA SITE	N



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Cook Inlet R	219499	1253298	412 ANCH AAA GUN POS NO 7	N
Cook Inlet R	219499	1253298	413 ANCH AAA GUN POS NO 12	N
Cook Inlet R	219499	1253298	414 ANCH ACS FAM HSG ANX 1	N
Cook Inlet R	224610	1257353	415 ANCH ACS FAM HSG ANX 2	N
Cook Inlet R	222830	1257241	416 ANCHORAGE ACS STO ANX	N
Cook Inlet R	222830	1257241	417 CIVIL WORKS HSG SITE	N
Cook Inlet R	214818	1256746	418 ANCHORAGE COAST ARTIL	N
Cook Inlet R	232338	1248510	419 ANCH INTL APRT AAA GUN	N
Cook Inlet R	222830	1257241	420 ANCH RR BN CANTONMENT	N
Cook Inlet R	224610	1257353	421 ANCHORAGE REC SITE	N
Cook Inlet R	224610	1257353	422 ANCHORAGE US ENGR OFF	N
Cook Inlet R	239368	1277002	426 BIRCHWOOD AF SITE	N
Cook Inlet R	230313	1252114	427 CPBELL CREEK RNG & MAN	N
Cook Inlet R	253255	1244332	430 CHUGACH MTS-SHIP CREEK	N
Cook Inlet R	254760	1285556	432 EKLUTNA ARMY ASP SITE	N
Cook Inlet R	230344	1319366	433 EKLUTNA DISPERSAL SITE	N
Cook Inlet R	214377	1249250	446 NIKE ALASKA POINT	N
Cook Inlet R	108079	1216457	456 WILLOW AC&W SUPPLY&HSG	N
Cook Inlet R	156616	1339529	457 WILLOW ACS	N
Cook Inlet R	122834	1097563	488 STARISKY CREEK RR	N
Cook Inlet R	158064	1248167	501 BELUGA OIL FLDS	N
Cook Inlet R	221661	1275845	509 NIKE SITE BAY	N
Cook Inlet R	138271	1083186	514 OHLSON MT	N
Doyon Ltd	547720	1502221	34 ANCHORAGE-TOK ACS	Y
Doyon Ltd	311457	1688467	40 ARCTIC AEROMED LAB ANX	Y
Doyon Ltd	97149	1700902	46 BEAR CREEK RADIO RELAY	Y
Doyon Ltd	110074	1881508	49 BETTLES ARPT	Y
Doyon Ltd	400991	1573123	50 BIG DELTA AFB	Y
Doyon Ltd	366074	1622819	56 HILL 3026(BUCK CK) ARM	Y
Doyon Ltd	510215	1530141	58 CATHEDRAL BLUFF ACS	Y
Doyon Ltd	327188	1755449	63 CHISTOCHINA ACS	Y
Doyon Ltd	433625	1755632	64 CIRCLE HOT SPRINGS AFB	Y
Doyon Ltd	402848	1584606	70 DELTA JNCT-ACS COMM ST	Y
Doyon Ltd	248756	1539185	71 DENALI PARK HOTEL	Y
Doyon Ltd	399338	1559791	73 DONNELLY RADIO RELAY	Y
Doyon Ltd	317946	1655495	75 DYKE ARMY RNG	Y
Doyon Ltd	5994	1391903	80 FAREWELL GRND CON INTX	Y
Doyon Ltd	612960	1663406	84 FORT EGBERT	Y
Doyon Ltd	89821	1692814	85 FT GIBBON	Y
Doyon Ltd	386488	1969770	86 FORT YUKON RR	Y
Doyon Ltd	441066	1567078	87 GERSTLE RIVER ACS SITE	Y
Doyon Ltd	451050	1557178	97 INDEPEND RDG ARMY SIG	N
Doyon Ltd	483090	1554262	99 JOHNSON RIVER ACS RR	N
Doyon Ltd	494759	1559784	108 KNOB RIDGE RADIO RELAY	N
Doyon Ltd	417722	1500729	119 MC CALLUM RADIO RELAY	N
Doyon Ltd	-80990	1443177	120 MCGRATH ARPT	N
Doyon Ltd	323476	1656058	125 MOOSE CREEK ARMY RNG	N
Doyon Ltd	235319	1631464	133 NENANA REDISTRIBUTION	N
Doyon Ltd	292233	1666073	134 NIKE FOX (LADD DEF)	N
Doyon Ltd	309737	1665884	135 NIKE SUGAR (LADD DEF)	N
Doyon Ltd	612783	1506096	138 NORTHWAY ACS	N
Doyon Ltd	-190610	1643366	139 NULATO RADIO STA	N
Doyon Ltd	33616	1369701	157 ROHN RIVER	N
Doyon Ltd	339478	1633432	159 SALCHA ARMY ASP	N
Doyon Ltd	295031	1618715	160 SALCHAKET LK	N
Doyon Ltd	412757	1617659	164 SAND CREEK ARMY SIGNAL	N
Doyon Ltd	286881	1740205	173 SMITH LK ARCT SURV TRG	N
Doyon Ltd	529996	1527626	180 TANACROSS AF	N
Doyon Ltd	90115	1709547	182 TANANA RIVER BOAT LAND	N
Doyon Ltd	551876	1533129	185 TOK (ACS RADIO RELAY)	N
Doyon Ltd	506817	1546572	187 TOWER BLUFF SITE	N
Doyon Ltd	290397	1598677	188 TRANS-CANADIAN RAIL S	N
Doyon Ltd	475154	1607649	197 VOLKMAR RIVER SITE	N
Doyon Ltd	-80990	1443177	198 WALSETH AFB, MCGRATH	N
Doyon Ltd	230687	1595693	205 WOODSPUR ACS COMM FAC	N
Doyon Ltd	378741	1675335	207 YUKON COMMAND DISPOSAL	N
Doyon Ltd	510457	1750607	208 YUKON-CHARLEY RIVERS	N

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Doyon Ltd	539040	1529102	211 SNOWSHOE MICROWAVE REP	N
Doyon Ltd	173677	1731709	241 RAMPART ARMY SIG STAIO	N
Doyon Ltd	407767	1603982	245 CLEARWATER LK ARMY TRG	N
Doyon Ltd	405381	1590551	246 DELTA POL DUMP	N
Doyon Ltd	607170	1499376	278 NORTHWAY STAGING FLD	N
Doyon Ltd	307737	1661952	294 FAIRBANKS ARMY AAA #4	N
Doyon Ltd	299568	1664150	295 FAIRBANKS ARMY AAA #3	N
Doyon Ltd	298426	1669457	296 FAIRBANKS ARMY AAA #8	N
Doyon Ltd	306650	1673052	297 FAIRBANKS ARMY AAA #1	N
Doyon Ltd	298614	1674142	298 FAIRBANKS ARMY AAA #2	N
Doyon Ltd	290830	1664076	299 FAIRBANKS INTN-L AAA	N
Doyon Ltd	293724	1670506	300 FAIRBKS REMOTE REC RS	N
Doyon Ltd	295906	1660816	301 FAIRBANKS RADIO STA	N
Doyon Ltd	293034	1670255	302 FAIRBANKS TSU NO. 4	N
Doyon Ltd	289594	1660228	303 FAIRBKS SIG RESCH U 3	N
Doyon Ltd	320085	1673867	304 FAIRBKS ATOMIC ENGY CO	N
Doyon Ltd	257960	1733908	324 AFCACHE #4	N
Doyon Ltd	51258	1662207	325 AFCACHE #5	N
Doyon Ltd	225467	1554286	330 AFCACHE #10	N
Doyon Ltd	182046	1747070	331 AFCACHE #13	N
Doyon Ltd	-11829	1661811	332 AFCACHE #14	N
Doyon Ltd	-110174	1713913	333 AFCACHE #15	N
Doyon Ltd	-31656	1650795	334 AFCACHE #16	N
Doyon Ltd	-140909	1651926	335 AFCACHE #17	N
Doyon Ltd	-206610	1605237	336 AFCACHE #18	N
Doyon Ltd	-303823	1431640	337 AFCACHE #19	N
Doyon Ltd	-265819	1501304	339 AFCACHE #21	N
Doyon Ltd	316885	1618011	342 AFCACHE #49	N
Doyon Ltd	275085	1653327	357 FAIRBANKS AFSTA	N
Doyon Ltd	230687	1595693	368 NENANA USARACS STA COM	N
Doyon Ltd	282680	1683859	388 TANANA NGS	N
Doyon Ltd	551876	1533129	389 TOK ARMY RADIO COMM	N
Doyon Ltd	294759	1595339	395 GOLD KING CREEK RREL	N
Doyon Ltd	508035	1527918	398 CATHEDRAL RR SITE	N
Doyon Ltd	314800	1630887	428 CHENA ANX	N
Doyon Ltd	310579	1673439	434 FAIRBKS ARCT INDOC SCH	N
Doyon Ltd	289765	1658377	435 FAIRBANKS INTN-L ARPT	N
Doyon Ltd	298885	1662965	436 FAIRBANKS USO FAC	N
Doyon Ltd	294687	1673770	437 FAIRBANKS WEATHER STA	N
Doyon Ltd	373424	1597920	441 HARDING LK ACS RR	N
Doyon Ltd	617804	1497558	447 NORTHWAY ARMY SITE	N
Doyon Ltd	633382	1460679	448 N-WAY SPUR ACS PLINE R	N
Doyon Ltd	340868	1642933	450 SALCHA OBSERVATION	N
Doyon Ltd	237520	1601788	462 CLEAR AF AUX FLD	N
Doyon Ltd	316783	1659114	464 EIELSON AFB RR R/W	N
Doyon Ltd	306676	1727972	465 EIELSON ALPA RES 2-1	N
Doyon Ltd	273647	1712925	466 EIELSON ALPA RES 2-5	N
Doyon Ltd	283322	1728748	467 EIELSON ALPA RES 2-6	N
Doyon Ltd	318322	1743623	468 EIELSON ALPA RES 3-1	N
Doyon Ltd	333533	1705485	469 EIELSON ALPA RES 3-2	N
Doyon Ltd	269787	1677339	470 EIELSON ALPA RES 3-4	N
Doyon Ltd	252269	1716511	471 EIELSON ALPA RES 3-5	N
Doyon Ltd	250079	1743315	472 EIELSON ALPA RES 3-6	N
Doyon Ltd	325368	1725442	473 EIELSON ALPA RES 3-12	N
Doyon Ltd	296052	1745523	474 EIELSON ALPA RES 3-16	N
Doyon Ltd	262611	1696464	475 EIELSON ALPA RES 3-45	N
Doyon Ltd	264041	1731630	476 EIELSON ALPA RES 3-56	N
Doyon Ltd	329409	1660412	477 EIELSON JT TRANS ANX	N
Doyon Ltd	387468	1872686	478 FORT YUKON AIR PORT	N
Doyon Ltd	305801	1689774	485 PEDRO DOME	N
Doyon Ltd	409886	1877762	487 PORCUPINE REC ANX	N
Doyon Ltd	563682	1533253	491 TETLIN ARMY CP	N
Doyon Ltd	341466	1637386	511 NIKE SITE JIG	N
Doyon Ltd	288332	1682510	512 NIKE SITE LOVE	N
Doyon Ltd	316224	1664663	513 FAIRBANKS AACS AND ACS	N
Doyon Ltd	101435	1887059	523 BETTLES RRS	N
Koniag Inc	66135	900464	33 AFOGNAK ISL COAST DEF	Y

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Koniag Inc	-97843	657386	62 CHIIPIKOF ISL, NAV-KODIA	Y
Koniag Inc	96563	878749	77 KODIAK (E CPE HBR DEF)	Y
Koniag Inc	65481	874042	150 PORT LIONS ACS COMM ST	N
Koniag Inc	110564	871668	217 WOODY ISL	N
Koniag Inc	101633	873290	218 CAPE CHINIAK TRACK STA	N
Koniag Inc	105088	854759	219 FT TIDBALL/LONG ISL	N
Koniag Inc	89312	850647	220 KASLIN BAY HBR DEF.KOD	N
Koniag Inc	97524	839670	221 FT SMITH/LITTLE NS	N
Koniag Inc	93430	886122	222 N CPE HBR DEF, KODIAK	N
Koniag Inc	-15372	765689	223 LAZY BAY AWS STA, KODIA	N
Koniag Inc	95059	867539	224 FT GREELY DOCK, KODIAK	N
Koniag Inc	101729	869568	225 KODIAK ACS RREL ANX	N
Koniag Inc	-8190	725005	226 SITKINAK ISL RADIO REL	N
Koniag Inc	85685	880358	227 ENTRANCE POINT, KODIAK	N
Koniag Inc	93795	870798	228 MONASHKA BAY, KODIAK	N
Koniag Inc	72171	865191	229 BURMA ROAD	N
Koniag Inc	91985	863742	234 BELLS FLATS, KODIAK NS	N
Koniag Inc	0	925975	375 PILLAR MT RR SITE	N
Koniag Inc	97779	869468	438 FORT ABERCROMBIE	N
Koniag Inc	77296	855979	502 KODIAK CG SUP CNTR	N
Koniag Inc	106379	843621	517 KODIAK TRACKING STA	N
Koniag Inc	97779	869468	518 ST PAUL/ST GEORGE	N
Koniag Inc	86544	856171	519 BRUHN PT. (KODIAK ISL)	N
Koniag Inc	90370	862246	520 BUSKIN BCH-KODIAK ISL	N
N.A.N.A. Reg	-419570	1952059	28 KRUSENSTERN RR ANX	Y
N.A.N.A. Reg	-376562	1906889	109 KOTZEBUE ACS COMM STA	N
N.A.N.A. Reg	-426200	1990415	129 MULGRAVE AFS	N
N.A.N.A. Reg	-371488	1865173	214 KOTZEBUE NG SITE (NEW)	N
N.A.N.A. Reg	-278774	1858655	215 KIANA NG SITE	N
N.A.N.A. Reg	-377289	1906984	444 KOTZEBUE ACS TRANS	N
N.A.N.A. Reg	-372226	1865266	445 KOTZEBUE NG SITE (OLD)	N
N.A.N.A. Reg	-399996	1814679	463 DEERING NGS	N
N.A.N.A. Reg	-384492	1984413	482 NOATAK NG ARMORY	N
N.A.N.A. Reg	-308077	1892202	483 NOORVIK NG SITE	N
N.A.N.A. Reg	-418175	1799376	500 COLLINS HANNUM AIR	N
Sealaska Cor	1146113	999922	36 ANGOON MICROWAVE STA	Y
Sealaska Cor	1405656	799198	38 ANNETTE ISL LAND FLD	Y
Sealaska Cor	1113542	913764	41 ATAKU FIRE CONTROL STA	Y
Sealaska Cor	1115254	1090601	43 AUKE BAY	Y
Sealaska Cor	1085414	935759	47 BEAVER POINT	Y
Sealaska Cor	1108795	916276	52 FORT PIERCE	Y
Sealaska Cor	1143806	1083772	53 PT BISHOP ACS SUBCABLE	Y
Sealaska Cor	1234583	972704	55 BOULDER POINT	Y
Sealaska Cor	1114570	940186	59 CHARCOAL ISL	Y
Sealaska Cor	1115197	1054726	61 CHICHAGOF PASSIVE REF	Y
Sealaska Cor	1297466	811615	67 CRAIG ACS SITE	Y
Sealaska Cor	1407107	791842	69 DAVISON POINT	Y
Sealaska Cor	1251309	947064	74 DUNCAN CANAL	Y
Sealaska Cor	1195750	993544	76 E BRO ISL ACS SUB-CAB	Y
Sealaska Cor	1067601	1085503	79 EXCUR IN S-PORT EMB	Y
Sealaska Cor	1295911	733139	83 FORRESTER ISL AWS STA	Y
Sealaska Cor	1120864	911029	88 GOLF ISL DEF SITE	Y
Sealaska Cor	1050215	1061209	90 GUSTAVUS ARPT	Y
Sealaska Cor	1043718	1175559	91 HAINES ACS RADIO RELAY	N
Sealaska Cor	1078219	1055613	94 HOONAH RRS	N
Sealaska Cor	1108951	941472	102 KASIANA ISLS BASE STA	N
Sealaska Cor	1397895	818109	104 KETCHIKAN ACS RR ANX#1	N
Sealaska Cor	1113314	926275	106 KITA ISL DEF SITE	N
Sealaska Cor	1105408	1094622	113 LENA POINT ACS	N
Sealaska Cor	1109027	952141	114 LISIANSKI PEN BASE END	N
Sealaska Cor	944509	1081167	115 LITUYA BAY SITE	N
Sealaska Cor	1116117	934824	116 LONG ISL DEF SITE	N
Sealaska Cor	1344482	837003	118 LYMAN ANCH ACS SUBCABL	N
Sealaska Cor	1176747	1052181	123 MIDWAY ISL	N
Sealaska Cor	1114357	1098597	124 MONTANA CK LUMBER MILL	N
Sealaska Cor	1131258	1089767	127 MT ROBERTS ACS RR	N
Sealaska Cor	1092536	951299	128 MUDBAY RR	N

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Sealaska Cor	1113622	921526	144	PEISAR ISL DEF SITE	N
Sealaska Cor	1038903	1021352	145	PELICAN ACS RADIO REL	N
Sealaska Cor	1293008	931426	146	PETERSBURG ACS COM STA	N
Sealaska Cor	1057923	1076929	148	PLEASANT ISL DEF SITE	N
Sealaska Cor	1068299	1076015	149	PORPOISE ISLS DEF SITE	N
Sealaska Cor	1321568	805839	152	PRINCE OF WALES	N
Sealaska Cor	1314545	866809	153	RATZ HBR ACS SUB-CABLE	N
Sealaska Cor	1106461	976415	156	RODMAN DBL PASS REF	N
Sealaska Cor	991374	1016316	161	SALISBURY RDG TRANS LI	N
Sealaska Cor	1465135	923606	162	SALMON RIV FLOOD CON	N
Sealaska Cor	1062331	1089805	165	SAWMILL BAY CANNERY	N
Sealaska Cor	1040252	1197832	170	SKAGWAY ACS COMMS STA	N
Sealaska Cor	1407211	807612	174	SMUGGLER COVE RRS	N
Sealaska Cor	1292971	932721	175	SOKOLOF ISL ACS SUBCAB	N
Sealaska Cor	1265312	910560	177	STEAMER PT ACS SUB-CAB	N
Sealaska Cor	1263819	953820	190	TWIN CREEK TROOP HSG	N
Sealaska Cor	1030567	1200867	191	TYONEK ACS COMMS SITE	N
Sealaska Cor	1296959	901395	195	STEAMER PT ACS SUB-CAB	N
Sealaska Cor	1384167	834940	199	WARD LK HSG	N
Sealaska Cor	1104981	1047885	200	WHEELER CK ACT RFLCTO	N
Sealaska Cor	1381449	820237	201	WHIPPLE CREEK ACS	N
Sealaska Cor	1030567	1200867	203	WM HENRY BAY ACS SUBCA	N
Sealaska Cor	1292923	951005	206	WRANGELL ACS SITE	N
Sealaska Cor	1298838	933378	236	FORT STIKINE	N
Sealaska Cor	1467624	787895	237	FORT TONGASS	N
Sealaska Cor	1025432	1040831	238	GEORGE ISL ACS	N
Sealaska Cor	1026621	1040190	239	PORT ALTHORP NAVY BASE	N
Sealaska Cor	1043837	1171715	244	HAINES POL DUMP	N
Sealaska Cor	1042967	1198616	256	SKAGWAY POL TANK FARM	N
Sealaska Cor	1042708	1199511	266	SKAGWAY TROOP HOSP	N
Sealaska Cor	1042528	1201658	267	SKAGWAY STA HOSP SITE	N
Sealaska Cor	1052130	1156652	268	SITKA NG TAR RNG	N
Sealaska Cor	1116807	940444	269	SITKA DEF SITE	N
Sealaska Cor	926503	1105447	276	GLACIER BAY, MT FAIRWEA	N
Sealaska Cor	1042967	1198616	277	SKAGWAY RR YARD	N
Sealaska Cor	1112570	943481	279	FORT RAY	N
Sealaska Cor	1113600	939906	280	FORT ROSSEAU, SITKA	N
Sealaska Cor	1113085	941694	281	SITKA ACS TRANSMITTER	N
Sealaska Cor	1099598	930097	283	FORT BABCOCK, SITKA	N
Sealaska Cor	1114711	928741	284	POVOROTNI POINT DEF	N
Sealaska Cor	1120442	1095244	306	JUNEAU RADIO STA 7MI R	N
Sealaska Cor	1115108	1099471	307	MENDENHALL LK RIF RNG	N
Sealaska Cor	1116718	1094121	308	JUNEAU AF AND GARRISON	N
Sealaska Cor	1122990	1090177	309	JUNEAU ACS FIVE MI STA	N
Sealaska Cor	1129273	1086243	310	JUNEAU ACS STO ANX	N
Sealaska Cor	1132850	1091226	311	JUNEAU 12THST ACS HSNG	N
Sealaska Cor	1115392	1091777	312	JUNEAU 11 MI ACS TRANS	N
Sealaska Cor	1406764	792442	344	ANNETTE ISL ACS VHF RE	N
Sealaska Cor	1115661	932756	348	CAPE BURUNOF DEF SITE	N
Sealaska Cor	1087958	922948	349	CAPE EDGE CUMBE FCS	N
Sealaska Cor	1054041	1058415	352	CHICHAGOF ISL DEF SITE	N
Sealaska Cor	1050573	1164509	358	FLAT BAY ACS SUB-CABLE	N
Sealaska Cor	1115571	938538	359	GALANKIN ISL DEF SITE	N
Sealaska Cor	1175701	1040637	360	MIDWAY PT ACS SUB-CAB	N
Sealaska Cor	1109800	1090102	361	JUNEAU RIFLE RNG	N
Sealaska Cor	1388833	824771	363	KETCHIKAN ACS RR ANX#2	N
Sealaska Cor	1391892	816008	364	KETCHIKAN RADIO STA	N
Sealaska Cor	1339706	858915	367	LEMESUR PT ACS SUB-CAB	N
Sealaska Cor	1114619	943653	381	SITKA NAT CEMETERY	N
Sealaska Cor	1115396	940295	382	SITKA RADIO STA	N
Sealaska Cor	1038085	1180372	383	SKAGWAY POWDER & DETON	N
Sealaska Cor	1042708	1199511	384	SKAGWAY QUARRY SITE	N
Sealaska Cor	1021084	1227232	385	SKAGWAY TELE LINE RW	N
Sealaska Cor	1098537	955908	386	SOUND ISL BASE END STA	N
Sealaska Cor	1095602	927515	387	ST LAZARIA ISL AWS STA	N
Sealaska Cor	1104981	1047885	390	WHEELER CK PASS REFL	N
Sealaska Cor	1107374	932313	392	MT.EDGE CUMBE/SITKA NOB	N

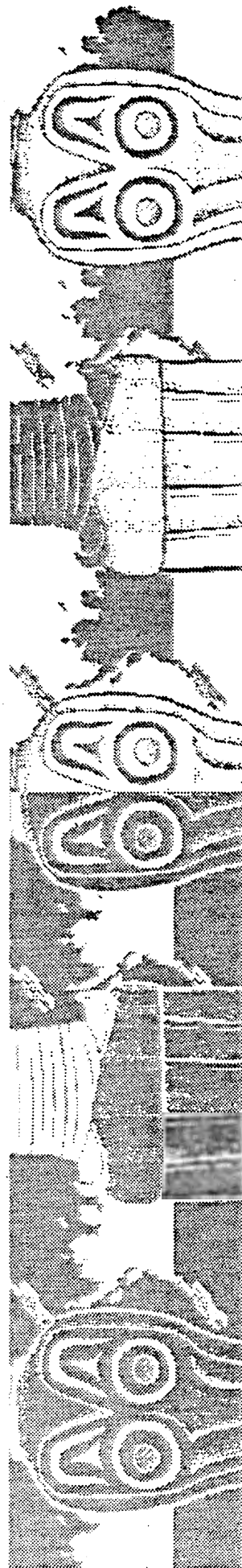
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Sealaska Cor	1132850	1091226	396 JUNEAU ACS HSG	N
Sealaska Cor	1115392	1091777	400 JUNEAU ACS RR	N
Sealaska Cor	1114054	941973	402 SITKA ACS RR SITE	N
Sealaska Cor	1134332	990567	423 ANG-CHAT ACS SUB CAB	N
Sealaska Cor	1042754	1161712	429 CHILKOOT BARRACKS	N
Sealaska Cor	1129273	1086243	443 JUNEAU SUB-PORT FMBK	N
Sealaska Cor	1117479	941026	453 SITKA ACS HSG SITE	N
Sealaska Cor	807433	1152035	458 YAKUTAT AFB	N
Sealaska Cor	796431	1149620	484 OCEAN CAPE RR SITE	N
Sealaska Cor	1016469	1036472	494 SOAPSTONE HARBOR	N
Sealaska Cor	1052393	981623	496 OUTER ISL ACRAFT WARN	N
Sealaska Cor	776428	1175808	508 YAKUTAT	N
The Aleut Co	-896461	468866	11 CHERNOFSKI HBR SUP&STO	Y
The Aleut Co	-821253	492616	12 UNALASKA DEF SITE	Y
The Aleut Co	-793970	512933	13 UNALGA ISL NAV RADIO	Y
The Aleut Co	-839156	521540	14 DRIFTWOOD BAY RR STA	Y
The Aleut Co	-832495	509863	15 FT. LEARNARD	Y
The Aleut Co	-768560	524307	16 AKUTAN	Y
The Aleut Co	-833616	527064	17 CAPE WISLOW AWS STA	Y
The Aleut Co	-2129459	793738	22 AGATTU ISLAND	Y
The Aleut Co	-410444	687791	25 PORT MOLLER	Y
The Aleut Co	-546103	518298	26 CATON ISLAND	Y
The Aleut Co	-696815	543807	27 SCOTCH CAP	Y
The Aleut Co	-1565784	451626	32 CAPE YAKAK RADIO STA	Y
The Aleut Co	-2129152	854348	42 ATTU ISL MIL SITES	Y
The Aleut Co	-1496582	474169	89 GREAT SITKIN ISL	Y
The Aleut Co	-1578373	467949	100 KANAGA ISL	N
The Aleut Co	-1905437	631791	105 KISKA ISL GARR(B & L)	N
The Aleut Co	-2092421	820147	137 NIZKI-ALAIID ISLS	N
The Aleut Co	-1679509	492253	141 OGIIUGA ISL	N
The Aleut Co	-565318	530139	163 SANAK ISL NAVAL STA	N
The Aleut Co	-1774710	568529	167 SEMISOPOCHNOI ISL	N
The Aleut Co	-1637216	485877	181 TANAGA ISL	N
The Aleut Co	-809964	489068	192 UGADAGA BAY STA	N
The Aleut Co	-812788	513629	232 CONSTANTINE PT END STA	N
The Aleut Co	-802754	513625	233 ERSKINE POINT FCS	N
The Aleut Co	-917154	470359	235 FORT GLENN	N
The Aleut Co	-576299	640208	243 AMAK ISL	N
The Aleut Co	-530945	578063	247 DEER ISL AWS STA	N
The Aleut Co	-844320	495187	270 CATHEDRAL POINT	N
The Aleut Co	-722638	514436	305 TIGALDA ISLAND	N
The Aleut Co	-412920	609654	313 SAND PT NAV AUX AIR FA	N
The Aleut Co	-811322	509582	320 CAPTAINS BAY SS N WEST	N
The Aleut Co	-358159	541311	351 CHERNABURA ISL NAVY	N
The Aleut Co	-1529381	464117	355 DAVIS AFB	N
The Aleut Co	-540606	586769	371 COLD BAY PAVLOF UNIT	N
The Aleut Co	-702922	566578	397 CAPE SARICHEF	N
The Aleut Co	-826781	516304	459 HOG ISL DEF SITE	N
The Aleut Co	-824187	500718	460 UNALASKA ACS COMMO	N
The Aleut Co	-844056	462381	493 CAPE PROMINENCE AWS	N
The Aleut Co	-819212	509194	503 AMAKNAK	N
The Aleut Co	-551459	610633	506 COLD BAY ACS COM-FT RA	N
The Aleut Co	-1366563	454607	510 ATKA AF AUX FLD	N
The Aleut Co	-1819746	521479	516 AMCHITKA AF AUX FLD	N

# Appendix II

Locational Information - Alaska Native Villages  
Demographic Information - State of Alaska





# Listing for Ray Peterson

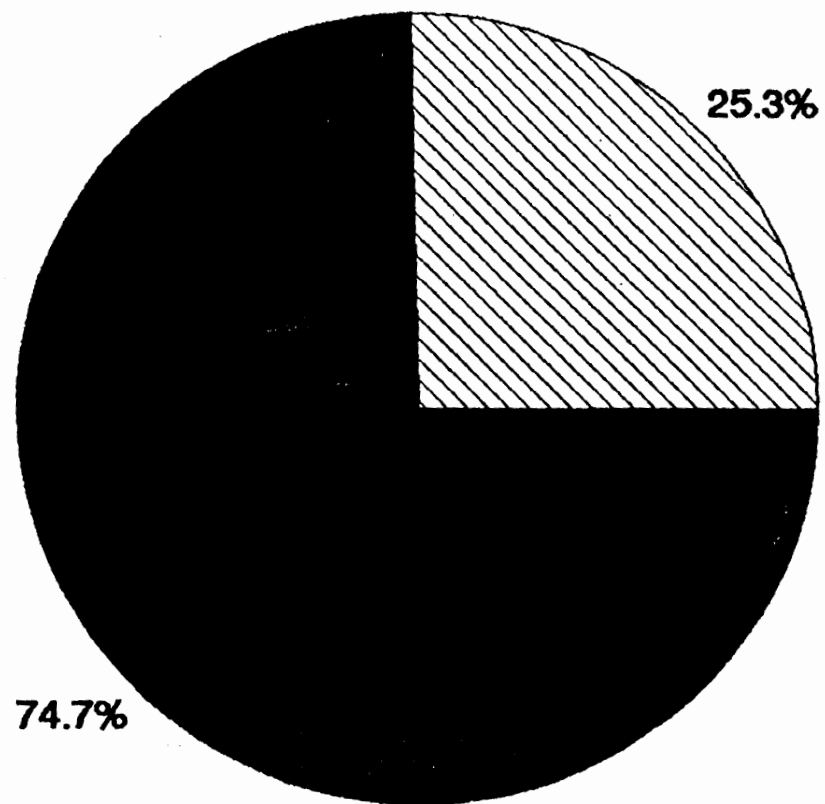
Thu Jun 27 16:28:00 1996

Akhiok	00650	-13,067	774,819
Akiachak	00760	-399,593	1,234,843
Akiak	00870	-387,519	1,231,200
Akutan	01090	-768,337	527,756
Alakanuk	01200	-542,016	1,458,209
Aleknagik	01420	-259,455	1,040,633
Allakaket	01860	54,819	1,843,824
Ambler	01970	-171,205	1,907,377
Anaktuvuk Pass	02080	95,537	2,020,484
Angoon	03440	1,151,471	997,383
Aniak	03550	-293,341	1,301,052
Anvik	03880	-317,082	1,422,433
Arctic Village CDP	03990	351,946	2,042,638
Atka	04210	-1,364,856	456,698
Atmautluak	04430	-446,745	1,235,826
Barrow	05200	-101,441	2,364,199
Beaver CDP	05750	299,343	1,837,285
Bethel	06520	-423,486	1,226,280
Birch Creek CDP	07620	367,010	1,833,267
Brevig Mission	08740	-577,856	1,763,304
Buckland	09600	-324,102	1,797,729
Cantwell CDP	10150	252,634	1,499,461
Chalkyitsik CDP	11800	453,290	1,888,132
Chefornak	12680	-562,887	1,171,974
Chevak	13230	-611,405	1,336,872
Chignik Lagoon CDP	13670	-277,811	709,737
Chignik Lake CDP	13780	-293,774	707,692
Chistochina CDP	14000	475,625	1,432,285
Chitina CDP	14110	502,729	1,317,042
Chuathbaluk	14330	-276,443	1,299,590
Circle CDP	14880	452,829	1,796,255
Clarks Point	15450	-259,728	991,607
Copper Center CDP	17300	449,275	1,365,108
Craig	17740	1,297,934	817,196
Crooked Creek CDP	17850	-214,363	1,332,352
Deering	18510	-395,306	1,816,307
Dillingham	18950	-257,385	1,015,779
Dot Lake CDP	19720	488,470	1,556,369
Eagle	20380	604,875	1,705,100
Eek	21040	-442,631	1,163,449
Egegik CDP	21150	-199,430	925,026
Ekwok	21810	-196,742	1,047,528
Elim	22250	-394,012	1,653,100
Emmonak	22910	-533,705	1,466,013
English Bay CDP	23130	118,026	1,039,929
Evansville CDP	23790	113,278	1,883,543
False Pass CDP	24670	-605,969	580,118
Fort Yukon	26760	389,556	1,871,808
Gakona CDP	27420	448,323	1,397,912
Galena	27530	-132,516	1,645,694
Gambell	27640	-861,468	1,645,951
Golovin	29180	-429,552	1,651,918
Goodnews Bay	29290	-429,969	1,037,971
Grayling	30060	-308,934	1,451,162
Gulkana CDP	30500	444,913	1,393,298
Healy Lake CDP	32310	456,255	1,591,945
Holy Cross	33030	-302,603	1,370,843
Hoonah	33360	1,077,771	1,052,903
Hooper Bay	33470	-638,443	1,341,190
Hughes	33910	-12,318	1,786,068
Huslia	34350	-106,192	1,750,218
Hydaburg	34460	1,325,677	790,431
Igiugig CDP	34790	-105,572	1,035,623
Iliamna CDP	35120	-49,407	1,086,372
Ivanof Bay CDP	35890	-342,095	672,865
Kake	36770	1,200,091	957,081



Kaktovik	36990	399,923	2,261,163
Kaltag	37430	-228,085	1,606,217
Karluk CDP	37540	-23,203	840,844
Kasaan	37650	1,337,334	834,854
Kiana	39300	-282,971	1,904,035
King Cove	39410	-528,312	594,697
King Salmon CDP	39630	-144,959	978,226
Kipnuk CDP	39740	-557,282	1,144,236
Kivalina	39960	-448,244	2,010,827
Knik CDP	40620	225,257	1,284,088
Kobuk	40840	-126,845	1,888,107
Koliganek CDP	41500	-181,168	1,088,281
Kongiganak CDP	41610	-492,491	1,136,537
Kotlik	41720	-481,162	1,485,064
Kotzebue	41830	-373,627	1,904,895
Koyuk	41940	-337,063	1,682,653
Koyukuk	42050	-172,760	1,664,928
Kwethluk	42380	-401,022	1,221,143
Kwigillingok CDP	42490	-506,791	1,130,178
Larsen Bay	43040	-31	838,413
Levelock CDP	43810	-165,409	1,017,169
Lime Village CDP	44030	-80,741	1,275,214
Lower Kalskag	45460	-336,897	1,298,302
Manley Hot Springs CDP	46780	161,272	1,676,452
Manokotak	46890	-285,301	1,011,508
Marshall	47000	-421,078	1,348,008
McGrath	46010	-84,608	1,443,887
Mekoryuk	47990	-671,291	1,216,260
Mentasta Lake CDP	48540	519,931	1,474,277
Minto CDP	49530	211,458	1,693,323
Mountain Village	51180	-503,833	1,383,755
Naknek CDP	52060	-165,808	978,917
Napakiak	52390	-433,447	1,212,919
Napaskiak	52720	-420,217	1,212,754
Nelson Lagoon CDP	52940	-453,027	678,003
Nenana	53050	235,346	1,627,517
New Stuyahok	53710	-186,444	1,059,450
Newhalen	53270	-50,124	1,083,434
Newtok	53820	-572,260	1,264,610
Nightmute	53930	-588,937	1,217,254
Nikolai	54150	-19,689	1,447,749
Nikolski CDP	54260	-985,079	439,573
Ninilchik CDP	54480	133,945	1,119,688
Noatak CDP	54700	-384,916	1,985,344
Nondalton	55030	-48,245	1,109,580
Noorvik	55140	-310,310	1,891,506
Northway Junction CDP	56250	614,054	1,504,784
Nuiqsut	56320	115,722	2,248,790
Nulato	56350	-201,199	1,644,825
Nunapitchuk	56680	-456,013	1,239,593
Old Harbor	57340	38,062	803,704
Oscarville CDP	58330	-421,262	1,214,881
Ouzinkie	58550	90,308	882,007
Pedro Bay CDP	59540	-6,485	1,088,946
Perryville CDP	60200	-325,538	672,684
Pilot Station	60750	-462,954	1,360,999
Pitkas Point CDP	60860	-481,747	1,373,761
Platinum	61080	-440,069	1,024,205
Point Hope	61630	-521,922	2,088,082
Point Lay CDP	61700	-349,843	2,215,138
Port Graham CDP	63280	121,651	1,040,810
Port Heiden	63390	-278,467	778,406
Port Lions	63610	65,792	876,474
Quinhagak	64600	-439,990	1,109,157
Rampart CDP	64820	187,511	1,733,120
Red Devil CDP	64930	-176,622	1,315,265
Ruby	65590	-71,552	1,640,472

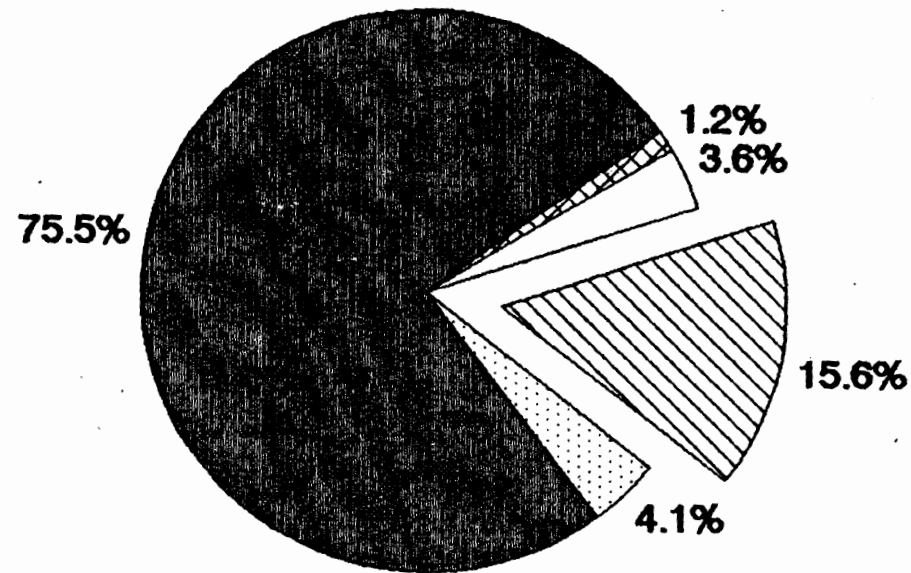
Salamatof CDP	66510	146,119	1,184,521
Sand Point	67020	-410,581	610,765
Savoonga	67460	-805,460	1,624,531
Saxman	67570	1,394,618	827,831
Scammon Bay	67680	-604,663	1,371,322
Selawik	68230	-268,335	1,861,788
Seldovia	68340	129,404	1,052,010
Shageluk	68670	-284,323	1,421,313
Shakttoolik	68890	-346,988	1,619,243
Shishmaref	69770	-543,628	1,858,873
Shungnak	70100	-139,649	1,883,090
Slana CDP	70930	509,465	1,453,616
Sleetmute CDP	71090	-170,983	1,308,878
South Naknek CDP	72190	-171,155	965,725
St. George	65800	-948,702	843,639
St. Mary's	66140	-479,410	1,378,453
St. Michael	66360	-401,847	1,526,764
St. Paul	66470	-973,246	916,949
Stebbins	72960	-408,953	1,528,046
Stevens Village CDP	73290	225,443	1,791,664
Stony River CDP	73400	-133,216	1,313,357
Takotna CDP	74610	-107,807	1,448,350
Tanacross CDP	75050	523,577	1,527,715
Tanana	75160	89,174	1,691,489
Tatitlek CDP	75380	395,295	1,234,061
Telida	75820	33,262	1,486,296
Teller	75930	-574,645	1,753,907
Tetlin CDP	76590	584,884	1,502,721
Togiak	77690	-367,302	1,024,552
Toksook Bay	78240	-605,920	1,224,093
Tuluksak	78790	-372,558	1,256,005
Tununak	79230	-611,929	1,228,887
Twin Hills CDP	79780	-356,973	1,026,815
Tyonek CDP	79890	148,976	1,237,042
Unalakleet	80660	-331,646	1,565,364
Unalaska	80770	-814,507	506,800
Venetie CDP	82420	332,011	1,912,770
Wainwright	82750	-228,607	2,301,318
Wales	82860	-645,077	1,808,349
White Mountain	84070	-446,835	1,667,786
Yakutat	86490	797,269	1,148,453



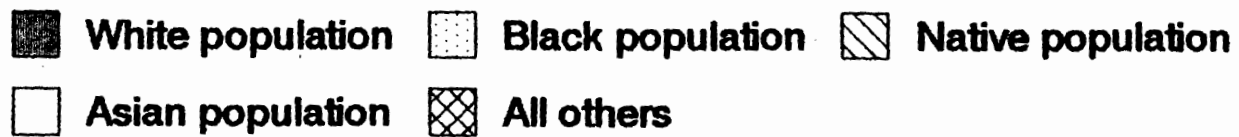
**State of Alaska-People of Color  
EPA-Region 10 Data**

 **People of Color**  **All Others**

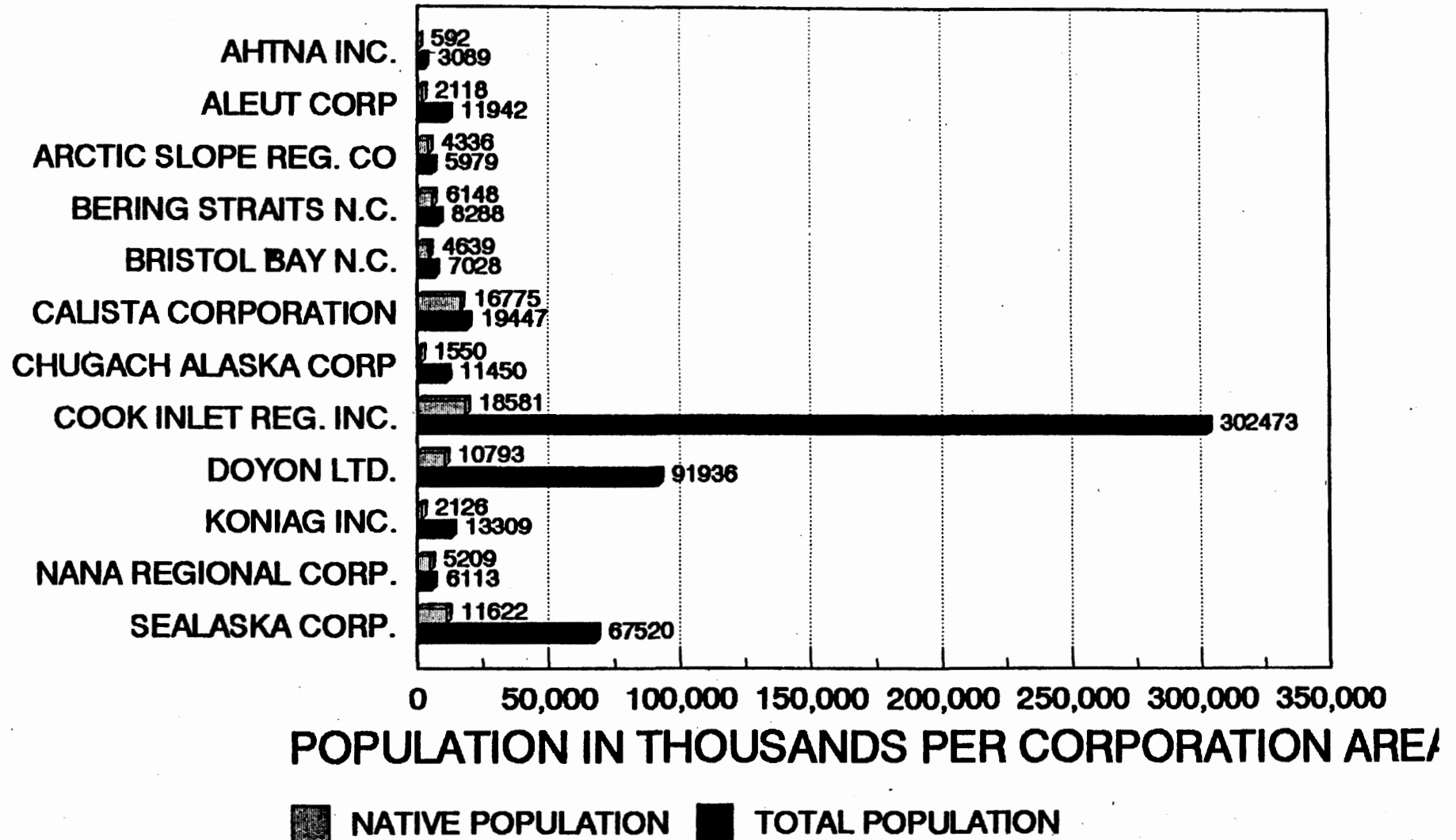
People of Color includes Native, Hispanic, Black  
and Asian populations.



**State of Alaska Demographics  
1990 Census Data**



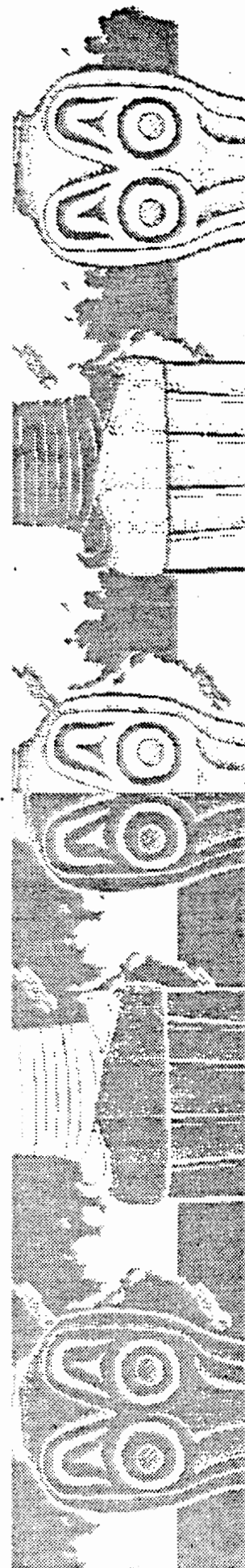
# NATIVE CORPORATIONS



Total Native population is 85,468 = 15.58%  
(1990 CENSUS DATA)

# Appendix III

Technical Details - Methodology



## Nearest Neighbor Spatial Analysis

$R$  = the nearest-neighbor index

$R = \bar{D}_{obs} / \bar{D}_{exp}$   $\bar{D}_{obs}$  = average observed nearest-neighbor distance

$\bar{D}_{exp}$  = average expected nearest-neighbor distance

$\bar{D}_{exp} = 1 / 2(p)^{0.5}$   $p$  = density of points per unit area

$\bar{D}_{obs} = \sum d / n$   $d$  = nearest neighbor distance,  $n$  = number of pts

if  $R = 0.0$  the pattern is completely clustered

if  $R = 2.15$  the pattern is completely dispersed

if  $0 < R < 1.1$  then the pattern is very clustered

if  $R = 1.1$  then the pattern is moderately clustered

if  $1.1 > R > 2.15$  then the pattern is very dispersed



```
1 REM THIS PROGRAM PERFORMS A NEAREST NEIGHBOR (CLUSTERING) ANALYSIS BASED ON
2 REM THE EQUATIONS AND PROCEDURE FROM 'STATISTICS IN GEOGRAPHY' BY DAVID EBDON
3 REM AUTHORS: GARY IDLEBURG, EPA-REGION 10, ENVIRONMENTAL JUSTICE PROGRAM
  REM          PROF. PATRIC BUCKLEY, WESTERN WASHINGTON UNIVERSITY -
  REM          GEOGRAPHY/ENVIRONMENTAL STUDIES DEPARTMENT
```

```
10 REM "ESTABLISH PARAMETERS FOR ACCESSING A DATA FILE"
```

```
11 OPEN "I", 3, "garfile5.dat"
```

```
20 REM "READ, COUNT AND PRINT ITEMS IN AN ARRAY THEN CALCULATE DISTANCE "
```

```
21 REM "SETTING ARRAY SIZE"
```

```
22 DIM LATLONG(700, 3)
```

```
30 REM "SETTING COUNTER (TO TRACK THE NUMBER OF POINTS) TO 0"
```

```
31 LET PTSTOT = 0
```

```
32 LET A = 0
```

```
33 LET B = 0
```

```
34 LET DIST = 0
```

```
40 REM "INITIALIZING ARRAY AND MEASUREMENTS TO 0"
```

```
41 FOR R = 1 TO 5
```

```
42 FOR C = 1 TO 3
```

```
43 LET LATLONG(R, C) = 0
```

```
44 NEXT C
```

```
45 NEXT R
```

```
50 REM "READING IN THEN PRINTING LOCATION DATA"
```

```
51 R = 0
```

```
52 R = R + 1
```

```
53 INPUT #3, LATLONG(R, 1), LATLONG(R, 2)
```

```
54 IF LATLONG(R, 1) < -999999999 THEN 400
```

```
55 LET PTSTOT = PTSTOT + 1
```

```
62 PRINT LATLONG(R, 1), LATLONG(R, 2), PTSTOT
```

```
63 GOTO 52
```

```
64 CLOSE #3
```

```
262 REM DISTANCE AND NEAREST DISTANCE CALCULATIONS
```

```
400 LET OG = 1
```

```
404 LET DES = 1
```

```
408 LET SHRTDIS = 999999999
```

```
412 IF OG = DES THEN 432
```

```
416 A = LATLONG(OG, 1) - LATLONG(DES, 1)
```

```
420 B = LATLONG(OG, 2) - LATLONG(DES, 2)
```

```
423 DIST = (((A ^ 2) + (B ^ 2)) ^ .5) / 1000
```

```
426 PRINT A, B, DIST
```

```
428 IF DIST < SHRTDIS THEN SHRTDIS = DIST
```

```
429 REM PRINT DIST, SHRTDIS
```

```
432 LET DES = DES + 1
```

```

436 IF DES <= PTSTOT THEN 412
440 LET LATLONG(OG, 3) = SHRTDIS
441 PRINT OG, LATLONG(OG, 3), SHRTDIS
444 OG = OG + 1
448 IF OG <= PTSTOT THEN 404

500 REM NEAREST NEIGHBOR INDEX CALCULATION

530 PRINT "PLEASE INPUT THE VALUE OF AREA FOR THE EXPECTED DENSITY CALCULATION"
540 INPUT AREA
550 IF AREA <= 0 GOTO 641
551 LET P = PTSTOT / AREA
552 LET DEXP = 1 / (2 * (P ^ .5))
560 PRINT "THE EXPECTED MEAN NEAREST NEIGHBOR DISTANCE IS"; DEXP
570 REM PTSTOT IS THE # OF POINTS, NEARN IS A SINGLE NEAREST NEIGHBOR DISTANCE
571 REM DSUM IS THE SUM OF ALL DISTANCES, DOBS IS THE MEAN NEAREST NEIGHBOR DIS
572 LET DSUM = 0
573 FOR R = 1 TO PTSTOT
581 LET NEARN = LATLONG(R, 3)
595 DSUM = DSUM + NEARN
596 NEXT R
600 DOBS = (DSUM / PTSTOT)

610 PRINT " THE OBSERVED MEAN NEAREST NEIGHBOR DISTANCE IS "; DOBS
620 LET R = DOBS / DEXP
621 PRINT " THE NEAREST NEIGHBOR INDEX IS "; R
622 IF R = 0 THEN PRINT "THE PATTERN OF POINTS IS COMPLETELY CLUSTERED"
623 IF R = 1.1 THEN PRINT "THE PATTERN OF POINTS IS MODERATELY CLUSTERED"
624 IF R >= 2.15 THEN PRINT "THE PATTERN OF POINTS IS COMPLETELY DISPERSED"
625 IF R > 1.1 AND R < 2.15 THEN PRINT "THE PATTERN OF POINTS IS VERY DISPERSED"
626 IF R > 0 AND R < 1.1 THEN PRINT "THE PATTERN OF POINTS IS VERY CLUSTERED"
631 GOTO 651
641 PRINT " AREA VALUES <= 0 ARE INVALID"; AREA
651 END

```

# Appendix IV

List of Contact People



### **Contact People for Contaminated Site Information**

Mark Ader	EPA Region 10, Hazardous Waste Sites (206) 553-1808
Sandra Borbridge	EPA Region 10, Alaska Operations Office (907) 271-6329
Robert Deering	U.S. Coast Guard (907) 463-2440
John Halverson	Alaska Dept. of Environmental Conservation Contaminated Sites Program (907) 269-7553
Tim Hansen	U.S. Air Force - 611 Air Support Group, 6900 9th St, Suite 360 Elmendorf AFB, Alaska 99506
Kathy Hill	EPA Region 10, Tribal Office (206) 553-6220
Joyce Kelly	EPA Region 10, Environmental Justice Program (206) 553-4029
Ken Lauzen	Federal Aviation Administration (907) 271-3743
Jennifer Roberts	Alaska Dept. of Environmental Conservation Contaminated Sites Program (907) 269-7545
Greg Smith	Formerly Used Defense Sites (FUDS), Army Corps of Engineers (Alaska) (907) 753-5793
Fran Stefan	EPA Region 10, Solid Waste (206) 553-6639