COPPER MINERAL OCCURRENCES IN THE WRANGELL MOUNTAIN - PRINCE WILLIAM SOUND AREA, ALASKA

M.I.R.L. Report No. 27

MINERAL INDUSTRY RESEARCH LABORATORY
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INTRODUCTION

On January 9, 1970, the U.S. Bureau of Mines entered into an agreement with the University of Alaska based upon a proposal submitted by the Mineral Industry Research Laboratory. Under the terms of this agreement, the Laboratory undertook to compile information on copper occurrences in eight quadrangles covering what are loosely known as the Copper River, White River, and Prince William Sound copper provinces. If time permitted four other quadrangles would be added, and this has been possible. Information was to be obtained by searching published and unpublished records of the Bureau of Mines, the U.S. Geological Survey, the State Division of Geological Survey, the University of Alaska, and the recording offices. The contract states:

1. The data are to be organized, coded, and stored on magnetic tape.
2. The data are to be evaluated and coded on a "merit" or worth basis.
3. The report is to include a section pertaining to the economic geology of the region studied, as well as a tabulation of all copper occurrences.

This project is part of a continuing objective of the Mineral Industry Research Laboratory, i.e. to produce up-to-date compilations of geology and mineral prospect data to be used as a base for research and as an initial guidebook for exploration people desiring to initiate mineral exploration programs in Alaska. It is hoped that this study can be expanded in the near future to include a compilation of all minerals in the area.

The study has contributed greatly toward the development of a computer processable storage and retrieval program for Alaskan mineral occurrences and claims. It is also to be hoped that this program, entitled "MINEFIL", will become an industry-

government access tool for extraction, use and study of known mineral occurrence data.

LOCATION

The area embraced in this report consists of eleven quadrangles: Gulkana, Nabesna, Anchorage, Valdez, McCarthy, Seward, Cordova, Bering Glacier, Blying Sound, Middleton Island, and Icy Bay. These quadrangles include parts of several Mining Regions and Districts as defined by the U.S. Bureau of Mines (Ransome and Kerns, 1954). Most of the area studied lies in the Copper River Region, but parts of the Kenai, Cook Inlet-Susitna, and Yukon River regions are also included. For purposes of tabulating the occurrences of copper deposits, the quadrangle system is better, because the chief source of information is the Kardex file of the Alaska Division of Geological Survey. For purposes of describing mining districts and associated geology, the U.S. Bureau of Mines system is better. Both are used in this report. Figure 1 shows the location of the area with respect to Alaska. Figure 2 shows the locations of the mining regions and districts (red) as well as the quadrangles (green). The quadrangles are named on Figure 3.

Other systems, based on geography or geology, may be used to describe the location or the setting of the area. It lies within Brooks' Pacific Mountain System, the arcuate ranges that border the Pacific (Brooks, 1953). The northern boundary of this province is the north flank of the Alaska Range. Across the northern part of the area are the Nutzotin and Mentasta Mountains on the east, and the Copper River Basin on the west.

The Nutzotin and Mentasta Mountains ascend toward the south to become the Wrangell Mountains, which, however, stand as an isolated mass because they are

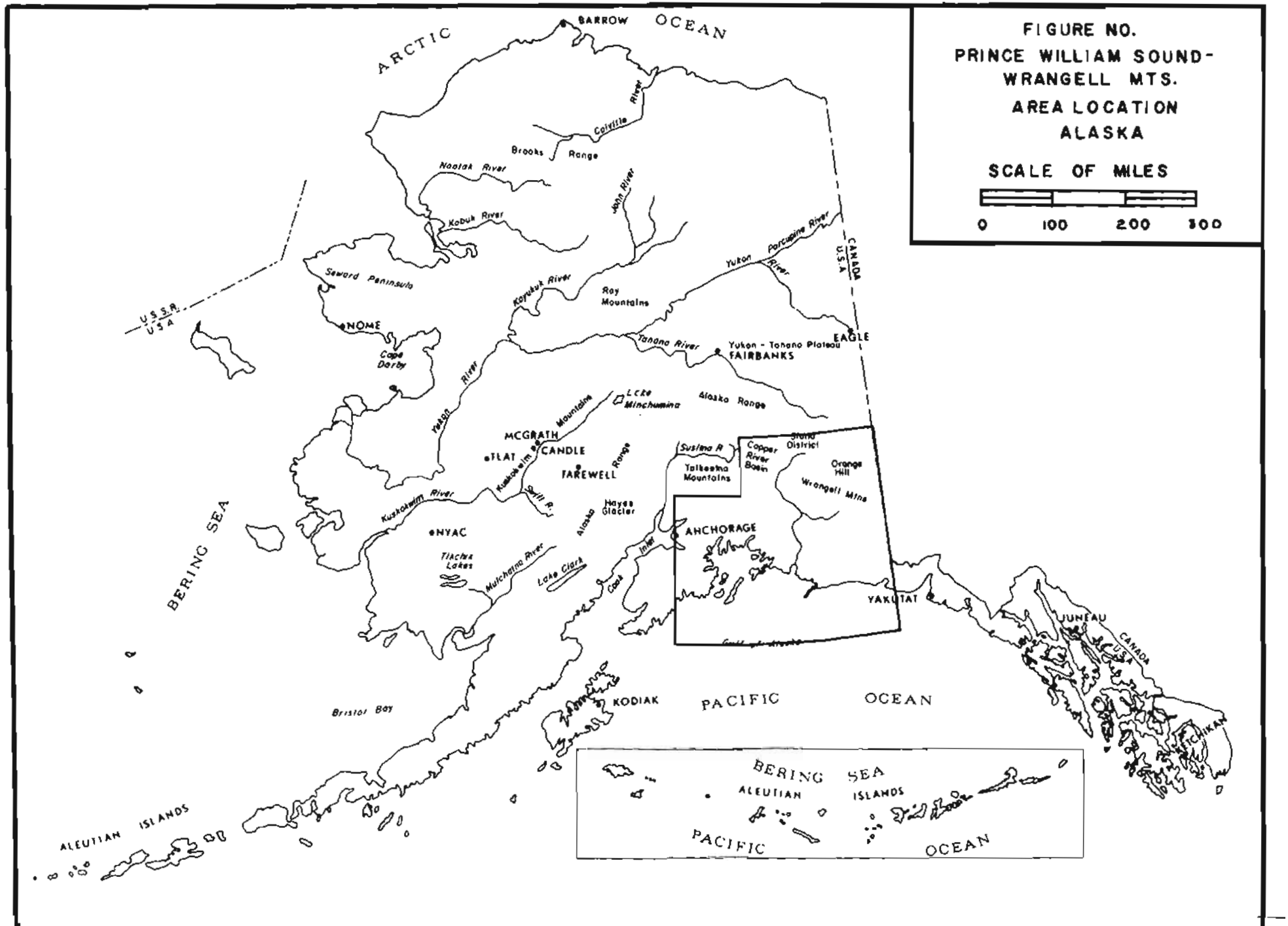


FIGURE NO.
PRINCE WILLIAM SOUND-
WRANGELL MTS.
AREA LOCATION
ALASKA
SCALE OF MILES
0
100
200
300
ARCTIC OCEAN
BARROW
Colville River
Brooks Range
Noatak River
Kobuk River
John River
Porcupine River
Yukon River
CANADA
U.S.A.
Seward Peninsula
U.S.S.R.
U.S.A.
NOME
Cape Darby
Koyukuk River
Ray Mountains
Tanana River
Yukon - Tanana Plateau
FAIRBANKS
EAGLE
Yukon River
Alaska Range
Mt. McKinley
MCGRATH
FLAT
CANDLE
FAREWELL
Range
Kuskokwim River
Hayes Glacier
Susitna R.
Talkeetna Mountains
Copper River Basin
Orange Hill
Wrangell Mts.
ANCHORAGE
NYAC
Tlachs Lakes
Mulchatna River
Lake Clark
Cook Inlet
YAKUTAT
JUNEAU
KODIAK
PACIFIC OCEAN
Bristol Bay
BERING SEA
ALEUTIAN ISLANDS
BERING SEA
ALEUTIAN ISLANDS
PACIFIC OCEAN

bounded on the south by the valley of the east-flowing Chitina River, and on the west and northwest by the Copper River. The Wrangells reach to an altitude of more than 16,000 feet at Mt. Sanford. A high intermountain valley between the Nutzotins and the Wrangells contains the east flowing White River.

Forming a barrier between the Coast and the lowlands of the Chitina Valley and Copper River basin on the north, are the Chugach Mountains. These terminate on the north against the Matanuska, Copper, and Chitina Rivers. On the east, they rise to merge with the St. Elias Mountains in Canada. A minor unit, part of the Chugach Mountains in the southeast, is the Robinson Mountains.

These physiographic units have been described by Wahrhaftig (1965). Figure 3 shows his breakdown. One area not shown as a physiographic division consists of Prince William Sound and its islands. This Sound projects into the coast and has many islands, some of which contain copper deposits.

Copper has been produced in the past from Kennicott in the Chitina Valley and from Prince William Sound. There is therefore, precedent for believing in the feasibility of mines in the area being able to export to the contiguous United States. The situation today is potentially more favorable because the area is closer to Japan than United State's west coast ports. Figure 4 shows the relation of Anchorage to Pacific localities. (After Johnson and Hartman, p. 11).

SETTLEMENTS AND TRANSPORTATION ROUTES

Within the study area the principal towns are Anchorage, Seward, Cordova, and Valdez. The locations of the cities, towns, and roads are shown on several of the figures in this report.

FIGURE No. 5

PRINCE WILLIAM SOUND-WRANGELL MTS. AREA ALASKA PRINCIPAL MINING AREAS

SCALE OF MILES

0 50 100 150

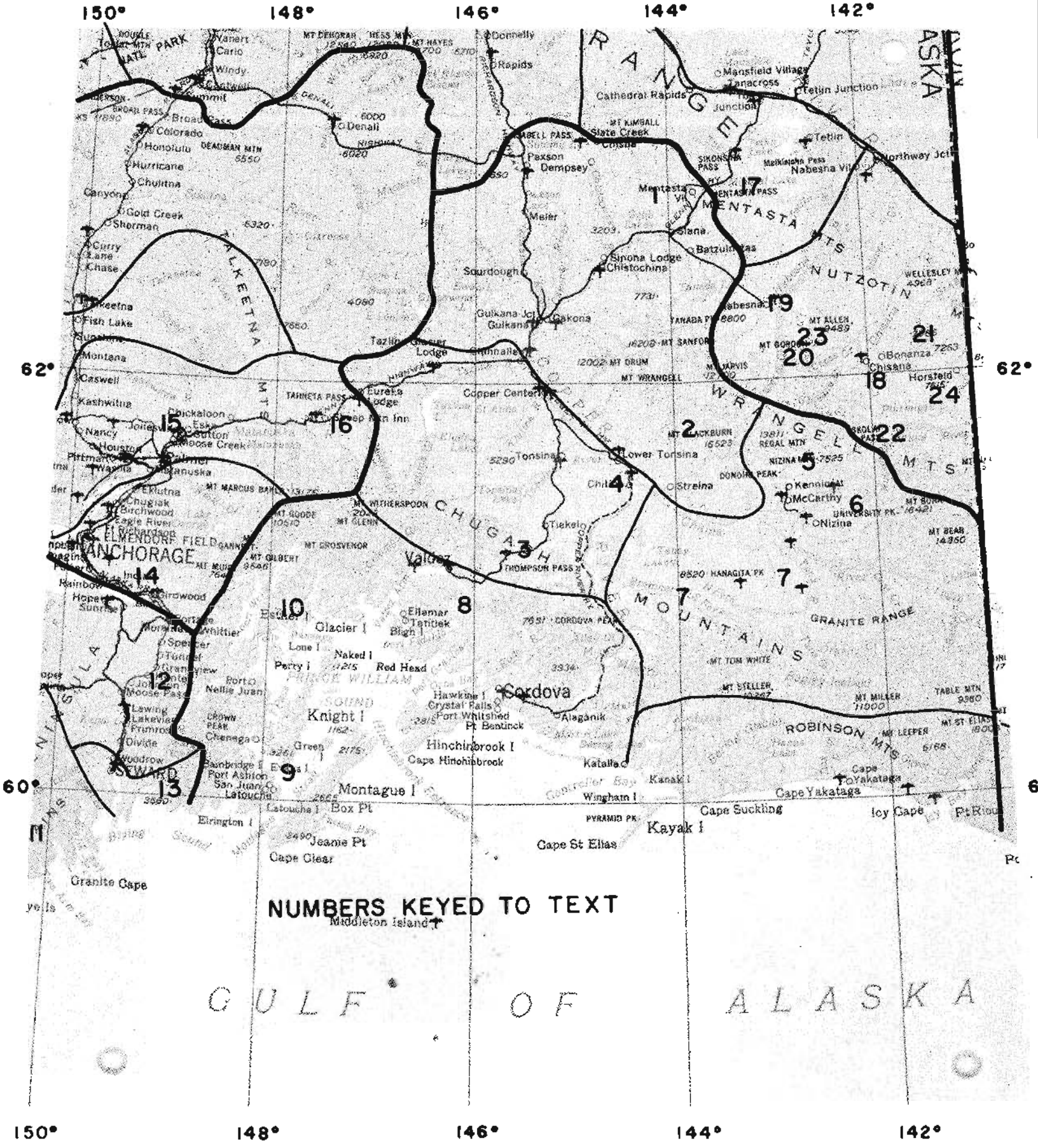
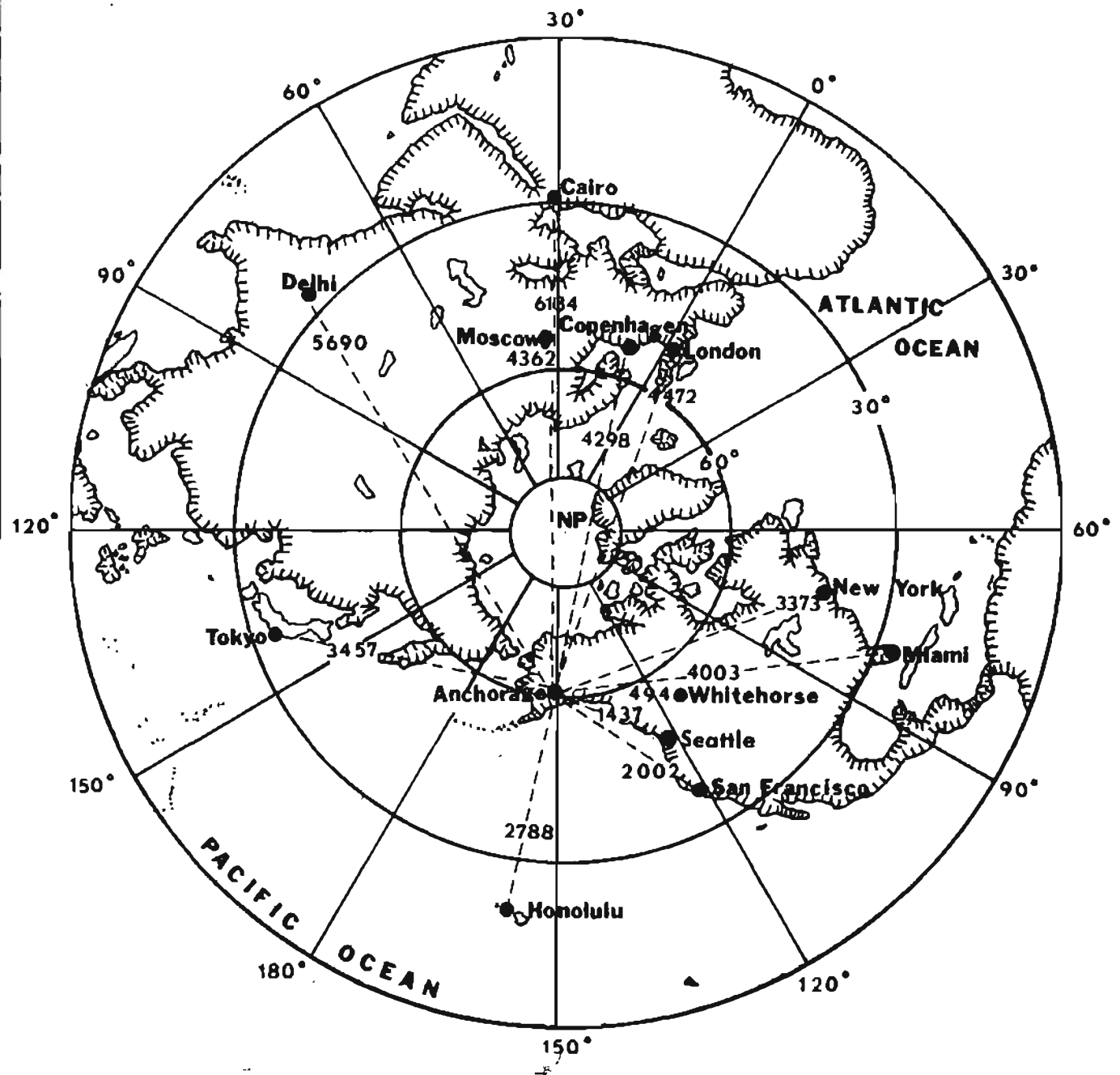


FIGURE No. 4

STRATEGIC LOCATION

OF ALASKA

AFTER JOHNSON AND HARTMAN



Anchorage is Alaska's largest city, having a population of 45,000 within its boundaries. It is located on Knik Arm, Cook Inlet, 75 miles northwest of Seward. Anchorage can be considered the only modern "full service" city in the study area. It has an International airport, a harbor, and railroad to Seward and Fairbanks. Anchorage is currently the center for Alaska's oil industry.

Seward, a small town of about 2,100, is the ocean terminus for the Alaska Railroad. Seward has an airfield and an ice-free harbor; for this reason it is an important supply center for interior Alaska. Limited services may be obtained at Seward.

Valdez is located at the head of Port Valdez 45 miles northwest of Cordova and 115 miles east of Anchorage. The population of Valdez is small (1,200). The town has an excellent ice-free port and for this reason it is planned to make it the southern terminus for an oil pipe line from Prudhoe Bay. Limited services are available and the town may be reached by air, road or water.

Cordova is a small fishing town of about 1,600 persons, but once it was the southern terminus for Copper River and Northwest Railroad. Cordova has a paved airport but no road to any other town. Limited services are available.

Chitina, Copper Center and Glennallen are small highway towns or service areas along the road network in the region. Bush flights, lodging and meals can be arranged at these towns.

Although the area has the greatest concentration of roads in Alaska, most of the potential mining areas are still quite inaccessible. One of the earliest roads in Alaska, the Richardson Highway, connects Valdez, on Prince William Sound, with Fairbanks. From Valdez the road extends up Lowe River, over Thompson Pass, down the Tsina River, up the Tiekel, down the Tonsina and across the Copper River basin

to strike the Copper River at Copper Center. From there it generally follows up the Copper River to Gakona Junction, thence across the Basin in a northerly direction and crosses the Alaska Range at Isabella Pass.

An important side road leaves the Richardson about 10 miles south of Copper Center and extends southeast to Chitina at the confluence of the Chitina and Copper Rivers. Chitina was the site of a railroad bridge across the Copper River when the Copper River and Northwest Railroad was operating between Cordova and Kennicott. Roads lead from McCarthy to the placer camps at Dan Creek and Nizina and up McCarthy Creek. At present a road is being built on the old railroad grade, and it will be possible to drive from the main highway system to McCarthy and beyond. It is anticipated that eventually a highway will connect to Cordova along the route of the railroad along the Copper River.

From Gakona Junction on the Richardson Highway a paved road leads northeast up the Copper River, skirting the north side of the Wrangells to Slana. It then continues up the Slana River, through Mentasta Pass and Sikonsina Pass and down the Tok River to connect with the Alaska Highway at Tok. This road is the northeast portion of the Glenn highway, sometimes called the Tok Cutoff.

A graveled branch road leaves the Tok Cutoff at Slana and extends southeast to the settlement of Nabesna at the site of the old Nabesna mine near Jacksina Creek. This road is approximately 45 miles long.

The main transportation artery connecting the Richardson highway with the Cook Inlet area is the Glenn Highway (western part) running west from Glennallen near the confluence of the Tazlina and Copper Rivers. For about the first 80 miles out of Glennallen this paved road does not follow any particular water course, but finally

near Sheep Mountain it reaches the Matanuska River and follows that stream to its mouth on Knik Arm. It thence extends on to Anchorage. Its total length, from Glennallen to Anchorage, is something over 200 miles. A short gravel and dirt road of about 18 miles leaves the highway near Tazlina Lodge and leads north to Lake Louise.

The Alaska Railroad, and more recently a highway, connect the Anchorage area with the northwest part of the Anchorage quadrangle via Matanuska and Wasilla. These routes lead tup the Susitna River and down the Nenana to the Tanana Valley. The railroad is the main freight route to the Interior, and shortly the highway will also connect with the Interior system at Nenana.

The Denali highway, a graveled road, connects Paxson on the Richardson highway with McKinley Park, but this road is just north of the study area.

The Kenai Peninsula is traversed by the Seward-Anchorage highway and the Sterling highway. The Seward-Anchorage highway swings around Turnagain Arm and then generally runs south to Seward. It has a branch to Sunrise and Hope. The Sterling highway leaves the Seward-Anchorage road, and runs through Coopers Landing to Soldatna and thence south along Cook Inlet to Homer. A branch from Soldatna leads to Kenai and Nikishka, communities on western Kenai Peninsula.

The road system just described provides only a very widely-spaced transportation net. However, it does provide the primary access that has been found necessary to stimulate exploration and development. Such primary nets can cut the distance that must be traversed by off-highway means from hundreds of miles to tens of miles. The vehicles for off-highway travel have traditionally been by tractor train or airplane; during the last few years the helicopter has taken an important place in reconnaissance exploration activity.

Most communities or mining areas have some kind of airstrip which allows delivery of small amounts of freight. For larger amounts it is necessary to use tractor trains, preferably in late winter while there is still snow and the ground is frozen.

Finally, along the coast, transportation by boat or barge is available. For the Prince William Sound province, this is the only practical means of supplying exploration programs or developing mines.

CLIMATIC ENVIRONMENT

The study area lies across three climatic zones. The northern part has a continental climate, with extremes of high and low temperatures and low precipitation; the coastal strip has a maritime climate, with moderate temperatures and heavy precipitation (up to 160 inches annually). The intermediate areas has a "transitional" climate, somewhat influenced by the fact that much of it lies at high elevations. The climate is not considered harsh, and perhaps the greatest deterent to mining operations would be heavy snow falls in certain areas; greater than 200 inches annually in northern Prince William Sound.

Likewise, the area encompasses several permafrost zones. Along the coast the ground contains no permafrost and in the northern part permafrost is "discontinuous", that is,certain areas are permafrost free. In between is the "sporadic" zone, where only isolated masses of frozen ground occur. The presence or absence of permafrost has a great effect on the construction of any surface works that must accompany mining.

The entire area has been glaciated, and a large part is covered by existing glaciers (several plates show their distribution). Consequently, much of the area is inaccessible for prospecting, and, in fact, unfit for most human activities. The glaciers and generally mountainous terrain make the region scenically beautiful.

Partly for this reason, the Bureau of Land Management has recently proposed to classify the eastern part of the area as a "National Scenic Area." This would be divided as follows: Mt. Sanford Wildlife Development and Utilization Area (1.9 million acres) ; Mt. Bona Wilderness Preservation Area (2 million acres); and Chitina Valley Resource Area (6.6 million acres). It is further proposed that 6.2 million acres be studied for possible future additions (some of this is outside the study area). Plate 3 shows the proposed classification areas.

In the Mt. Bona Area, mining or any other type of resource development, would not be allowed. In the other two, mining would be allowed, but under conditions that would make it virtually impossible (Bureau Outdoor Recreation, p. 23, Public Law 88-607 88th Congress, H.R. 5159). Any assessment of the economic importance of the study area must take these proposals into account.

TECTONIC SETTING

The gross tectonic pattern of all of Alaska shows alternating anticlinal uplifts and intervening geosynclines, all curving from southeast to west to southwest. The age of warping that produced these structures is generally Jurassic - Cretaceous. The ages of the rocks exposed in the uplifts is older, but the downwarps that flank the anticlines contain clastic wedges of sedimentary rocks of the same ages as the warping.

In the area under consideration, generally south central Alaska, the pattern of warping is more compressed and complex than farther north. The picture is further complicated by the presence of numerous large thrusts and lateral faults. Plate 15 shows the main elements; from south to north are the Yakataga geosyncline (Tertiary), the unnamed geanticline, the Chugach Mountains geosyncline (Early-Late Cretaceous) the Seldovia geanticline (Middle Jurassic-Cretaceous) the Matanuska geosyncline

(Mid Jurassic to Late Cretaceous) and the Talkeetna geanticline (Middle Jurassic-Cretaceous).

GENERAL GEOLOGY

The generalized geologic map of the Prince William Sound - Wrangell Mountain area (Plate 1) was compiled from the Tectonic Map of North America (King, 1968) and from the Geologic Map of Alaska (Dutro and Payne, 1957). Generally, the extent and subdivisions of the units reflect King's map while the formational designations are taken from the Dutro and Payne map, with some changes in stratigraphy reflecting more recent literature. The structure is taken directly from King (1969). The base map for Plate 1 is Alaska Map B of the U.S. Geological Survey as are all the ore deposit location overlays (Plates 4 to 14).

BEDDED ROCKS

Precambrian or Lower Paleozoic (P€, P_z):

The oldest layered units in the area occur in the northeast corner of the map area and make up the Birch Creek Schist (Plate 1). The age of the Birch Creek Schist was formerly considered to be Precambrian but the most recent studies in the area of this report by Foster (1970) indicate that it is probably of early Paleozoic age in part. This unit includes some augen gneisses that have been mapped in Canada as the Pelly Gneiss.

The Birch Creek Schist is highly metamorphosed and has been subject to a number of episodes of metamorphism and deformation. The fold structure is complex and the details have not been worked out. The lithology of the Birch Creek Schist is also highly variable but consists mostly of quartz-biotite schists and quartzo-feldspathic gneisses with variable proportions of micaceous quartzites, garnet schists and

amphibolites (see Foster, 1966, 1970, and Moffit, 1954a, for details of the lithology).

Cambrian to Devonian (Pz_1):

Lower Paleozoic metamorphosed rocks occur in two areas along the Denali Fault (upper portion of Plate 1). The unnamed unit north of the fault in the upper-central portion of the map has been described by Moffit (1954a) as metamorphosed slates, quartzites, quartz sandstones, cherts, and mica schists with very prominent limestone beds. The limestones contain Middle and Late Devonian fossils. The Lower Paleozoic units between the slices of the Denali Fault in the northwest portion of Plate 1 represent little known metamorphosed marine and volcanic units. They probably are correlative with the Totatlanika Schist, at least in part, that have been described by Wahrhaftig (1968) just to the northwest of the area of Plate 1. Generally the rocks consist of gneisses and schists that are mostly of volcanic origin, but phyllites and argillites are common locally. Rocks of similar age and lithology are also present as small masses and fault slices between the two areas of Lower Paleozoic rocks differentiated on Plate 1; they are not shown because of their limited outcrop area.

Mississippian to Permian (Pz_2):

Rocks of late Paleozoic age are widespread in the area. They are best differentiated in the area south of the Wrangell Mountains, where, along both sides of the Chitina River, they are represented in the Strelna Formation of probable Mississippian age. This unit consists of bedded basalts, tuffs, and interbedded argillites and silicified limestone (Moffit, 1938). In addition, the Skolai Group of Permian age has been defined on the north side of the Chitina River and consists of slightly metamorphosed marine units, volcanic flows, and volcano-clastics (Smith and MacKevett, 1970).

In the Alaska Range to the south of the Denali Fault, extensive outcrops of upper Paleozoic rocks occur. Some of the more recent work, (Hanson, 1963) shows Mississippian (?) to Permian graywackes, limestones, and andesitic and dacitic pyroclastics in the Rainbow Mountain area. Even more recent work on the fossils at that locality by Petocz (1970) indicates that these units should be considered Pennsylvanian and Permian in age. Rose (1967) extended these units to the east along the south side of the Denali Fault to the Upper Chistochina River. Here he distinguished almost 9,000' of andesitic and dacite flows and tuffs of Pennsylvanian and Permian age which he correlates with the Chisana Formation, and 12,000 feet of argillites with basalts and diabases of Pennsylvanian and Triassic (?) age which he includes under the Mankomen Formation. Moffit (1954a) summarizes much of the earlier work in this area and includes descriptions of the Mankomen and Chisana Formations as originally defined.

Extensive upper Paleozoic rocks are known to occur on the north side of the Wrangell Mountains but little of the recent work in the area has been published to date. Moffit (1954a), however, presents a summary which indicates that the dominant lithology of these rocks consists of tuffs and basalts with variable amounts of marine sediments. Compared to the Mankomen and Chisana Formations in their type areas to the northwest, the upper Paleozoic rocks here probably show a much higher percentage of volcanic units.

Triassic and Jurassic (TR, J):

Lower Mesozoic rocks are also widespread in the area. One of the best sequences occurs along the south side of the Wrangell Mountains. The units here include the Triassic Nikolai Greenstone (formerly considered to be of Permian age) which consists

of at least 6,500 feet of dark amygdaloidal basalt; the Chitistone Limestone which is approximately 1,900 feet thick and of Upper Triassic age; 1,100 feet of Upper Triassic Nizina Limestone, and approximately 2,000 feet of Upper Triassic McCarthy shale (Moffit, 1938). The Jurassic rocks of the Wrangell Mountain area are unnamed and consist of scattered outcrops of tuffaceous slate, conglomerate, black shale, and some minor sandstone and limestone.

The lower Mesozoic rocks of the west-central portion of the area consist of a thick sequence of poorly differentiated shales, argillites, and graywackes, with local limestones and 6,000–9,000 feet of volcanic clastics and greenstones. In the Talkeetna Mountains, the volcanic clastics are known to be of Early Jurassic age and are designated as the Talkeetna Formation (Capps, 1940; Detterman and Hartsock, 1966).

Unnamed Triassic rocks are also known from the west flank of the Chugach Mountains on the Kenai Peninsula and consist of at least 2,000 feet of dark cherts interstratified with shale, sandstone and limestone. An unnamed Lower Jurassic unit occurs in the vicinity of Seldovia near the tip of the Kenai Peninsula and consists of tuff and volcanic agglomerate; it is probably equivalent with the Talkeetna Formation to the north. Middle and Upper Jurassic units are not known along the west side of the Chugach Mountains but are present in the Mantanuska Valley to the north of Cook Inlet and along the west side of Cook Inlet (off Plate 1). They consist of the Tuxedni Formation which is composed of up to 7,000–8,000 feet of sandstone, shale, conglomerate, and arkose, several thousand feet of red and gray argillaceous marine shale of the Chinitna Formation; and 2,000–5,000 feet of shale, arkose, and comglomerate of the Naknek Formation (Kelly, 1963).

Cretaceous (Kv and K):

The Chugach Mountains are almost entirely composed of a thick monotonous section of alternating dark shales and graywackes known as the Valdez Group. The rocks of the Valdez Group were deposited on the south flank of the Seldovia geanticline (see Plate 15) which lay approximately along the present axis of the Chugach Mountains. The few fossil localities indicate a late Cretaceous age but the unit may be of Jurassic age in part. The total thickness of the Valdez Group is unknown due to tight foldings, steep dips, and probable faulting. However, judging from its very extensive outcrop area, the unit must be extremely thick (Moffit, 1954b).

During much of Cretaceous time, a continuous trough, the Mantanuska geosyncline, (Plate 15) lay in an arc approximately parallel to and north of the present Chugach Mountains from the end of Cook Inlet to the Chitina Valley. The remnants of the rocks deposited in this geosyncline are found in two areas. In the Mantanuska Valley at the north end of Cook Inlet, the Mantanuska Formation consists of about 4,000 feet of marine graywacke sandstone with some mudstone and conglomerate (Grantz, 1964). In the area just south of the Wrangell Mountains, correlative units are seen in almost 13,000 feet of Cretaceous sediments which consist mostly of marine sandstone and siltstone with subordinate conglomerate, shale and mudstone. This Cretaceous section has been divided into five formations, the Kennicott, Moonshine Creek, Schulze, Chititu, and MacColl Ridge Formations by Jones and MacKevett (1969)

Tertiary Orca Group (To):

A thick sequence of rocks known as the Orca Group occurs along the borders of Prince William Sound. Moffit (1954b), and Miller, Payne and Gryc (1959) considered that the Orca Group rocks were of late Cretaceous age and were genetically related

to the Valdez Group which encircle it to the north. However, more recent work by Plafker and MacNeil (1966) utilizing new fossil localities indicates that the Orca Group is of Tertiary age. The lithology of the unit is quite similar to the Valdez Group rocks to the north but more variable. The Orca Group consists dominantly of slate and graywacke (especially in the upper portion) but also contains altered basic extrusive and intrusive units several thousands of feet thick (the "greenstone" often associated with the copper deposits of Prince William Sound) and local beds of arkose, sandstone, conglomerate and limestone. The Orca Group may easily be as thick as 30,000 feet (Moffit, 1954b).

Quaternary and Tertiary

The relatively undeformed Recent, Quaternary and Tertiary rocks in the area have not been differentiated on Plate I. These include the extensive units in Cook Inlet, the Copper River Basin, the Gulf of Alaska, and in various intermontane basins. They are probably of most interest to petroleum geologists and have been discussed in detail by Kelly (1963), Miller, Payne, and Gryc (1959), Plafker (1967), Miller and Dobrovolny (1959), and Wolfe and others (1966).

IGNEOUS ROCKS

Ultramafic Rocks

Peridotites and dunites of unknown age and possibly diverse origins occur in small masses along the north and west flanks of the Chugach Mountains and just south of the Denali Fault in the Alaska Range. Along the west and north edge of the Chugach Mountains small stocks of dunite are located near Seldovia at the tip of the Kenai Peninsula (Guild, 1942) where chrome ore has been mined intermittently near Eklutna about 30 miles northeast of Anchorage (not shown on Plate 1 because of size)

(Rose, 1966b), and at the south end of the Copper River Basin near Tonsina (Moffit, 1938, Ragan and Grybeck, 1965). A number of similar plutons of dunite and peridotite also occur just to the south of the Denali Fault in the northwest portion of Plate 1. They are not shown because of their small sizes, but occur in a discontinuous belt more than 50 miles long on both sides of the Richardson Highway (see Hanson, 1963; and Rose, 1965, 1966a, and 1967).

Jurassic-Cretaceous Plutonic Rocks (KJi)

Large batholithic masses of plutonic rocks similar to batholithic rocks in the Coast Ranges of British Columbia and in the Sierra Nevada of California occur in the Talkeetna Mountains. Their composition generally varies from granodiorite to quartz diorite with local quartz monzonite and diorite. Within the Talkeetna Mountains, one such body has been dated as Jurassic by Grantz and others (1963), however, it is probable that these rocks are Cretaceous in part.

In the northeast portion of the area, several smaller plutons invade the Birch Creek Schist and Paleozoic units. Along the Alaska Highway there are three such bodies ranging in composition from diorite to granite. These give a Cretaceous age by lead-alpha methods (Holmes, 1965) while another just to the north of Plate 1, of granodiorite composition, is dated as late Triassic or early Jurassic (Foster, 1970).

Tertiary Plutonic Rocks (Ti)

The Tertiary intrusive rocks within the area occur in a broad northeast trending belt and consist of small epizonal plutons. In Prince William Sound, Lanphere (1966) has dated a number, whose composition varies from quartz diorite to quartz monzonite, as early Oligocene by K-Ar methods. Those in the area to the south of the Wrangell Mountains are considered to be of Tertiary age on the basis of geologic evidence and

have a composition that varies from felsic to intermediate (MacKevett, 1965). The relatively large pluton in the northeast portion of Plate 1 just east of the Taylor Highway-Alaska Highway junction is of granodioritic composition. Recent work by Foster (1970) indicates that it is probably of Mesozoic age although that designation is questioned.

Tertiary Volcanic Rocks (Tv)

The largest mass of Tertiary volcanic rocks occurs in the northeast portion of the area along the Taylor Highway. The composition of these rocks varies from felsic to mafic with some basalts and gabbros; their age is based on geologic evidence (Foster, 1970).

Quaternary Volcanic Rocks (Qv)

The Wrangell Mountains are composed of a very thick pile of volcanic flows and agglomerates of Quaternary to Recent age (although earlier work by Moffit (1938) indicates that they are of Tertiary age in part). The rocks are hypersthene or hornblende andesites predominantly but local variations from olivine basalt to dacite are not uncommon (Mertie, 1938).

MINING AREAS

Figure 2 shows the Mining Regions and Districts which are covered in this report (Ransome and Kerns, 1954). These Regions and Districts, as used by the U.S. Bureau of Mines, have a historical basis in that they are derived to some extent from the old mining and recording districts, which consisted of groups of properties that formed isolated entities. When the mining districts acquired legal status by court action, their boundaries were generally defined on the basis of watersheds, which, of course, form irregular areas. The area described in this report, however, consisting as it does

of several quadrangles, must necessarily be bounded by straight lines. Both the mining region and quadrangles systems have merit, and it is necessary here to use both, and to reconcile them as best as possible.

The area of this report, bounded by the eleven quadrangles named earlier, contains parts of four regions (see Figure 2). These are the Copper River, Kenai Peninsula, Cook Inlet - Susitna, and Yukon River.

The Districts contained in the study area are as follows:

Copper River Region

- Chistochina
- Nelchina
- Nizina
- Prince William Sound
- Yakataga

Kenai Peninsula Region

- Homer
- Hope
- Seward

Cook Inlet - Susitna Region

- Anchorage
- Valdez Creek
- Willow Creek

Yukon River

- Tok
- Chisana
- Fortymile

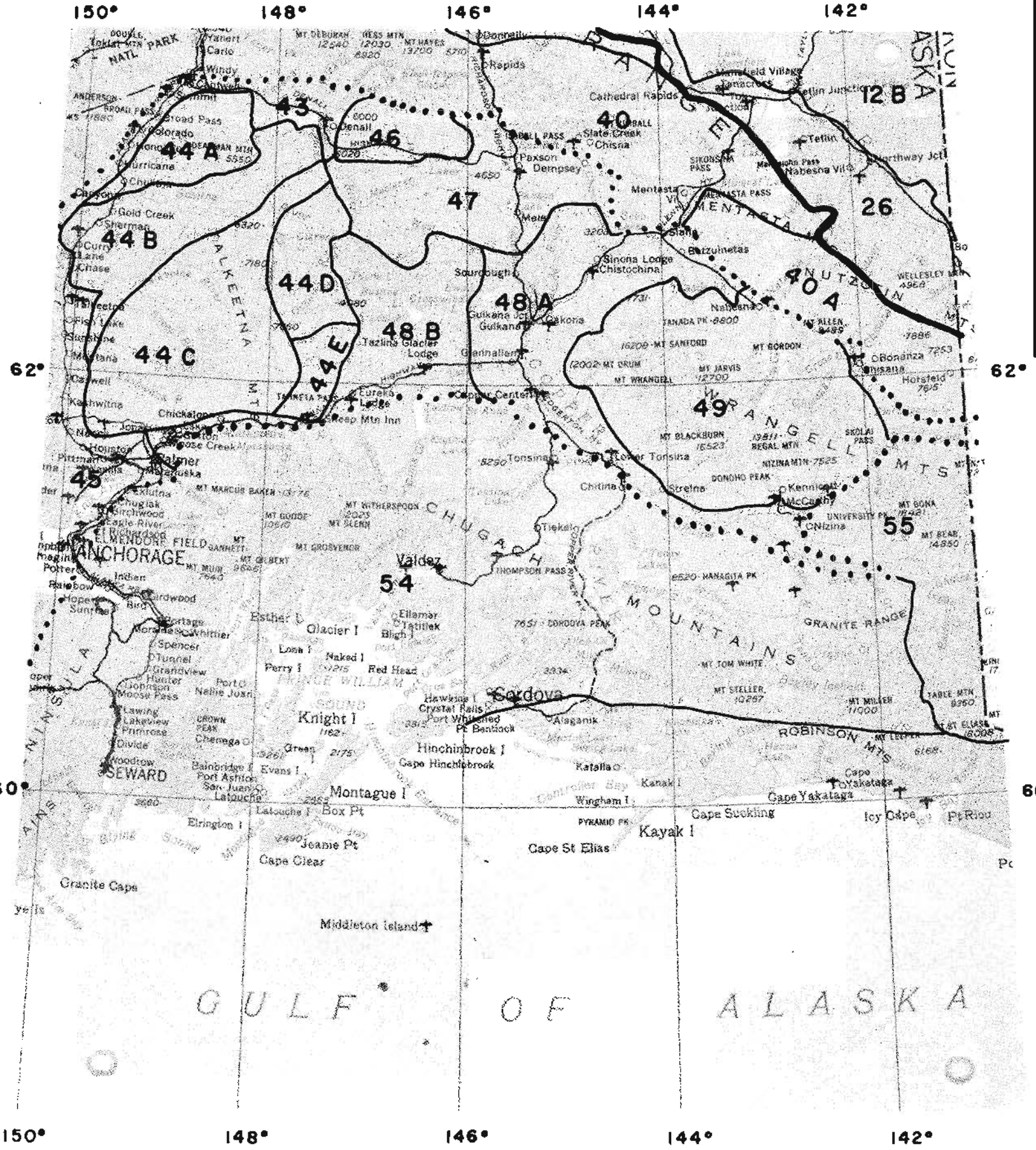
These Districts generally represent actual mining areas or several associated areas. An attempt has been made in Figure 5 to show the main areas of mining within each District. The numbers in parentheses in this section refer to the numbers circled on Figure 5. The Districts are described in the following pages.

FIGURE No. 3

PRINCE WILLIAM SOUND-WRANGELL MTS. AREA ALASKA PHYSIOGRAPHIC PROVINCES

SCALE OF MILES

0 50 100 150



Legend

- Boundary, Major Physiographic Divisions
- Boundary, Physiographic Provinces
- Boundary, Physiographic Sections

12	Yukon-Tanana Upland
12B	Eastern Yukon-Tanana Upland
26	Tanana-Kuskokwim Lowland
40	Alaska Range (Central and Eastern)
40A	Mentasta-Nutzotin Mts.
43	Broad Pass Depression
44	Talkeetna Mts.
44A	Chulitna Mts.
44B	Fog Lakes Upland
44C	Central Talkeetna Mts.
44D	Clarence Lake Upland
44E	Southeastern Talkeetna Foothills
45	Upper Matanuska Valley
46	Clearwater Mts.
47	Gulkana Upland
48	Copper River Lowland
48A	Eastern Copper River Lowland
48B	Lake Louise Plateau
49	Wrangell Mts.
54	Kenai-Chugach Mts.
55	St. Elias Mts.

After Wahrhaftig, USGS pp 482.

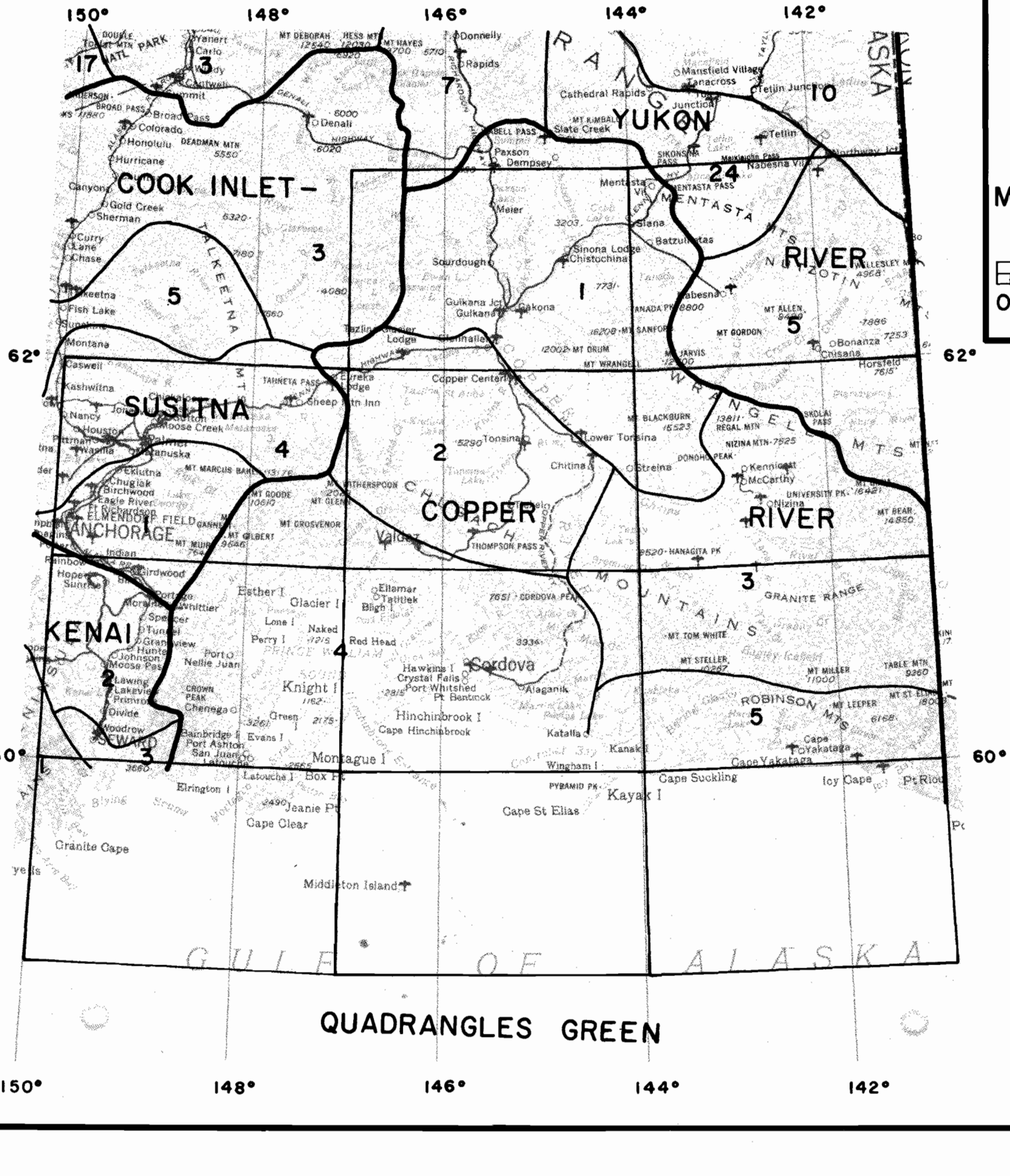
FIGURE No. 2

PRINCE WILLIAM SOUND-WRANGELL MTS. AREA ALASKA

MINING REGIONS & DISTRICTS

SCALE OF MILES

0 50 100 150



QUADRANGLES GREEN

Legend

Yukon River Region

3 Bonnifield
5 Chisana
7 Delta River (Donnelly)
10 Fortymile
17 Kantishna
24 Tok

Copper River Region

1 Chistochina
2 Nelchina
3 Nizina
4 Prince William Sound
5 Yakataga

Cook Inlet - Susitna Region

1 Anchorage
2 Redoubt
3 Valdez Creek
4 Willow Creek
5 Yentna

Kenai Peninsula

1 Homer
2 Hope
3 Seward

Copper River Region

Chistochina District

Berg and Cobb in U.S. Geological Survey Bulletin 1246 (1967, p. 39) list two main mineralized areas, the Slana area (1) and the Kotsina - Kuskulana area (2).

The deposits of the Slana area (1) occur generally in the northern part of the District, near the Tok Cutoff. Most of the prospecting in the area was done before 1940 but during the last few years work by Federal and State agencies has revived interest in the area, and considerable work is being done on potential deposits of the porphyry copper type.

Richter (1964) has described the geology of the Slana area. Bedded rocks consisting of interlayered sediments and volcanics of probable Permian age are intruded by stocks, dikes, and sills of generally acidic composition.

Three small gold placers occur in the area and a number of veins containing lead, silver, and copper are exposed. Ore controls have not been worked out and veins are not confined to the igneous rocks or the contact zones. Richter's (1965) geochemical results have been subjected to trend surface analysis (Heiner and Wolff, 1967). It would appear from the distribution of trace amounts of copper and molybdenum that the possibility exists for the occurrence of large low-grade deposits of the porphyry copper type.

The Kotsina - Kuskulana area (2) is in the southern part of the Chistochina District, north of the Chitina River and close to the town of Chitina. The geologic environment here is similar to that at Kennicott, and most of the deposits occur either in the Nicolai greenstone or the overlying Chitistone limestone near acidic intrusions. The copper deposits occur as veins or disseminated deposits in sheared or brecciated

rock. Unlike the Kennicott area forty or fifty miles to the east, the area contains no large mines, and production has been almost nil. Berg and Cobb (1967, p. 39) list 44 prospects in the area.

Nelchina District

This District lies to the south and west of the Chistochina District, and west of the Copper River; it generally extends west and south to the divides.

The District has had very little mineral production, all of which has been in gold. Most of the District lies in the Chugach Mountains; about one third of it consists of lower country north of the mountains. The rock units of the District are chiefly the Cretaceous graywackes and shales (Valdez Group) and the late Paleozoic volcanic clastics (Pz2 on Plate 1).

The ore deposits consist mostly of northerly striking gold quartz veins. Most of these are in the area around Tonsina Lake (3), although several are near Chitina (4). In addition to gold veins, there are a few that contain manganese, chromite and silver. A dunite sill near Tonsina contains some chromite. There are almost no copper prospects in the District.

Nizina District

This District contains most of the drainage of the Chitina River and the drainage of the Bremner. It contains the famous copper mines of Kennicott (5), and smaller districts such as Nizina (6) and Hanagita - Bremner (7), as well as small prospects throughout the southern Wrangell Mountains.

The geologic environment that has accounted for the greatest mines is the contact between Nicolai Greenstone, altered amygdaloidal basaltic flows of Triassic age, and the overlying Chitistone Limestone, of Upper Triassic Age. The formations

occur in the Triassic and Jurassic unit shown on Plate 1. Copper deposits occur in both units, but the Kennecott mines were in the Chitistone Limestone, as massive bodies in wedge shaped lodes of almost pure chalcocite with dimensions in the hundreds of feet. Other replacements and fillings along tensional openings formed during faulting. Although some geologists consider that the source of the copper was in hydrothermal solutions coming from granitic plutons at depth, the association of limestone and greenstone strongly suggests that the copper originally occurred in the greenstone (as it does today) and that this copper was remobilized and deposited at favorable sites in the limestone. The greenstone also contains low-grade disseminations and large chunks, some of which, when released by weathering, have accuumulated in the alluvium to form copper placers chiefly at Dan Creek.

Gold placers occur in the streams near Nizina and at Dan Creek. Farther south, in what has been called the Hanagita - Bremmer area, gold placers were worked on Golconda Creek (7) and the Little Bremner River (7). At Golconda Creek, fairly extensive gold lode mining was carried on before World War II. The lodes occur as quartz veins in slate and graywacke of the Cretaceous Valdez Group. Other gold quartz veins occur on the lower Bremner River.

A nickel-copper prospect occurs at Spirit Mountain south of Chitina. It lies in sills of peridotite and pyroxenite in metamorphics of the late Paleozoic (Pz 2) unit of Plate 1. The deposits in the sills have, at least heretofore, been considered too small to be of commercial interest.

Prince William Sound District

This District consists generally of the areas draining into Prince William Sound and the Gulf of Alaska as far east as the Copper River. The islands of the Sound are also included.

Referring to Plate 1, it is seen that most of the area is underlain by eugeosynclinal sediments of the Cretaceous Valdez Group; chiefly graywackes, slates and some greenstone. The islands and eastern shores of the Sound consist of the Orca Group of Tertiary age. Tertiary intrusives of felsic to intermediate composition occur at many localities.

Berg and Cobb (1967, p. 66-68) list nine mining areas and 63 mines and prospects in the District. The Sound penetrates the well mineralized Chugach Range, and the combination of good exposures provided by the long shoreline, and easy water transportation allowed prospectors to find many prospects that otherwise might have been overlooked.

In spite of the large number of prospects listed by Berg and Cobb, the major areas may be narrowed to three in number: the northeastern part, from Valdez Arm to Port Fidalgo (8), the southwestern part, principally Latouche and Knight Islands (9), and the northwestern Sound, around Port Wells (10). Copper occurs in all of these areas, but the northwestern area has not produced.

The northeastern area contained a number of substantial producers of copper but the Ellamar, about 20 miles southwest of Valdez, was its largest producer, ranking only behind the Latouche mines. The Ellamar mine, which is considered representative of others in the area, occurs as a replacement in a shear zone in sediments of the Orca Group. Although Moffit, (1954b, p. 298) states that the ore body has "no evident connection with nearby greenstone lavas", he also states (Moffit and Fellows, 1950, p. 47) that all of the deposits in the Prince William Sound district "are associated more or less with greenstone lava flows and intrusives that are interbedded with the slate and graywacke of the Sound area."

The major producer in the southwestern area was the Latouche Island group which consisted of three bodies in a fault zone in graywacke and slate, altered near the ore bodies to a cherty rock. On Knight Island the deposits are in greenstone.

In the northwestern area (10), although there are numerous prospects, very little development work has been done, and no mining. Moffit and Fellows (1950) mention a shear zone in greenstone which contains chalcopyrite and cupriferous pyrite on Glacier Island. Mineralized shears have also been found in granite near Cedar Bay. Smaller undeveloped prospects are numerous throughout the area.

The Prince William Sound District has also been a substantial producer of gold. The deposits are chiefly in quartz and calcite veins. The most productive mine was the Cliff mine, near Valdez. The Ramsey - Rutherford mine, in the same vicinity, was the second greatest producer. Both of these are in graywacke and slate. In the northwest area, the Granite mine, on the west side of Port Wells, lies in a shear zone in granite.

Yakataga District

This District lies between the Copper River and the Canadian border and south of the crest of the Chugach Mountains. The area contains many glaciers, which restrict the exposures. Most of the District is underlain by Tertiary sedimentary rocks which contain coal and oil, but which are poor host rocks for metallic minerals. A narrow strip in the north contains Mesozoic sedimentary rocks. No commercial deposits are known and Berg and Cobb (1967, p. 73) list only one prospect, a copper deposit in volcanic rocks near the Bagley ice field.

Kenai Peninsula Region

Homer District

A small part of the eastern part of the Homer District is contained in the Seward and Blying Sound quadrangles. The District contains the Kenai Mountains on the east and the Kenai lowlands on the west. The lowlands comprise an important petroleum province, but they contain few metallic mineral deposits.

The Southeastern part of the District contains the important Nuka Bay gold district, (11), which consists of narrow veins and stockworks in graywacke and slate. Some of these were very rich in gold. Near the southwestern end of the Peninsula, chromite deposits in ultramafic rocks were mined during World Wars I and II. That part of the Homer District lying within the study area occupies a barren zone between the Nuka Bay gold area and the north-trending gold zones of the Seward and Hope Districts.

Hope District

This District lies generally south of Turnagain Arm; its eastern boundary is the drainage divide between Cook Inlet and Prince William Sound. The mineralized area (12) extends south from the end of Turnagain Arm to the boundary with the Seward District; it is continuous with the mineralized areas of the Seward District (13).

The mines of the Hope District are among the oldest in Alaska; placers at Sunrise were worked before the Klondike Stampede, and lode mining began in 1898. Although some prospecting was done for base metals, only gold was produced. Two types of lodes occur in the district: fissure veins and mineralized dikes (Berg and Cobb, 1967, p. 79). The fissure veins, some of which are as wide as five feet, consist of quartz or calcite. The country rock is slate and graywacke. The mineralized

dikes consist of small quartz veins lying in porphyritic dikes; they produced very little gold.

Seward District

This District lies south of the Hope District in the drainage of Resurrection Bay and Blying Sound. The gold lodes of the District (13) are in a continuation of the gold belt of the Hope District, and are fissure veins of the same type. None were productive. Several copper prospects are known on Resurrection Peninsula. They are in quartz, calcite or epidote veins; the chief copper mineral is chalcopyrite. The veins occur in basic lava flows or gabbro or peridotite. No production is recorded.

Cook Inlet - Susitna Region

This Region is divided into the Anchorage, Redoubt, Valdez Creek, Willow Creek, and Yentna Districts. Of these, only the Anchorage and Willow Creek, and a small part of the eastern edge of the Valdez Creek Districts lie in the study area.

Anchorage District

The Anchorage District lies between Turnagain Arm and Knik Arm and the divide to Prince William Sound. It contains therefore, the Cretaceous Valdez Group, the Triassic-Jurassic, some Tertiary, and a large area of Quaternary volcanics (see Plate 1). The Valdez group contains slates and graywackes; the Triassic-Jurassic includes also greenstones and volcanic clastics.

The District has not been a very large producer. Most of the prospects are narrow quartz veins worked for their gold content. They occur chiefly near Girdwood on Turnagain Arm (14). A copper prospect in the form of a sulfide vein occurs in greenstones of the Triassic-Jurassic units northeast of Matanuska. The chief copper mineral is chalcopyrite; it also contains zinc and silver.

Willow Creek District

This District lies north of the Anchorage District, and includes the drainages of the Matanuska River and the lower easterly tributaries of the Susitna River. It contains the Triassic-Jurassic unit with extensive greenstones, and a large quartz diorite batholith of the Cretaceous-Jurassic intrusive unit. There are also extensive areas of Tertiary rocks that contain coal.

The district has been a significant producer of gold, partly from placer mines, but mostly from the lodes of the Willow Creek area north of Palmer (15). The lodes are quartz veins, almost all of which are in the quartz diorite of the batholith. The veins are of two types (Berg and Cobb, 1967, p.31). Both are quartz veins, but the older ones are non-productive. The productive veins are generally from one to three feet wide and contain small amounts of base metal sulfides.

There are also two or three copper prospects reported by Berg and Cobb. One, a zone in the batholith containing disseminated sulfides, is in the Willow Creek area. Another is on Sheep Mountain (16). A large iron stained area on the mountain has led to the speculation that a disseminated deposit may lie at depth.

Valdez Creek District

Although this District contains the gold and copper deposits around Denali, they are outside the area of this study.

Yukon River Region

Two of the southeastern Districts of this large Region lie within the study area: the Tok and the Chisana. A very small corner of the Fortymile district also is contained.

Tok District

This lies on the north flank of the Alaska Range in the vicinity of Mentasta Pass. Only one area, in the Nabesna quadrangle near Mineral Lake, (17), is listed by Berg and Cobb (1967, p. 238). Here a shear zone lies in argillite and limestone probably of the Pz 1 unit of early Paleozoic age. Quartz and disseminated sulfides are contained in the shear.

Chisana District

The Chisana District, containing generally the drainage of the Nabesna, the Chisana, and the White River, lies between the Canadian Border, the Tanana River, the crest of the Wrangell Mountains and the Nabesna drainage. The Denali fault runs through the District. The rocks are mostly Precambrian or Paleozoic, but faulting and thrusting have brought large slices of Mesozoic rocks into the area. Several large batholiths of Cretaceous - Jurassic intrusive rocks occur, as well as younger volcanics of the Wrangell Mountains. A number of mines and important prospects are contained within its confines, and more important, the potential for the discovery of important copper deposits is considered good.

Prospecting for both gold and copper dates back to gold rush days, and several of the more conspicuous prospects were located in the very early years of the century. However, significant operations on a commercial scale began, as they did in most districts of Alaska, with a stampede for placer ground. The Chisana (Shushana) stampede in 1913, one of the last, brought many men to Chisana, but the area was so isolated and the placers so restricted that a large viable placer mining industry did not develop. Thus a local source of capital for prospecting was not available.

The mines and prospects of the District are spread over a large area, but for convenience, a number of sub-areas can be defined. First, in the Chisana-Bonanza area near the Chisana River (18), placer gold was produced for the next few years after 1913. Prospecting stimulated by this activity resulted in the discovery of several gold quartz veins, some of which carry green copper stain (Capps, 1916, p. 119). None of these veins has been productive.

The Nabesna mine (19), near the west side of the District, was the only lode from which there has been any production. This is a contact deposit formed where quartz diorite intrudes Triassic limestone. From 1930 until World War II it produced almost $2 million in gold.

At Orange Hill (20), near the end of the Nabesna Glacier, about 14 miles from Nabesna, in a prospect known since early in the century, copper, gold and molybdenite mineralization occurs in quartz stringers cutting a quartz diorite stock (Moffit and Knopf, 1910, p. 58). Work in recent times has led to the hope that this may be a disseminated porphyry type deposit. As far back as World War II, this prospect was known to contain large tonnages of sub-economic grade material in the igneous rock (Berg and Cobb, 1967, p. 208).

East of Chisana, near the Snag River (21), several copper prospects occur as veins or disseminations in volcanic flows and breccias.

The first attraction for prospectors in the interior of Alaska was copper from the Chisana District. Objects made from native copper were bartered by the Natives, and stories placing their source on the White River (22), brought Arthur Harper to the area in the early 1870's (Brooks, 1953, p. 316). In the alluvium of many streams of the area, and also in the Nizina District (6), farther south, (Miller, 1946, p. 98),

nuggets of native copper are plentiful. These were weathered from greenstones of late Paleozoic and Triassic age. The native copper occurs chiefly as an oxidation product, but also as a primary mineral (Moffit and Knopf, 1910, p. 56).

Although no commercial deposits have been found in the greenstones, these rocks contain a tremendous amount of copper, and indicate that the district has the potential of containing several mines.

During the past few seasons, the District has received the attention that it deserves; a number of old prospects have been looked at and some new ones found. These are all of the disseminated copper type, holding out the promise of large low-grade mines. The following are only some of the better known: a new prospect has been discovered on Bond Creek (23), north of Orange Hill; two old ones have been reactivated at Horsfeld and Baultoff Creeks (24) in the extreme southeast corner of the Nabesna quadrangle; a large block of claims was staked in 1970 just south of Horsfeld; and others have been staked between Horsfeld and Orange Hill.

Fortymile District

The extreme southeast corner of this district is contained in the Nabesna Quadrangle. It is the only part of the study area that lies north of the Tanana River, and is mostly occupied by the flats of the upper Tanana. There are no known mineral deposits in that part of the District that is contained in the study area.

INFORMATION RECORDED FOR MINERAL OCCURRENCES

Prior to preparing the tabulation of mineral occurrences that follows this section, the State Division of Geological Survey Kardex File was searched, and the information abstracted was stored on a magnetic tape.

The information recorded for each property includes:

1. The mining district in which it is located.
2. The quadrangle number (See Plate 2).
3. A serial number.
4. Location on a 1:250,000 scale quadrangle map in X and Y coordinates, stated in inches. See page for use of coordinates.
5. The latitude and longitude of the property.
6. The year discovered or staked.
7. The property or claim names.
8. Lode or placer.
9. Active or inactive.
10. Patented or unpatented.
11. Number of claims within the property.
12. Land status code.
13. Development code.
14. Production code.
15. Reserves code.
16. An exploration activity code.
17. The elements that occur on the property.

A storage and retrieval program was written to enable access to these data under a variety of options including printed and plotted output.

The retrieval program provides a system whereby questions can be asked of the computer, answered by information retrieved from the stored information, and printed for the user. A system of programs to do this is written in Fortran IV for the IBM Model 40 computer. A complete description of the storage and retrieval program will be published as MIRL Report Number 24.

A subset file of all properties in the Wrangell Mountains - Prince William Sound area was stored on magnetic tape for use in this study. Several maps were produced at a scale appropriate for overlaying the geologic map (Plate 1) contained in this report. These are:

1. All mineral occurrences (Plate 4)
2. All metallic deposits (Plate 5)
3. Copper deposits (Plate 6)
4. Gold deposits (Plate 7)
5. Silver deposits (Plate 8)
6. Lead deposits (Plate 9)

7. Zinc deposits (Plate 10)
8. Iron deposits (Plate 11)
9. Molybdenum deposits (Plate 12)
10. All patented claims (Plate 13)
11. All active claims (Plate 14).

The Appendix to this report gives a complete listing of the information stored on the copper occurrence file. Most of the information given is self explanatory. That which requires decoding follows:

Merit Code:

0: Not coded
1: Of primary interest, producing, or past production
2: Of secondary interest
3: Of possible interest
4: Not of current interest

Development Code:

0: Unknown
1: None or insignificant
2: Preliminary
3: Ore blocked out
4: Extensive
5: Unassigned

Production Code:

0: Unknown
1: None or insignificant
2: Minor
3: Significant
4: Substantial
5: Unassigned at present

Exploration Code:

Agency

1: Bureau of Mines
2: Geological Survey
3: Private
4: Division of Geological Survey

Activity

1: Geophysics
2: Drilling
3: Exploration
4: Underground
5: Geochemical
6: Mill Test

TABULATION OF COPPER MINERAL OCCURRENCES

The records of the Alaska Division of Geological Survey and the literature of the U.S. Geological Survey and U.S. Bureau of Mines were examined in order to compile a comprehensive tabulation of mineral deposits. In the tables, only deposits that contain copper are listed. To supplement these sources early records from the recording offices associated with the study area were searched. When possible, informed persons have been consulted to make the lists more nearly complete and bring it more up to date. Even so, it can not be made entirely complete, and undoubtedly anyone familiar with a particular region can find shortcomings. The two most comprehensive sources for information on mineral deposits are the Alaska Division of Geological Survey files and U.S. Geological Survey Bulletin 1139 (Cobb and Kachadoorian, 1961). In the tabulations beginning on page , the reader is referred whenever possible to the appropriate references concerning the property in question. The prospects and mineral deposits are listed by quadrangle. (Plate 2 shows the location of the quadrangles in the report area.) Names of prospects and mines are then arranged alphabetically within each quadrangle.

A binominal coordinate system, used by the U.S. Geological Survey and by the Alaska Division of Geological Survey is used to locate mineral occurrences on maps of the Alaska Reconnaissance Topographic Series. The first number is the perpendicular distance from the west boundary of the quadrangle map: the second number is

the distance from the south-west corner of the map northerly until its intersection with a perpendicular from the occurrence. Therefore, an occurrence with coordinates (7.6, 10.1) would be 7.6 inches from the west boundary along a line extending east, normal to the west boundary, and 10.1 inches above the southwest corner of the map. Coordinates such as 2.1-2.3, 3.2-3.3 are used to delineate extreme limits of an area; this would be interpreted as 2.1 to 2.3 inches east of the southwest corner of the map and 3.2 to 3.3 inches north of the southwest corner.

Considerable time and effort was expended in an attempt to correlate properties mentioned in the various literature sources with the Alaska Division of Geological Survey Kardex file. This was done by producing a computer listing of the Kardex file and arranging this list as follows:

1. Alphabetically by name
2. By quadrangle
3. Sequential x coordinate
4. Sequential y coordinate

These lists were then compared with properties from other sources so as to identify single properties that might be listed under different names in different sources. Many properties were correlated with the Kardex System and are referenced in the tabulation.

Properties extracted from early claim records were extremely difficult to correlate with the literature. However, it was possible to make many correlations. Properties which could not be correlated are listed in the tables and referenced to the appropriate recording office, Volume and Page. Early recordings are generally listed as "Quartz claims" or "Placer claims," and for this reason their usefulness is limited.

TABULATION

OF

COPPER MINERAL OCCURRENCES

ANCHORAGE QUADRANGLE

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Agostino (7.55, 0.85) 61°04'N 149°03'W	B 520, p 153-155 B 587, p 173-176 B 642, p 188-191 B 722, p 40-41 B 798, p 12 B 810, p 17 B 849-G, p 407, 409, 413-417 B 926-C, p 187-188 B 1139 B 1246 KX 85-233 KX 85-64	Au, Ag, An, Cu, Pb, Mo, As	Agra Alaska Gold Exp. & Dev. Co.; Anna; Barnes; Edlund (gold); Monarch Min. Co.; Ruth; Stella; Styles; Tony; Bruno Agostin; Crow Cr. Min. Co., Inc.; Eagle (Girdwood Dist.); Jewel; Crow Creek.	1909. Gold bearing quartz. Stella claim developed in 1911 with 560' adit, 56' crosscut timbering and 52' of winzes. Three veins; 2 parallel striking E; one S18E. Visible traces of contact-metamorphism. Country rock: dark slates, banded argillites, fine graywackes and conglomerates intruded with bosses of light colored granites and sphantic acidic dikes. Pyrite, arsenopyrite, sphalerite, galena sulphides. Au-low grade at $15.90/oz.
Arch Group (7.2, 13.6)	Anchorage Recording Office Vol. 2, p 197, Vol. 3, p 16	Cu (?)	Red Bird, Red Boy, Bartholf, Eastman, Isaacs, McFarland, Long.	1911. 1912. On Arch Angle Creek.
Amco Group (7.6-7.9, 13.8) 61°47'N 149°10'W	B 662-A, p 47 B 692-D, p 183-184 B 714-D, p 206; B 907, p 178-179 KX 85-62 KX 85-110	Cu	C. Herbert; Long Tree Gulch; Lichtenwalner; C. Miller; Juneau	1916. Numerous claims. Private drilling. Gneissic diorite intrusive replaced by rusty-red gossan containing massive sulfides composed chiefly of pyrrhotite, pyrite, and chalcopyrite.
Bahrenberg (7.65, 1.0) 61°03'N 149°10'W	B 587, p 176-177 B 642, p 191 B 849-G, p 417-418 KX 85-21	Au, Cu	Treasure Box; Patchell; Hottentot; Hilltop Hostol Mine; Czaplin	1910. Quartz vein 1' wide striking N 11° E, dip 70°E. Veins are thin and irregular with arsenopyrite and minor amounts of chalcopyrite, galena, sphalerite, pyrrhotite, molybdenum, pyrite and magnetite. Veins occur in intensely silicified graywacke and slate.
Bailey (6.0-7.0, 14.6)	KX 85-308	Cu, Mo	One mile NW Archangel Creek. Rice, et al; Hartung	1967. Two claims.
Black Bear (8.6-10.5, 10.5-11.2) 61°38'N 148°45'W	B 1181-1, p 13-16 KX 85-25	Cu, Fe, W	Frank Clark; East of Clear Creek	1953.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Brenner (7.5, 0.8) 61°04'N 149°03'W	B 849-G, p 406, 408-410, 419 KX 85-233	Au, Cu	Bruno Agostino	1909. Thin irregular auriferous quartz veins with arsenopyrite, and minor amounts chalcopyrite, galena, sphalerite, pyrrhotite, molybdenum, pyrite and magnetite. Veins in intensely silicified graywacke and slate.
Blue Streak (6.1-6.2, 8.3-8.4) 61°27'N 149°15'W	KX 85-280	Cu, Fe, S	Gunther Pearson	1962. 18 Claims.
Capitol Hill Mine (15.7-16.0, .9-2.3) 61°03'N 148°08'W	B 712, p 33; B 1193; B 1139; KX 85-161; KX 85-196	Au, Ag, Cu	N. Shore Barry Arm	1800. Tunnel driven.
Cechowski (12.0-12.5, 13.0-13.5) 61°45'N 148°30'W	KX 85-244	Cu, Au	NW slope King Mountain; Clifford; Ethel; David; Terry; King Mt.; Werner	1956. Six claims.
C. G. & M. (6.6-6.8, 14.9) 61°50'N 144°10'W	KX 85-253	Cu, Au, Mo	M. Rice; Reed Cr. Area; Bailey; Egland; Murphy; Hartung	1956. Four claims.
Columbia Red Metals (24.1, 2.4) 61°05'N 147°10'W	KX 85-90	Cu, Au, Ag	Columbia Glacier; Idle; Harrison	1900.
Copper King Group (8.6, 16.0)	Anchorage Recording Office	Cu (?)	Albert Barrett, T. Hawkins, J. Cann, F. W. Hemlow, Frost	1906. On divide between Montana Creek and North Fork Kashwitna River.
Copper Queen	Anchorage Recording Office	Cu(?)	J. Hamilton, R.J. Kinney	1912. Two miles up Reed Creek from junction of Reed and Archangle Creek.
Crow Creek (7.55-7.9, 0.05-0.5)	AR 20, p 278, 820; p 70, p 164; B 259, p 92, 97; B 263 p 207; B 277, p 9, 40-43, 46; B 314 p 119-122; B 480, p 32, 38; B 520,	Au, Ag, Cu	Crow Cr. Consol. Min. Co.; Girdwood; Alaska Crow Cr. Mining Co.; Lindblad; Nutter-Dawson (Min.) Co.; Wadman	1897. Occurs in glacial moraine. 1903-04: hydraulic mining; 200' of sluice. 1904-12: largest hydraulic plant in area, 7-8" nozzles; 15-20 men employed. 1915: 16 claims, flume 8' wide, 3400' long, dam 37 1/2' high. Three distinct paystreaks; 1) high bench, 2) glacial deposits 3) stream deposits. Au: 2 types; 1) coarse & pale, 2) bright yellow; assay $15.00/oz. 1931: mining done; 6 men employed.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
	p 141, 161, 171-178; B 542, p 44; B 587, p 189-192; B 592, p 63; B 622, p 46; B 642, p 55, 181-186; B 662, p 46; B 692, p 82; B 739, p 24; B 755, p 118; B 773, p 88; B 844-A, p 30; B 849-G, p 398-405;			1938: notable production. 1939: Lindblad did development work. Bedrock-glacial origin, black slates, interbedded by graywacke and conglomerate; strike NE, dip nearly vertical. Numerous large boulders. Gravel: quartz in diorite.
B 857-A, p 29;	B 857-A, p 29; B 864-A, p 33; B 868-A, p 34; B880-A, p 37; B 897-A, p 44; B 917-A, p 40-41; B 926-A, p 37; BM B 153, p 34; B 1139			
David Copper Group (22.3-23.0, 2.2) 61°8'N 147°28'W	B 963-B, p 77 KX 85-56 KX 85-114	Cu, Au, Ag	D. Vietti; C. Aldridge; Dado; Copper Mountain; Four-in-one; Ho. miners river, 10 miles from beach.	1930. Ten claims. Private examination.
Dixie (5.8, 14.4) 61°47'N 149°17'W	B 714, p 202-203; B 1139; KX 85-137	Cu	Bartholf	1919. Deposit: pegmatitic vein 8 1/2' wide, strike N 55 E, dip 55 SE. Quartz: irregular stringers of chalcopyrite with some bornite.
Eagle River (7.7, 2.4) 61°08'N 149°05'W	B 587, p 178 B 642, p 193-194; B 849-G, p 409, 419-420; C 196, p 10; B 1139; KX 85-164	Au, Ag, Pb, Zn, Cu	Mayflower, White Horse; Jeremy Voss; Frisbie; Murray; McMelan	1911. Orebody exposed on recently glaciated surface of fine-grained graywacke. Quartz stringer 1" - 12" wide. Quartz galena, sphalerite, arsenopyrite, chalcopyrite, malachite, & native silver. Assay 0.05 oz. Au, 24.80 oz. Ag/ton. 1931: restaked, but little work since 1911. Au content is discouraging.
Galena-Gold (5.8, 14.4) 61°N 147-149°17'W	B 692, p 186 B 1139 KX 85-137	Cu, Au, Pb	Dixie	1917. Three claims at head of Purchase Creek; little development work. Approximately 1' ore with chalcocite, pyrite, galena and free Au on surface.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Globe (23.0) 61°47'N 149°17'W	B 692, p 146; B 1139 KX 85-213 KX 85-214	Cu	Long Bay	1917. Low grade Cu ore several feet wide. Two claims. No development work.
Gold Bullion (Min. Co.) (5.55-5.6, 13.8-13.85)	B 442, p 35; B 480, p 146-147; B 520, p 29; B 542, p 39; B 592, p 65, 260-262; B 607, p 50, 66-69; B 622, p 48; B 642, p 197; B 662, p 48; B 692, p 32, 178, 179; B 712, p 34, 173; B 714, p 77, 202; B 722, p 41; B 739, p 25; B 755, p 30; B 773, p 15, 40; B 792, p 11; B 813, p 16; B 824, p 18; B 849-C, p 169, 186, 188, 192, 204, 213-214; B 897-A, p 20; B 917-A, p 23; B 926-A, p 21; B 933-A, p 19, 21; B 1004, p 1, 83; BMB 142, p 44, 52; BMB 153, p 40-42; B 1139	Au, Hg, Cu	New Bullion; Doheny & Thompson; Rapp & Till; Gold Dust; Willow Cr. Min. Co.; Lucky Shot; War Baby; Nugget; Panhandle. NOTE: B 810, p 46 reports Cu from this company but does not specify from which claim.	1907. Aerial tram and two stamp mills. Country rock: blocky quartz diorite.
Gold Cord (Min., Mil. & Power Co.) (5.9, 14.0) 61°47'N 149°17'W	B 692, p 32, 180-181, 185 B 712, p 34 174-175; B 714, p 204; B 773, p 39-40; B 813, p 16; B 824, p 19; B 844-A, p 17-18; B 849-C,	Au, Pb, Zn, W	Golden Bear Min. Co.; Smith; C.B.; Smith & Swan; Bartholf; Horning & Black; Martin; W.P.; B & C Renshaw; Alaska Free Gold Min. Co.; Martin; Rae-Wallace	1915. Some development work. 1917: mill test on 100T ore was satisfactory. At end of 1918, 500' tunnel, crosscut and two small stopes; production small. 1919: no mining done. 1923: Management-adit 575'. 1929-30: T. Herman mill. Production: 1600T ore mined, $21,000 Au recovered. 1931. fault movement. 193-39: steady production. 1939: new mill; temporary shutdown. 1940: mining discontinued; lower levels flooded. 1954: mining done. 23 claims-9 patented. Most complicated mine in district due to numerous post-ore

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Gold Cord (Min., Mil. & Power Co.) Cont.	p 186, 188, 192, 215, 217-220; B 857-A, p 17; B 864-A, p 19; B 868-A, p 19; B 897-A, p 20; B 917-A, p 23; B 926-A, p 19, 21; B 1004, p 1, 31-32, 54-58; C 184, p 5; RI 4174, p 35; B 1139; KX 85-29; KX 85-106			faults, Gold quartz vein-25' wide with minable hanging wall and footwall;quartz separated by altered country rock. Vein of blue-gray to greenish quartz mottled with white; strikes NS, dips 40-44W. Au in small particles with pyrite. arsenopyrite, tetrahedrite, galena, and scheelite.
Gunnysack (7.5, 1.1) 61° 05'N 149° 10'W	B 813, p 18 B 1246 KX 85-65	Au, Cu	Kiska; Luck 13; Danich	1909. Thin irregular auriferous quartz veins with arsenopyrite and minimum amounts of chalcopyrite, galena, sphalerite, pyrrhotite, molybdenum, pyrite and magnetite. Veins occur in intensely silicified graywacke and slate.
Hi Rise (8.0-8.2, 13.4-13.5) 61°46'N 149°01'W	B 662-A, p 47 B 714-D, p 206; KX 85-300	Au, Cu, Ag, Zn	A. W. Smith. Iron Creek.	1916. Ten claims.
Huntley Brothers (6.7, 15.1) 61°52'N 149°10'W	KX 85-18	Cu, Au	Reed Creek area, about 2.5 miles north of Snowbird Mine. Little Mingo #1; Price	1958.
Jim Creek (9.95, 10.05) 61°34'N 148°48'W	B 729, p 58, 69-70; B 1139; KX 85-176	Cu, Au, Zn	Conroy & Marion; Wolverine Smith	1925. Copper in greenstone exposed in tributary draw at head-waters of Jim Creek. Vein N 80 W, dip vertical; traces by gosan 400-600'E; badly sheared; intermixed chalcopyrite, pyrrhotite, and sphalerite. Cu assayed at 15.08%; Zinc 2.95%; Ag 1.75 oz/ton; Au-trace. Deposit is in Mesozoic greenstone a few miles south of a diorite pluton contact.
King River (11, 13-16) 61°47'N 148°38'W	B 662, p 47 B 1139 KX 85-182	Cu		1916. Low grade deposits of chalcopyrite ore reported found on King River.
Last Chance Claim (7.0, 7.0)	Anchorage Recording Office Vol. 3, p 363	Cu, Pb	J. Frisby, F. Whitney, Wm. Morray, S. McMelan.	1913. On Crow Creek Summit. Adjoins Eagle Claim.

ANCHORAGE QUADRANGLE, Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Little Willie (5.9, 14.4) 61°49'N 149°15'W	B 714, p 203 B 864-B, p 109-110; B 1004, p 82-83; B 1139; KX 85-140	Au, Cu, Mo	Holland; Long & Holland; Rainbow	1919. Country rock: quartz diorite (shattered) with pyrite; vein strikes N 77 W-quartz, dips 26 NE; 2-8" quartz. Au with pyrite, bornite and chalcopyrite.
Long Bay (23, 0) 61°01'N 147°03'W	B 963-B p 77; B 1139; KX 85-213	Cu		1945. Mineralized area of Cu sulphides and other metals found in mainland between Long Bay and Port Wells.
Lucky Frost (8.6, 6.0)	Anchorage Recording Office	Cu	W. M. Frost	1906. North Side Copper King group.
Mabel (6.5, 13.9)	B 592, p 263; B 607, p 69-70 B 642, p 198; B 662, p 198; B 692, p 32, 181-182; B 712, p 34, 175-176; B 714, p 77, 204; B 739, p 25; B 755, p 31; B 773, p 15, 41; B 783, p 8; B 792, p 11; B 797, p 12; B 813, p 16; B 824, p 19; B 836, p 18; B 844-A, p 18; B 848-C, p 169, 188, 194, 220-222; B 897-A, p 21; B 917-A, p 23; B 926-A, p 21; B 933-A, p 19; B 1004, p 1, 14, 21, 31-32, 68-70; BMB 153, p 40; B 1139; KX 85-254	Au, Cu, Pb, Zn, Mo	Mabel Min. (Mil. & Power) Co. Loveland-Alaska Min. Co.; Hocking & Emard	1911. 1915: development work 75' of adit, drift and stripping. Quartz vein to 2' thick, aerial tram, moly vein discovered. 1918: stoping, drifts, (exposing quartz veins) and 15T Denver mill operated by water power. 1931-37. No active mining. 1937, 38, 39: production small (Au). 1939-1946: inactive. 1946-47: some development work. Composition of quartz diorite: quartz 24%, hornblende 5%, biotite 3%, plagioclase 61%.

ANCHORAGE QUANDRANGLE, Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Miners Bay (21.3, 1.6) 61°10'N 147°30'W	8963-B, p 77; B 1139 KX 85-84 KX 85-220 KX 85-298	Au, Cu, Ni	War Eagle; Winchester; Dulz	1945. Two Cu deposits. No production
Monarch (7.55, 0.75) 61°03'N 149°10'W	B 739, p 24; B 755, p 30; B 813, p 18; B 844-A, p 21; B 849-G, p 409, 4-8-419; B 864-A, p 22; B 868-A, p 24; B 880-A, p 27; B 987-A, p 33; B 910-A, p 29- 30; B 917-A, p 28; B 926-A, p 25-26; B 1139; KX 85-64; KX 85-65	Au, Ag, Cu	Jewel; Crow Cr. Gold Corp.; Holmgren; Danich	1909. Thin irregular auriferous quartz veins with arsenopyrite and minor amounts chalcopyrite, galena, sphalerite, pyrrhotite, molybdenum, pyrite and magnetite. Vein occurs in highly silicified graywacke and slate.
Montana Creek Copper Lode (8.6, 16.0)	Anchorage Recording Office Vol 1, p 155		C. H. Tecklenburg, J. H. Conn	1906. On east side of divide between Montana Creek and head of N. Fork of Koshinitna River.
Moose Creek (7.8-7.9, 13.9-13.95) 61°47'N 149°02'W	B 662, p 47; B 714, p 206; B 1139 B 1246 KX 85-85	Cu, Au, Ag, Zn	Northwestern, McCallie; New Adventure; Twin metals	1916. Low grade chalcopyrite deposit. 1919: Two groups of claims (four claims and seven claims). Ore deposit 30-100' wide, strikes N 75 E, dips 80 SE. Quartz diorite country rock containing pyrite, pyrrhotite, chalcopyrite and sphalerite, with Au and Ag. Low value. One open cut. Some private examination.
Myers (5.2, 7.45) 61°28'N 149°28'W	B 792, p 71; B 1139 KX 85-127	Pb, Zn, Cu		1925. Country rock: greenstone with considerable rhyolite. Arsenopyrite, pyrite, sphalerite and galena. Vein 2" wide with rusty gouge either side.
Northwestern (7.8-7.9, 13.9-13.95)	B 692, p 183- 184; B 1139	Au, Ag, Cu	Moose Creek	1917. 13 claims West of Moose Creek. Tunnel through gossan into unoxidized sulphides. Sphalerite, pyrite, pyrrhotite, chalcopyrite.
Peters Creek (7.7-7.9, 4.0-4.1)	B 642, p 192- 193; B 712, p	Au, Pb, Cu,		1915. Three tunnels on quartz veins up to 8" thick. 1918: chromite discovery. Country rock: greenstone and greenstone

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Peters Creek Cont. (7.7-7.9, 4.0-4.1) 61°14'N 149°03'W	23,34; B 1139; B 1246; KX 85-165			tuff with interbedded shale. Little mineralization with some pyrite, galena and chalcopyrite.
Rae (6.15, 13.65)	B 592, p 269 B 1139	Au, Pb, Cu	Jenning	1913. Country rock: gneissic quartz diorite with fault, containing chalcocite, pyrite, galena and gold carbonates.
Red Cloud (8.0, 13.8)	Anchorage Recording Office Vol 4, p 390	Cu	Wm. M. Elliott	1914. On right limit of Moose Creek one mile north of mouth of Iron Creek on what is known as Copper Mountain.
Reiter & Olson (15.55, 1.3)	B 592, p 228 B 1139	Au, Sb, Pb, Cu		1912. Country rock: argillite and graywacke with dike of medium grained igneous rock with quartz, calcite, pyrite, sphalerite, gold and chalcocite.
Schroff-O'Neil (5.85, 14.25) 61°48'N 149°18'W	B 1004, p 44, 73; B 1139; KX 85-139	Au, Pb, Cu, Zn	Last Chance	1950. Vein striking 70° and dipping 21-34° NW. Copper stained quartz vein. Free Au, galena, pyrite, sphalerite, chalcopyrite and tetrahedrite.
Sheep Mountain (21.0, 15.0) 61°50'N 147°39'W	B 542, p 39 B 592, p 281- 282; B 622, p 47; B 791, p 73; B 1139; KX 85-245; KX 85-57; KX 85-69; KX 85-314; KX 85-309; KX 85-297; KX 85-262	Cu, Au, Ag, Fe	Chalco; B. Locke; Yellow Jacket Gulch; Lone Star; Wm. Rogers; RuFel; Max Rusaw; Bule-Green; Zimmerman Rusaw Creek	1914. Some Cu found. Cu minerals occur in irregular lenticular and shattered parts of a series of lower Jurassic fragmental volcanic rocks and lavas associated with interbedded shale, sandstone & chert; high degree of mineralization. Private examination.
Simonton & Mills (16.15, 1.0) 61°04'N 148° 03'W	B 592, p 226 KX 85-200	Au, Cu, Pb	Alaskan Wonder	1913. Country rock: graywacke with some slate. Ore body: to 200' long, 6"-5' wide quartz vein strike W of N, dip vertical; branching white quartz stringers. Galena, pyrite, chalcopyrite & Au.
Stiles (6.4, 13.7)	B 542, p 39; B 592, p 270; B 607, p 75- 76; B 642, p 199; B 849-C p 183, 200,	Au, Cu, Pb	Shough, Oregon	1912. Quartz vein carrying Au. 1913-development work begun; 35' adit, shaft and open cuts. country rock: pinkish decayed diorite to dark blue-gray diorite. Vein #1: strikes N 13 E, dips 62W to 15" thick. Vein #2: strikes N 36 W, dips 45 E; quartz with Cu stain. Vein #3: strikes E, dips 68N; to 3' wide. 1914-1915: vigorous mining; 150' winding

ANCHORAGE QUADRANGLE, Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Stiles Cont. (6.4, 13.7)	226-227; B 1139			tunnel on irregular quartz vein with little Au; fault zone 60' wide. Assay: little or no free Au; 1931: adit driven to find vein parallel to dacitic aplite dike of hydrothermal alteration; pyritized and sericitized Azurite, chalcocite, galena; iron base.
Wells Bay (21-22,0) 61°00'N 147° 30'W	B 963-B, p 77; B 1139; KX 85-210	Cu		1945. Mineralized area of sulphides of Cu. No production.
BLYING SOUND QUADRANGLE				
Elrington Is. (16.5, 16.9)	1 273	Cu		
Fairview (6.4, 15.8) 59°55'N 149°14'W	B 379, p 105-106; B 442, p 170; B 587, p 235-236 KX 105-8	Cu	E. F. Pitman; A. C. Gould	1908. Country rock brecciated greenstone 8-10 feet thick. Medium grained diabase. Has quartz, pyrite, marcasite, and chalcopyrite. Iron stained zone with 9.8% copper penetrated by tunnel 10' long. Irregular quartz vein, 10' wide with chalcopyrite.
Feather Bed (6.25-6.6, 17.2-17.25)	B 379, p 104 B 442, p 170 B 587, p 234-235 KX 105-4	Cu	E. F. Pitman; A. C. Gould; Sunny Bay area	1908. Shear zone with four stringers of near pure chalcopyrite; up to 7" thick with 14-19% copper. Zone strikes NE; vertical dip.
Iron Mask (6.3, 15.85)	B 379, p 104-105 B 587, p 235	Cu, Zn	H. E. Ellsworth; Reynolds-Alaska Development Co.; Renard Island	1908. Prospect #10 in brecciated greenstone 12' thick and 100' along shore. Strike N 27 W, dip 20 W. Had quartz, pyrite, calcite, chalcopyrite, sphalerite. 12' brecciated zone; 1.1% copper and small streak with chalcopyrite; 7-8% copper. Was known as prospect #78 in 1914.
Latouche Consolidated Copper Co. (17.3, 16.8) 59°57'N 148°01'W	B 379, p 89; 1 273 KX 105-10 KX 105-16	Cu, Au, Zn	Latouche Island; Moerlein; Whale	1908. Pits sunk. Numerous claims in recent years.
Eight Mile Point Group (5.4, 17.1)	Cook Inlet Dist. vol. 4, p 73	Cu (?)	L. Simpson, J. B. Cameron, L. G. Jackson, P. Kindrick, H. St. Clair, Lower Queen, IBEX, Native Copper, Iron Clad, The Cliffe, The Butte, Copper Queen, Silver King	1905. Near the S.E. side of 8 mile point; about 8 miles south of Seward on the west side of Resurrection Bay.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Elrington 1 (16.5, 16.9)	1 273	Cu		
Fairview (6.4, 15.8) (59'55-149'14)	B 379, p 105-106 B 442, p 170 B 587, p 235-236 KX 105-8	Cu	E. F. Pitman, A. C. Gould	1908. Country rock brecciated greenstone, 8-10 feet thick. Medium grained diabase. Has quartz, pyrite, marcasite, and chalcopyrite. Iron stained zone with 9.8% copper penetrated by tunnel 10' long. Irregular quartz vein, 10' wide with pyrite and chalcopyrite.
Feather Bed (6.25-6.6, 17.2-17.25)	B 379, p 104; B 442, p 170 B 587, p 234-235; KX 105-4	Cu	E. F. Pitman, A. C. Gould, Sunny Bay area.	1908. Shear zone with four stringers of near pure chalcopyrite; up to 7" thick with 14-19% copper. Zone strikes NE; vertical dip.
Geneva Group (6.5, 16.0)	Cook Inlet Dist. Third Division pp 588-602	Cu (?)	E. R. Campion, Cris Hanson, Fred Alexander	1907. Unreferenced.
Iron Mask (6.3, 15.85)	B 379, p 104-105 B 587, p 235	Cu, Zn	H. E. Ellsworth, Reynolds-Alaska Development Co. Renard Island.	1908. Prospect #10 in brecciated greenstone 12' thick and 100' along shore. Strike N27W, dip 20W. Had quartz, pyrite, calcite, chalcopyrite, sphalerite. 12' brecciated zone: 1.1% copper and small streak with chalcopyrite; 7-8% copper. Was known as prospect #78 in 1914.
Last Chance Group (6.4, 15.8)	Cook Inlet District Third Div. p 556-562	Cu (?)	J. McCabe, M. Monasmith, E. R. Campion	1907. Unreferenced. 9 claims.
Latouche Consolidated Copper Co. (17.3, 16.8) (59'57-148'01)	B 379, p 89; 1 273 KX 105-10, KX 105-16, KX 105-16	Cu, Au, Zn	Latouche Island. Moerlein, Whale,	1908. Pitts sunk. Numerous claims in recent years.
Lietzke, W. R. (6.3-6.4, 15.35-15.5) (59'53-149'15)	B 379, p 106 B 587, p 236 KX 105-5	Cu		1908. Prospect #12: quartz, with diabase, pyrite and chalcopyrite in brecciated zone. In 1914 known as Prospect #80.
Northern (6.4, 15.1)	Cook Inlet Dist. Third Div. p 552	Cu (?)	W. R. Lietze, H. Orseth, E. G. Jackson, I. B. Cameron	1907. Unreferenced.
Peterson (6.3, 16.95) (59'58-149'15)	B 379, p 104 B 587, p 235 KX 105-7	Cu, Zn	Hart mine, Hart, Mize, Tollison	1908. Prospect #9; S. Sunny Bay. Country rock: fine grained, fairly fresh diabase. 35' tunnel along brecciated vertical sheet zone. N32W, dip 68W. Quartz, calcite, sphalerite, pyrite,

BLYING SOUND QUADRANGLE, Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Peterson, Cont.				epidote and Chalcopyrite. Second 35' tunnel with less vein material 200' SW of lst tunnel. Zone - 6' wide, N12 $\frac{1}{4}$ W with vertical dip. Known as Prospect #17 in 1914.
Reynolds Alaska Development, (6.7, 17.5) (59'55-149'14)	B 279, p 104 B 587, p 234 KX 105-9	Cu	H. E. Ellsworth, Iron Mask.	1908. Prospect #6: Greenstone with chalcopyrite. Several claims. Prospect #10: Iron Mask Claim. Strike N27W dip 20W at contact of non-brecciated and brecciated greenstone. Quartz, pyrite, calcite and chalcopyrite. Brecciated zone contains 1.1% copper. Small streaks with chalcopyrite assayed 7.8% copper.
Seattle Alaska Copper Co. (17.7, 17.1) (59'58-148'00)	B 379, p 89; B 480, p 31; B 520, p 28; B 622, p 132; B 662, p 201, 209-210; B 692, p 145; B 963-B, p 67 I 273; KX 105-3	Cu, Au Zn	Alpha-Owen Ore Co., Seattle-Alaska Mining Co.	1906. SE shore Latouche Island. Latouche Mining Co. - 60' shaft and Latouche Consol. Copper Co. - pits. In 1914: 140' tunnel in 9-10' wide ore zone (Knight Island). Produced few tons of copper. 1916: development work and 1917 no work done. Country rock: graywacke with small amount black argillite and slate; strike N.E., dip 70W. Orebody: mineralized shear zone 1"-5.5' wide. Strike N35-50°E, dip 70-80W. Lenticular shear zone (mineralized) 18-66' thick. Chalcopyrite pyrrhotite, sphalerite, gold and quartz. As of 1945-46, 2 adits in shear zone in graywacke and slate.
Snug Harbor Group (6.8, 16.8)	Cook Inlet Dist. Third Div. p 602-604	Cu (?)	Gus Bystedt, Karl Karlson	1907. 13 claims. Unreferenced.
Swan Group (6.3, 15.2)	Cook Inlet Dist. Third Div. p 103-106	Cu (?)	Wm. C. Lietze, Henry Orseth	1909.
Alaska Comm. Co. (3.9, 15.0) (60°53'-146°32')	AR 20, p 417-418 B 284, p 83-84 B 542, p 119-121 B 605, p 13, 52-54, 56, 70-71, 107-108 B 622, p 133 B 963-B, p 59; BMB 142, p 43 BMB 153, p 50; RI 5320, p 2, 6, 18-19 KX 96-23	Cu, Zn Pb, Au Ag, As	Ak. Pioneer & Sourdough, Copper Mtn., Jacobsen.	1897. Underground and development work, 412 foot crosscut tunnel (1898-99); 2 short adit tunnels 100'x20' (250' above). By 1912, drift begun in crosscut tunnel 210' from mouth. 1913-produced several tons from small tunnels. 1914-ore reported found in shear zone in green amphibolite schist; copper pyrites and bornite. Country rock: greenstone, (ellipsoidal with black and gray slates and graywackes). Dips and strikes vary - lower crosscut N30W, dip 50E, upper tunnels N20W, dip 70-80E. Ore-lenticular shear zone 30' wide. Gold, silver, sphalerite, galena arsenopyrite, chalcopyrite, pyrrhotitic streak 2"-8", lens 18" chalcopyrite, quartz and epidote. Patented.

CORDOVA QUADRANGLE

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Banzer (3.85, 14.35)	B 542, p 123-124; B 605, p 112; B 692, p 149; KX 96-27	Au, Cu, Zn,		1912. Two shafts and several hundred feet of stripping. Slate and greenstone. Strike SE, dip NE. Quartz stringers and buches to 6' thick. Chalcopyrite, pyrrhotite, pyrite, sphalerite, galena and calcite. Assay - $50/T. gold.
Buffalow Copper Mine (10.7, 0.7)	Cordova Recording Office, Vol 3, p 194	Cu	Trimble, Harris	1909. Lying on E and joining the Obstruct Copper Mine about 3/4 mile from Flemming Spit, N 1 1/2 mile, north of Cordova Dock.
Chisna Consol. Min. Co. (4.05, 14.8) 60°50'N 146°31'W	B 605, p 111-112; RI 5320, p 6, 19; KX 96-35	Cu		1909. 40' inclined shaft, few open cuts, 20' tunnel. Ore-body: slightly mineralized schistose greenstone. Strike N 30W, dip 35 NE. Chalcopyrite and pyrite.
Cloudman Bay (2.3, 14.6)	B 605, p 112 KX 96-11	Au, Cu, Zn		1914. Strike a little east of south, dip 65 N. Quartz vein in slate 20-30 feet wide. Chalcopyrite, pyrite and sphalerite. Ore averaged from $2 - $4.80/ton.
Copper Belle (12.4, 11.6)	Cordova Recording Office, Vol 1, p 319	Cu	T. Erickson, R. Holt	1907. 1 1/2 miles east of Cordova Bay, lying SE of and adjoining the Copper Queen lode claim.
Copper Bullion (12.4, 11.6)	Cordova Recording Office, Vol 2, p 213	Cu	T. Erickson, R. Holt	1907. About 1 1/2 miles E of Cordova Bay lying SE of and adjoining the Copper Belle and NW of and adjoining the Copper Carbonate Lode claims.
Copper King (11.6, 10.9)	Cordova Recording Office, Vol 1, p 208, 333	Cu (?)	McMurray, Hayden	1907. Two miles NW from the little glacier on a creek adjoining the claim known as Rice on the W, to the claim known as the Bacon on the S.
Copper King (12.9, 11.3)	Cordova Recording Office, Vol 3, p 244	Cu (?)	Wash, Copper Queen	1910. NW Tributary of Eyak Lake and 6 miles N of Egal Lake and on right side of creek and lies on the N of the Almo claim about 10 miles N of Cordova.
Copper Mountain (3.65, 15.15) 60°53'N 146°35'W	B 284, p 82; KX 96-21; KX 96-26	Cu	H. Reynolds; Standard; Centaue; Grizzly; Tiger; Porcupine; Beach; Putz; Stein Metz, Tansey.	1899. Ragged crested mountain 4,000 feet above sea level, 4 miles SE Ellamar, west base is Boulder Bay, south base is Landlock Bay. Country rock: greenstone with slate and graywacke.
Cordova Copper Co. (10.95, 10.1) 60°35'N 145°43'W	B 284, p 84; B 442, p 165; B 443, p 54, 70; KX 96-43; KX 96-42	Cu, C	Flaming Spit; Tacoma-Cordova Mines; Wm. Hewitt	1905. Country rock: crushed reddish, amygdaloidal basalt and irregular stringers epidotized rock two feet wide strike NE dip vertical. Ore is chalcocite in quartz stringers, some association with non-epidotized country rock. No vein. Other minerals present: bornite, chalcocite, cuprite, malachite (from surface alteration) and native copper. Two tunnels and open cuts.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Dickey Copper Co. (5.0, 13.5) 60°46'N 146°25'W	B 520, p 27; B 542, p 34; B 592, p 62, 241-243; B 605, p 119-122; B 963-B, p 62; B622, p 133-134; B 642, p 141; B 662, p 184, 187; B 692, p 144, 149 B 714, p 22; KX 96-38; KX 96-3	Cu, Zn	Black Bear; Mason & Gleason; Fidalgo-Ak. Copper Co.; Ak. Copper Corp.; Copper Mines Inc.	1907. In 1910, 50' of underground work done. In 1911, mining work. 1913: 100' tunnel, 70' drift; 600 tons of ore were mined but no shipment made in 1914. A new ore level was found. 1916: 500-600' underground work. 1945-46: 660' crosscuts, drifts and raises. Ore: pyrite, chalcopyrite, sphalerite and pyrrhotite in shear zones in sedimentary rocks (graywacke, argillite and slate.)
Ellamar (Mining Co.) (2.55, 15.75) 60°53'N 146°43'W	AR 20, p 418-419; B 284, p 82, 87; B 314, p 27; B 345, p 178; B 379, p 87-88, 94-95; B 442, p 32, 39, 164; B 443, p 52-53, 56-57, 59-61, 78; B 480, p 31-32, 81; B 520, p 27; B 542, p 97, 100-102, 105-108; B 592, p 62, 240-241; B 605, p 13-14, 51-55, 57-63, 66-68, 71-72, 87-92; B 622, p 45, 131-133; B 642, p 138, 140; B 662, p 44, 184-186; B 692, p 31, 144, 147; B 712, p 35; B 714, p 22, 69, 77; B 722,	Cu, Zn, Pb, Au, Ag	Gladhaugh & Peterson; Meenath; Brown; Seldovia-Port Graham Consoldiation Inc.; Central Alaska Missing Inc.	1897. First shipment of 225 tons in 1900. 1902: 100' crosscut. 1905: crosscut was 500' and in 1906 the first shipment was made. 1908: production decreased-large tonnage low-grade. 1909: cofferdam and mining between 200' and surface. 1911: shipments were made from upper levels. 1912: three productive copper mines. Largest orebody found in district. Chalmersite, sphalerite, arsenopyrite, galena, gold, silver, quartz and calcite. 1912: large glory hole, 600', a three compartment vertical shaft and 4000' of drifts. Strike sediment beds NW, dip 80 NE. Faults NW, dip 80 NE. Orebody in one large lens of solid pyrite, and two small parallel lens of sulphides. 1913: adopted filling system of mining. 1914: regular operations and shipment of crude sulphide ore of copper and gold and silver. Country rock of slate, limestone, argillite, and graywacke. 1915: copper ore mined and shipped. Diamond drilling SE of mine. Chalcopyrite more abundant than pyrite and pyrrhotite. 1917: diamond drilling and regular shipments. 1919: mining equipment was removed. Ore result of primary impregnation by sulphide minerals in sedimentary rocks. Patented.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Ellamar (Mining Co.) Cont.	p 20; B 963-B, p 55-56; B 989-E, p 228, 296-298, 302; BMB 142, p 39, 52; BMB 153, p 44-45; IC 7379, p 33; KX 96-12			
Falck (3.85, 15.15) 60°53'N 146°32'W	B 605, p 72 103-104 KX 96-30	Cu, Zn		1900. Small flakes of native copper found (secondary). 25' adit, numerous open cuts, several leads and shear zone. N 70 E strike with 83 S dip, 1-7' wide. Chalcopyrite, pyrrhotite, sphalerite, quartz, calcite and country rock of greenstone and black slate.
Fidalgo (Min. Co.) (6.15, 14.1) 60°48'N 146° 15'W	B 379, p 96; B 443, p 63 B 542, p 34; B 592, p 62, 240-242; B 605, p 113-117; B 622, p 134; B 642, p 138, 141; B 662, p 184, 186; B 692, p 31, 144, 148; B 712, p 33; B 714, p 22, 69, 77; B 722, p 21, 40; B 739, p 24; B 755, p 29; B 963-B, p 61-62; BMB 142, p 39, 52; BMB 153, p 45-41; KX 96-39	Cu, Au	Grill; McIntosh; Blakney; Herren; Winchester; Elgin; Verdi; Mauser; Panama; Elendaro; Seaside	1905. Underground development work. 24 claims. Well defined shear zone. Lenticular ore shoots 5-50 feet in cross sections. Ore stringers are chalcopyrite, one 20" vein of solid chalcopyrite. Copper chiefly associated with greenstone. Sulphide ore replacement of sulphide minerals in shear zone. Strike N 4 E to N 6 W, dip 55-75 E.
Fidalgo (Min. Co.) (6.15, 14.1) 60°48'N 146° 15'W	B 379, p 96; B 443, p 63 B 542, p 34; B 592, p 62, 240-242; B 605,	Cu, Au	Grill; McIntosh; Blakney; Herren; Winchester; Elgin; Verdi; Mauser; Panama; Elendaro; Seaside	1905. Underground development work. 24 claims. Well defined shear zone. Lenticular ore shoots 5-50 feet in cross sections. Ore stringers are chalcopyrite, one 20" vein of solid chalcopyrite. Copper chiefly associated with greenstone Sulphide ore replacement of sulphide minerals in shear zone.

CORDOVA QUADRANGLE, Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Fidalgo (Min.Co.) Cont.	p 113-117; B 622, p 134; B 642, p 138, 141; B 662, p 184, 186; B 692, p 31, 144, 148; B 712, p 33; B 714, p 22, 69, 77; B 722, p 21, 40; B 739, p 24; B 755, p 29; B 963-B, p 61-62; BMB 142, p 39, 52; BMB 153, p 45-41; KX 96-39			Strike N 4 E to N 6 W, dip 55-75 E.
Fielder and Hemple (3.2, 15.55) 60°54'N 146°40'W	B 379, p 94 B 542, p 114-115; B 605, p 57, 98; KX 96-17; KX 96-13; KX 96-15	Cu	Boulder Bay; Rua; Wagner	1908. Tunnel and small crosscuts 200' long. Surface showings: chalcopyrite stringers in sheared greenstone. 1912: two tunnels surface stripping; lower tunnel 260' of drift and 25' raise and upper tunnel 20' long along shear zone. Country rock: greenstone and black slate with quartz. Ore; poor mineralized shear zone in greenstone. Pyrite, chalcopyrite, pyrrhotite and quartz. Several shipments in 1913. Strikes N 45 E, dips 65 N, 25-30 feet wide.
Galena Bay (Min. Co.) (3.45-3.6, 15.4-15.55) 60°50'N 146°40'W	B 284, p 83; B 345, p 178; B 379, p 93; B 442, p 164; B 443, p 59; B 542, p 112-114' B 605, p 98-102; B 622 p 133; B 642, p 140; B 963-B, p 53-54; BMB 142, p 40, 42; BMB 153, p 46; KX 96-19	Au, Cu, Zn	Vesuvius Valley; Simenstad Henrie; American Girl; Anvil Copper Crown; Forget-me-not; Homestake; Hornet's Nest; Lone Hand; Minnehaha; Minnewaska; Sheep Run; Spitz; Starvation; Summit; Sunnyside; White Hollow; Wrangle; Yellow Dog	1899. Country rock: greenstone with graywacke, and slate. Vesuvius: 2200' crosscut tunnel; iron stained shear zone with stringers of chalcopyrite, pyrrhotite, pyrite and quartz. Copper crown: 4' solid sulphide ore shear zone strike N 75 E, dip 80S. Sunnyside claim numerous shear zones with E-W fissuring, no continuous shear zone. Lower tunnel is 28'long; upper tunnel 400' drifts and two winzes. Ore: pyrrhotite with chalcopyrite. The ore bodies are replacement and fissure fillings. Patented.

CORDOVA QUADRANGLE, Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Glacial Island Copper Co. (1, 15)(?) 60°50'N 146°15'W	B 480, p 31 KX 96-9	Cu		1910. Tunnel 170' long; vein 4' wide containing chalcopyrite.
Green Top (0.0, 13.5; 11.0, 12.0) 50°38'N 145°24'W	KX 96-8	Cu	Ibach; Native	1956. USBM examination.
Hawkins Island (7.9, 9.2)	Cordova Recording Office Vol 1, p 132	Cu	T. B. Tansey, Tim Erickson	1907. Native copper on Hawkins Island on the north side of Canoe Pass and about 1500 feet from the NW entrance.
Head-of-(the)-Bay (12.45, 11.65)(?) 60°40'N 145°31'W	B 442, p 165; B 442, p 70; KX 96-45	Cu	Cordova-Tacoma Copper Co.	1909. Country rock: black slates, diorite and graywacke.
Hemple Copper Co. (3.9-3.95, 15.0) 60° 53'N 146°32'W	B 379, p 95; B 520, p 27; B 542, p 118-119; B 605, p 57-58, 106-108; B 622, p 133; B 692, p 148; B 963-B, p 59; RI 5320, p 6, 18; KX 96-32	Cu, Au, Ag, Zn	Hemple; Peterson; Fidalgo; Ivero; Sylar; Last Chance	1908. Six claims. Development underground is 1350' four tunnels - 800', 450', 65' and 18' in length; two shafts are 19'-15' deep with numerous open cuts. Minerals: pyrrhotite, chalcopyrite, sphalerite, calcite, and quartz. Country rock: greenstone, black slate, graywacke: one copper-lead shear zone averages 24'; strike N 55 W, dip 60 N with bunches of Solid sulphides and lenticular stringers of pyrrhotite and chalcopyrite 2-18" wide. Shear zone assayed 3-6% copper. As of 1945-46 there were six patented claims and a millsite.
Hoodoo (3.85, 14.85) 60°51'N 146°33'W	B 542, p 122-123; B 605, p 111; KX 96-31	Au, Cu, Zn	Thos. Grove; Three Man Mining Co.; Bay View	1904. 1912: surface stripping; three tunnels. Country rock: greenstone. Ore: thin film to three feet, average 4-5% copper. The 3' mineralized shear greenstone strikes N 45 W, sips 60 NE. Minerals: chalcopyrite, pyrrhotite, sphalerite and native copper assays $10-$22.
Humpback (11.6, 11.0)	Cordova Recording Office Vol 3, p 88	Cu	J. Digg, C. Porter, W. Storey	1909. NW corner near the bench of Fall Creek.
Irish Cove Copper Co. (4.9, 13.45) 60°45'N 146°28'W	BMB 142, p 52 KX 96-37	Cu		

CORDOVA QUADRANGLE, Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Judith C. Group (19.9, 12.6)	Cordova Recording Office	Cu	D. L. Buckingham	1907. On W bank of Copper River about 4100 ft from the river near the middle of Abercrombie Canyon.
Landlock Bay Copper Mining Co. (3.85, 14.85) 60°53'N 146°33'W	B 542, p 97, 110-112; B 592, p 62, 241; B 605, p 14, 51, 96-97; B 622, p 133; B 642, p 141; B 662, p 186; B 692, p 148; B 963-B, p 57-58; BMB 142, p 41, 52; BMB 153, p 48; RI 5320, p 5-6, 17-18; KX 96-28; KX 96-95	Cu, Zn	Moonshine; Dolan; Rystrom	1898. 500' of drifts, 25' winze, three short raises 400' of tunnel. First shear zone in greenstone: strike NW to NS, dips N to E, 4-15' wide with two ore shoots 25-30' long and 1-7' wide, 7 1/2% copper. Second shear zone strikes S 60 E, dip 67 N, 2-5' wide. Country rock: greenstone and hard slate. Sulphides: chalcopyrite, sphalerite, undetermined sulphide, (chalmersite) pyrrhotite. Gangue: quartz, calcite, slate and greenstone. 1945-46 samples of lenses: 1.3% and 6.8% copper.
Madonna (16.5, 8.1) 60°26'N 145°02'W	KX 96-100	Cu	Chugat #1; Wise	1957.
Magul Group (3.3, 15.65) 60°55'N 146° 38'W	B 605, p 98; KX 96-18	Cu, Zn	Guy Banta; Fred Cameron	1913. 10' shaft and opencuts. Ore in shattered and sheared greenstone in irregular masses. Quartz is irregular, fine, network on weathered surfaces. Chalcopyrite, pyrite, pyrrhotite and sphalerite present.
Montezuma (3.75, 15.1) 60°53'N 146°35'W	B 542, p 121; B 592, p 241; B 605, p 108-109; B 622, p 133; B 692, p 148; B 963-B, p 59; BMB 142, p 43; BMB 153, p 50; RI 5320, p 19; KX 96-24; KX 96-29	Cu, Zn, Zu	Threeman Mining Co.; Buckeye; Ajax	1912. Straight crosscut tunnel, 350' long; short crosscut tunnel 10' long; 10' adit; stripping - 900'. Country rock: greenstone, interlayered black slate 15' thick. Irregular mineralized shear zone 20' wide, strikes E, dips 65 N - lenticular (1-4" thick), chalcopyrite, pyrrhotite; quartz impregnation and replacement of sheared greenstone by chalcopyrite and pyrite. 1913: underground work but no shipments. 1914: mining done. 1916: small shipment. Vein sample in 1959 was .05% copper.
Morning Group (12.6, 10.1)	Cordova Recording Office Vol 3, p 190-194	Cu	Trimble, Borden, Karanaugh	1909. 7 claims. Situated S side of Cordova Bay about 6 miles E of Orca Cannery.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Red Crown Group (7.9, 11.7)	Cordova Recording Office Vol 3, p 105	Cu	Powell, Waln	1909. On or near granite contact between Govina and Sheep Bays and is on the west side of a spur of the mountain running S and is about 2 miles W of Sheep Bay at the granite contact.
Reynolds-Alaska Dev. (3.2, 15.5) 60°53'N 146°40'W	B 345, p 178; B 379, p 94; B 443, p 52, 61; B 542, p 115-116; B 605, p 57, 61, 102-103; B 963-B, 54-55	Cu	Bounder Bay	1908. 20 claims. Main tunnel is 2100' drift with crosscuts, winzes and raises. Bedrock: greenstones, graywackes and slates. Second tunnel is a 200' drift. Veins of disseminated chalcopyrite in greenstone 2-3" thick. Production was several hundred tons. No mining since 1909.
Reynolds Alaska Dev. (Landlocked Bay) (3.8, 15.25) 60°53'N 146°32'W	B 284, p 82-83; B 542, p 115-116; B 605, p 102-103; B 763-B, p 59; RI 5320, p 5; KX 96-26	Cu	Putz; Steinmetz; Copper Mt.; Reynolds	1899. 1912: 900' underground development; two tunnels, several short tunnels, open cuts and shallow shafts. Country rock: interbedded greenstone, graywacke and black slate. Several small sulphide shear zones with stringers to 3" thick, and disseminated lenses (sulphide) 8-10" wide with quartz, calcite, chalcopyrite and pyrrhotite. Ore replacement and impregnation of sheared greenstones.
Rua (2.5, 15.9) 60°54'N 146°43'W	KX 96-101	Cu, Pb, Zu, Zn	Hidden Treasure	
Schlosser (4.95, 13.5) 60°46'N 146°25'W	B 379, p 96; B 443, p 63; B 520, p 27; B 542, p 34; B 592, p 62, 240-242; B 605, p 117-120, 122; B 642, p 141; B 662, p 184, 186-187; B 692, p 31, 144, 148-149; B 712, p 33; B 71 , p 22, 69-70; B 722, p 21, 40; B 963-B, p 60-61; B 989-E,	Cu, Zn	Alaska Mines Corp.; Fidalgo-Alaska Copper Co.	1907. 1911: aerial tram 2800' long and underground development. 1912: 600' underground development. 1913: development work; one shipment ore, six tunnels, short shaft, open cuts and stripping. 1917: stoping of lenticular sulphide ore deposits; ore zone 100' long strike N 20 E, dip vertical. 1916-20: had regular shipment to Tacoma. Produced prior to 1920: 16,000 tons at 10% copper. Since 1920 idle. 1945-46 has had promising geophysical work. Country rock: sedimentary rock filled with chalcopyrite, pyrite and quartz. Ores are replacement of shattered and sheared sedimentary rock.

CORDOVA QUADRANGLE, Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Schlosser Cont.	p 298, 302; BMB 142, p 38, 52; BMB 153, p 43; KX 96-3			
Standard (3.65-3.7, 15.1) 60°53'N 146°36'W	B 284, p 84; B 379, p 95; B 442, p 39, 165; B 443, p 52, 61-63; B 520, p 27; B 542, p 116-118; B 605, p 57, 61, 104-106; B 622, p 186; B 692, p 148; B 693-B, 58-59; RI 53-20, p 2, 5-6, 16-17; KX 96-20 KX 96-99; KX 96-22	Cu, Zn, Au, Ag	Centaru; Peterson; Tibbets; North Star; Evening Star; Sun; Moon	1906. 1908: 3449' aerial tram, one 420' tunnel and ore shipped. 1911: production was several 100 tons. 1912: 1300' of underground work was done, five tunnels and 50' winze. Ore body: lenticular sulfide of various lengths and widths; bunched sulfide at shear zone intersection. Country rock: shear zone schistose greenstone with graywacke, and black slate. Shear zone strikes NE, dips N and W. Tunnel #2 has quartz-calcite stringers of 4-5% copper and #3 has malachite staining. Minerals present: chalcopyrite, pyrrhotite, sphalerite, calcite and quartz. Ores: replacements of crushed filling of shear zone with cementation of numerous fractures by sulfide minerals. 1912-1915, idle. In 1917: development work only.
Steinmetz (3.95, 14.9) 60°52'N 146°31'W	B 605, p 110-111; RI 5320, p 18; KX 96-33; KX 96-25	Cu	Putz; Alaska Lode; Pioneer; Sourdough	1900. Produced six tons ore with 6% copper. 1913: several shear zones. Country rock: greenstone, slate and graywacke. The best shear zone strikes N 64 E, dips 65 NW is lenticular and 204' wide. Pyrrhotite, chalcopyrite, quartz and calcite present.
Schwarzkoph (2.8, 6.1)	Cordova Recording Office Vol 3, p 429	Cu (?)	Couger copper, Panther copper, Lion copper, Black Cat copper, Civil Cat copper, Bobcat copper, Wildcat copper, Leopard copper	1911. E shore of Cordova Bay and 1 mile from salt water and about 2 1/2 miles from townsite of Nelson.
Threeman (4.0, 15.0) 60°15'N 146°33'W	B 379, p 95; B 442, p 165; B 443, p 52, 54-55, 61-62; B 520, p 27; B 542, p 97, 101-102, 108-110; B 592, p 62, 241; B 605, p 14, 51,	Cu, Pb, Zn, Ni, Co, Ag	Dickey; Keystone; Threeman Min. Co.; Discovery; Sarcher; Jay; Redemption; Daisy; Buckeye; Climax; Ajax; Clift; Montezuma	1903. 40 claims. Locally known as Dickey Claims. 1906: 57 1/2 tons of 12% copper shipped. 1909: few 100 tons of ore mined. 1912: regular producer; had 2000' of adits, 5 levels of drift and considerable stoping at 5th level. Country rock: greenstone, graywackes and slates. Extensive faulting. Chalcopyrite, pyrrhotite, sphalerite, pyrite, soft pale brass-yellow metallic minerals, native copper, quartz and calcite. Development work was done in 1916-17. Five shipments of 6000 tons each containing 8% copper were produced from two lenticular ore bodies of near solid sulphides. Shear zone

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Threeman Cont.	56–57, 61, 70–72, 92–96; B 642, p 138; B 662, p 184, 186; B 692, p 144, 148; B 712, p 33; B 739, p 24; B 963-B, p 57; B 989-E, p 298, 302; BMB 142, p 43, 52; BMB 153, p 50; RI 5245, p 1, 5–6; RI 5320, p 3,5–7, 16, 19–21; KX 96–4; KX 96–5			15–50' wide: 0.3–8.6% copper.
Threeman Mining Co. (4.25, 14.5) 60°48'N 146°30'W	B 542, p 122; B 605, p 109–110; KX 96–36; KX 96–34	Cu	Billy Goat Mountain	1912. Short tunnels. Lower tunnel 30 feet in length strikes N 45 E and dips 45 E. Greenstone shear zone (country rock), 1–6" thick with chalcopyrite, pyrrhotite and quartz stringers, with barren quartz–calcite veins. Upper tunnels strike S 70 E and dip 30–50N in shear zone. Chalcopyrite and pyrrhotite mineralization. The ores are sulphide impregnations and replacements of sheared greenstone.
Threeman Mining Co. (South of Landlocked Bay) (3.95, 14.8) 60°53'N 146°32'W	B 284, p 84; B 542, p 121–122; B 605, p 109; KX 96–23; KX 96–31; KX 96–34	Cu, Au, Zn, Pb, Ag, As	Hilltop; T. B. Grove; Hoodoo; Bayview; Jacobsen; A. C. Company	1904. Small shipment of ore. 1912: four tunnels, 220 feet total. Slightly mineralized shear zone in interbedded black slates, graywackes and greenstone. The various strikes and dips of shear zones are 1) strike S 75 E, dip 40–50N, 2) strike N 65 E, dip vertical, 3) strike N 35 W, dip 35 N, 4) strike S 85 E, dip 52 N. Lenticular quartz carrying chalcopyrite and pyrrhotite. Patented.
Turner (3.1, 16.0) 60°55'N 146°40'W	KX 96–88	Cu	Monaughton	1910.
Whalen and Nelson (7.4, 14.3)(?) 60°47'N 146°08'W	B 379, p 96 B 443, p 62–63; KX 96–40	Cu	1908. Stripping and small	1980. Stripping and small tunnel. Country rock: hard black to greenish slate. Ore in hard non-slaty rock with irregular stringers and disseminated grains of chalcopyrite and pyrrhotite; 2–4 feet thick band to 12 feet thick.

GULKANA QUADRANGLE

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Ahtell Creek (see also Grubstake Creek) (23.45–24.1, 13.55–15.5) 62°44'N 144°02'W	B 1246; pp 15, p 47; B 904, p 48, 51; B 917-A, p 38; B 926-A, p 34; B 989-D, p 190; KX 77-41; KX 77-48; KX 77-57; B 1139; DMG Geochem. R.-2; DMG Geochem. R-6	Au, Cu, Mo	Standberg; Jack Frey; Lyons & Assoc.	1943. West brach nine miles northwest of Slana and 1 1/2 miles NE of the Dome. Lode explored by two short adits in shear zone that cuts altered and fractured diorite. Zone is up to eight feet wide and strikes northeast, dips west and includes quartz veins up to eight inches thick containing galena, copper and iron sulfides. Much of the country rock is stained by limonite and blue-green copper oxide. Some private drilling done.
Dome (23.4, 14.8)	KX 77-57	Cu	Copper Jack; James Frey; Right limit Ahtell Creek	1967. Two claims.
Eagle Creek (20.55, 17.7-18.85)	B 379, p 157 B 943-B, p 40-42; B 989-D, p 191, 194-195; B 1139	Au, Cu, Ba, Pt, Fe	White Bros.	1908. Mankomen formation of limestone, limey tuff in Permian rock (upper). In 1942 hydraulic dredge was installed. During World War II, mining was discontinued. Gold associated with native copper, magnetite, barite and heavy minerals. Platinum also present.
Grubstake Creek (or Gulch) (23.6, 13.4) 62°42'N 144°01'W	B 868-A, p 32; B 868-C, p 139-141; B 880-B, p 106-107; B 987-A, p 41; B 904, p 48-50; B 910-A, p 40; B 933-A, p 34; B 943-B, p 42-43; B 989-D, p 195; RI 3940, p 2; KX 77-41; B 1246; B 1139; KX 77-28; DMG Geochem. R.-2 Geochem. R.-6	Au, Ag, Cu, Mo	Stephanie; R. Austin; Ahtell Mining Co.; Johnson; Lyons & Assoc.; Swanson; Olson; Johnson; DeWitt	1934. Bedrock is dark, fine-grained lava flows with coarse granular diorite intrusives. Iron-stained igneous bedrock (diorite) with crushed sheared zone N 75° W. As of 1934 only preliminary prospecting. Gold associated with silver and some copper, well rounded and flattened. Production was barely sufficient, and handicapped by insufficient water. In 1939 there were hydraulic operations. Mining discontinued in 1941. Current work in area drilling disseminated Cu-Mo property.
Indian Creek (22.4, 14.9 62°49'N 144°13'W	B 824, p 122-124; B 989-D p 211; C 248 l 7; C 348, p 2-3; B 904, p	Ag, Pb, Cu	Elizabeth #1; Blue Ridge; Indian Claim	1944. Several mineralized veins and intrusive and extrusive igneous rocks. Country rock is dark green, coarse grained porphyritic variant of granodiorite-diorite and most important vein is quartz 10 feet wide. Several veins 100 feet long to 18 inches wide. Iron stained quartz, galena, chalcopyrite and

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Indian Creek Cont.	45-46; RI 3940 p 3-5; B 1139 KX 77-32			pyrite. Quartz diorite with wide variation in texture. At most places it is coarsely granular with large feldspar phenocrysts. A series of nearly vertical fracture planes striking almost due east appear to control the localization of the quartz veins containing the metallic minerals-silver-bearing galena, chalcopyrite, tetrahedrite, malachite and azurite in a quartz-calcite gangue.
Lewis (18.9, 14.0)	KX 77-54	Cu	Discovery; E. Lewis. Chistochina River E drainage.	1968. Two claims.
Monsen & Vinning (22.7-23.4, 14.8-16.0)	KX 77-25	Cu, Au, Ag, An	2.5 mi. west Ahtell Creek	1967. One claim
Neversweat (23.3, 14.85) 62°44'N 144°02'W	B 989-D, p 211 B 1139 B 1246 KX 77-34 KX 77-41 RI 3940, p 6-7	Pb, Cu	Noel Routsen & Wallace. Ahtell Creek-West Fork.	1943. Country rock is fractured diorite and quartz stringers 2-3 inches wide. Galena and chalcopyrite present. Mineralization indicates open fracture deposition with galena and limited amount of chalcopyrite deposited between quartz crystals up to 1/2 inch thick diameter. Prospecting difficult because of overburden.
Porcupine Creek (24.05, 14.35) 62°45'N 144°01'W	B 904, p 50-51; B 943-B p 43-44; B 989-D, p 195; B 1139 KX 77-7	Au, Ag, Bi, Fe	Bronnick	Gold, Magnetite, native copper and bismuth present. Deposits derived from igneous rocks and volcanic breccia and granites. Copper, silver, pyrite, magnetite and gold of local origin.
Silver Bowl (23.0-23.3, 17.0-17.1)	KX 77-55	Cu, Fe, Ag	Cities Service; Granite Creek	1968. Six claims.
Silver Creek (23.6, 13.35) 62°44'N 144°02'W	B 904, p 46-47; B 989-D, p 210-211; C 248, p 8; C 331, p 16, 18; C 348, p 3; RI 3940, p 7-8; KX 77-17; B1246 B 1139; KX 77-41	Ag, Cu Pb, Zn, Au	Stanley; Strandberg	1936. Area of undifferentiated igneous rocks-medium grained hornblende diorite and dark basaltic rock. Fault zone is 100 feet wide and strikes N 45° to 70°W; several veins of mineralized quartz. Adit and small shaft and several open cuts. Veins are up to four feet thick and with copper stained quartz containing sphalerite, pyrite, galena, granular tetrahedrite. Assays show up to 1.59% cu.

GULKANA QUADRANGLE, Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Silver Shield (23.4-23.5, 13.6-13.7) 62°45'N 144°03'W	KX 77-49	Cu, Pb, Ag	W. Buck. East of junction Ahtell Creek & Flat Creek.	1964. 27 claims.
Slana (22-23, 16-17) 62°53'N 144°15'W	KX 77-46 B 904, p 51	Cu, Fe	Blue Eyed Laura; Judy; K. Stanley; Wallace Baille. Right limit Granite Creek.	1938. Four claims. Private drilling.
Tom Burns (by name only in RI 3940) (21.5, 15.35) 62°50'N 144°20'W	B 842, p 124 B 904, p 46 RI 3940, p 5-6; B 1139 KX 77-33	Pb, Cu	Carl Whitman; Silver Circle. West	1945. Vein is milky quartz 2-8 feet wide. 1-3 inch mineralized stringer, 50 feet long. Galena, chalcopyrite, tetrahedrite and quartz present.
McCARTHY QUADRANGLE				
Amy Creek (Trib. Kotsina River) (1.2-2.0, 12.25-12.3) (61°40'-143°55')	B 345, p 137-138 B 374, p 55; B 379, p 156, B 745, p 104; KX 87-42	Cu	Great Northern Dev. Co., Kotsina River, Clear Creek, Hidden Creek, Regal, Roaring Creek, Woodin & Herman.	1906. Tunnels driven in iron stained outcrops of basaltic country rock uncovered only faulted and fractured country rock impregnated with pyrite stained with copper.
Anderson (16.6, 17.4) 61°58'-142°0'	KX 87-116	Cu	MS 1511 Chisana Mining Co.	1929. Patented.
Bear Paw (12.4-12.5, 6.8-7.0) (61°23'-142°31')	B 947 F, p. 120; KX 87-77	Cu	Big Horn, Contact Gulch, Golden Eagle, Porcupine Creek, Snow Bird, Westover, Alaska United Copper Exp. Co.,	1943. No development work.
Berg Creek (1.6-1.7, 9.5-9.65)	B 542, p 83; B 592, p 61; B 622, p 114, B 642, p 54; B 662, p 160; B 712, p 15, 31-32; B 714, p 30, 191-192; B 722, p 38; B 745, p 140-141, 143-146; B 755, p 26, 65, 68-71; B 773, p 15, 37 B 783, p 7-8; B 947-G, p 140-141;	Au, Ag, Cu	Engineer Syn. Midas Burdick	1907. Development work in 1915. Lithology includes altered limestone and greenstone intruded by diorite porphyry: extremely altered and faulted (trends NE) Major fault zone contains magnetite, pyrite and chalcopyrite but these minerals do not occur together all the time, (mineralization not in limestone). Contact - metamorphic area: vein 1 1/2" -6' wide, with 1% Cu, strike NE dip 45-55 SE. By 1916 4 tunnels totaled 1150'; tunnel #4 gave high Au values. By 1923, 5 tunnels (last 2 were Au, Ag ones). Open cut exposes contact of limestone with very garnetiferous rock containing pyrite and chalcopyrite (N40-50 E, 15' wide). 1918: 20-25 T/day mill; 4600' tram; 5 T/hr. (Au, Ag assay $450/T). 1919: copper, secondary, gold-silver primary. 18 lode claims, 4 placer claims.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Berg Creek Cont.	BMB 153, p 33 KX 87-14			
Big Horn (3.1, 1 (61°40'-143°37')	B 622, p 113-114; B 662, p 158-159; B 745, p 90-91, 133-135; B 947-G, p 137-138, KX 87-52	Cu	Whistler, Finch, Alaska United Copper Exp. Co., J. Huber, Baumgaertner, Sentinel Extension, Lost Chance, Elizabeth	1914. Ore consists of bornite, granular chalcocite and quartz crystals 1/25" in diameter. Discovered on mountainside about 1000' above glacier. Prospected with several short tunnels and open cuts. By 1916: 350 foot total tunnels and open cuts. Shear zone trends N40 E, dips high E in greenstone area faulted and leached. By 1923 several tons of ore ready for shipment. 1944-45: abandoned and caved.
Butte Grp. (10.4, 8.4)	KX 87-138	Cu, Ag	Boothby	1968. 10 claims.
Calcite (2.2, 9.4) (61°32'-143°50')	B 714, p 192 B 745, p 137-139 B 755, p 65-66 B 947-G, p 140 KX 87-46	Cu, Fe	MacDougall Creek, Bigfoot Creek, War Eagle, Chitina-Kuskulana Copper Co.	1919. 600' tunnel. 1924: poor prospect results. Contact diorite mass on north and silicified limestone on south. Fractured shear zone with iron stained gouge with pyrite and chalcopyrite. As of 1944-45 no indication of any ore body on MacDougall Creek.
Canyon Creek (15.5, 5.4) 61°17'-142°10'	KX 87-89	Cu		1953.
Chiti Lode (9.0,10.2, 7.2,10.5 61°30'-142°40'	KX 87-114	Cu	Bear Creek Mining	1956. W. Side McCarthy CR
Chititu Creek (11.4-11.9, 5.2-5.6) (61°17'-142°31')	P 15, p 59-60,63 P 41, p 118-119 B 263, p 207 B 345, p 172-173 B 374, p 45, 95-97 B 379, p 156 B 442, p 158, 162-163, B 448, p 76, 80, 98-100, 103-107, B 520, p 107; B 542, p 84-85 B 592, p 61-62 B 622, p 105,115- 117; B 649, p 62-63; B 662, p 43, B 714,	Au, Cu, Ag, Pb, Sb, Mo, Ba	Andrus, Rex Creek, Chititu Mines, Hammon, Murie, Nizina Mining Co., Easterly and Andrus, White Creek, Jelly Creek.	1902. 1907: bedrock flume sluicing operation for gold and copper. Shale bedrock; copper nuggets to 300 pounds found more or less rounded. 1908: 2 hydraulic plants - little production. 1903-1909: production near $43,000 per year. 1912: large production. 1915: stibnite bearing lode discovered. 1922: poor mining. 1933-1936: large production. Present: Gold veins of quartz with pyrite, native gold and molybdenum cutting black shales in area.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Chititu Creek, Cont.	p 196; B 722, p 89; B 755, p 27-28, 69-71; B 783, p 12; B 792, p 15, 29; B 797, p 16-17; B 810, p 21; B 813, p 24; B 824, p 28 B 836, p 27, B 844-A, p 28; B 857-A, p 26; B 864-A, p 30; B 868-A, p 31; B 880-A, p 34; B 880-B, p 98; B 897-A, p 40-41; B 910-A, p 38; B 917-A, p 36; B 926-A, p 34; B 947-F, p 98; BMB 153, p 33, KX 87-71			
Chokosna River (2, 9(?) (61°30'-143°50')	B 442, p 161, B 712, p 193	Cu	Broken Leg, Mineral King, Mt. Wrangell Copper Co.	1909.
Clear Creek (1.15-1.4, 10.7-11.0) (61°38'-143°52')	P 15, p 18; B 379, p 156; B 442, p 161, B 520, p 106, B 542, p 82-83; B 592, p 61; B 622, p 113; B 642, p 54, B 662, p 157-158; B 714, p 29-30; B 745, p 94, 126-128; B 755, p 66; B 947-G, p 132-136; BMB 142, p 37, 52; BMB 153, p 30, KX 87-41; KX 87-40	Cu	Copper Mtn., Great Northern Dev. Co.	1906. 1915: Development work done. 1916: 58 claims (35 patented), 5700' underground and 4 tunnels. Clear Creek follows closely the boundary between Chitistone limestone and Nikolai greenstone. Greenstone on east side of creek near its head is intruded by a mass of dark porphyritic iron stained rock that is generally mineralized. Pyrite and chalcopyrite disseminated; some replacement and fracture fillings through both intruding and intruded rock. In general ore is low grade and disseminated. Magnetite and garnet also found in greenstone in minor quantities. By 1923: 3 tunnels total 5661'. Vein: 2' wide chalcopyrite in mineralized country rock.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Coastal Mining Co. (9.2-10.3;8.7-9.9)	KX 87-144	Cu, Ag	Hanna Mining	1969. 119 claims.
Colorado (24.1, 17.5)	KX 87-134	Cu	J. Hanna	1968.
Contact Gulch (13.6, 8.65) (61°28'-142°28')	B 345, p 167; B 374, p 90 B 947-F, p 120; KX 87-86	Cu	Alaska United Copper Exploration Co.	1907. Bornite in greenstone. No large deposits of copper minerals found. By 1920: abandoned.
Copper King (Kotsina River) (NW 1/4 2, 12) (16.6, 13.6) (61°45'-142°00')	P 15, p 19; P 41, p 95 B 213, p 146-147 KX 87-105	Cu		Altered bed of greenstone with quartz stringers with epidote and chlorite. Native Cu: flakes and grains with chalcocite association.
Copper King (White River) (16.6, 13.6) (61°45'-142°00')	B 379, p 174 B 417, p 55-56; B 480, p 86-87 B 630, p 121-122; KX 87-91	Cu	Discovery lode, P. White, Arnold.	1908. 2 small open cuts on copper bearing lava sheet. Claims on rock outcrop with native copper. Country rock: stratified basalts, breccia and tuff beds. Native copper in amygaloidal volcanic sheet. Metallic copper with prehnite, calcite and zeolites.
Copper Queen (1.9, 9.75) (61°31', 143°50')	B 542, p 83 B 622, p 44, 113; B 662, p 160 B 714, p 193; B 745, p 71, 95, 129, 139; B 947-G, p 139; KX 87-44	Cu, Fe	Rarus. Mt. Wrangell Copper Co., Alaska Consol. Copper Co. Nugget Creek.	1914. 433' tunnel in faulted and metamorphosed mass of limestone and igneous rock including quartz diorite, hornblende, augite porphyry and possible greenstone. Some limestone is altered to highly garnetiferous metamorphic rock and some is silicified. Ore: pyrite and chalcopyrite. 1943: abandoned.
Dan Creek (12.1-12.85, 6.6-6.7) (61°20', 142°30')	P 15, p 59-61; B 259, p 44-46; B 263, p 37,39,207, B 345, p 37, 169-169; B 374, p 45, 91-92, 97-99; B 379, p 156; B 442, p 158, 162, 163; B 448, p 76,	Au, Cu	Copper Creek, Idaho Gulch, Radar Gulch, Seattle Gulch, Green, Joshua, Assn. Nikolai Placer Co. Birch. Warner & Kain, Cayouette.	1901. 11 shafts. 1909: Little or no Cu found on Dan Creek. 1914: 4 hydraulic giants operating (3 1/4 to 5" dia.) 52,000' bedrock uncovered. As of 1922: mining primarily in stream gravel. 1927-31: mining in bench gravels. 1934: not operating due to surface improvements and reorganization of water supply. 1935: Pardners Mines Corp. 1937: Favorable mining results. Stream gravel on lower Dan Creek almost mined out. 40,000 square foot bedrock uncovered; production small; water supply main source of difficulty. 1939: 3

McCARTHY QUADRANGLE Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Dan Creek Cont.	80, 98-103; B 520, p 107; B 542, p 84; B 592, p 61; B 622, p 105, 115-116; B 714, p 196; B 722, p 39; B 755, p 27, 69-71; B 783, p 12; B 792, p 15, 29; B 797, p 16-17; B 810, p 21; B 813, p 24; B 824, p 28; B 836, p 27; B 844-A, p 28; B 957-A, p 26; B 864-A, p 30; B 868-A, p 31; B 880-A, p 34; B 910-A, p 38-39 B 917-A, p 37; B 926-A, p 34; B 933-A, p 37; B 947-F, p 98, 119-120; C184, p 3; BMB 153, p 33			ton copper nugget discovered. Dan Creek Westover prospect produced 40 tons native Cu by 1944-45. Copper associated with gold and silver. Size: fine to several hundred pounds found only in creeks with greenstone gravels. *Patented.*
Dan Creek Gold & Copper Co. (N 1/2, 12.6)(?)	B 947-F, p 120	Cu		Exact site unknown.
Davy (1.55-1.65, 12.1-12.25) (61°40'-143°50')	P 15, p 19-20 P 41, p 95-96 B 213, p 145-146' KX 87-32	Cu, Ag, Skyscraper		1902. No development work. Country rock: greenstone over limestone with bunches of copper. Ore bodies: few inches to 2-3' diameter and irregular. Native copper, bornite and chalcocite.
Donohoe (10.2-10.55, 8.4-8.85) (61°30'-142°45')	B 448, p 97; KX 87-69	Cu	Nizina, Schulze, and Green Butte	1953. Copper disseminated as sulphides in greenstone.
Eleanor (1.55-1.65, 12.1-12.25) (61°40'-143°50')	P 15, 1 19-20 P 41, p 95-96 B 213, p 145-146; KX 87-32	Cu, Ag	Davy and Skyscraper	

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Erickson (14.65, 7.35) (61°23'-142°15')	B 345, p 167-168 B 374, p 90-91 B 947-F, p 98, 117-118 KX 87-87	Cu	Chiti, Iowa, McGavock, Nugget, Glacier Creek	1906. Greenstone cut by a fault N10°E, dip 40°W. Country rock has a series of bedded amygdaloidal greenstone flows. Copper restricted to bed of black amygdules. Average copper content; 5%. Malachite, native copper, chalcocite and cuprite are present. Specks, thin sheets, and stringers - largest in quartz vein (60 lb.). 1917: some ore shipped. 1927: 2 claims patented. Underground work = 300' on levels, drifts, and crosscuts.
Fall Creek	P 15, p 21; P 41, p 97 B 345, p 142-144 B 374, p 60-61 B 442, p 161; B 622, p 109 B 745, p 113-114 KX 87-32	Cu, Ag	Kluvesna Creek, Hidden Treasure, Homestake, Kotsina Mining Co., Skyscraper, Newhome, Sunset, Sunrise, Ammann, Good Enough, Lost Cabin, Roaring Creek.	1907. Contact between fine grained, well-shattered greenstone and grayish amygdaloidal greenstone. Contact is faulted with prominent fault planes cutting the country rock N 35-45°W and dip 50°SW. Native copper appears as small particles in amygdaloidal greenstone, both in unaltered rock and leached portions. Native copper associated with small quartz and calcite veins (quartz and native Cu; 20-30 pound pieces in dump). Bornite and copper staining also appears in the area. By 1914: 2 tunnels. Sunrise: amygdaloidal greenstone cut by acidic porphyritic dike and quartz veins; minor bornite.
Fepco Grp. (12.0,7.0)	KX 87-137	Cu	F. Potts	1966. 16 claims.
Fourth of July Creek (7.1, 9.1) (61°31'-143°10')	B 345, p 161; B 374, p 99 KX 87-61	As, Cu	Woodin & Herman, Bekka & Eli.	
Fredarika Glacier (15.1-15.4, 12.4) 61°42'-142°10'	KX 87-117	Cu	MS 941, 942, Nolan	1915. Patented.
Freds Folly (9.2-10.3;8.7-9.9)	KX 87-141	Cu, Ag	King Resources	1969. 127 claims.
Frieda & Moore (1.7, 9.8) 61°33'-143°48'	KX 87-133	Cu, Au	Tripple M	1965.
Glacier Creek (Trib. Chitistone R.) (13.4-14.7, 7.0-8.3)	B 813, p 54	Cu	Erickson, Nelson (copper), Radovan.	1928. Cu ore discovered.

McCARTHY QUADRANGLE Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Golden Eagle (12.5, 6.75) (61°23'-142°31')	B 662, p 176 B 947-F, p 120 KX 87-77	Cu	Bear Paw, Snow Bird	1916. Considerable development work done. 1944-45: development work, one short tunnel. Country rock: greenstone.
Good Enough (0.5, 13.4)	B 745, p 112-113	Cu	Ammann	1923. Fine-grained basalt and tuff, faulted, fractured, and mineralized with native copper and chalcocite, associated quartz and calcite. Cuprite, malachite, and azurite are present in small quantities. Two tunnels (longest 70'). Prominent faults N35° - 45°W, dip 50°SW. Above minerals form amygdules and replace greenstone.
Green Butte Copper Co.	B 712, p 31; B 739, p 23; B 755, p 27, B 773, p 28, 37 B 783, p 20; B 792, p 27-28 B 797, p 35-36; B 810, p 47 B 813, p 54; B 824, p 60 B 836, p 63 B 947-F, p 98, 103-104; KX 87-69	Cu, Ag	Green, Donohoe, Barrett (copper), Satterfields.	1909 or earlier discovery. 1918: 500' of tunnel driven. 1925: third largest Cu producer in Alaska. Regular shipments; 14,000' underground work. 1927: no productive work. Shipments average 1200 pounds Cu and 10 oz. Ag per ton. Ore: similar to Kennecott; principally in veinlike bodies which replaced limestone in fracture. Calcite, dolomite and chalcolite. Patented.
Harris (20.2,20.5;.7,.9) 61°2' - 141°38'	KX 87-29 B 675, p 79 B 1155, p 68-72	Cu,Pb,Ag,Zn	MS 1578, O'Neill	1936. Patented.
Harris (24.6,24.8; 13.3,13.5) 61°45'-141°0'	KX 87-23 MR 784, p 42-51	Cu		1907.
Hidden Creek (6.75-7.1, 9.25-9.7) (61°32'-143°10')	B 345, p 158-160 B 374, p 77-79 B 442, p 161; B 622, p 115; B 662, p 162- 163, B 947-F, p 98,	Cu	Woodin & Herman, Tjosevig Bros., Josevig-Kennecott Corp., Nebraska, Norway, Valdez Explor. Co.	1906. 1907: many open cuts. 1909: work done. 1916: difficulty in shipping ore. 1920: development work. Claims along limestone-greenstone contact, bornite stringers and and irregular shaped masses in greenstone (20-30 lb.). Mineral deposits scattered erratically through greenstone in

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Hidden Creek Cont.	118–119, KX 87-58			irregular zone 25' to 75' mostly very shattered and sheared country rock. Chalcopyrite present.
Houghton Alaska Exp. Co. (Chitistone River) (13.3, 8.35)	B 345, p 166–167 B 374, p 89–90 B 947-F, p 120; KX 87–82	Cu	Peavine	1907. 20' tunnel in fault in limestone, S30°E and dipping 70–80°E. 25' stope to limestone N60°E and 35°S. This zone (max. 4') of crushed country rock is heavily impregnated with Cu carbonates, Fe oxides and epidote (malachite form joint planes and azurite crushed zone).
Houghton Alaska Exp. Co. (McCarthy Creek) (9.9–10.2, 9.1–9.4) (61°31'–142°50')	B 379, p 155 B 442, p 160–161 B 448, p 92–93 KX 87–65; KX 87–66	Cu	Slide, Bonanza, Hanna Mining Co., Skokane Group, DeWitt, MS 1081, 1082, 1572, A & B	1908. 160 acre placer claim. As of 1909, several short tunnels, open cuts on fault zone N30°E. Cu minerals high in Chitistone limestone. Calcocite, prevailing Cu associated with azurite. First proof that Cu bearing solutions reached so high a position above their source in greenstone.
Kals Grp. (7.0–7.6; 9.8–9.9)	KX 87–143	Cu	King Resources	1967. 46 Claims.
Kan and Klet (24.5 , 11.3) 61°37';141°03'	KX 87–5 B 630, p 124–125	Cu	D. Burton	1954. 16 Claims. Kan River near Headwaters Kletsan River.
Kenya (9.8; 9.1) 61°30'–142°58'	KX 87–129 KX 87–9	Cu, Ag	R. Trotochau Mother Lode Copper Mines Co. Hanna Mining Co., 1969	1959.
Kennecott Copper Corp. (9.2–9.9, 9.0–9.35) (61°30'–142°58')	P 15,p16–18,27–28 P 41, p 92, 103–104, B 213, p 144–145; B 314, p 28 B 345; p 161–165; B 374, p 80–88; B 379, p 153–154; B 442, p 34, 160, B 448, p 76, 83–93 B 480, p 27–28, 84–86, B 520, p 105–106, B 542, p 82–84, B 592, p 60–61, B 622, p 16, 43, 163–175 B 692, p 17–18,30 B 712, p 30–31, B 714, p 12–13, 25,	Cu, Ag	Bonanza, Erie, Independence, Jumbo, Kennecott-Bonanza, Kennecott Mines Co., Marvelous, Mother Lode, Coalition Mines Co., Old Hero, Old Independence, Nelson (copper), Glacier.	1899. Life span from 1907–1938. Continuous operation during 1911–1938. Ore minerals dominately chalcocite but covellite, azurite, malachite, enargite, bornite, chalcopyrite, chalcanthite occurred. This group of properties includes the Bonanza, Jumbo, Erie and Mother Lode mines. The underground workings in these mines were connected and totaled approximately 70 miles. From 1900–1938 more than a billion pounds of copper was recovered from this area, most of it from these mines. The origin of the ore is uncertain, however, many geologists believe that the Nikolai greenstone is the source. Others think that copper was deposited from hydrothermal solutions that emanated from a concealed granitic pluton in the mine area.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Kennecott Copper Corp. Cont.				Jumbo Mine: Ore body rich in chalcocite occurring in fracture zone in limestone above limestone greenstone contact. 1907: Two tunnels 12 feet long. 1913: First shipments made. 1914: 3700' of underground work. 1915: Tram capacity increased from 450 to 650 TPD. 1938: Mine abandoned. Erie: Ore body above limestone-greenstone contact. 1916: 3 tunnels and 2700 feet of aerial tram. 1922: Had 12000' of crosscut.
Keystone (NW 1/4 2, 12) (61°42'-143°45')	P 15, p 19 P 41, p 94-95; B 213, p 146 KX 87-106	Cu	Kotzina	1900. Quartz stringers in greenstone and lenses to 5 or 6" wide strike E and W, are vertical. Epidote associated with quartz; native Cu, calcocite; 4 claims.
Kinney-Golden	B 662, p 160-161	Cu	Golden Creek	1916. 200' tunnel in shale, greenstone and porphyritic dike - into limestone. 7 claims along contact of interbedded Triassic shale and limestone with carbonate lava flows. 2 faults strike E, dip S bring shale into contact with greenstone and Chitistone limestone. Chalcopyrite present.
Kletson Creek (24.9, 11.0-11.5) (61°35'-141°10')	AR 20, p 488-489 AR 21, p 379-381 P 15, p 40-42; B 213, p 148 B 314, p 28 B 379, p 175-176, B 417, p 57; B 622, p 226 B 630, p 90, 120, 124-125, KX 87-99	Cu	Dalton	1891. 1897-98, considerable amount native Cu plus vein Cu sulfides located. Bedrock occurrences of native Cu - irregular system vein transversing joints in greenstone, filling - calcite and native Cu. As of 1908 - work done on chalcocite prospects. Stringers Cu in calcite veins in diorite greenstone (country rock) near intrusive contact of greenstone and limestone. Malachite staining.
Kotsina River	B 345, p 137	Cu	Great Northern Development Co., T. Larson, Hartman	1907. Porphyritic dike (10') cuts fine grained greenstone N30°W, dip 80°W and bounded on both sides by faults. A little chalcopyrite found in fractured rock along fault and in 4-6" quartz veins (S50°W). 1907, 3 tunnels, 20' (100 men).

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Kennecott Copper Corp. Cont.	27-28, 69, 194-195 B 722, p 19,21,38-39 B 739, p 13, 23 B 755, p 15, 26-27, 62-65, 68, 70-72, B 773, p 28, 37 B 783, p 20, B 792, p 27-28 B 797, p 32, 34-35 B 810, p 45-46, 48 B 813, p 52-53; B 824, p 58-59 B 836, p 60-61, B 844-A, p 59-60 B 857-A, p 56-57 B 864-A, p 59; B 868-A, p 67 B 880-A, p 69-70 B 880-B, p 98; B 897-A, p 78-80 B 910-A, p 84-85 B 917-A, p 85-87 B 947-F, p 98-101; C 252, p 5 BMB 142, p 32-38,52 BMB 153, p 30-32 BMB 405, p 25,205- 206, 209-211, 275 IC 7379, p 32-33; KX 87-64			Bonanza Property: Ore bodies occur along faults in limestone. Veins of solid ore 5 to 6' in width and large irregular masses of sulfide were mined. The sulfide was principally chalcopyrite as a limestone replacement with no quartz association. A sample of the ore assayed 70% copper, 14 ounces silver and trace gold. The ore body trends NE and can be traced 1 1/2 miles. 1907: 180' tunnels, 30' winze and several drifts. 1909: 50' tramway in operation. 1910: 150-160' deep. Concentrator in operation. 1911: First shipment of ore made. 1913: The only productive mine in the Copper River region. 1914: 4000' of underground workings. Tramway 2.8 miles in length. 1918: Increased tram capacity from 500-800 TPD to 1000 TPD. 1919: Mined out above 300' level. 1939: Mine abandoned. Mother Lode: A rich massive chalcocite lode. 1914: Producing 1150' of underground workings. A 300 TPD tramway 7000' in length in operation. 1915: 5040' of underground workings. 1916: 7000' total underground workings. 1918: Additional 2500' drifting and tunnels. 1923: 25,710 tons ore mined averaging 8.07% copper and 1.24 ounces silver per ton. 1925: Most productive of all Kennecott mines; producing 156,309 T averaging 10.38% copper and 1.68 ounces silver per ton. 1927: Production of 104,444 tons averaging 10.57% copper and 1.67 ounces silver per ton. 1928: 61,074 tons ore mined. Averaged 11.72% copper and 1.63 ounces silver per ton. 1930: 57,486 tons ore mined. Averaged 20.31% copper and 3.24 ounces silver per ton. 1931: 32,456 tons ore mined. Averaged 13.00% copper and 2.06 ounces silver per ton. 1918 to 1934: Total Production of 1,160,000 tons ore totaling 258 million pounds of copper.

McCARTHY QUADRANGLE Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Katsina River Cont.				By 1923; 3 more short tunnels. Coarse-grained porphyry intruded gabbro.
Lakina River (5.0-5.4, 9.7-9.9)	B 345, p 155-158 B 374, p 75-77 B 442, p 161; B 622, p 115 B 642, p 54 B 662, p 161-162; KX 87-56	Cu	Lakina Copper Co.	1907. Open cut 6' deep. Some work done 1914 and 1915. First prospect: shear or minor fault plane N30°W and dip 70°SW in amygdaloidal greenstone; 2' of crushed country rock, native Cu, quartz veins, chalcopyrite specks and shale. Second prospect: along pseudo-bedded greenstone structure N70°E and dip 45°SE had shear or movement sheet-like filling (1' to 6 or 8') containing native Cu specks to nuggets (max. 2 x 1/2"). Third prospect: 18" wide. 1916, 36 claims. 235' tunnel following well defined shear zone traced 1000'. Chalcocite occurs as veins with calcite or disseminated grains. Bornite found in open cuts. Several tons waiting shipment.
Larson (0.95, 12.2) (61°42'-143°52')	B 745, p 100 KX 87-39	Cu		By 1923, two tunnels started in amygdaloidal greenstone with quartz amygdules, veins and lenses, malachite staining along fracture zones.
Lime Creek (trib. Rock Creek) (0.45-0.5, 12.0) (61°40'-143°58')	P 15, p 21 P 41, p 96-97 B 345, p 138 B 374, p 55-56 B 622, p 111 B 745, p 92, 105; KX 87-33	Cu	B & B, United Verde, Gilleneau, Bell & Barrett, Bird Larsen.	1907. Small fault carrying bornite and small amounts chalcopyrite with quartz and epidote. Small veins or lenses of bornite cut greenstone or disseminated through it, probably replacement along fracture or joint. N35°E, dip 60°S, 2' lens and lumps, mostly replaced. Chalcopyrite replacing bornite near contact. 1907 - 1 tunnel. 1914 - 2 tunnels, open cuts.
London & Cape Co. (2.3, 9.9) (61°35'-143°45')	B 662, p 159-160 B 745, p 136-137	Cu	W. Wigger, Wagenen	1909. Patented, 14 claims. Cu stains along numerous fracture planes that cut quartz diorite country rock. 1916 - 245' tunnel contained no Cu. 1923 - closed.
Lost Cabin (0.05, 12.75)	B 745, p 112	Cu	A. Ammann.	Copper indications 100' below contact in greenstone contains bornite-south, chalcocite north, chalcopyrite - nearest limestone. Bornite and chalcocite disseminated and without notable gangue minerals. Chalcopyrite stained with Fe oxides. By 1923 - 4 tunnels and several open cuts - none driven far enough to hit contact.
Mayflower (3.0, 11.0) (61°38'-143°40')	B 662, p 159 B 745, p 135-136; KX 87-51	Cu	McConnell & Johnson	1920. Fault in greenstone N50°E, dip 75°N plus minor ones. Bornite with quartz and epidote in variable quantities along fault. High grade ore 12' thick exposed. 1916 - open cuts and 75' tunnel, shows quartz veins with NS strike.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Mineral Creek (0.7-0.85, 13.05-13.1)	B 622, p 109-110 B 745, p 114-115; KX 87-36	Cu, Au	Valdez, Barrett, Young, & Nafsted. (Porcupine Creek)	1913. Creek crosses series of tuffaceous beds cut by granodiorite and by more basic granular dikes or sills of intrusive rock. These beds are faulted and locally mineralized with pyrite and chalcopyrite. Au in quartz veins with some chalcocite. 1914: tunnel driven. By 1923 1/2 dozen tunnels started by many different prospectors. Valdez group, the longest, (100+ ft) followed bedding or flow plane which was cut by numerous faults; the vein (4' max.) assayed $9.75/T Ag. Another vein of quartz, pyrite, chalcopyrite, and bornite was 18" thick in faulted greenstone country rock; gold content assayed to $60/T.
Moraine Creek (18.45, 11.7) (61°38'-141°45')	B 379, p 174-175 B 417, p 56 B 630, p 123-124; KX 87-97	Cu		1907-08. 1910: development work. Bedrock: green and reddish amygdaloids with breccias striking N85°W, dip 55°S. Malachite stained rock fragments in talus. Orebody occurs in small seams cutting amygdaloid-veinlets of prehnite and calcite and chalcocite. Small stringers of quartz prehnite. Contacts easily located as superimposed lava sheets differ in color. Amygdaloidal phases of basalts most favorable and are found along the contacts of successive lava flows.
Nebraska (.7, 9.5) 61°33'-143°10'	KX 87-59 B 662-C, p 162-163	Cu		1953. Glacier Creek Area.
Nelson (copper) (13.6, 8.0) 61°25'-142°25'	B 824, p 60; B 836, p 62 B 947-F, p 110-114 KX 87-25; KX 87-26	Cu	Spruce, Cascade Quartz. McCarthy.	1928. C. A. Nelson. 1929, highgrade ore similar to Kennecott discovery. Kennecott Copper Corporation explored: find was not sufficient to warrant opening of mine. 1100' exploratory tunnels - some ore shipped. 1935, 6 claims patented, 1 unpatented. Ore deposit - lowest beds of block of Chitistone limestone 1 mile long and 2000' wide limestone-greenstone contact. Faulted down about 3000'. Chalcocite and covellite, enargite, bornite, malachite, chalcopyrite, pyrite, calcite, dolomite. 1936, 5 claims.
Nicolle Butte (13.3, 6.7)	KX 87-142	Cu	S. Wilson	1969. 20 Claims.
Nikolai (10.85-11.05, 8.0-8.15) 61°28'-142°40'	AR 21, p 437 P 15, p 16-18, 28-29, P 41, p 92, 104-105, B 213, p 144, B 345,	Cu	Chittyna Exp. Co., Red Rover. Side Partner, Siwash Jack, Surprise, Wonder. Galena Bay Mining, Edward Gates.	1899. 1900; 30' shaft and 100' adit and 50' open cut along vein (ore 2'-4'). 1907; no work since patented. 1910-12; development work. Road being built. No production. As of 1944-45; 250' tunnel, 2 short drifts and winze. Little significant Cu mineralization. Country rock is Triassic shale

McCARTHY QUADRANGLE Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Nikolai Cont.	p 165-166 B 374, p 88-89 B 448, p 75, 93-95, B 480, p 84-85, B 520, p 106; B 542, p 84, B 714, p 28 B 947-F, p 98, 106-108, KX 87- KX 87-147			intruded by porphyry but a great fault brought up the Nikolai greenstone. A true fissure vein is 50' below limestone; fault thrust may be 50' up NW N50-55°E, dip 65°SE. Several fissures containing Cu minerals and between cut by stringers of ore. The main vein is 8 to 12'; the ore is almost pure bornite and sometimes a little quartz association. Ore in part is replacement of greenstone and in part is a filling of a pre-existing fissure along two shear zones. Occurs as thin veins and disseminated grains.
Nikolai Butte Copper Co. (N 1/2, 12,6)	B 947-F, p 120	Cu		1943-44, claims located on Dan Creek - exact location not known.
Nizina Group (10.3-11.6; 7.4-8.4) 61°25'-142°37'	KX 87-130	Cu	Fremont Mining Co.	1961.
Nugget Creek (2.15-2.4, 11.2-11.25) 61°38'-143°48'	P 15, p 27; P 41, p 103 B 345, p 153-155 B 374, p 45, 72-74, B 379, p 155; B 442, p 161 B 542, p 83; B 592, p 61, B 622, p 44, 113, B 642, p 54; B 662, p 158 B 712, p 31, B 714, p 82-83, 85, 90, 93, 129-133, B 947-G, p 136-137, BMB 142, p 37, 52, BMB 153, p 30; KX 87-45	Cu, Au, Ag	Alaska Consol. Copper Co., McCarthy, One Girl, Thorgaard.	1900. Prospects in amygdaloidal basalt flows of Nikolai greenstone. A set of parallel well defined faults N65E, dip 80° N cuts greenstone and deposits of chalcopyrite and bornite to 24' thick. Strelna formation: most promising claim. Rurus: silicified limestone and dark porphyry is sheared and large amounts of magnetite, pyrite and chalcopyrite occur. 1907: 30' shaft. 1914: had 170' shaft, 1500' tunnels. 1916: crosscut at bottom of shaft from well defined fault N68°W, dip 80°E, drifts at 4 levels, compressor installed. 1919: 2-3 ton mass of native Cu discovered. Production prior to 1916: 2 carloads highgrade-hand picked ore; 1916-1923, 160 T of concentrates and hand sorted ore. By 1943 shut down; failure to find ore on lower level. One Girl claim: 91' tunnel in frozen slide rock and amygdaloidal greenstone impregnated with fine particles or grains of chalcocite associated with small calcite veins and epidote. Several open cuts. Found 2-3 ton nugget in creek. The group contains several patented claims. The total excavation on the Valdez claim as of 1923 was 4000 feet.
Peacock Creek (SE 1/4 1, 12) 61°40'-143°45'	P 15, p 19-20 B 345, p 140-141 B 374, p 57-58	Cu	Alaska Kotsina Copper Co. Surprise Creek, Mint, White Dog, Mountain, Rose.	1907. Country rock: greenstone with dikes of diorite. Rose claim: greenstone cut by a fault N25°E traced 400' with max. 12' of crushed rock containing bornite, glance, chalcopyrite and

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Peacock Creek Cont.	B 745, p 107; KX 87-109			a little native Cu; with malachite and a little red oxide as alteration products. White Dog and Mint claims; greenstone cut by fault plane N40°E dip steeply W; crushed zone is 3.5-4.5' wide; 25' open cut shows chalcopyrite scattered through crushed rock and clay seams. Mint claim; small fault N15°W dip 60°W cuts grayish greenstone having amygdaloidal phases. Zone 5"-1' contains rock, quartz, calcite with bornite and glance with Fe stains. Mountain claim ; no work on only few small stringers of Cu sulphides. As of 1923, prospects given up.
Peavine (12.85, 8.0) 61°26'-142°30'	B 345, p 166-167 B 374, p 89-90 B 947-F, p 120; KX 87-80	Cu	Houghton Alaska Exp. Co.	1921. William Mahar restaked 6 claims at Houghton Ak sites, S. Chitistone River. 1938, claims abandoned. No Cu shipped.
Pierson (2.55, 10.55) 61°36'-143°44'	B 745, p 136 B 947-G, p 138 KX 87-49	Au, Cu	Young	1923. Opencut; short tunnel. As of 1943-44, abandoned. Chitistone limestone and Nikolai greenstone separated by 30' fine grained (light colored) latitic intrusive contact-fault strike N60°E, dip 50°E. Ore zone; crushed Cu stained rock 2-3' thick, sheared, with limonite and malachite stain. Free Au.
Porcupine Creek (1.25-1.7, 10.75-11.05) 61°38'-143°50'	B 542, p 83 B 662, p 158 B 745, p 128; KX 87-37	Cu, Au	Clear Creek. Blackburn, Blackstone, Great Northern Dev. Co., Barrett, Young, Nafsted.	1912. Copper minerals near intrusives. 1916, short tunnels. Great Northern Dev. claims; open cuts in Nikolai greenstone. Fault zone strike N25°E dip 50'SE. Veinlets; malachite and chalcopyrite. Au with Cu. Barrat, Young, and Nafsted; 3 claims, similar Cu min. 2 tunnels by 1923. Blackburn group, Ak. United Expl. Co: 2 tunnels; one 75' in fine grained basalt with dioritic dikes (shattered); fault-vertical strike N25°E. Country rock; broken with pyrite and chalcopyrite. Considerable Cu staining 125' in greenstone with dioritic dikes; outcrop with stringers quartz and pyrite.
Rabbit Creek (24.0, 14.6) 61°49'-148°08'	B 379, p 175; B 417, p 57	Au, Cu	Copper Chief, S. Abert.	1907. 20' adit. In shattered zone in basalts of Carboniferous age. Mouth of adit rock is iron stained and vertigated with Cu carbonates; also sparsely disseminated. Chalcopyrite.
Radovan (13.65-13.85, 7.2-7.6)	B 947-F, p 98 114-117, KX 87-10; KX 87-27 KX 87-112	Cu, Sb	Alaska Copper Mines Inc., Binocular, Low Contact, Triassic, Delano.	1929-31. 30 claims. As of 1943-44, 12 claims. Development work consists of several shallow pits on outcrop; 2 exploratory tunnels to 100', not significant amount Cu. Pyrite, marcasite, chalcocite, bornite, chalcopyrite. Malachite stained outcrop exposes 75,000' Nikolai greenstone and Chitistone limestone with thin beds shales at contact; fault strike N40°E, dip 50°S.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Radovan Cont.				Ore body, in lens of fractured dolomitic limestone.
Regal (8.5, 9.6) 61°32'-143°00'	B 622, p 44, 115 B 622, p 163 B 947-F, p 101-103 KX 87-63	Cu	Great Northern Dev. Co.	1910-25. Great Northern Dev. Co. Most prominent Cu minerals along contact at incline #1, where shale bed and upper 3-5' of greenstone contain disseminated powdery malachite. Development work for a number of years. 1916, struck promising ore and let contract for driving tunnel. As of 1943-44, inclines and 3 tunnels, 700' of of openings. Patented.
Roaring Creek (1.15-1.4, 11.8-12.3) 61°40'-143°50'	B 345, p 139 B 374, p 56-57 B 622, p 111; B 745, p 107 KX 87-110	Cu	Skyscraper, Kotsina Mining Co., California-Alaska Mining & Dev. Co.	1907. Chalcocite with malachite, quartz, epidote are in small fractures of greenstone. A little native copper, believed to be an alteration product of chalcocite, is present. Great Northern Dev. had several prospects. One tunnel in gray and black mottled slate near fault N20°W, dip high, no Cu. Another, only small native Cu in greenstone. 1907, California-Alaska Mining and Dev. 50' tunnel in greenstone. Calcite with native Cu and azurite. 599-600 lb. nugget in slide rock. 1907, Skyscraper, several open cuts and short tunnels. Lenticular mass of chalcocite 6" x 3', in greenstone just below limestone. 1923, much iron stain, little Cu seen.
Rohn Glacier (12.1, 14.1) 61°47'-142°32'	KX 87-118 KX 87-119	Cu	MS 943, Nolan	1915. Patented.
Sheep Creek (19.6, 12.15) 61°40'-141°40'	B 630, p 124; KX 87-98	Cu		1916. Claims and development work; abandoned. Purple amygdaloidal lava with calcite, zeolite and chalcocite, cuprite and native Cu reported.
Shower Gulch (2.2, 12.65) 61°40'-143°45'	B 345, p 141 B 374, p 58-59 B 745, p 107-108 B 755, p 67; KX 87-47	Cu	Drake & Grenig	1907. Native Cu found in amygdaloidal greenstone as thin leaves, grains or small slugs from alteration associated with secondary quartz. Several claims but little prospecting. 1923, exposed by 2 open cuts.
Silver Star (0.75, 12.85) 61°44'-143°57'	B 622, p 110 B 745, p 87, 110-112, KX 87-37; KX 87-132	Ag, Cu, Pb, Bi	Fennesand Bros. Pandora.	1914. Cu and Ag veins cut basalt and tuffaceous rock. Ag bearing tetrahedrite associated with quartz and deposited in joints and fissures (in 2 stringers). Ag rock including veins are faulted and crushed. Two short tunnels; 260' tunnel follows fault N80°W strike, 30°N dip, with amygdaloidal greenstone,

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Silver Star Cont.				porphyritic intrusive outcrop; 20 foot tunnel in broken fine grained country rock; vein 30" thick quartz and greenstone. Opencut - with vertical fault N10°-20° strike and one dip 60°W. Azurite plentiful. Assays - 1916 - Ag 25-700 oz/ton, Cu 1-32%.
Simpson 18.6, 18.7;12.2,123 61°40'-141°45'	KX 87-127	Cu	R. Berg	1959. 3 claims, NW slope Black Mtn.
Skyscraper (1.55-1.65,12.1-12.25) 61°40'-143°50'	P 15, p 20; P 41, p 96 B 345, p 139; B 374, p 57 B 622, p 110-111 B 745, p 88-89, 106-107 KX 87-32	Cu	Davy, Eleanor, Roaring Creek, Castle, Morning Star, Snowshoe, Ammann.	1907. Several opencuts and short tunnels. 1914, 100' tunnel. (Snowshoe Claim) - Most work done on this claim. Several short tunnels. In upper part of greenstone - chalcocite (lenticular masses to 6"x3' and no relation between) and some native Cu (probably from alteration of chalcocite) mineralization to contact along abundant joints.
Snow Bird (12.45, 7.05) 61°23'-142°31	B 662, p 176-177 B 947-F, p 120 KX 87-78	Cu	Westover Copper Group, J. O'Neill, Alaska United Copper Exploration Co.	1906. 2 short tunnels below contact. 1943-44: development work only. Chalcocite appears disseminated in small grains in irregular-shaped masses of greenstone; leached in fracture zone.
Strelna Creek (0.0, 11.0) 61°38'-144°0'	P 15, p 27; P 41, p 103 B 345, p 155; KX 87-30	Cu		1903. Prospecting done; several mineral veins located. Fe and Cu, sulphides impregnate vein. 6-8' of decomposed greenstone along fault contact is heavily mineralized with pyrite and some chalcopyrite in limestone above contact; thin veins of chalcopyrite. Stringers and small bunches of ore also in greenstone.
Surprise Creek (.15, 12.9) 61°44'-143°50'	P 41, p 123 B 345, p 141-142 B 374, p 59-60 B 442, p 161; B 622, p 161 B 745, p 89, 108-110 KX 87-43	Cu, Sn	Hubbard, Laddie, Sheehan, Joe Dandy, Drake, George M., Grenig, Sunshine Creek, True Blue, Kotsina.	1907. Well defined fault striking NNE in greenstone containing chalcocite, bornite and a little pyrite in quartz. Zone traced for more than mile with many minor faults of crushed rock and veins (1'-6 to 8"). True Blue - close grained grayish "greenstone" cut by fault N 20-30°E, dip 45°NW; zone 2-3' of crushed rock, 18" quartz, some calcite, chalcocite and a little bornite and chalcopyrite; conc. not uniformly distributed. Pits show vein 7200' in length. George M - fault in greenstone N45°E and dipping 45°NW has similar wider zone 3'-4'; chalcocite veins in quartz 1/2". Joe Dandy - vein N40°E is 4-8' quartz carrying chalcocite, bornite and pyrite with 3" clay seam along edge, smaller veins

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Surprise Creek Cont.			Drake and Grenig.	10-12" thick. 1907: cut 40' long and 25' deep ; 135' tunnel. 1914: 135' tunnel and several open cuts.
Tjosevig (10.3, 8.85) 61°30'-142°46'	B 947-F, p 104-105, KX 87-68	Cu	Baultoff, Big Ben, Jackson.	1920. Original claims by John Baultoff. 1923; restaked by Tjosevig - 8 lode claims, 28 claims patented. Since 1928, little or no work done. Outcrop of greenstone, limestone and shale. Strike N45°W, dip 25-40°NE. Malachite and azurite veinlets.
War Eagle (2.0-2.2, 9.14-9.8) 61°32'-143°50'	B 622, p 114; B 662, p 160 B 714, p 192, B 745, p 137-139 B 755, p 65-66 B 947-G, p 139-140, KX 87-46	Fe, Cu	Mac Dougall Creek, Chitna-Kuskulana Copper Co.	1920. Contact metamorphic mineral deposits near the contact of the quartz porphyry and overlying limestone and sandstone; mostly magnetite. Contains pyrite and magnetite. Assay shows Au and Ag. By 1923, 100' tunnel SSE in white silicified limestone, broken by numerous joints, 8-12" exposure of dark mineralized dike of pyrite and chalcopyrite.
Warner (0.25, 12.3) 61°43'-143°59'	P 15, p 18, 20 P 41, 1 94, 96 B 345, p 138; B 374, p 55 B 745, p 104-105; KX 87-31	Cu	J. Huber, McClellan, Chittyna Expl. Co.	1907. 25' tunnel in Nikolai greenstone near contact with Chitistone limestone. Follows crushed calcite vein 3-3 1/2' wide in fault zone. Strike S35°W with malachite, bornite.
Warner (17.2, 10.9) 61°36'-141°56'	KX 87-124 MR 78-1 p 75-76	Cu		1907. Russell Glacier.
Westover (12.5, 7.0) 61°23'-142°31'	B 345, p 169; B 442, p 161 B 448, p 83, 95-97 B 520, p 106; B 542, p 84 B 622, p 44, 115 B 662, p 175-177 B 712, p 31 B 947-F, p 98, 108-110, 119-120 KX 87-78	Cu	Alaska United Expl. Co. Alaska Westover Copper Co. Dillman O'Neill.	1906. Ore is bornite, chalcocite and chalcopyrite. Shale between limestone and greenstone confined to 2 beds limestone 11' thick. Original exposure rudely wedge shape face of ore 35' x 10'. One end mineralization cut abruptly by limestone, other grades in to silicified limestone. Cu sulphide found in lenses, veins and fracture fillings. By 1916 had total 900' workings, considerable ore awaiting shipping. 1917-1918, some ore shipped to Ladysmith smelter. From 1911-1930, 1400' workings, 4 levels. 1930, abandoned. 1943, accessible - estimated 100T with 30% Cu ore available.
White Creek (11.9-12.45, 4.9-5.2) 61°17'-142°31'	B 225, p 47 B 448, p 103-107 B 622, p 115, 117	Au, Ag, Cu	Chititu Creek, Jolly Gulch.	1900. Placer gold from creek gravel and bench gravel. Gravels - of shale, limestone, sandstone, quartz diorite porphyry - of local origin with greenstone, diorite and other

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
White Creek	B 714, p 196 KX 87-74			foreign rocks.
White River (headwaters) (17.9-17.95, 12.4-12.55) 61°43'-141°56'	B 417, p 57 B 630, p 122-123 KX 87-92; KX 87-113	Cu	Skolai Mining Co. Verdi, Wiley, Arnold	1907. Number of claims patented. No development work. Basaltic tuffs, breccias, amygdaloids and porphyritic sheets dip 10°N with chalcocite croppings. Glance stringer 1-3" thick - lenticular.
White River (Middle Fork) (17.25, 12.95) 61°43'-141°56'	B 542, p 40; B 630, p 122, KX 87-95; KX 87-93, KX 87-115	Cu	Skolai Mining Co., Northern Comm. Co., Sinclair, MS 920.	1912. Cu claims owned by Northern Comm. Co. surveyed and patented.
Wiley (24.3, 17.45) 61°57'-141°0'	B 379, p 177; B 417, p 177 B 622, p 224, B 630, p 90, 118 B 933-B, p 163-164 KX 87-102	Au, Cu, Ag	Beaver Creek, Acme Mining Co.	1920.
Wiley Creek (18.8, 12.15)	B 630, p 123 KX 87-94	Cu	Simms Co., Skolai Mining Co.	1916. 8 claims surveyed for patent. Few shallow openings - longest 12'. Amygdaloidal lava, altered and shattered - bunches lenticular shale 1/2"-2" thick. Chalcocite stringers; light colored dikes.
Wilson (13.7, 8.4)	KX 87-136	Cu	J. Wilson	1968. 54 claims.
Woodin & Herman (7.05, 9.1) 61°31'-143°10'	B 345, p 160-161 B 374, p 79-80 B 662, p 163 B 947-F, p 98, 118-119, KX 87-61	Cu	Bekka, Eli, Fourth of July Cr.	11 claims. Bornite and chalcopyrite in greenstone below contact. Ore stacked for shipment. Between crystalline sill rock and amygdaloidal greenstone 200' below limestone, there is a thin seam of chalcopyrite. Bornite and chalcocite associated with ore. Claims over major fault and minor faulted area. 1920 - development work Fourth of July Creek, little ore shipped.
Young Creek (11.45-13.2, 4.0-4.35)	P 15, p 59-61 B 448, p 98, 107-108, B520, p 107; B 542, p 84, B 622, p 115, B 755, p 27-28, B 947-F, p 98 KX 87-73	Au, Cu	Harris	1914. Not important producer. Considerable ground held. 1922: mining done. Creek contains a heavy sediment lode due to a large amount of glacial runoff. Country rock is black shale. Sediment contains native copper.

NABESNA QUADRANGLE

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Beaver (24.0-24.5, 2.0-3.0)	B 379-D, p 178; B 417, p 60 KX 78-20	Cu, Au	Eldorado, Horn, Skokum-Between Eureka & Anaconda Creeks.	1907. USBM examination.
Bee-Jay (8.2-8.3, 8.8-9.0) 62°30'-143°03'	KX 78-66	Cu, Au	Soda Creek, Locke, Jaslin.	1964. 8 claims.
Bonanza Creek (17.6-18.2, 1.7-2.45) 62°06'-141°53'	B 592, p 316 B 622, p 60, 204, 208-216, 222 B 630, p 90, 92-95, 99-109, 115 B 642, p 62; B 662, p 55, B 692, p 36; B 714, p 84, B 783, p 14; B 864-A, p 42, B 813, p 35; B 864-A, p 42 B 868-A, p 44; B 880-A, p 47 B 880-B, p 105, B 897-A, p 55 B 910-A, p 56 B 917-A, p 55 B 926-A, p 53 B 926-C, p 193 B 933-A, p 50 B 933-B, p 170-173 B 989-D, p 196-200, 203, C 248, p 7; C 348, p 4-5, BMB 142, p 26; B 1139, KX 78-18	Au, Pb, Ag, Hg, Mo, Cu, Zn	Deadman, Green, Hirst, James, Nelson & Wales, McGettigan, Nelson Mining Co., Upper Bonanza, King, Galena Bros., C. Whitham, Erie Hamshaw, Price & Ives.	1900. 14 claims. In 1915, $150,000 recovered from gold placer; highline ditch surveyed and partially built. By 1952-3 small placer mines. Permian volcanic and Devonian sedimentary rocks intruded by granodiorite; many dikes, sills, and small irregular igneous bodies occur throughout the district. Galena, pyrite, silver and gold occur in veins; gold, silver, copper, cinnabar, molybdenite, and galena have been recovered from placer operations.
Bond Creek (9.8-10.7, 3.6-4.1) 62°14'-142°46'	KX 78-65	Cu	Bear Creek Mining, Taku, Orange Hill.	1962. 150 claims.
Bryan Creek (16.65-16.8, 0.9-0.95) 62°03'-141°59'	B 662, p 223 B 630, p 115-116 B 989-D, p 200	Au, Cu		1914. Claim 4: drain 10' deep did not strike bedrock; pits sunk. Gold occurs through gravels, especially in clay. Largest nugget valued at $126. Copper nuggets were abundant. Claim 3:

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Bryan Creek Cont.	B 1139; KX 77-33			drain 12'deep, bedrock of sediment and intrusions, contains gold. No paying ground. 1955: abandoned.
Camp Creek (9.9, 6.15) approx. 62°20'-142°48'	B 213, p 148 B 314, p 28 P 15, p 39; B 1139 KX 78-28	Cu		1902. Vein of chalcocite 6"-2' thick. Country rock: limestone and greenstone diabase (purple amygdaloidal rock). Assay 61% copper.
Chathenda Creek (16.8-17.6, 1.4-1.75) 62°05'-141°58'	B 622, p 221-222, 225, B 630, p 92-94, 114, 118-119, B 933-B, p 165; B 1139, KX 89-35	Au, Cu	Big Seven, Cathenda Creek. Johnson Creek, Dry Gulch. Erie.	1913. Country rock: Tertiary sandstone, conglomerate and shale. Stream gravel, on bedrock of sandstone is 4' thick. Fine gold is unevenly distributed. Largest nugget has a $2 value. Copper nuggets found in stream gravel. Mining difficult. Little production. Similar geologic form as Bonanza Creek. 1940: 800' tunnel, veins of silver and gold, pyrite and galena.
Copper Pass (12.5, 4.8) 62°16'-142°30'	KX 78-51	Cu, Au		1907. USBM examination.
Cross Creek (11.6-11.9, 1.5-1.8)Approx. 62°05'-142°32'	B 379, p 173 B 417, p 55 B 630, p 121 B 933-B, p 174 B 989-D, p 210' B 1139; KX 78-30	Cu, Pb, Zn	Tinast Gulch, Copper Creek, Mullen prospect.	1908. Quartz, chalcopyrite vein cutting andesitic lavas and breccias. Native copper present. Lead-zinc mineral prospect (high mineralization). Most of the prospects are in Nikolai greenstone, with a few located in Chitistone limestone. All are near the contact of the two units. The area is extensively folded and faulted and intruded by small altered diorite dikes. Copper deposits usually are small irregular veinlets of quartz, calcite and epidote, with subordinate bornite, chalcopyrite, chalcocite, enargite malachite, azurite and pyrite. Sample assay: 1.55-5.82% Cu with trace Au. Total resources estimated at 1360 tons.
Discovery (20.6, 3.9)	KX 78-68	Cu	Spears, Espland. Snag River Ridge.	1967. 8 claims.
Eldorado (17.1-17.3, 2.1-2.2) 62°07'-141°55'	B 622-F, pp 204-205, 211, 220-221, B 630, p 93, 95, 104, 113-114, 117 KX 78-17	Cu, Au, Ag	Bonanza, Snow Gulch, Big Eldorado Creek, North Star, Peterson.	1936. USBM examination. 10 claims.
Fourmile Creek (22.6-24.0, 2.8-3.3)Approx.	B 379, p 178; B 417, p 60	Au, Cu	Husky and Jumbo.	1908. Quartz veins 8' - 30' thick. Brecciated silicified zone. Country rock with chalcopyrite. Wall rock: siliceous feldspar

NABESNA QUADRANGLE Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Fourmile Creek Cont. 62°08'-141°02'	B 622, p 224; B 630, p 118 KX 78-46			porphyry intrusion in shales and argillites. Porphyry cut by green dikes with 2-3" hornblende crystals.
Mineral Cake (5.1, 16.8) 62°57'-143°25'	KX 78-12	Cu, Au	Little Tok River Bridge. Coronado Copper.	1955. 2 claims.
Mineral Pt. (4.6, 16.65) 62°56'-143°28'	B 1139; C 248, p 8, C 348, p 2; RI 3940, p 8-9; KX 78-23	Ag, Cu, Au, Ni	Bronniche.	Country rock: limestone and reddish rocks, argillitic rocks-granitic dike 100' wide. Shear zone 6' wide, N65W. Float from 1" vein contains nickel arsenates. Shear zone in argillite. Little mineralization.
Montana (2.9, 16.6) 62°57'-143°40'	KX 78-52	Cu, Au, Pb	Exploration Ventures Inc. N.E. of Mentasta Pass.	1957.
Nabesna (Mining Corp.) (7.65-7.95, 6.25-6.85) 62°23'-143°01	B 379, p 176-166 B 417, p 58; B 480, p 65, B 622, p 224; B 630, p 90, 118 B 824, p 22-23; B 836, p 22 B 844-A, p 21 B 844-C, p 159-162 B 857-A, p 18-19 B 864-A, p 21 B 868-A, p 21, 66 B 868-C, p 141-142 B 880-A, p 21-22, 70, 72, B 897-A, p 23-24, 80 B 910-A, p 25-26, 85, B 917-A, p 24, 87, B 926-A, p 23- 24, 80, B 933-A, p 24, 76-77, B 933- B, p 168, 175-195, B 943-B, p 45-46, B 989-D, p 66, 189-190, 201-203, B 1139; C 248, p 7	Au, Ag, Cu, Pb, Zn, Ab	Fjeld & Paulson, Golden Eagle, Rams Horn, Royal Dev. Co., Stonehead, White Mountain, Carl Whitman Mining, Ptarmigan Mining Co., Jacksina Creek.	1906. Gossan derived partly from oxidation of pyritized contact-metamorphosed limestone. Trend N45E; 4'-15' wide. Surface ore-iron stained, gold carrying, cellular quartz. 1906-3 stamp mill erected; surface ore crushed yielding $12/ton in gold recovered-worth $30/ton in gold; highest $85/ton. 1908-crosscut expecting to strike ore at 25 feet. 1914-2 tunnels total 130 feet. 1928-31, 30' shaft and 50' cut on vein. 1929 - Nabesna Mining Corp. founded. 1931-small mill in operation. 1933-road in. By 1936 expanded to 60 tons/day year around; 1293' diamond drilling. By 1939 most known veins worked out. Production; $1,869,396 chiefly gold, some silver and little copper. Ore body and tactite formed in limestone along east contact of main stock. Tertiary lavas overlie intrusive-limestone unconformity. Three types of mineralization 1) bodies of magnetite with pyrite and calcite, 2) veins and masses of pyrrhotite with or without pyrite, 3) veins of pyrite with calcite. Veins formed by replacement pockets or lenses of limestone (inches to 35') average 5'-7' but localized by pre-existing fractures & contacts. Also chalcopyrite, galena, and sphalerite, quartz in upper part of some veins. Some nearly pure galena veins 5'-6' and as high as $100/ton. Bare stope 320 x 250 vert. ft. No ore below 550' level of mines. Preglacial oxidation effective to 30' depth. Ore treated on Deister table and differential flotation concentrates shipped to Tacoma smelter. 1940: production stopped; exhausted

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Nabesna Mining Corp. Cont.				exploration. By 1940 was the fourth most productive lode gold district. In 1938: 12,225 tons ore milled and 5,801 tons gold tailings. 1939: 5,000 tons ore sent to mill, 1,630 lineal feet underground openings, 3,364' diamond drill holes. Chalcopyrite, sphalerite, galena, magnetite, pyrrhotite, arsenopyrite, stibnite, pyrite, and gold plus contact minerals such as andradite, vesuvianite, epidote, specularite, wollastonite, spinel, magnetite, brookite, and others.
Orange Hill (9.3-8.9, 3.2-3.6) 62°10-142°57'	P 15, p 37-38, 43-45, B 379, p 173, B 417, p 54-55, 58 B 622, p 227; B 797, p 36 B 810, p 47; B 813, p 54 B 824, p 60; B 836, p 63 B 880-B, p 103 B 926-C, p 193 B 933-B, p 166-168, B 989-D p 189, 201, 203, 205-207, 209 C 248, p 6-7 C 252, p 5-6 C 348, p 4 B 1139, p 6, 9-10 KX 78-14 KX 78-61	Cu, Au, Mo, Ag	California, California Gulch, Camp Bird, Copper King, Glacier, Lemon, Nabesna Claim, Nikonda Creek, North Star, Shamrock, Alaska-Nabesna Corp.	1899. 1913: Low grade copper sulphide claims. Principal copper mining-bornite, chalcopyrite with sulphides in veins or at base of limestone. Hill deposit-contains 200,000,000 tons ore. Average .4% copper, plus associated values in molybdenum, silver and gold. As of 1952 development work included adits, shafts (many caved) open cuts and some diamond drilling. Permian lava flows, greenstone, and metamorphosed limestone intruded by quartz diorite; dikes of alaskite cut the quartz diorite as well as the sedimentary rocks and are intruded by dacite and andesite dikes. Ore minerals: chalcopyrite, magnetite, hematite, pyrrhotite, pyrite, bornite, sphalerite, molybdenite, tetrahedrite, gypsum, gold and silver. Upper Triassic or later. Recent drilling & exploratory work.
Reynolds (21.1, 3.7) 62°10'-141°28'	B 933-B, p 169 B 989-D, p 204-205 B 1139; K	Cu	Chisana Mines, Inc. Sulzer, Snag River, E. Anderson.	1940. Open cuts 900' in amygdaloidal basalt or greenstone exposed several small veins containing malachite, bornite, specularite, and chalcocite with calcite. Now partly filled with slide rock. Abandoned in 1953.
Rock Creek (5.05, 10.5)	B 1246; B 910-A, p. 105, B 917-A, p 104, B 917-B, p 150-153, B 926-C, p 184-185	Mo, Cu	Fram, Horn, Todd, Kennecott Copper Corp., Todd, Frame, Horne & DeWitt, Bessie M., D. Vietti, Lost Cabin prospect; Warner prospect, Lime Creek.	Prospects are bornite and chalcopyrite in 3' of malachite stained calcite vein within sheared Nikolai greenstone near contact with Chitistone limestone.

NABESNA QUADRANGLE Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Rock Creek Cont.	B 989-D, p 190, 201, 209-210 C 248, p 7; C 348, p 3, TDM 1, p 30; KX 78-11			
Sheephead (8.6-8.7, 3.0-3.1) 62°09'-142°59'	KX 78-57	Cu, Au, Fe	McQuerry, Mt. Gordon	1959.
Sulzer (20.75, 4.05) 62°10'-141°28'	B 933-B, p 169-170, B 989-D, p 204-205 KX 78-44	Cu	O'Hara. E. Anderson, Reynolds, Chisana, O'Hara prospect.	1940. Two claims. First claim: open cuts in basalt now filled with slide. Contains malachite, bornite, specularite, chalcocite, and calcite. Second claim: bedrock, andesitic and basaltic flows with pillow structure. First tunnel driven NW in fractured zone in greenstone in 1930; 87 feet now caved. Second tunnel shorter. Malachite, copper sulphide and pyrite mineralization.
Tinast Gulch (11.6-11.9, 1.5-1.8)(?) 62°05'-142°32'	P 15, p 38-40 KX 78-30 B 1139	Cu	Cross Creek	1903. Copper nuggets reported. Occurrence assumed at contact of igneous rock and limestone.
SEWARD QUADRANGLE				
Alaska Glaciers Min. Co. (May be in Anchorage quad) (11-18, 12-17) 60°40'-147°56'	B 797, p 12; KX 95-183	Au, Cu		1926. Port Wells Dist.
Alaska Oracle (Min. Co.) (3.85, 10.9) 60°37'-149°34'	B 836, p 20 B 849-I, p 507-510, B 864-A, p. 22; B 868-A, p 23, B 880-A, p 26-27, B 910-A, p 29; B 926-A, p 25 B 926-C, p 186; KX 95-92	Au, Pb, Zn, Mo, Cu	Heaston, Lindsley	1930. Mine and small mill. 1931: 2 patented claims. Total development work: 912' crosscuts, 400' drifts, 200' raises. Recovery not very efficient. Production until 1931: several thousand dollars. In 1931 $60,000 ore reserves visibly available. 1933: development work by Dunkle. 1934: exploration work intensive. 1939: active work. Country rock: interbedded slate and graywacke. Vein in fractures parallel to country rock. Movement primarily before mineralization. Footwall stringers, strike N15E, dip 60 W to 3' wide, near acidic dike. Sample assay $350 Au/T, average $40-$50 Au/T. Chalcopyrite, pyrrhotite, molybdenum, arsenopyrite, pyrite, galena, sphalerite make up 0.5% of ore.

SEWARD QUADRANGLE Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Alhambra (18-19, 5-6) 60°15'-147°57'	B 662, p 218 KX 95-230 KX 95-225 KX 95-243	Cu	U & I, Una, Drier Bay, Hercules MS 736.	1916. Total development work - 2 tunnels, 60' & 100' and 4 open cuts.
Anderson (:May be in Anchorage quad) (20, 16-17)	B 662, p 185	Cu		1916.
Big Passage Copper Min. Co. (20.15, 7.95)	I 273	Cu		
Bird Point (5.45, 16.3) 60°56'-149°25'	B 542, p 38 B 642, p 191-192 KX 95-151	Au, Pb Cu	Conway prospects.	1911. West of Bird Point. 2 quartz claims. Vein below high tide level (log cribbing erected), shaft 22' deep, flooded, vein, 2-16" thick. Shipment, 2 T ore at $52.75/Ton. Acidic dikes cut slates; Au, with pyrite, chalcopyrite, galena, copper carbonate mineralization.
Blue Dike Quartz Lode (4.3, 13.2)	Kenai Precinct, Dist. Court p 77	Cu(?)	E. F. Bell	1914.
Byers (21.95, 15.75)	I 273	Cu		
California Creek (7.3-7.45, 17.0-17.5)	B 277, p 9, 40, 43, B 587, p 192; B 642, p 186 B 824, p 30 B 836, p 30-31 B 844-A, p 30; B 849-G, p 406 B 857-A, p 29; B 864-A, p 33 B 868-A, p 34; B 897-A, p 44	Au, Pb, Zn, Cu	Dawson and Assoc.	
Cathead Bay (18.7, 5.25) 60°16'-147°53'	B 963-B, p 73 I 273; KX 95-228	Cu		1945. Tunnel 50' long, strike S55 E driven in fault zone in pillow lavas. Mineral pyrite and other sulfides.
Cedar Bay (22.3, 17.25) 60°56'-147°23'	B 692, p 146 B 963-B, p 76-77 I 273; KX 95-97	Zn, Cu	Lenora, Peterson, S. Gamblin.	1917. 5 claims surveyed for patent. 1945-46: 6 claims, 30' tunnel with 10' crosscut on mineralized shear zone. Second longer abandoned tunnel above. Shear zone 8-10' wide,

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Cedar Bay Cont.				vertical strikes north. Low grade Cu deposit reported one mile north. Country rock: granite, with some brecciation containing quartz, pyrite, sphalerite, chalcopyrite and covellite. Zinc mineralization predominant in shear.
Conley & McChesney (17.85, 17.6) 60°59'-147°55'	B 592, p 219 1273; KX 95-222	Au, Pb,	Bluebell, Primrose, Whistler, Downing, Kenai-Alaska, Perseverance.	1911. By 1913, 3 claims. 40' tunnel on Bluebell containing vein 18" wide. All veins traceable for considerable distances. Ore: bluish quartz with few sulfides of galena, pyrite and chalcopyrite.
Copper Bay (18.6-18.75, 5.0-5.15) 60°15'-147°53'	B 662, p 218 I 273; KX 95-224	Cu, Zn	Erricksen & Allen, Larson, Knight Island.	1916. Tunnel on NE shore Copper Bay in slightly shattered greenstone with epidote stringers and small quartz veins. No definite orebody. Country rock: fine grained, dark green igneous with epidote, quartz, calcite, pyrite, pyrrhotite, chalcopyrite and sphalerite.
Copper Boy (6.7, 1.9)(?)	Book 4 Seward Recording Dist. pp 371, 372.	Cu (?)	W. Kingsley, B. Wood	1916. Unreferenced.
Copper Bullion (20.3-20.55, 6.4-6.7) 60°20'-147°33'	B 379, p 92 B 442, p 165; B 443, p 69 B 662, p 213-214 B 692, p 31, 145 B 714, p 22-23 B 722, p 40; B 739, p 24 B 755, p 28-29 B 773, p 28, 38 B 783, p 21 B 813, p 54-55 B 824, p 22, 60 B 836, p 21-22 B 947-E, p 85-92 B 989-E, p 300-301 I 273; RI 4986, p 1-6, KX 95-98 KX 95-99	Cu, Zn	Consol. Min. & Smelt. Co., Rhea Cove, Rua, Solar Dev. Co., Bullion, Dickey, LaTouche, Liljegren, Snyder, Iron Bullion, Bettels.	1908. Tunnel in greenstone with stringers of pyrrhotite and chalcopyrite. Solid pyrrhotite ore exposure 65' wide above tunnel. By 1916, 365' tunnel with crosscuts - 5', 35' & 60' long. 1922: drift 900' long with 750' crosscuts at 100' intervals plus 244' of underground work. Low price of Cu discouraging to development. 1928: Consol. Min. & Smelt. Co. took over. Drilling and sampling. 1929: Solar Dev. Co.,- development work. As of 1943-44, 18 claims by F. W. Dickey (included 2 patented claims). Development work: open cuts, 2850' of tunnels and crosscuts, and diamond drill holes. Production: none reported. Shear zone contains several million tons low grade ore. Dimensions of ore body: Surface - Length 210' Width 35' Upper Tunnel - 400' 45' 200' below upper tunnel - 560' 25' Average 390' 35' Lens: contains 9,000,000 Cu/Ft or 1,125,000 T ore. 1948: Bureau of Mines sampling. Mineralization: shear zone with sulfide mineralization replacing country rock along fault and fracture plane. Shear zone contains several million tons ore with average content 0.6% Cu. Ore body: linked system of mineralized shear zones enclosing large horses of unsheared,

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Copper Bullion Cont.				unmineralized country rock (greenstone) cut by fault; strike N10W, dip 70E. Pyrrhotite, quartz, chalcopyrite, and sphalerite veinlets.
Copper Chief (6.45, 0.4) 60°03'-149°15'	B 379, p 103-104 B 587, p 234; KX 95-166	Cu	Likes & Frazer, Iron Cap, Real Thing.	1908. 23 claims. Brecciated shear zone, 6' wide in ellipsoidal greenstone, strikes N37W and dips 35S. Pyrite, chalcopyrite, hematite, and epidote in quartz veins.
Copper Coin	B 379, p 90-91 B 443, p 68; B 662, p 184 B 662, p 184, 216-217 B 692, p 146 B 963-B, 72-73 1273; KX 95-238	Cu	Russell Ball Copper Co., Rex, Eureka.	1908. Six claims. Four openings (60' adit, short crosscuts and open cuts). Wire tram. Adit in iron stained shear zone in greenstone striking N10W, dip 70E; 10"-10' wide. Vein of nearly solid chalcopyrite with pyrrhotite. *Production:* small shipment 1908. 1917: surface development. Chalcopyrite, chalmersite, pyrrhotite, and quartz mineralization.
Copper Girl (6.7,1.9)(?)	Book 4, Seward Recording Dist. p. 370		C. B. Poindexter	1916. Unreferenced.
Copper Head (6.7,1.9)(?)	Book 4, Seward Recording Dist. p. 371		A. E. Bates	1916. Unreferenced.
Copper King	Book 4, Seward Recording Dist. p 369		C. Poindexter, W. Kingsley	1916. Unreferenced.
Copper Queen (19.6, 3.55) 60°10'-147°45'	B 692, p 146; KX 95-247	Cu, Zn	Happy Jack Copper, Min. & Dev. Co., Ground Hog; Helena.	1908. Small shipments reported in 1917.
Crow Creek (7.85-7.9, 17.5-17.6) 61°00'-149°05'	AR 20, p 278,320 B 259, p 92, 97 B 277, p 9, 40-43, 46, B 314, p 119-121; B 480, p 38 B 520, p 141, 160-161, 171-173, B 542, p 44 B 587, p 183,185, 187-192, B 592,	Ag, Au,	Erickson, Holmgren, Alaska Crow Cr. Min. Co., Crow Cr. Consol. Min. Co., Peterson & Mayfield, Nutter-Dawson Co.	1896. 1898: first production. 1904: hydraulic mining (largest in Cook Inlet). 1906: considerable work done. 1910: high bench deposits contain $1.50/Cu. Yd. Stream flat gave average of 44¢ Au/Cu. Yd. Bedrock sluice: 15-20 men employed. 1915: diversion flume; 29 creek & bench claims. 1932: Holmgren-Erickson claim was the only productive claim on Crow Creek. 1934: Au lode operations. 1935: hydraulic operations. Bedrock: slates, arkoses and banded quartz. Gravels: slates, arkoses, and granite rock. Enormous boulders. Three types gravels (bench, glacial, stream). Coarse angular wash over stratified

SEWARD QUADRANGLE Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Crow Creek Cont.	p. 63; B 622, p 44 B 642, p 55, 181- 186, B 662, p 44; B 692, p 176 B 739, p 24; B 755, p 29,118 B 773, p 38; B 783, p 12, B 792, p 16; B 797, p 17, B 810, p 23; B 813, p 26, B 824, p 30; B 836, p 30, B 844-A, p 30; B 849-G,p 398-404 B 857-A, p 28-28; B 864-A, p 33 B 868-A, p 33; B 880-A, p 37 B 897-A, p 44; B 910-A, p 43 B 917-A, p 41; 926-A, p 37 BMB 153, p 34			clays, sands and gravels. Native Cu and Ag reported.
Crown Copper Co. (19.85, 7.8) 60°24'-147°44'	B 379, p 93 B 662, p 212 B 963-B, p 69; I 273, KX 95-251	Cu, Zn		1908. 1916: 30' tunnel with 10' exploratory drift. Some stripping and open cuts. Country rock: greenstone with epidote stringers; no well defined vein; quartz, epidote, pyrite, pyrrhotite, and chalcopyrite mineralization.
Day Harbor (7.4, 0.6) 60°04'-149°10'	B 442, p 170 B 587, p 233; KX 95-174	Au, Cu	California-Alaska Mining	1909. Some work on prospect along shear zone between gabbro and peridotite. Four feet thick lode with gabbro-pegmatite, containing pyrrhotite, pyrite, and chalcopyrite.
Disk 1. (20.3, 8.85) 60°25'-147°40'	B 662, p 211; I 273, KX 95-256	Cu, Zn	Knight Is. Mining & Dev.	1908. 10' adit in poorly delimited, shattered zone in greenstone. Ore contains quartz, epidote, pyrite, pyrrhotite, chalcocite, malachite, and azurite. Strike N55E, dip 75E, 50' trace; 4 1/2' maximum width. Country rock: fine grained dark green greenstone and coarser lighter greenstone.
Donaldson Creek (4.4, 13.5) 60°46'-149°29'	B 587, p 168-169 B 849-I, p 517; KX 95-138	Au, Cu	B. Queirolo	1915.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Downing (4.2-4.35, 14.4-14.45) 60°50'-149°30'	B 849-I, p 500-501 KX 95-11	Au, Pb, Cu	Francisco, Gina #1-3 N. Forrest, Bonanza, Last Chance, Gina.	1953.
Dunklee & Reilly (13.6, 15.5)	B 592, p 233 B 662, p 188 I 273	Au, Cu, Pb, Zn	Yellow Horse, Black Bear.	1913. Two claims, 5' tunnel, stripping. Country rock: argillite cut by acidic dikes. Vein, well defined fissure. Strike S63W, dips 60N, 250' long, average width, 6", shows 1-24" quartz in places. Quartz, calcite, chalcopyrite, gold, pyrrhotite, galena, arsenopyrite, and sphalerite mineralization.
Elrington I (17.4, 0.6)	I 273	Cu		
Gilnow (23.3, 17.15)	I 273	Cu		
Gilpatrick (3.8, 10.7-19.85) 60°36'-149°33'	B 442, p 171-172 B 480, p 32 B 587, p 164-167 B 592, p 63; B 622, p 46, B 642, 56; B 662, p 34, B 692, p 175, B 849-I, p 512-515, B 880-A, p 26; B 926-A, p 25 BMB 142, p 43, 52; BMB 153, p 35 KX 95-19	Au, Ag, An, Cu	Wanowski Gold Min. Co., Sprague & Byers, Meat-in-the-Pot, Summit, Snow & Watson, Clara, Lisbon, Olympia, Hattie, F. Henton.	
Glendenning Mining Co. (21.5, 17.95) 60°59-147°30 May be in Anchorage Quad.	B 662, p 185	Cu	Bowes, Beatson, Von Rottke.	1916. 7 men employed, 400' tunnel driven. Patented.
Golden Wonder No. 1 & 9 (17.45, 17.25) 60°57'-148°00'	B 542, p 37 B 592, p 221 B 622, p 136 B 642, p 142 I 273 KX 95-213; KX 95-218	Au, Zn, Cu, Pb	Cordova Min. & Dev. Co., C. Anderson & L. Little, Golden Eagle, Mayflower, Lucky Swede.	1911. 1912: 60' tunnel work reported; stripping. 1914: several ft. tunnel. As of 1915: 5 stamp mill and aerial tram (Cordova Min. & Dev. Co.), 1916: operations discontinued. Assay $30-$100. Quartz, calcite, chlorite, Au (free) sphalerite, and limonite mineralization. Country rock: slate with massive graywacke. Ore in well defined fissure, strike SW, dip 70N, 8-44" wide, 250' trace.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Gouge Eye Creek (5.1, 4.3)	Kenai Precinct Dist. Court, pp 141-142	Cu (?)	Daisy No. 1, Quartz No. 2	1913. 2 claims. Unreferenced.
Graham & Harrison (19.55-19.65, 4.95-5.15) 60°15'-147°45'	B 379, p 92 I 273; KX 95-245	Cu	Discovery Bay	1908. 60' tunnel in greenstone.
Granite (Gold Min. Co.) (15.35, 17.2) 60°56'-148°12'	B 592, p 230 B 622, p 45, 135-138; B 642, p 141-142; B 649, p 61 B 662, p 187-188 B 692, p 149; B 712, p 33 B 722, p 14; B 813, p 18 B 864-A, p 22; B 868-A, p 22 B 880-A, p 22, 25 B 897-A, p 24 B 910-A, p 26-27 B 917-A, p 27; B 926-A, p 26 B 989-E, p 228, 304, 306-307, I 273 USBM B 142, p 40-41, 52; USBM B 153, p 47; KX 95-33	Au, An, Sb, Pb, Cu	El Primero Min. & Mil. Co., Port Wells, Totum & Erving, Millard, G. Heatherly, Sun Ray, Good Hope, Invictus, Spartan.	1912. 5 T ore shipped. As of 1913 : shaft and 30'-170' crosscut tunnel, 2 drifts on vein 75' x 60'. 1913-14; mill erected; 7' Chilean; aerial tram. 1914; largest gold quartz producer in Prince W. Sound. By 1915; 800' crosscut tunnel; 10 stamp mill; 7' lane mill. By 1916; 2000' of workings; acicular crystals; stibnite reported. 1928; closed. El Primero Min. & Mil. Co. take over. 1935; productive. 1939; no productive mining. Country rock: interbedded slates, graywackes and blue-black argillite, cut by large masses granite. S75W, dip 60N, 3"-8' wide, 150' trace. Quartz, calcite, gold, pyrite, sphalerite, stibnite, galena, arsenopyrite and chalcopyrite.
Happy Jack Copper Min. and Dev. (9.6, 3.55) 60°10'-147°45'	B 379, p 91 B 443, p 68-69 B 662, p 219-220 B 963-B, p 74; I 273, KX 95-247	Cu, Zn	Hogan, Copper Queen, Hogan Bay Copper Co., Ground Hog, Helena.	1908. Main tunnel 986' to intersect vein along fissure. Vein 1-4' thick with quartz, chalcopyrite, pyrrhotite (sphalerite). 2 tunnels 85' & 450' long. Production: some ore (several tons on dumps presently). 1945-46: 3 tunnels, 600', 600' 1200'. Country rock: slates, graywackes, greenstone.
Harvey (19.2, 4.5-4.75) 60°13'-147°48'	B 379, p 91; B 443, p 56 KX 95-235	Cu		1908. N.W. Mummy Bay, some stripping, irregular quartz lenses with pyrrhotite, chalcopyrite, pyrite. Country rock: fairly coarse grained diabase, impregnated by pyrrhotite and chalcopyrite.
Hermann & Eaton (14.15, 16.85) 60°56'-148°20'	B 542, p 37; B 592, p 231-232, B 622, p 189, B 692, p 150; B 792. p 11, B 797,	Au, Zn, Pb, Cu	Mineral King Min. Co., Herman-Everman, Bettles Bay, Merrill Min. Co.	1912. As of 1912: 70' inclined shaft. 1913: shaft to 117' with 65' drift on vein at bottom of shaft; stripping. 1914; shaft to 150'. 1916: 10 stamp mill (not installed). 1927: mill erected - 2 stamp Nisson mill. As of 1935: production Au variable.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Hermann & Eaton Cont.	p 12; B 810, p 17, B 836, p 22; B 880-A, p 25, B 897-A, p 24; B 910-A, p 26-27, B 917-A, p 27; B 926-A, p 26, I 273; BMB 142, p 41-42, 52, BMB 153, p 48-49; KX 95-28			1937, Merrill Mining; productive. 1939; no productive mining. Country rock: fine grained, dark gray graywacke and argillite; large dike. Au bearing quartz vein. Ore deposit: in fissure, 200' trace; strike N26W, dip 45E; 2-6' wide. Large quartz lenses 15-25' long. Quartz, calcite, sphalerite, pyrite, galena, chalcopyrite, Au, pyrrhotite and arsenopyrite.
Hillside (11.4, 14.4) 60°49'-148°38'	B 592, p 234; I 273, KX 95-185	Au, Zn, Pb, Cu	Hansen & Young	1913. Vein, 30' long, 3' wide (widest). Ore, with quartz, Au, pyrrhotite, chalcopyrite, sphalerite, galena.
Hirshey & Carlson (4.2, 14.6) 60°50'-149°30'	B 587, p 171-172 KX 95-136	Au, Zn, Pb, Cu	Ptarmigan Gulch, Logman.	1898. Coeur d'Alene Gulch. Relocate on Ptarmigan Gulch. 1911; relocated on Coeur by Logman; 25 claims, 40' tunnel + 50' tunnel. Palmer Creek; mineralized acidic dike; masses of quartz and stringers. Country rock: Slates and graywackes. Strike N and S dips vertical, 1'-6 1/2' wide. Arsenopyrite, galena sphalerite, pyrite, chalcopyrite, and free gold.
Hogg Bay (15.5-15.8, 1.6-1.8) 60°06'-148°12)	B 783, p 21; PE 95-3 KX 95-89	Cu	Shoo-Fly claims.	1926.
Hogan, Hample & Eagan (19.5, 3.9) 60°12'-147°46'	B 379, p 92 I 273; KX 95-241	Cu		1908. 1/4 mile west of Hogan Bay, 130' tunnel; irregular vein of chalcopyrite with pyrrhotite.
Home Camp Group (19.25, 4.5) 60°13'-147°47'	B 379, p 91 B 662, p 219 B 963-B, p 75 I 273; KX 95-237	Cu, Zn	Schultz.	1908. Prospected north shore Mummy Bay, 10' wide, 30' long opening on schistose zone with chalcopyrite and pyrrhotite; strike N20-30E; dip vertical, 10' wide. Lenticular sulfides (10"x10'). By 1916, mineralized shear zone exposed open cuts. Country rock: greenstone with slate. Quartz, pyrrhotite, chalcopyrite, sphalerite, chalmersite.
Homestake (Porcupine Cr.) (NW 1/4 5,5) 60°18'-149°26'	B 587, p 147; KX 95-145	Au, Cu	Porcupine Cr., Schoonover.	1911.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Hubbard & Elliott (19.1, 5.5)	I 273	Cu		
Hummer Vein (14.3, 16.05) 69°55'-148°18'	B 592, p 232 B 622, p 138 I 273; KX 95-195	Au, Pb, Cu	Everson, Harris & Parker.	1912. 40' tunnel, winze & stripping. 1914: 2 tunnels, 30' & 138'; 15' shaft. Country rock: slates, argillites, graywackes. Ore deposit: irregular quartz stringers (parallel) in sheared, folded and faulted country rock; 10' wide exposed strike S10-40W, dip 60W. Stringers 1-12" wide, 60' trace. Slight mineralization. Quartz, galena, pyrite & chalcopyrite.
Iron Cap (6.6, 0.2) 60°03'-149°15'	B 379, p 103-104 B 587, p 234 KX 95-166	Cu, Fe	Real Thing, Copper Chief, S. Likes	1908. Lead trace 4500' along glacier. Magnetite, chalcopyrite & pyrite. 23 claims.
Jackpot Bay (15.2, 5.85) 60°18'-148°13'	B 379, p 97 B 443, p 76, 78 B 592, p 237; I 273, KX 95-202	Au, Ag, Pb, Zn, Cu	Evans, Cooper & Matson.	1908.
Jensen (24.85, 16.05) 60°54'-147°05'	B 662, p 185 B 692, p 146-147 B 963-B, p 75-76 I 273; KX 95-258	Cu	Glacier Bay, Portsmouth, Scotia Bell, Wallace, Kilbourne.	1916. 1917: 2 exploratory tunnels. First - 225' on strongly mineralized shear zone in greenstone. Shear zone 3 1/2' wide, trace 60', strikes N, dips W. Orebody: hard shattered greenstone cemented by quartz. Second, 30' strikes N5°W, dips 65°W, 5-12" wide. Solid chalcopyrite streak to 3" wide along hanging wall of tunnel. Epidote, pyrite, chalcopyrite.
Jonsey (19.5, 6.35) 60°21'-147°46'	B 345, p 178 B 379, p 89-90 B 662, p 215 B 963-B, p 70-71 KX 95-242	Cu	Bald Eagle, Monarch, Knights I. Consol. Copper Co., Hubbard-Elliott Co., Drier Bay.	1907. Country rock: greenstone with irregular schistose zones around masses of nonschistone rock. Schistose carries chalcopyrite & pyrrhotite. Production: few hundred tons ore mined. 1916: aerial tram, power plant. 1907: abandoned.
Kavanaugh & Boon (16.15, 15.3) 60°50'-148°08'	B 592, p 234; I 273, KX 95-208	Au, Pb, Cu	Esther Is., H. Kavanaugh.	1911. 1913: 5' tunnel at 375' elevation, 1 shipment ore. Orebody in contact zone of Esther granite. Shattered graywacke bed cemented by irregular bunches and stringers of fine grained dense white quartz frozen to graywacke, 20' long 6' wide exposed; strike SW, dip vertical, bluish quartz zone carries free gold; quartz, chlorite, pyrrhotite, galena, chalcopyrite, pyrite.
Kenai Star (4.15, 14.8) 60° 52'-149°30'	B 542, p 38; B 587, p 171 B 592, p 63;	Au, Pb, Zn, Cu	Logman.	1898. 1912: 50' shaft. 1922: 5 stamp mill installed; unprofitable; mill removed. 3,000' of tunnels. Sample with 30% quartz - 23¢/T Au.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Kenai Star Cont.	B 755, p 30 B 773, p 38 B 849-I, p 501-503; KX 95-134			Mineralized acidic dike, quartz masses and stringers, fractured. N.S. strike, vertical dip, 3-6' wide. Country rock: slate, strike N30E, vertical, with quartz, arsenopyrite, pyrite, chalcopyrite, galena, sphalerite, free gold.
Knights I. Alaska Copper Co. (19.8, 6.0) 60°20'-147°44'	B 379, p 90 B 662, p 215-216 B 963-B, p 71-72 I 273; KX 95-249	Cu, Zn	Reasor, Clouse, Phillips Hillside, Winchester, Tremont, Ajax, Anna D., Bully Boy, Waterfront, Legal Tender, Lakeview.	1908. 300' tunnel to intersect vein at 360' above tunnel. Vein: schistose zone in greenstone with quartz, pyrrhotite, chalcopyrite. 1916: crosscut tunnel 650' long; 3 drifts (20', 40', 60'); winze, raise. Sheared slightly mineralized zone (poorly defined on surface) strikes N15E, few 100' trace, 12' wide, quartz stringers, lenticular. Chalcopyrite, chalmersite, sphalerite, pyrrhotite, quartz. Basic dikes 1"- 2" thick and irregular masses of basic igneous rocks cut and intrude mineralized shear zone. Patented.
Knights I. Copper (Min.) Co. (19.55, 5.75) 60°18'-147°45'	B 284, p 85; B 379, p 90 B 443, p 56; B 520, p 28 B 542, p 34; B 622, p 133 B 963-B, p 73; I 273, KX 95-248	Cu	20th Century Knight, Louise Bay.	1905. Lens of ore 30' x 40' with chalcopyrite, pyrrhotite in greenstone; exposed, strike S72E along ore body. Second smaller lens; strike N7W, dip 62N above ore body; 9' across, 25' long. 1914: 25' drifting; open cuts. By 1945-46 abandoned. Country rock: 1) fine grained, hard, black; 2) coarse-grained diabase; 3) porphyritic diabase. Ores replacement of country rock.
Knights I. Min & Dev. Co. (20.15, 8.0) 60°25'-149°20'	B 379, p 93 B 443, p 69-70 B 662, p 212 B 963-B, p 68-69 I 273; KX 95-256	Cu, Zn		1908. 2 tunnels; 1) 85' cutting 5 schistose zones 2-18" wide in greenstone (winze drift). Zones with pyrite, chalcopyrite, pyrrhotite, quartz, epidote; 2) 160'. 1916: flooded and abandoned.
Lake Shore Claim (6.4, 16.6)	Anchorage Recording Office Vol. 2, p 197	Cu (?)	J. McFarland, R. Lang.	1911. Northerly side of Turnagain arm about 2 1/2 miles west of Glacier Creek.
Latouche (18.4-18.45, 1.1-1.2) 60°04'-147°55'	AR 20, p 419-420 B 284, p 82, 85-87, B 314, p 27; B 345, p 178, B 379, p 88, B 442, p 39, 165-165, B 443, p 52-54, 56-58, 63-67 B 480, p 31, 81 B 520, p 27-28	Cu, Au, Zn, Pb, Ag, Ni	Barrack-Girdwood, Beatson-Bonanza, Big Bonanza, Blackbird, Bonanza, Chenega, Girdwood, Kennecott Copper Corp., Ladysmith Smelt. Corp., Latouche Copper Min. Co., Whitewing, Chinega, Downing, Bazard, Victor, Blue Bell, Hillside, MS 970.	1897. Bonanza Mine: 2 tramways; native Au. (1897, discovery, 1899, first shipment). 1910: diamond drilling. 1907: production, several 100 tons. Latouche Copper Min. Co.: shallow pits and trenches; 700' tunnel, ore of pyrrhotite and chalcopyrite. Production: several hundred tons by 1910. Chicago-Latouche Min. & Power Co.: 1908: 1400' tunnel. Reynolds Alaska Dev. Co.: 100' shaft; ore body strikes N NE, dips 70°W; (lenticular) to 45' thick; small shipments by 1908. Pyrite and chalcopyrite, with slate and graywacke. Blackbird: (1917): Underground development work. 12-50' wide zone;

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Latouche Cont.	B 542, p 34 B 592, p 62, 240, 243, B 605, p 13-14, 60-61, B 622, p 45, 131-133, B 642, p 138-139, B 662, p 44, 184, 201-202, 204-206, 208-209, B 692, p 18, 31, 144-145, B 712, p 32-33, B 714, p 12- 14, 21-24, 69, 77 B 722, p 19, 21, 39-40, B 739, p 10, 23-24, B 755, p 15, 28, 119, B 773, p 28, 38; B 783, p 20, B 792, p 27-28, B 797, p 32, 35 B 810, p 45-46; B 813, p 53-54, B 824, p 59; B 836, p 61, B 844-A, p 60-61, B 857-A, p 57, B 963-B, p 63-65, B 989-E, p 228, 262, 266, 281, 298-300, 302, B 1024-E, p 110, 118; I 273, BMB 142, p 41, 52; BMB 153, p 47-48, BMB 405, p 25-26, 205-206, 219-220, 269, IC 7379, p 33; KX 95-233 KX 95-52, KX 95- 88, KX 95-227			700' trace. Latouche Cons. Copper Co.: pits on SE end of island. Seattle-Alaska Copper Co.: shaft and steam plant on SE shore. 1916: idle. Latouche I. Copper Min. Co.: 60' shaft; 100' tunnel. Lamprophyre dike occurs underground in Bonanza. Country rock: igneous, slates and graywacke. Ores: fractured or sheared zones with chalcopyrite pyrrhotite in altered slate and graywacke. By 1921: 6164' underground work. 1910-30: production 5,500,000-6,000,000 T ore; 200,000,000-210,000,000 lbs. Cu. Mining done by surface glory holes and modified shrinkage. 1930: closed; ore exhausted. Largest ore body: rough lenticular; 800' long, 340' wide (mas.) 300' interior shaft, 970' adit stopes 70' wide; 70'-270' long.
Latouche I Copper Min. Co. (Ltd.) (18.7-19.05, 0.3-1.05) 60°14', 148°-00'	B 379, p 89; B 642, p 139, B 662, p 210-211 I 273; KX 95-226	Cu, Zn	Alameda	1897. 1908: 60' shaft sunk, 100' tunnel (SE shore of Latouche island). By 1916: 2 complete 65' shafts. Production: several small shipments by 1905. Chalcopyrite, pyrrhotite, sphalerite and quartz mineralization. Country rock: graywackes from few

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Latouche I Copper Min. Co.				inches to several feet thick with slates and argillite and chert. NE strike, 40°-65°W dip.
Louis Bay (20.1-20.15, 8.35-8.5) 60°25'-147°40')	B 662, p 211-212 B 963-B, p 69 I 273; KX 95-256	Cu, Zn	Disk I.,Knights I. Min. and Dev. Co., Von Greunther. Singletary.	1908. 10' adit delimited shattered zone in silicified and epidotized greenstone, N55°E strike, 75°E dip; 50' trace, 4 1/2' width (max). Quartz, epidote, pyrite, pyrrhotite and chalcopyrite.
Lower Herring Bay (19.3, 7.25) 60°23'-147°47'	B 662, p 213 I 273; KX 95-239	Cu		1916. East of NE arm of Lower Herring Bay. Short tunnel on flat lying stringer 1-6" thick cuts greenstone. Epidote, pyrite, and chalcopyrite mineralization.
Lynx Creek (6.0-6.05) 60°40'-149°20'	B 277, p 9, 37, 40, B 314, p 123-124; B 379, p 52 B 520, p 141, 161 B 587, p 207-208; B 642, p 55, B 662, p 44; B 692, p 176 B 755, p 29; B 773, p 38 B 783, p 12; B 797, p 17 B 810, p 23; B 813, p 26 B 824, p 30; B 836, p 30 B 833-A, p 30 B 849-I, p 522,527, B 857-A, p 28; B 864-A, p 32 B 868-A, p 33; B 880-A, p 37 B 910-A, p 43; BMB 153, p 34 KX 95-157; KX 95-159	Au, Cu	Ready Bullion Copper	1895. Almost worked out as of 1904. Production to 1904: $87,000.00. 1906: no production; development work. 1917: development work. 1915-31: one of largest operations in area. Au occurs scattered over bedrock. 1931-36: smaller operations. Country rock: (gravel) slate and arkoses plus altered diabase boulders. Heavy Au with native Cu, nuggets 10-25¢ common, $60-$70 found.
Mallard Bay (18.95, 5.05) 60°15'-147°53'	B 662, p 217 B 963-B, p 73 I 273; KX 95-229	Cu, Au		1916. Shallow shaft and open cuts. 1945-46: no ore shipped. Epidote, pyrite, chalcopyrite, quartz and Au. Country rock: greenstone. Ore body: large curved shear zone in country rock with small shears wrapping lenticular horses of greenstone

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Mallard Bay Cont.				on footwalls; strike N35°E, to N80°E, dip 60°–75°W. Ore: 5% Cu in shaft.
Minnie (19.45, 4.3) 60°12'–147°47'	B 662, p 219 B 963-B, p 74–75; I 273 KX 95-240	Cu, Zn	Mummy Bay, Home Camp.	1916. 140' adit in small slightly mineralized shear zone in slate, graywacke and greenstone 700' above bay. Chalcopyrite, sphalerite, pyrrhotite, quartz and native Cu.
Mizpah (5.05, 4.75) 60°16'–149°26'	B 520, p 155 B 587, p 145–146 KX 95–147	Pb, Zn, Cu	Pullen-Davis, Kennedy.	1911. Country rock: vertical beds of slate and graywacke striking N18E. Ore deposit: exposed at 30' open cut. Fissure cemented by lenses and stringers of quartz. Calcite, galena, sphalerite, pyrite, arsenopyrite.
Moore (18.9, 8.3)	B 692, p 144, 146, I 273	Cu		1913. Small shipments of Cu. Drier Bay (Knight Island).
Monarch (19.25, 6.65) 60°21'–147°48'	B 345, p 178 B 379, p 89–90 B 662, p 215 B 963-B, p 71; I 273, KX 95-236	Cu	Knight Is. Cons. Copper Cu, Hubbard-Elliott.	1908. 350' development work (underground). 1916: no definite ore body seen underground. On dump: pyrite and chalcopyrite in sheared greenstone.
Mountain Sheep (4.9, 13.7)	Kenai Precinct, District Court	Cu (?)	Tom Tacy	1914. 2 claims. Unreferenced.
Mummy Bay (18.75–19.4, 4.3–4.65) 60°51'–149°30'	B 284, p 85; KX 95-240	Cu	Home Camp, Minnie	1905. N.E. Mummy Bay. Shear zone 1–5' wide with irregular stringers of chalcopyrite, pyrite, pyrrhotite exposed at two points. Country rock: greenstone.
Nellie (19.6, 6.2) 60°20'–147°45'	B 662, p 217–218 B 963-B, p 71; KX 95-246	Cu	Drier Bay	1916. 5 open cuts, 6' shaft, 36' adit. Country rock: greenstone. Mineralized shear zone (lenticular) strike N25E, dips 75E, 9'–20' wide. Chalcopyrite, chalmersite, pyrrhotite and quartz.
Nelson & Rystrom (24.7, 16.16)	I 273	Cu		
Nugget (17.4, 17.3) 60°57' – 147°38'	B 542, p 37 B 592, p 220–221 B 622, p 135; B 642, p 142 B 622, p 189; I 273	Au, Ag, Pb, Cu	Roe	1911. 1913: tunnel plus 175' underground work. 1 shipment ore. 1914: new lead discovery. 1915: Cordova Mining & Dev. Co. installed 5 stamp mill and aerial tram. 1916: 45' of tunnel driven. Country rock: graywackes and black slate. 2 ore bodies 700' apart: 1) 4–10" vein; 70' trace, strike, NE, dip vertical; 2) fissure 4–30" wide; 200' long, strikes N80°E,

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Nugget Cont.	KX 95-219			dip 75°N. Quartz varies from little in fissure to 20" wide solid vein. Quartz, calcite, chlorite, galena, pyrrhotite, chalcopyrite, pyrite and limonite.
Olson & Viette (15.1, 17.75) 60°59'-148°15'	B 592, p 229-230 KX 95-201	Au, Zn, Cu	Dominick Ledge.	1912. Located Dominick ledge. 1913: short crosscut tunnel and stripping. Country rock: argillites and graywackes intruded by a large dike of medium grained light gray igneous rock. Ore in well defined fissure 3-4 1/2' wide; strike S30°W, dip 80°E to vertical; 2000' trace. Maximum 2' quartz filling in fissure. Quartz, calcite, pyrite, sphalerite and chalcopyrite mineralization.
Palmer Creek (3.9, 13.8)(?)	Cook Inlet Precinct, Third Division, p 223-4	Cu (?)	R. Morrison	1910. No name claim. Unreferenced.
Pandora (19.9, 6.55) 60°22'-147°43'	B 379, p 92-93 B 520, p 28; B 642, p 139 B 662, p 213; B 692, p 146 B 963-B, p 69-70 I 273; KX 95-252	Cu, Zn	Wallace, McPherson & Valentine, Snowstone.	1908. Small shipment. 1915: development work; 90' shaft sunk on 5' solid ore; 10' of crosscuts, 132' of drifts, 75' adit, (wide chalcopyrite bearing ore zone developed). 1917: open cuts, lead trace now 1000+ feet. By 1945-46: abandoned. Ore formed by replacement, impregnation of sheared material and filling of fissure. Country rock: greenstone with some sheared and faulted graywacke. Schistose zone in greenstone 50'-100' wide. Strike N10-15W, dips 65-80E. 3 smaller zones 5-24" wide. Sulfide lenses to 15" thick. Chalcopyrite, pyrrhotite, chalmersite and quartz.
Portage Pass Min. Co. (10, 13) 60°45'-148°45'	B 642, p 139 B 926-D, p 233	Cu (?)		1915. Copper lode north side Portage Bay. No development work.
Primrise Min. Co. (5.05, 5.75) 60°20'-149°27'	B 542, p 37-38 B 587, p 146-147 B 592, p 63; B 622, p 46, B 642, p 56; B 662, p 45, B 692, p 175, B 880-A, p 26; B 897-A, p 32 BMB 142, p 43, 52 BMB 153, p 34-35; KX 95-10	Au, Zn, Pb, Cu	Porcupine Creek, E. Farrell, Naw-Ruz Star Lode, Spruce Lode.	1911. As of 1912: 3 ton mill erected. 45' shaft; 350' of adits and drifts. 1913: 150' crosscut and 30' raise. 1916: some development; little ore treated. 1917: few tons reported mined and milled. 1935-36: some productive mining done. Compact stringer lode 9' wide. Parallel lenses and stringers of quartz 1-15" wide, assay to $100. Vein in interbedded slate and graywacke. Quartz stringers at 40' depth converge to 7' thick solid quartz. Crystalline quartz, calcite, arsenopyrite, sphalerite, chalcopyrite, galena, pyrite. Free milling ore.

SEWARD QUADRANGLE Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Quartz Cr. Kenai L.	B 442, p 172; B 520, p 141, 160-161, 167-168 B 587, p 163, 201-202, B 622, p 46; B 642, p 55 B 849-I, p 518; KX 95-114	Au, Pb, Zn, Cu	Lyengholm, Hargood & Larson, Kaffir, Buster, Yellor Jacket, Fairman and Madsen, (Slate Cr.) (trib. Quartz Cr.)	1908. 1914: Kaffir Ledge: 20' crosscut tunnel and open cuts. Galena, sphalerite, pyrite, chalcopyrite, arsenopyrite and Au. Buster vein: 16-18" wide; quartz stringers. Yellow Jacket: 1908: 35' crosscut; 1911: 44" quartz vein, N60°E, dip vertical, 1' wide, 1500' trace, 200' exposure; assay $9 Au/ton. Country rock: sheared slates and graywackes.
Ready Bullion Copper Co. (5.85, 11.75) 60°40'-149°20'	P 70, p 164; B 259, p 99 B 277, p 48 B 314, p 124-125 B 587, p 177-178 B 849-I, p 520-521 KX 95-157	Cu	Lynx Cr.	1904. Vein of Cu sulfides. 1905-06: development work, 350' tunnel. 1906: work discontinued. Country rock: graywacke and slate. Chalcopyrite with pyrrhotite and pyrite with quartz.
Real Thing (6.55, 0.5)	B 379, p 103-104 B 587, p 234; KX 95-166	Fe, Cu	Copper Chief, Iron Cap, Likes and Frazer.	1908. Magnetite with chalcopyrite veinlets .03" wide and pyrite. Strikes NW-SE 500-600' long 3/4 mile trace 9' wide (max.).
Redman & Guyot	B 379, p 103	Cu	Reman, Guyot	1908. Vein 9' wide of porous heavily iron-stained gossan with malachite, azurite and chalcopyrite.
Reed, Gauthier & Copper (15.1, 16.85) 60°57'-148°15'	B 592, p 230-231 B 622, p 138; I 273 KX 95-200	Au, Zn, Cu	Everson, Hobo Bay (south).	1912. 1913: 160' crosscut, shallow shaft opencuts, stripping, 25' adit on shore with 30' winze. 1914: 12' more on crosscut. Country rock: interbedded black slate and dark gray graywackes. Ore body in fissure stripped at 800-900' intervals. Strike S30°W, S60°W, dips 70°N, 30-36" wide. Quartz, calcite, pyrrhotite, chalcopyrite, sphalerite, pyrite.
Resurrection Bay Min. Co. (4.85, 1.7)	B 379, p 107; B 587, p 142	Au, Zn, Pb, Cu		1908. Two tunnels. One 60' long;brecciated graywacke. Quartz with pyrite, chalcopyrite, sphalerite, pyrrhotite. Second tunnel 40' long brecciated zone in graywacke; strikes N47°W, dips 80°N; black slate. 1911-1914: tunnels 60', 10' 70' and 15' winze.
Reynolds Alaska Dev. Co. (18.1-18.3, 0.45-0.7) 60°01'-147°58'	B 284, p 85; B 345, p 178 B 379, p 88-89 B 443, p 52-53, 56, 66-67, B 520, p 28	Cu, Au, Ag, Pb, Zn	Duchess Duke, Horseshoe Bay, Iron Mtn., Blue Fox, Northern Pyrites Corp., Radco Ind.	1898. 1905: Duchess claim, Latouche Island: 300' tunnel, 2 ore bodies. Blue Fox claim: band of solid pyrite; tunnel 50' long, 1 ore body. Country rock: interbedded graywacke, slate, chert and limestone. 1908: Reynolds built small town on Horseshoe Bay. 100' shaft with crosscut on bottom (flooded) plus 2000' of tunnel primarily on the Duchess. 1916: development work.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Reynolds Alaska Dev. Co. Cont.	B 662, p 201-202, 206-208; B 692, p 145; B 714, p 22-23 B 963-B, p 65-66 B 989-E, p 262, 299-300, B 1024 E, p 107, 109-110, 113-122, I 273; BMB 153, p 49, KX 95-56; KX 95-231			Cu deposits found in sedimentary rocks. 1917: no development work. Production:small shipments by 1910: several hundred tons. Ore:replacement deposit with tabular lenses of massive and disseminated sulfides in a slate-graywacke country rock.
Seward Bonanza Gold Mines Co. (5.9, 6.55) 60°23'-149°20'	B 442, p 173 B 520, p 143, 144-146, 160, B 542, p 38 B 587, p 149-151	Au, Pb, Zn, Cu	Gould, Hickey, Lakeview Min. Corp., Miller, Stevenson.	1907. 1909: quartz veins cutting slates and graywackes. Gould property. 1912: Hickey property, 200' adit. 110' tunnel along vein, upper crosscut tunnel 40' in length. Well defined fissure vein; strike N75°W, dip 80°S, 1 1/2-5' thick. Country rock: black slate, graywacke and limestone lenticular quartz stringers.
Shaw, Deubruel & Bouchaert (6.25, 2.0) 60°07'-149°17'	B 379, p 103; B 587, p 233 KX 95-162	Cu, Au	Goodwin, A. W. Smith, Prospect No. 69	1908. Nearly solid pyrrhotite with chalcopyrite, 700 pound boulder of pyrrhotite (solid).
Siwash Bay (29.25, 17.3) 60°56'-147°39'	B 662, p 185 B 963-B, p 77, I 273; KX 95-255 KX 95-254	Cu	Wagner, Beach Comber, Anderson.	1916. As of 1945, no production.
Snowstone Group (20.05, 7.5) 60°23'-147°42'	B 379, p 92; I 273 KX 95-253	Cu	Wallace, McPherson & Valentine.	1908. 2 tunnels; 55' and 25'.
Snug Harbor (19.8, 4.9) 60°15'-147°44'	B 379, p 92; B 442, p 165 B 662, p 218-219 B 963-B, p 74; I 273, KX 95-250	Cu, Zn	Bettles.	1909. As of 1916: short tunnel. Shear zone. 1945-46: no work done recently. Ore body: Strike N35°E, dip 73°W, 5 1/2' wide maximum; lenses of solid sulphide 12" thick. Quartz, sphalerite, chalcopyrite and pyrrhotite.
Sweepstake Min. Co. (Harriman Fiord) (13.8, 17.2) 60°58'-148°27'	B 592, p 228-229 B 622, p 139; B 662, p 189 B 692, p 150; I 273, KX 95-96	Au, Zn, Pb, Sb, Cu	Sweepstakes, Pedersen & Hanson.	1912. As of 1913: 150' tunnel; stripping along vein. 1914: underground work. 1916: 2 stamp mills erected. 1917: 1800' aerial tram; no operation. Au bearing quartz lode, 18"-4' wide, strike N65°W, dip vertical. Country rock: interbedded slates and graywackes; acidic dikes 6-48" thick. Vein exposed for 150'. Quartz, stibnite, calcite, gold arsenopyrite, pyrite, sphalerite, galena and chalcopyrite.

SEWARD QUADRANGLE Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Swetmann (3.75, 10.8) 60°35'-149°33'	B 824, p 21 B 849-I. p 515 KX 95-120	Au, Ag, Pb, Cu	Baughman, New Hope.	1931. Pit; 260' tunnel; 120' tunnel intercepting vein 60' below outcrop; opencuts. Au 0.16 oz/T, Ag 0.2 oz/T. Quartz, arsenopyrite, pyrite, chalcopyrite, galena. Vein strikes N50°W, dip 60°W, parallel country rock cleavage (graywacke); 10-16" wide, veinlets 2-3" wide; in old shear zone.
Taylor (3.9, 15.6) 60°53'-149°32'	B 849-I, p 506; KX 95-125	Au, Pb, Zn, Cu	Queen of Hills, Dunlap.	1931.
Teddy Bear (4.05, 13.85) 60°35'-149°30'	B 849-I, p 499-500 KX 95-131	Au, Pb, Zn, Cu	Lockhart, John Hirshey, Pete Kogovich.	1931. Open cuts, 50' tunnel. Slightly mineralized dike NW strike 45°-60°E, dip. Country rock: slate and graywacke. Arsenopyrite, chalcopyrite, galena, sphalerite and free Au.
Thomas-Culross Min. Co. (15.7, 13.25) 60°43'-'48°13'	B 592, p 235-236 B 622, p 139; B 642, p 142; B 662, p 188; B 692, p 149; B 755, p 29; B 792, p 10-11, B 797, p 12; B 926-A, p 26; B 989-E, p 307; I 273, BMB 142, p 42, 52, BMB 153, p 50; KX 95-206	Au, Pb, Zn, Cu	Chelan, Culross, I. Min. Co., Thomas Bay, Nordstrom, Carlson, Christiansen & others, Thomas & Thomas Bugaboo.	1907. 1910: relocated as Bugaboo. As of 1913: 140' cross-cut; 2 shallow shafts on vein; trenching; production; 5 ton ore to Tacoma. 1915: development work; 1 small shipment. 1916: 10' Lane mill; Pelton waterwheel; Samson jaw crusher. 1917: small shipment ore. 1922: reopened. 400' adit. 1926: prospecting work. Country rock: greenstone, slates and graywacke. Ore body: fissure in greenstone 800-900' trace, 36" wide. Strike N15°E, dip vertical. Quartz, chalcopyrite, galena and sphalerite.
U and I (18-19, 5-6) 60°15'-147°57'	B 662, p 218, 133; KX 95-230	Cu	Una, Alhambra.	1914. 65' of tunnel.
Wells Bay Gold & Copper Min. Co. (21, 16) 60°58'-147°30	B 662, p 185 KX 95-260	Cu (?)	May be in Anchorage quad.	1916. Crosscut tunnel started.
Wilcox (19.45-19.6, 4.1-4.2) 60°10'-147°55'	B 379, p 91; I 273 KX 95-244	Cu	Hogan Bay, Mullins, James, Coal Co.	1908. Veins of disseminated chalcopyrite.
Wilson Bay (18.3-18.4, 0.9-0.95) 60°04-147°55'	B 379, p 88; B B 963-B, p 66 I 273; KX 95-233	Cu	Chicago Latouche Min. & Power Co., Bazard, Chicago-LaTouche Min. & Power Co. Bonanza (?)	1908. Power plant.

SEWARD QUADRANGLE Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Yakima Ledge (14.6, 16.95) 60°56-148°17'	B 592, p 231; B 622, p 138 B 662, p 189; I 273 KX 95-197	Au, Zn, Pb, Cu	Brereton, Oome & Howell.	1913. 25' tunnel; strippings. 1914: tunnel to 50'. 1916: tunnel is 65'. Country rock; graywacke and slate. Ore body N12°E, dip 80 W. Fissure 10-31" wide, quartz 10-31" wide, heavy gouge. Quartz, calcite, Au, pyrite, sphalerite, arsenopyrite, galena, chalcopyrite and pyrrhotite.
VALDEZ QUADRANGLE				
Addison Powell (7.6, 0.7) 61°00'-146°7'	B 642, p 140; B 662, p 183 B 963-B, p 52-53 KX 86-116	Cu, Au	Sulphide Gulch, Peaboby, Alaska Copper Corp., Karla, Aldridge.	1915. Large low grade deposit. Chalcopyrite, some malachite and Au. 150' open cuts and 100' tunnel.
Alaska (SE 1/4 5, 3) 61°10'-146°20'	B 622, p 169 KX 86-106	Au, Pb, Zn, Cu	Alaskan, Queen of Sheba.	1914. Vein 6"-51"wide with 150' outcrop. Country rock: sheared graywacke. Vein minerals: quartz, pyrite, galena, sphalerite, chalcopyrite and gold. 200' adit driven towards a second vein.
Alice Mines, Ltd. (3.4, 2.4) 60°08'-146°37'	B 520, p 123; B 542, p 35 B 592, p 238-239 B 622, p 152, 175-176, B 642, p 144; B 662, p 190-191 BMB 153, p 43; KX 86-74	Au, Ag, Zn, Pb, Cu	Alice, Never Know.	1910. 1911: development work. 1912: 100' shaft; shipped 30 tons. 1913: 100' of drift. 1914: 170' of shaft, 247' adit; total 517. 1915: development work. 1916: small test shipment from surface cropping; had 100 hp boiler, 360 cubic ft/min compressor. Country rock: schistose graywacke and slate with some green schist. Fissure filling 1/2-15" wide traced 110' N60-65W, dip 20-80S. Quartz, calcite, chlorite, carbonates, gold, silver, pyrite, chalcopyrite, arsenopyrite sphalerite and galena mineralization.
Amman (24.35, 12.3) 61°40'-144°05'	B 947-G, p 125- 126, KX 96-64; KX 86-148	Cu, Ag	Blue Bird (copper), Bunker Hill (copper), Cave (copper Cr.)	1910. 1944: lower adit 580'-, upper adit 25' (done since 1914). Adit on nose of small anticline. Country rock: Chitistone limestone. A few irregular veinlets of malachite, azurite and calcite (1/4"). Mineralized breccia zone 2-6" strikes E, dips 45S, containing quartz pyrite, bornite, chalcopyrite, chalcocite, covellite, malachite and azurite.
Barry & Simpson (10.6-10.7, 2.4-2.5) 61°07'-145°44'	KX 86-154	Cu, Au	Thompson Pass	1965. 4 claims.
Bayview (6.15, 0.1) 61°00'-146°18'	B 692, p 165, 171 KX 86-109	Cu		1917. Mineralized zone in greenstone.

VALDEZ QUADRANGLE Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Bear Creek (23.0, 15.0) 60°48'-144°15'	P 15, p 18; P 41, p 94 KX 86-138	Cu	Cheshnina R., Mt. Chitty, Thomas & McDonough. Tibbits.	1902. Chalcopyrite associated with epidote and quartz. Bear Creek: trace gold, 1.8 oz. Ag/T. Bornite in quartz. Mt. Chitty: 0.1 oz. Au, 4.52 oz. Ag/T. Native Copper nuggets found in stream wash. Greenstone-limestone contact, lava covered schists and massive intrusives. Patented.
Benito Creek (23.85, 11.35) 61°38'-144°10'	B 622, p 155 B 714, p 193-194 B 745, p 142-143, 146, B 755, p 69; KX 86-139	Au, Ag, Cu ?	Conning & Centino.	1912. Three claims. Veins 2' thick N10W, vertical dip. Quartz, calcite, chalcopyrite, bornite, pyrite and Au, unevenly distributed.
Blackney (22.4, 8.3) 61°26'-144°20'	B 520, p 101-102 B 576, p 51-52 KX 86-134	Cu	H. Noerter	1911. *Patented claims. Shattered greenstone from diabase* intrusion or surface flow. Claim on 3' fault zone with numerous parallel fractures N75W, dip 45SW. Filled with pyrite and chalcopyrite from 1/2" to 18". Incline sunk.
Blue Bird (copper) (24.65, 12.1) 60°38'-144°08'	B 745, p 103; B 783-A, p 21 B 947-G, p 131; KX 86-50 KX 86-51; BMB 142, pp 37,52 BMB 153, p 30	Cu, Au	Hubbard, Hubbard & Fay, Nova Auartz, Discovery #1, Hubbard & Allen.	1923. Country rock: greenstone cut by shear zones locally stained by malachite containing calcite and epidote. N45-65W; dip vertical. By 1943-44, had 2 small open cuts in greenstone 100' below fault contact with Chitistone limestone. Prospecting work did not find an ore body. 100 pounds of bornite-energite by each cut. Enargite replacing bornite; enargite contains a few covellite grains; chalcocite along boundaries. Patented.
Bluebird (gold)	B 520, p 120, 123	Au, Pb, Cu	Bluebird.	1911. Quartz parallel to slate bedrock. Open cuts 100' in length contain pyrite, pyrrhotite and free gold. 1912: new company took over. 1913: total 115' of cross cut tunnels and considerable stripping. 1914: 12' of tunnels including 10' of drift. Ore body: poorly defined mineralized shear zone 4-10' wide includes shattered mineralized quartz. Minerals present are calcite, chlorite, pyrrhotite, chalcopyrite, galena and pyrite. 1916: tunnel extended 20'.
Bunker Hill (copper) (24.85, 12.2) 61°40'-144°00'	B 745, p 104 B 947-G, p 131-132, KX 86-140; KX 86-141 B 836, p 63; B 897-, p 41	Cu	Hoffman, Amman, Coronado.	1923. Three claims. Adit in greenstone near thrust fault of greenstone over Triassic shale. By 1943-44, had 15' adit in Chitistone limestone - 25' limestone sandwich between Nickolai greenstone, below and above (thrust fault); limestone extensively fractured. Adit along vein S10E. Vein contains malachite, azurite and a little bornite, chalcopyrite, calcite and epidote; maximum width is 1", average 1/4".

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Canyon Creek (22.0-24.0, 5.0-6.5) 61°15'-141°15'	KX 86-149	Cu, Ni	Sulfide, Boothby, Spirit Mt. Mining Co.	1957. 36 claims.
Cave (24.45, 12.25) 61°40'-144°05'	B 745, p 102-103 B 947-G, p 129-130, KX 86-64; KX 86-148	Cu, Ag	Galena Bay Mining Co., Alaska Copper Mining Co.	1923. 1943-44: 223' adit. Greenstone and overlying Chitistone limestone contact. Mineralized zone in adit 23' from portal. Shear zone 2 to 12" contains quartz, malachite, bornite and a little chalcopyrite. Limestone above portal shows azurite and malachite on a few joints.
Copper Creek (24.35-24.85, 12.1-12.35)	P 15, p 18, 21-22, P 41, p 94, 97, B 345, p 144-145, B 745-, p 101; B 797, p 36, B 810, p 46-47, B 813, p 54; B 824, p 60 B 836, p 63, B 997-A, p 41 KX 86-64; KX 86-148 KX 86-153	Cu, Ag	Amman, Blue Bird (copper), Bunker Hill (copper), Cove, Forget-me-not, Mountain Boy, Mountain Sheep, Mullen, Peacock, Alaska Copper Mining Co.	1890. All but Mullen Group owned by A. Crawford and A. Amman. Visited by Schraeder in 1900. Six or 8' shaft cuts 1-3' of poorly defined mineralized zones. Chalcopyrite and bornite stained with malachite and Fe oxide are replacements in limestone.
Coronado Copper & Zince Co. (21.2, 8.1) 61°27'-144°30'	KX 86-147	Cu, Fe, Ni	Iron, Woods Canyon	1956.
Cube (Min. Co.) (3.85, 2.5) 61°08'-146°34'	B 592, p 239 B 622, p 176-177 B 642, p 144 B 662, p 190-191 B 692, p 150-151 BMB 153, p 44; KX 86-82	Cu, Zn, Pb, Au	Three-in-one.	1913. 1914: 550' adit, 160' raise. Schistose graywacke and argillite N77E, dip 60N; width of fissure 3-10'; quartz filling inches to 8', average 2'. 1916: drove 600' more tunnel and installed amalgamation plant. 1917: closed down operations.
Divide Creek (22.9, 6.75) 61°23'-144°15'	B 576, p 52;	Cu		Cu reported on trail between Divide and Falls Creek. Small open cut in jointed and fractured greenstone, showed chalcopyrite and bornite disseminated and as veins.
Elliott Creek (23.55-24.7, 11.7-12.15) 61°38'-144°08'	P 15, p 16-19, 23-26, P 41, p 92-93, 99-102 B 213, p 145;	Cu, Au	Albert Johnson, Chance, Cliff, Copper King, Copper Queen, Curtis, Elizabeth, Fog, Goodyear, Guthrie, Henry Prather, Hubbard	1899. 1907: obtained patents. Elizabeth: hand drilling several hundred feet. Goodyear, H. Prather, Curtis-Rainbow Creek: $2-$3/Ton. Swazie claim: $2-$3/T Au in addition to Cu. 1914: Albert Johnson's main tunnel 850' in greenstone near

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Elliott Creek Cont.	B 314, p 28, B 345, p 146-152, B 374, p 65-71, B 379, p 155: B 442, p 161 B 542, p 83; B 592, p 61, B 622, p 44, 112-113, B 642, p 54, B 662, p 156-157, B 745, p 83-83, 80-90, 115-125, 146, B 755, p 26; B 783, p 21 BMB 142, p 37, 52 BMB 153, p 30 KX 86-50; KX 86-51 KX 86-52		Elliott (Copper Mines Dev. Co.), Kings, Lawton, Leland, Lizzie G, Louise, Marie Antionette, Marmot, Mary Ellen, Mineral King (copper), Swazie, Van Dyke, Lawson.	contact-diorite porphyry dikes. Mary Ellen claim: tunnel started for gold. Weathered surface material contains considerable gold. 1916: 50 claims, some patented. A. Johnson tunnel (Deception Cr.): total 1076', power drills used. By 1923: additional crosscuts total 300' on Rainbow Creek. Mineral King: indefinite belt of amygaloidal greenstone trends N60W, vertical. Ore impregnation coincides with crushed zones; partial replacement by chalcocite and bornite. Channel sample across 4' zone gives 10.85% Cu. Chopper King: 1902; 15' cut, 6-8' deep in greenstone (irregular mineralized masses). Considerable bornite and little chalcopyrite. No definite veins or fissures but generally parallel to contact and old basalt flow surfaces. Copper Queen: 1902; no development work. Small outcrop of greenstone impregnated with chalcopyrite. Marmot: 1902; no development work. Small outcrop of greenstone impregnated with bornite. Louise: 1902; open cut. Channel sample across 16' face of crushed greenstone impregnated with chalcopyrite and bornite said to give 20-25% Cu. Goodyear: 1902; open cut shows well defined fissure vein 4-5' wide, 50-75' long, N12E, dip 45SW. Quartz-calcite with bornite and some chalcopyrite appears in lenses; fault controlled. Henry Prather: same as Goodyear. Elizabeth: maximum 2-3' assay 1.87 oz. Ag/T metric and 21.69% Cu. Fog: calcite lens with some chalcopyrite.
Falls Creek (23.0, 6.55) 61°21'-144°15'	B 520, p 103; B 576, p 52 KX 86-137	Cu		1911. Greenstone and altered sedimentary beds of slate, schist, and siliceous limestone. Two tunnels 105' and 150' long. Ore: disseminated bornite, covellite and chalcocite.
Forget-me-not (24.6, 12.1)	B 745, p 103 B 947-G, p 130-131	Cu		1923. Small open cut on irregular fracture zone in greenstone near contact with limestone, contains pyrite or chalcopyrite and a little disseminated bornite; malachite coating; no indication of ore body.
Golden Dollar (5.5, 3.75) 45 61°13'-146°24'	B 622, p 166-167, KX 86-93	Au, Pb, Zn, Cu		1913. 20' tunnel on joint fractures, 1"-6", average 4"; 16' x 20' open cut. Quartz, pyrite lenses; galena, sphalerite, chalcocite, and gold in slaty gouge in schistose graywacke; N80E dip 70N.
Gold King Mln. Co. (2.25, 3.65)	B 592, p 63, 237-238, B 622, p 45, 152, 157, 183-185, B 642,	Au, Sb, Pb, Zn, Cu	Olaf, Olsen, Gustafson, Andersen.	1911. Graywacke with zones of banded argillite. Bedding strikes N65-72E, and dips 62N. Quartz dominate gangue mineral with some calcite. Metallics: gold, pyrite, galena, sphalerite, chalcopyrite, and stibnite.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Gold King Min. Co. Cont.	p 143-145, B 644, p 61, B 662, p 190, 192, B 692, p 151; B 712, p 33, B 755, p 28-29 8MB 142, p 40,52 8MB 153, p 46			
Guthrie & Belloli (3.65, 2.75)	B 592, p 239; B 662, p 191 B 622, p 181	Au, Zn, Pb, Cu		1910. Country rock: sheared graywacke and argillite striking N87E, dip 63N. Surface vein strikes N 25W, dips 60E. Quartz, calcite, and chlorite gangue, Metallics: pyrite, chalcopyrite, arsenopyrite, sphalerite and galena.
Iron Mountain (SE 1/4, 24, 11) 61°38'-144°00'	B 379, p 156; B 442, p 161 KX 86-142	Cu	Great Northern Dev. Co.	1900. 2 tunnels, total 635'. The larger had a 159' raise.
Jack Bay (3.35-5.7, 0.5-0.85) 61°03'-146°34'	B 692, p 171-172 B 963-B, p 53 KX 86-72	Pb, Zn, Cu		1917. 40' Tunnel. Country rock: fine grained bedded graywacke. Tunnel on shear zone strikes N10E, dips 70W. Shear is only slightly mineralized with chalcopyrite, pyrrhotite, sphalerite, galena, quartz and calcite. Prospect #2 in 1917: 25' tunnel. Slate and argillite inclusions in greenstone. These inclusions are slightly metamorphosed and mineralized with pyrite, pyrrhotite, chalcopyrite, sphalerite, and quartz.
Mayfield Gold Min. Co. (11.5, 2.7)	B 520, p 125; B 542, p 35 B 622, p 153, 185-186, B 642, p 145; B 692, p 151 B 824, p 22; B 880-A, p 24-25, B 897-A, p 24; B 910-A, p 27, B 917-A, p 27; B 926-A, p 26	Au, Pb, Zn, Cu	Alaska Mayfield Mines, Inc.	1912. Country rock: closely folded graywacke and argillite, strike N70-80E, dip 50-60E. Metallics: gold, pyrite, chalcopyrite, galena and sphalerite.
Midas (Copper Co.) (6.1, 0.4) 61°02'-146°17'	B 284, p 82-83; B 520, p 117 B 542, p 36, B 592, p 62, 240 B 622, p 45,	Cu, Au, Ag	Solomon Gulch (copper), Alaska Dev. & Min. Co., King Solomon's Copper Mines, All American, Jumbo, Granby Consol. Min., Smelt & Power Co.(Ltd.), Denby, St. Amand.	1905. 80' wide zone of schistose sulfide-bearing rock. 1911: 1 shipment. 1913: shipped several tons; 1500' total underground workings in shear zones that traverse black slates, greenstone intrusives and graywacke. Fissures are narrow with minor quartz filling (lenticular). Black slates

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Midas (Copper Co.) Cont.	132-133, 151-153, 156-157, B 642, p 144-145, B 662, p 44, 184-185, B 692, p 31, 144, 147, 157, B 712, p 33; B 714, p 22, B 739, p 24; B 963-B, p 51-52, B 989-E, p 298,302, BMB 142, p 38, 40, 52, BMB 153, p 46-47, KX 86-150			associated mostly with Midas claim. 1914: had 5 1/2 mile aerial tram, capacity of 20 T/hr; 3000 T bunker on wharf, and 15 hp conveyor loading belt. Total underground development: 1600' of tunnels, drifts and raises. Ore is partial replacement of crushed country rock 3-4' in 1-20' shear zone (traced 800') and cementation of fractures and impregnation of crushed country rock. Pyrite, chalcocite, and pyrrhotite mineralization. 1916: extended main tunnel to 735', 160 hp compressor in operation, regular shipments to smelter. 14,000 T shipped. 1917: important shippers of Cu ore, some opencut work, 100' inclined winze and considerable drifting. 1918: shipped ore and diamond drilled.
Millionaire (24.75, 12.1) 61°38'-144°00'	B 520, p 125; B 542, p 35, B 592, p 239 B 622, p 152,165-166, B 662, p 190 B 910-A, p 28	Au, Pb, Cu		1910. Irregular quartz 4"-24" wide strikes E & W, dips 70-80W. Country rock: slate and graywacke N70E, dip 60N. 1912: development work. 1913: development work. 1914: had; #1 - 60' adit, 20' drift, 50' winze, 15' stope #2 - 450' tunnel. Shear zone with numerous quartz stringers. By 1937 mining with small mill run by water power; had small production.
Mountain Boy (24.75, 12.1) 61°38'-144°00'	B 745, p 103 B 947-G, p 131; KX 86-140 KX 86-141; KX 86-50; KX 86-51	Cu, Au		1923. 1943-44: short adit 10' in length and several open cuts in greenstone near contact with Chitistone limestone. Several veinlets and a few small irregular bunches of bornite and chalcopyrite. Fractures show malachite staining a little chalcocite near contact.
Mountain King (Mining Co) (5.95, 4.0) 61°13'-146°19'	B 592, p 63, 239 B 622, p 45, 153, 163-164, B 642, p 144, BMB 142, p 42, 52; KX 86-9 KX 86-103	Au, Pb, Zn, Cu	Smith	1911. 1913: mill erected. By 1914 had 4 tunnels: 1) 101, 2) 145', 3) 55', 4) 260'. 1915: idle mill. Mineralization: pyrite, galena, chalcocite, sphalerite and gold. 120 tons produced.
Mountain Sheep (24.5, 12.2) 61°38'-144° 08'	B 745, p 103 B 947-G, p 130 KX 86-50; KX 86-51 KX 86-140; KX 86-141	Cu		1923. Had several open cuts and tunnels, 60' below Chitistone limestone contact in locally shattered greenstone. Contains disseminated pyrite, bornite, and a little chalcopyrite. A few zones (max. 1") estimated 1% by volume of bornite. Surface staining of limonite malachite and a little azurite.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Mt. Chitty (23.0, 15.0) 61°48'-144°15'	P 15, p 18: P 41, p 94 KX 86-138	Cu, Au, Ag		
Mullen (24,4m 12.35) 61°40'-144°05'	B 345, p 144-145 B 374, p 62 B 622, p 111-112 B 745, p 101-102 B 947-G, p 126-129, KX 86-64	Cu	Copper Cr., Copper Min. Co., Galena Bay Min. Co.	1907. 3 claims and 3 open cuts in limestone. 1914: short tunnels and numerous cuts and pits uncovered deposits of chalcocite, bornite, pyrite, covellite, malachite, azurite and chalcocite along limestone-greenstone contact as replacements along fracture planes in limestone. One max. 3', other 12" to 18". Prominent faults strike E, dip sharply S. Estimated 1263 tons reserves. Total of 7800' underground workings. Channel samples, 5.82% Cu and 1.55% Cu.
Owl Min. Co. (3.85, 2.65)	B 542, p 35 B 622, p 180-181	Au, Pb, Zn, Cu		1914. Country rock: graywacke and argillite. Strike N85E, dip 55N. Ore deposit is sheared zone. Quartz, calcite and chlorite, gangue. Metallics; pyrite, chalcopyrite, arsenopyrite, sphalerite and galena.
Peacock (24.45, 12.25) 61°40'-144°05'	B 745, p 103 B 947-G, p 130 KX 86-64; KX 86-148	Cu		1923. 1943-44: had tunnel caved 40' from portal in amygdaloidal greenstone, 200' below contact with limestone. Greenstone impregnated with and containing veinlets (max. 1") of pyrite, bornite and chalcocite stained with malachite and azurite. Greenstone brecciated and cemented with calcite epidote and bornite (max. 2").
Protection (24.5, 12.8)	KX 86-165	Cu	Copper River Exploration.	1969. 7 claims.
Quartz Creek (13.0-14.1, 7.0-9.25)	AR 20, p 422 AR 21, p 402, 436-437, P 15, p 63; P 41, p 121 B 662, p 179-180 B 866, p 35-36	Au, Pb, Cu		1898. Placer gold; had difficulties with glacial drift. Country rock: slate, schist, siliceous and crumbly graywacke. Diorite porphyry dikes. 1900: diabase dike heavily impregnated by pyrite and chalcopyrite; similar zones in larger masses of acidic rock. By 1901 (Mar.) entire production of gold was $1200, 1916: two abandoned tunnels, 175' and 65' in length. Finely banded quartz striking N40W, dip steep; 1-2' in width containing arsenopyrite, galena and chalcopyrite.
Ramsay-Rutherford (7.55, 3.65)	B 542, p 35; B 592, p 239 B 622, p 45, 153, 159-161, B 642, p 141, 143, B 662, p 44, 190, B 692,	Au, Ag, Zn, Pb Cu	Lost Hope.	1912. Graywacke with some argillite. Strike east, dip 75 N. Ore bodies are fissure veins. Solid sulfide bunches present. Quartz gangue. Gold, silver, pyrrhotite, pyrite, chalcopyrite, sphalerite, and galena mineralization.

VALDEZ QUADRANGLE Cont.

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Ramsay-Rutherford Cont.	p. 149-151 B 755, p 28-29; B 783, p 8, B 792, p 10; B 797, p 11 B 810, p 16, B 813, p 15, B 824, p 22, B 836, p 22, B 868-A, p 22; B 88-A, p 22, 24, B 910-A, p 28; B 926-A, p 26, B 989-E, p 304, 306, BMB 142, p 42, 52, BMB 153, p 49			
Rose Johnson (7.05, 3.25)	B 622, p 162- 163	Au, Pb, Cu		1914. Sheared black slate with greenstone; strike S85E. Ore: gold, pyrite, galena, chalcopyrite and sphalerite in quartz gangue.
Rose Quartz (5.95, 3.95) 61°13'-146°19'	B 880-A, p 24 KX 86-9; KX 86-103	Au, Pb, Cu	Little Giant.	1935. Ore bodies are quartz veins containing pyrite, some chalcopyrite, and galena accompanying gold. Mill and ore bunkers. All underground.
Seacoast (3.55, 2.9)	B 592, p 239 B 622, p 178-179 B 642, p 144; B 662, p 191 BMB 153, p 49	Au, Pb, Zn, Cu		1910. Schistose graywacke and argillite bedrock. Minerals: quartz, chlorite, carbonate, pyrite, galena, gold, pyrrhotite, chalcopyrite and sphalerite.
Sealy-Davis (3.6-3.65, 2.4-2.45)	B 520, p 124 B 542, p 35; B 592, p 239 B 622, p 152, 174-175, B 642, p 144, BMB 142, p 42, 52 BMB 153, p 49-50	Au, Pb, Zn, Cu		1910. Schistose graywacke with some argillite. Ore deposit is fissure filling. Primary minerals are quartz, chlorite, calcite, gold, pyrite, arsenopyrite, chalcopyrite, sphalerite and galena.
Spirit Mountain (22.9, 5.75) 61°19'-144°18'	B 520, p 103-104 B 576, p 52-53 B 662, p 25, 43 B 666, p 97;	Cu, Ni, Co, Zn	Canyon Creek, Peterson, Young and Halversen.	1911. Pyrite, chalcocite, pyrrhotite, bravoite and pentlandite mineralization. Rock containing nickel sulfides is a highly altered coarse grained peridotite and pyroxenite mineralization. Appears as disseminated grains and massive lenses (magmatic

Coordinates	Reference	Commodity	Names of Claims or Workers	Discovery Dates, Remarks
Spirit Mountain Cont.	B 692, p 23 B 712, p 91-98 B 714, p 40 B 943-C, p 49-56 C 252, p 7 IC 7379,p 70-71 RI 3913,p 2-8 KX 86-17			origin). 1911: development work; open cut and tunnel 20' in length. 1916: 7.23% Ni, trace Co; best assay 11% Ni. By 1917, 17 Ni claims reported on Canyon Creek; had 50' of tunnel. 1917: abandoned; 2 short tunnels, several pits. Outcrop of ore body in creek: average 25' thick N65W, dip very steeply north. 1942: deposit estimated as 6500 tons, ranging in grade from 0.22% Ni and 0.12% Cu (disseminated) to 7.65% Ni and 1.56% Cu (massive).
Surprise Creek (22.95, 7.55) 61°24'-144°15'	B 520, p 102-103, B 576, p 52; KX 86-136	Cu		1911. Bedrock: greenstone with diorite. Tunnel in shattered greenstone zone with copper, quartz, chrysocolla, chalcocite, bornite and chalcopyrite.
Thompson-Ford Min. Co. (3.9, 2.75)	B 520, p 125 B 542, p 35; B 592, p 239 B 622, p 177; B 662, p 192	Au, Pb, Zn, Cu		
Wetzler (13.15, 6.85) 61°24'-145°28'	B 662, p 180-181, B 866, p 27-29, KX 86-42; KX 86-122; KX 86-123	Au, Pb, Zn, Cu	Hurtle Cr., Quail.	1916. Schist or slate and graywacke cut by numerous dikes of diorite porphyry. Quail group developed by Messrs. P. Layton and C. Nelson. Country rock: folded, sheared and cut by closely spaced (2 principal) mineralized veins N5W, dip 60E. At least 4 veins, largest 10"-18" containing arsenopyrite, galena, quartz, chalcopyrite and free gold. 1914: 3 tons shipped, had water driven arrastre. By 1935 had 150' tunnel and 35' of crosscut.
Whale (5.5, 3.2)	KX 86-158	Cu, Au, Pb, Ag	Mishko, Mineral Creek.	1967. 2 claims.
Willow (15.1, 13.7) 61°45'-145°10'	KX 86-49	Cu, Au	Lund, McWilliams, East Side Willow Mountain.	1956. 9 claims.

AREAL DISTRIBUTION OF MINERAL OCCURRENCES

During the course of abstracting information from the Alaska Division of Geological Survey Kardex files, lists were made of deposits of all minerals. Even though only deposits containing copper are shown in the tabulation, deposits of all metals are stored on the magnetic tape for computer retrieval. It was thought worthwhile to plot the locations of deposits of these different metals as a guide to ore finding, and these are shown on Plates 4 through 12. In addition there are four metals for which there are so few occurrences that it was not considered worth while to print plates. These are nickel, chromium, tungsten and mercury. Coordinates for these are given below, and anyone desiring to make map overlays for these metals may do so by plotting them. These coordinates can be plotted as follows: Lay a triangle on the left margin of the map (Plate 1) so that it runs through the point. The measured distance from the left margin along the triangle is the x-distance. The distance from the southwest corner northerly along the left margin to the triangle is the y-coordinate. The following coordinates are in inches, x first, y second.

Nickel	Chromium	Tungsten	Mercury
(4.10, 7.99)	(4.20, 7.29)	(3.50, 6.20)	(4.15, 8.15)
(4.67, 7.54)	(4.21, 6.89)	(3.65, 6.08)	(13.17, 6.85)
(5.88, 3.39)	(4.30, 7.26)	(4.22, 9.20)	
(6.57, 6.18)	(5.89, 3.10)	(4.29, 9.25)	
(10.56, 7.20)	(6.15, 7.62)	(4.82, 7.70)	
(10.77, 6.79)	(9.62, 7.38)		
	(9.86, 7.49)		

Besides the plates showing distribution of deposits, Figures 6 through 9 have been prepared. These are bar graphs showing the percentages of mineral deposits that occur in various units.

FIGURE 6

PERCENTAGE OF OCCURRENCES

by

STRATIGRAPHIC AND IGNEOUS SEQUENCE

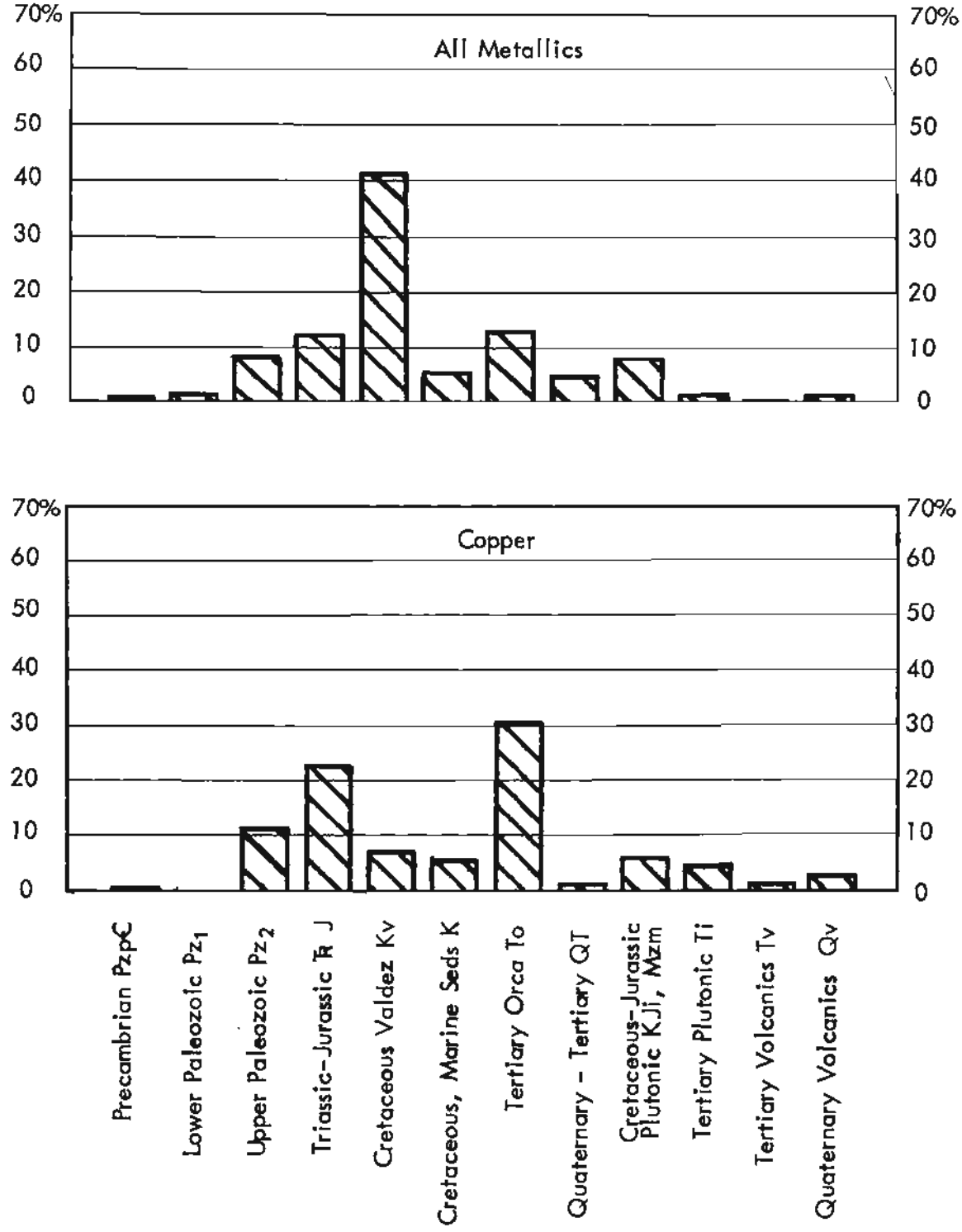


FIGURE 7

PERCENTAGE OF OCCURRENCES

by

STRATIGRAPHIC AND IGNEOUS SEQUENCE

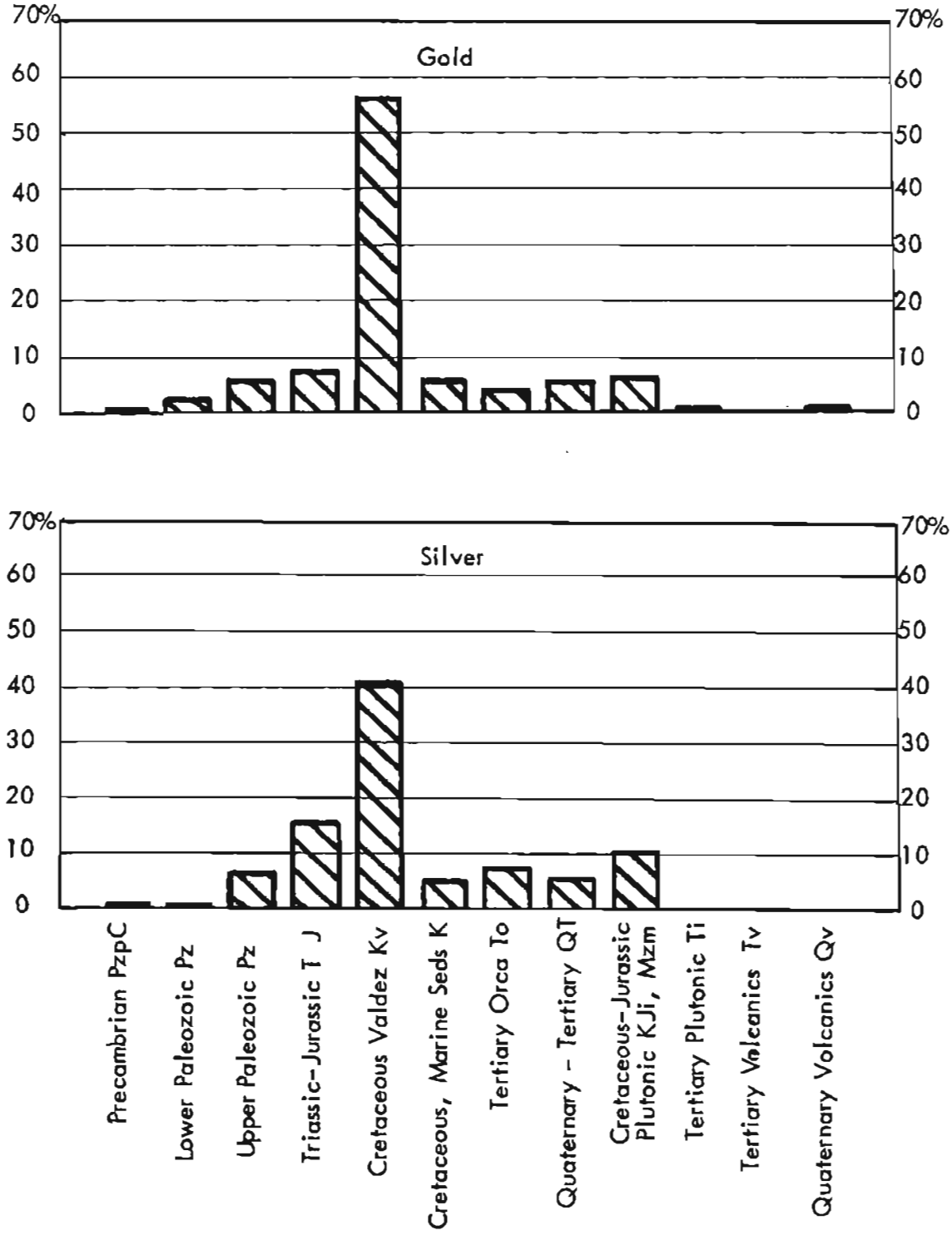


FIGURE 8

PERCENTAGE OF OCCURRENCES

by

STRATIGRAPHIC AND IGNEOUS SEQUENCE

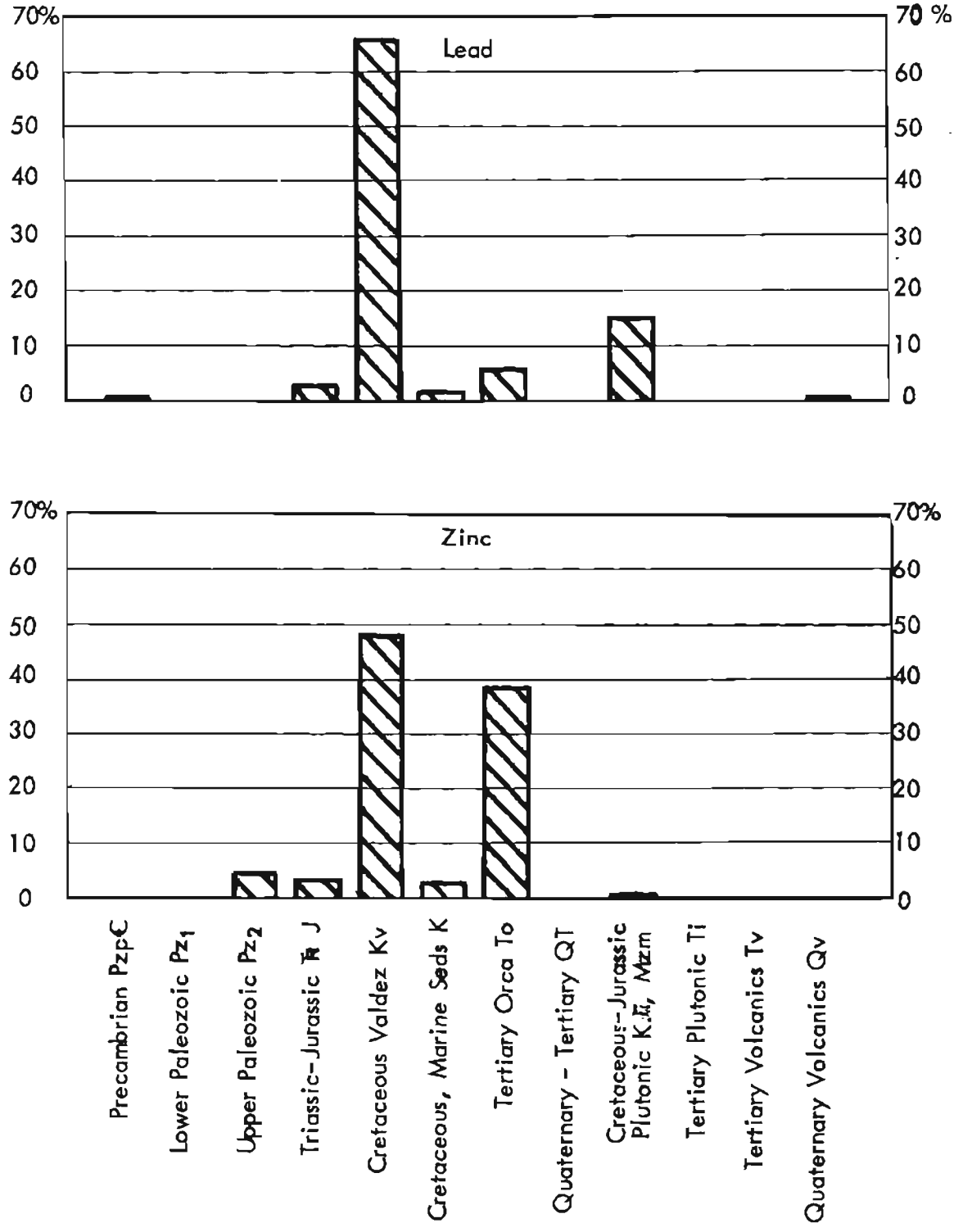
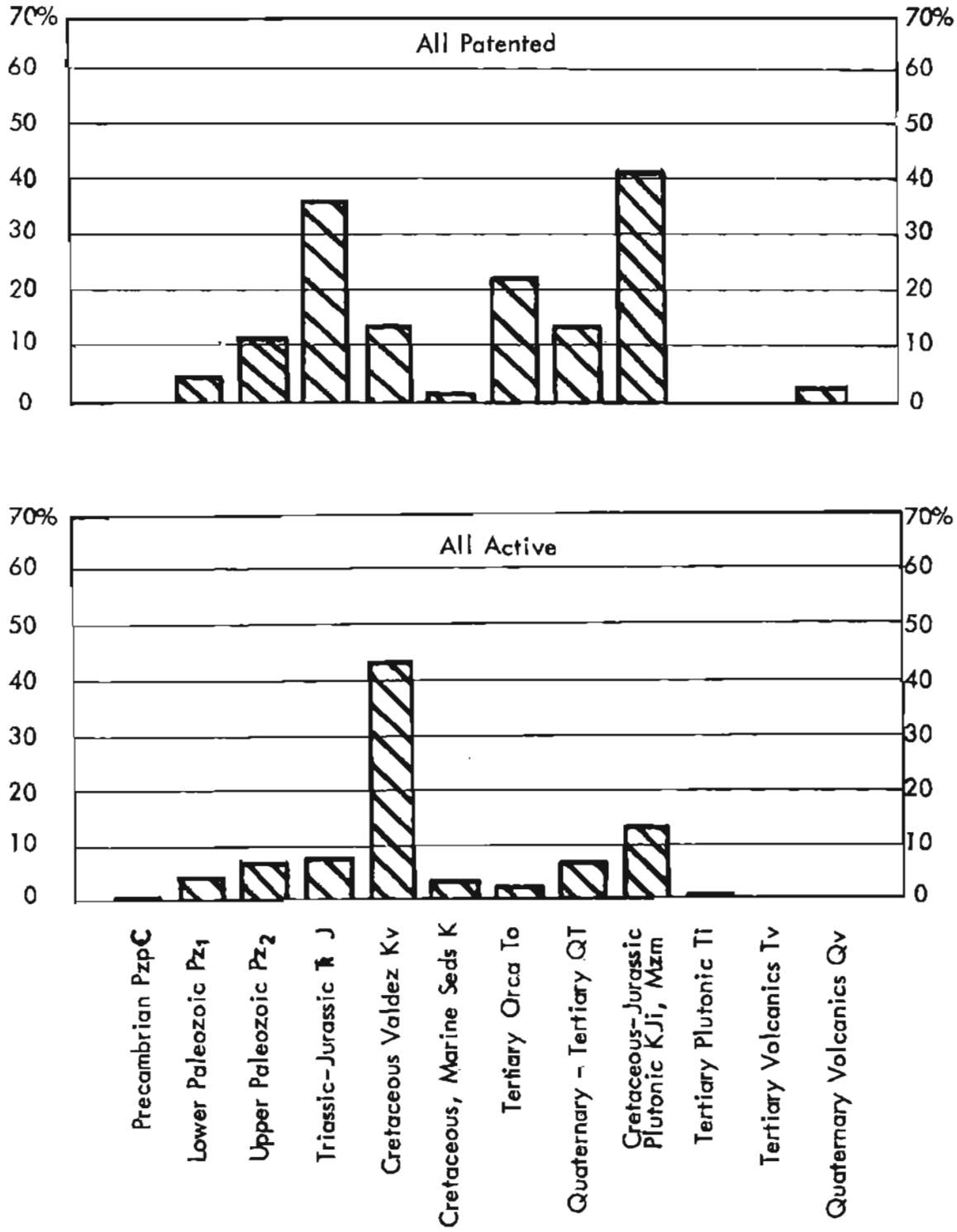


FIGURE 9

PERCENTAGE OF OCCURRENCES

by

STRATIGRAPHIC AND IGNEOUS SEQUENCE



Herreid (1964) states that the Wrangells are bounded by major faults on the northeast and southwest sides; in addition, the area is so tightly folded that no point along the Chitina Valley is far from a tectonic boundary. These structural features may have exercised some control over the deposition of copper in the Wrangells.

The distribution of gold deposits (Plates 1 and 7, Figure 7) is considerably different from that of copper. The most obvious difference is in the concentration of almost 60% of the gold deposits in the westerly outcrop areas of the Valdez group, a rock unit notably lacking in copper. There are several areas of gold deposits; in a number of parallel belts from Seward to near Turnagain arm; in the Willow Creek district north of Palmer, on northwestern Prince William Sound near Valdez, and the old placer districts of Nizina, Nelchina, Chisana and Chistochina. Again, as with copper, it is evident that there are several different geologic environments with different controls of deposition.

On the Kenai Peninsula, although there is a wide range of strikes of gold quartz veins, in general they tend to strike northerly or east to northeast. Most of the veins cut the regional structure, although (Plate 7) the general alignment of deposits is concordant with the structure. However, what are called "stringer lodes" (discontinuous lenses) and also the mineralized dikes lie parallel to bedding and cleavage (Johnson 1915, p 140).

The gold lodes of the Port Valdez area, although they too have strikes that show considerable variation, occur with greater frequency with a northwest to westerly strike, parallel to the trend of the country rock and major faults.

Little has been written about the gold deposits of the Port Wells area in northwestern Prince William Sound. From their distribution (Plate 7) they appear to be alligned parallel to the structure.

In attempting to discover any geologic controls of ore deposits, it must be remembered that the units shown on the geologic map, Plate 1, are rather gross, and in addition, that the area has not been mapped in detail. Also, the area is extremely active tectonically, and large faults and thrusts are common, creating a complex outcrop pattern.

Although nothing clear cut is readily apparent from examining the overlays, Plates 4 through 12, the impression is gained that there are at least two different provinces, in which controls of mineralization are different. First, the bar graphs, Figures 6 through 9 indicate that copper and zinc have affinities to the Tertiary Orca group, while the other metals have little for this unit. Copper also peaks in the Triassic-Jurassic marine sediments and volcanics. This group contains the favorable Nicolai Greenstone and Chitistone Limestone. Actually the copper graph (Figure 6) shows a fairly uniform distribution of deposits over many rock units, but the Pz 2 unit, Mississippian to Permian, contains about 11% of the deposits. This reflects the low-grade deposits in Permian greenstones, e.g. in the White River Valley.

The copper deposits in the Tertiary Orca group, which amount to about 30% of all prospects, lie in the Prince William Sound District, and near Seward. There is a very uneven distribution within the unit, and it is obvious that structural controls are effective.

Considering the copper deposits of Prince William Sound that lie in the Orca Group, there are concentrations of deposits near Cordova, in the Ellamar area, on Latouche and Knight Islands and on Resurrection Peninsula near Seward. From an inspection of Plates 1 and 6, it is apparent that groups of copper mines and prospects are elongated in the direction of major faults and shears. It is the conclusion of Condon and Cass

(1958) and Moffit (1954b) that ore deposits lie along shears and faults. However, the ultimate controls certainly are more subtle, since for the whole of Montague Island, which certainly contains many shears, there is not one mineral deposit listed, at least not in the readily available literature. Most of the deposits and shears line up with the northeasterly regional trends, but at Ellamar the deposits and faults have a northwesterly trend parallel to the great overthrusts. This difference in attitude reflects the very sharp bend in the regional structure in the area (Plate 1). Certainly the shearing in the Prince William Sound District has been complex. Also, according to the workers who have examined the area, most of the copper deposits, except those of Latouche Island are in greenstone. This introduces another variable, lithology, which further complicates the distribution pattern.

The second greatest number of copper deposits is in the Triassic-Jurassic unit, which contains the deposits at Kennicott and the associated mines and prospects of the Kotzina-Kuskulana area. This area lies in a different geologic setting than Prince William Sound and contains different types of deposits, with different controls of mineralization. It must be concluded that there are two different copper provinces. As seen from Plates 1 and 6, the distribution of ore deposits is parallel to the structure, and appears to be primarily controlled by stratigraphy, with structure as the secondary control. The structural controls at Kennicott have been described by Bateman and McLaughlin (1920, p 54–57). The ore deposits occur in the Chitistone limestone, near the contact with the underlying Nicolai greenstone. The greenstone contains disseminated copper in small quantities, but in the limestone the copper was concentrated into large lodes of very high grade chalcocite ore. The lodes were wedge shaped, wide end downward; the original openings or zones of weakness are believed to be caused by tension in the trough of a syncline.

From the foregoing discussion it appears that the gold deposits in the Valdez Group rocks fill tabular openings which can have almost any orientation, but which tend to be conformable with the enclosing graywackes, shales, slates and occasional greenstones. From the distribution of the individual deposits, it appears that the enclosing structure is the primary control (after stratigraphy); possibly shears that follow the structural trends have guided the deposition.

The gold deposits of the Willow Creek area lie in fissures within the igneous rock near the south boundary of the large batholith shown on Plate 1. The depositional control therefore appears to be the batholith itself.

Because of the relatively isolated distribution of the districts to the north - Nizina, Nelchina, Chisana and Chistochina, it is presumed that local structures are more important than rock type in controling deposition. Certainly the different districts lie in different lithologic units. It should be noted that the Nizina, Chisana, and Chistochina areas lie near major tectonic structures, and it may be that the smaller structures create favorable environments where they intersect these major ones. One very serious hindrance to the search for ore guides is the sketchy state of geologic mapping in the area. Even a good topographic map (see Alaska Map E shaded relief), however, brings out the fact that there are northeasterly trending linears in the area. It might prove fruitful to investigate the intersections of these linears with the major northwesterly trending shears.

The distribution of the other elements shown in the commodity maps (Plates 8 to 12) will not be discussed here. Probably lithologic and structural controls could be discovered if more detailed geologic maps were available. Anyone interested in these commodities should consult the U.S. Geological Survey literature for such maps.

APPENDIX

COMPUTER PRINTOUT

OF

COPPER OCCURRENCE FILE FOR

PRINCE WILLIAM SOUND - WRANGELL MOUNTAINS AREA

(MINEFIL)

MINEFIL 1969

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MINING DISTRICT 0                                  TYPE  2 LISTING  01/05/71
QUAD (0=NO SELECTION)   77     107                 MODIFIERS -
LATITUDE - MIN   0  0  MAX   0  0                     YEAR - ALL
LONGITUDE- MIN   0  0  MAX   0  0                     PRODUCTION CODES - ALL
USGS COORDINATES (0-NO SELECTION)                     MERIT CODES - ALL
           X-MIN  0.0  X-MAX  0.0                     ACTIVE AND INACTIVE
           Y-MIN  0.0  Y-MAX  0.0                     PATENTED AND UNPATENTE
ELEMENTS  CU                                          LODE AND PLACER
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DIST 4    QUAD  77   SERIAL  17  NAME SILVER CREEK LODE,STANLEY
USGS COORD  0.0 23.6  0.0 13.4   NO.CLAIMS  37 YEAR 1955 LODE
LATITUDE 62 44 LONGITUDE 144  2  PROD 0  DEV 0 MERIT 0  EXPL 3 2
ACTIVE  YES          PATENTED  NO  COMMODITY     CU AU  U

DIST 4    QUAD  77   SERIAL  25  NAME MONSEN & VINNING
USGS COORD 22.7 23.4 14.8 16.0   NO.CLAIMS   1 YEAR 1967 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES          PATENTED  NO  COMMODITY     CU AU PB AG ZN

DIST 4    QUAD  77   SERIAL  28  NAME STEPHANIE,AUSTIN,R
USGS COORD 23.4 23.8 14.2 14.4   NO.CLAIMS   1 YEAR 1955 LODE
LATITUDE 62 42 LONGITUDE 144  1  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO          PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  77   SERIAL  32  NAME INDIAN RIDGE ELIZABETH =1
USGS COORD  0.0 22.4  0.0 14.9   NO.CLAIMS   7 YEAR 1944 LODE
LATITUDE 62 49 LONGITUDE 144 13  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES          PATENTED  NO  COMMODITY     CU PB AG

DIST 4    QUAD  77   SERIAL  41  NAME AHTELL CLAIM,STRANDBERG
USGS COORD  0.0 23.6  0.0 13.4   NO.CLAIMS   2 YEAR 1936 LODE
LATITUDE 62 44 LONGITUDE 144  2  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO          PATENTED  NO  COMMODITY     CU PB AG

DIST 4    QUAD  77   SERIAL  46  NAME SLANA & JODY,K.STANLEY
USGS COORD 22.0 23.0 16.0 17.0   NO.CLAIMS   4 YEAR 1956 LODE
LATITUDE 62 53 LONGITUDE 144 15  PROD 0  DEV 0 MERIT 0  EXPL 3 2
ACTIVE  YES          PATENTED  NO  COMMODITY     CU FE

DIST 4    QUAD  77   SERIAL  48  NAME ELIZABETH CLAIM,K.STANLEY
USGS COORD 22.5 23.3 14.0 15.0   NO.CLAIMS 119 YEAR 1957 LODE
LATITUDE 62 46 LONGITUDE 144  4  PROD 0  DEV 0 MERIT 0  EXPL 3 2
ACTIVE  YES          PATENTED  NO  COMMODITY     CU PB

DIST 4    QUAD  77   SERIAL  49  NAME SILVER SHIELD,W.BUCK
USGS COORD 23.4 23.5 13.6 13.7   NO.CLAIMS  27 YEAR 1964 LODE
LATITUDE 62 45 LONGITUDE 144  3  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES          PATENTED  NO  COMMODITY     CU PB AG
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DIST 4    QUAD  77   SERIAL  54  NAME DISCOVERY,E.LEWIS
USGS COORD  0.0 18.9  0.0 14.0   NO.CLAIMS   2 YEAR 1968 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  77   SERIAL  55  NAME SILVER BOWL,CITIES SERVICE
USGS COORD 23.0 17.0 23.3 17.9   NO.CLAIMS   6 YEAR 1968 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO  COMMODITY     CU FE AG

DIST 4    QUAD  77   SERIAL  57  NAME COPPER JACK,J.FREY
USGS COORD  0.0 23.4  0.0 14.8   NO.CLAIMS   2 YEAR 1967 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  78   SERIAL  12  NAME MINERAL CAKE GP.,C.C.Z.
USGS COORD  0.0  5.1  0.0 16.8   NO.CLAIMS   2 YEAR 1955 LODE
LATITUDE 62 57 LONGITUDE 143 25  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU

DIST 4    QUAD  78   SERIAL  14  NAME MS 1414 A &B,AJV CORP.
USGS COORD  9.3  9.8  3.2  3.6   NO.CLAIMS  18 YEAR 1923 PLACER
LATITUDE 62 10 LONGITUDE 142 57  PROD 1  DEV 2 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU AU MO AG

DIST 4    QUAD  78   SERIAL  17  NAME BONANZA&ELDORADO,SNOW GULCH
USGS COORD 17.1 17.3  2.1  2.2   NO.CLAIMS  10 YEAR 1936 LODE
LATITUDE 62  7 LONGITUDE 141 55  PROD 1  DEV 1 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU AG

DIST 4    QUAD  78   SERIAL  18  NAME KING GALENA PROS.,C.WHITHAM
USGS COORD  0.0 17.4  0.0  1.8   NO.CLAIMS   1 YEAR 1936 LODE
LATITUDE 62  6 LONGITUDE 141 53  PROD 1  DEV 1 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU PB AG ZN

DIST 4    QUAD  78   SERIAL  20  NAME BEAVER,ELDORADO,HORN,SKOKUM
USGS COORD 24.0 24.5  2.0  3.0   NO.CLAIMS   0 YEAR 1907 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU

DIST 4    QUAD  78   SERIAL  26  NAME MS1591,PTARMIGAN MNG CO
USGS COORD  7.7  8.0  6.3  6.9   NO.CLAIMS  28 YEAR 1903 LODE
LATITUDE 62 23 LONGITUDE 143  2  PROD 4  DEV 4 MERIT 0  EXPL 1 3
ACTIVE  YES         PATENTED YES COMMODITY     CU AU PB AG ZN

DIST 4    QUAD  78   SERIAL  28  NAME D.C.SARGENT
USGS COORD  0.0  9.8  0.0  6.2   NO.CLAIMS   0 YEAR 1907 LODE
LATITUDE 62 20 LONGITUDE 142 48  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU
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DIST 4    QUAD  78   SERIAL  30  NAME CROSS CR.
USGS COORD 11.6 11.9  1.6  1.8   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 62  5 LONGITUDE 142 32  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU PB ZN

DIST 4    QUAD  78   SERIAL  33  NAME BRYAN CR.
USGS COORD 16.7 16.8  0.9  1.0   NO.CLAIMS   4 YEAR 1900 PLACER
LATITUDE 62  3 LONGITUDE 141 59  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU

DIST 4    QUAD  78   SERIAL  44  NAME MS921,E.ANDERSON
USGS COORD 20.8 21.1  3.7  4.0   NO.CLAIMS   5 YEAR 1909 LODE
LATITUDE 62 10 LONGITUDE 141 28  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED YES  COMMODITY     CU

DIST 4    QUAD  78   SERIAL  51  NAME COPPER PASS
USGS COORD  0.0 12.5  0.0  4.8   NO.CLAIMS   0 YEAR 1907 LODE
LATITUDE 62 16 LONGITUDE 142 30  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU

DIST 4    QUAD  78   SERIAL  52  NAME MONTANA,EXPL.VENTURES,INC.
USGS COORD  0.0  2.9  0.0 16.6   NO.CLAIMS   1 YEAR 1957 LODE
LATITUDE 62 57 LONGITUDE 143 40  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU PB

DIST 4    QUAD  78   SERIAL  57  NAME SHEEPHEAD,B.MCQUERRY
USGS COORD  8.6  8.7  3.0  3.1   NO.CLAIMS   1 YEAR 1959 LODE
LATITUDE 62  9 LONGITUDE 142 59  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU FE

DIST 4    QUAD  78   SERIAL  61  NAME AN,BN,CN,&DN GPS,AJV CORP.
USGS COORD  9.3  9.8  3.2  3.6   NO.CLAIMS  38 YEAR 1962 LODE
LATITUDE 62 10 LONGITUDE 142 57  PROD 0  DEV 0 MERIT 0  EXPL 3 2
ACTIVE  YES         PATENTED  NO  COMMODITY     CU AU MO AG

DIST 4    QUAD  78   SERIAL  65  NAME BOND CR GP&GPS,BEAR CR MNG
USGS COORD  9.8 10.7  3.6  4.1   NO.CLAIMS 150 YEAR 1962 LODE
LATITUDE 62 14 LONGITUDE 142 46  PROD 0  DEV 0 MERIT 0  EXPL 3 2
ACTIVE  YES         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  78   SERIAL  66  NAME BEE-JAY GP,B.LOCKE&J.JASLIN
USGS COORD  8.2  8.3  8.8  9.0   NO.CLAIMS   8 YEAR 1964 LODE
LATITUDE 62 30 LONGITUDE 143  3  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU PB AG

DIST 4    QUAD  78   SERIAL  68  NAME DISCOVERY GP,E.SPEARS
USGS COORD  0.0 20.6  0.0  3.9   NO.CLAIMS   8 YEAR 1967 PLACER
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO  COMMODITY     CU
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DIST 4    QUAD  78   SERIAL  69  NAME AB,BB,CC&CB GPS,W.MCGREGOR
USGS COORD 22.3 23.1  1.3  2.8   NO.CLAIMS  89 YEAR 1967 PLACER
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 3 2
ACTIVE  YES         PATENTED  NO  COMMODITY     CU AU

DIST 4    QUAD  85   SERIAL  18  NAME HUNTLEY BROTHERS=1
USGS COORD  0.0  6.7  0.0 15.1   NO.CLAIMS   1 YEAR 1958 LODE
LATITUDE 61 52 LONGITUDE 149 10  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU

DIST 4    QUAD  85   SERIAL  56  NAME DAVID COPPER GP,D.VIETTI
USGS COORD  0.0 22.3  0.0  2.2   NO.CLAIMS   3 YEAR 1953 LODE
LATITUDE 61  8 LONGITUDE 147 28  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  85   SERIAL  57  NAME SHEEP MTN CU=2,R.KLEM
USGS COORD  0.0 20.2  0.0 14.7   NO.CLAIMS   2 YEAR 1953 LODE
LATITUDE 61 50 LONGITUDE 147 30  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  85   SERIAL  62  NAME AMCO GP,C.HERBERT
USGS COORD  7.6  7.9  0.0 13.8   NO.CLAIMS  10 YEAR 1953 LODE
LATITUDE 61 47 LONGITUDE 149  2  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  85   SERIAL  69  NAME SHEEP MTN CU=1,G.FENNIMORE
USGS COORD  0.0 20.2  0.0 14.7   NO.CLAIMS   1 YEAR 1954 LODE
LATITUDE 61 50 LONGITUDE 147 30  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  85   SERIAL  84  NAME WAR EAGLE,F.WINCHESTER
USGS COORD  0.0 21.9  0.0  1.9   NO.CLAIMS   2 YEAR 1954 LODE
LATITUDE 61  5 LONGITUDE 147 25  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  85   SERIAL  85  NAME NEW ADVENTURE&TWIN METALS
USGS COORD  7.6  7.9  0.0 13.8   NO.CLAIMS  15 YEAR 1954 LODE
LATITUDE 61 47 LONGITUDE 149  2  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU AG ZN

DIST 4    QUAD  85   SERIAL  90  NAME COLUMBIA RED METALS GRP
USGS COORD  0.0 24.1  0.0  2.4   NO.CLAIMS   1 YEAR 1900 LODE
LATITUDE 61  5 LONGITUDE 147 10  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU AG

DIST 4    QUAD  85   SERIAL 110  NAME LICHTENWALNER,C.MILLER
USGS COORD  0.0  7.5  0.0 14.1   NO.CLAIMS   4 YEAR 1958 LODE
LATITUDE 61 47 LONGITUDE 149  8  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU
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DIST 4    QUAD  85   SERIAL 114  NAME DADO,D.VIETTI&C.ALDRIDGE
USGS COORD  0.0 23.0  0.0  2.2   NO.CLAIMS   7 YEAR 1930 LODE
LATITUDE 61  6 LONGITUDE 147 17  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU AG

DIST 4    QUAD  85   SERIAL 137  NAME DIXIE GRP,J.T.BARTHOLF
USGS COORD  0.0  5.8  0.0 14.4   NO.CLAIMS   3 YEAR 1917 LODE
LATITUDE 61 47 LONGITUDE 149 17  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU PB

DIST 4    QUAD  85   SERIAL 161  NAME CAPITOL HILL MINE
USGS COORD 15.7 16.0  0.9  2.3   NO.CLAIMS   0 YEAR 1918 LODE
LATITUDE 61  3 LONGITUDE 148  8  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU AG

DIST 4    QUAD  85   SERIAL 165  NAME
USGS COORD  7.7  7.9  4.0  4.1   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 61 14 LONGITUDE 149  3  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU PB

DIST 4    QUAD  85   SERIAL 176  NAME WOLVERINE,A.W.SMITH
USGS COORD  0.0  9.9  0.0 10.0   NO.CLAIMS   8 YEAR 1906 LODE
LATITUDE 61 34 LONGITUDE 148 48  PROD 0  DEV 0 MERIT 0  EXPL 3 5
ACTIVE  YES         PATENTED  NO  COMMODITY     CU AU PB ZN

DIST 4    QUAD  85   SERIAL 182  NAME KINGS RIVER
USGS COORD  0.0 11.0 13.0 16.0   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 61 47 LONGITUDE 148 38  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  85   SERIAL 196  NAME BARRY ARM
USGS COORD  0.0 15.7  0.0  1.9   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 61  6 LONGITUDE 148  5  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  85   SERIAL 210  NAME WELLS BAY
USGS COORD 21.0 22.0  0.0  0.0   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 61  0 LONGITUDE 147 30  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  85   SERIAL 213  NAME LONG BAY
USGS COORD  0.0 23.5  0.0  0.0   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 61  1 LONGITUDE 471 30  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  85   SERIAL 214  NAME GLOBE CLAIMS
USGS COORD  0.0 23.5  0.0  0.8   NO.CLAIMS   0 YEAR 1917 LODE
LATITUDE 61  1 LONGITUDE 147 13  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU
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DIST 4    QUAD  85   SERIAL 233  NAME BRUNO AGOSTINO
USGS COORD  0.0  7.5  0.0  0.8   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 61  4 LONGITUDE 149  3  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     AS CU AU PB MO AG ZN

DIST 4    QUAD  85   SERIAL 244  NAME C.C.CECHOWSKI
USGS COORD 12.0 12.5 13.0 13.5   NO.CLAIMS   6 YEAR 1956 LODE
LATITUDE 61 45 LONGITUDE 148 30  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU

DIST 4    QUAD  85   SERIAL 245  NAME CHALCO,B.LOCKE
USGS COORD  0.0 21.0  0.0 15.0   NO.CLAIMS   4 YEAR 1956 LODE
LATITUDE 61 50 LONGITUDE 147 29  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU AG

DIST 4    QUAD  85   SERIAL 251  NAME BLACK BEAR &,FRANK CLARK
USGS COORD  9.6 10.5 10.5 11.2   NO.CLAIMS   3 YEAR 1953 LODE
LATITUDE 61 38 LONGITUDE 148 45  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU FE  W

DIST 4    QUAD  85   SERIAL 253  NAME C.G.&M. &,M.RICE
USGS COORD  6.6  6.8  0.0 14.9   NO.CLAIMS   4 YEAR 1956 LODE
LATITUDE 61 50 LONGITUDE 149 10  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO  COMMODITY     CU AU MO

DIST 4    QUAD  85   SERIAL 262  NAME RU-AN,M.RUSAW&B.ANELL
USGS COORD 21.1 21.3 13.6 13.8   NO.CLAIMS   8 YEAR 1958 LODE
LATITUDE 61 45 LONGITUDE 147 28  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE  YES         PATENTED  NO  COMMODITY     CU FE

DIST 4    QUAD  85   SERIAL 280  NAME BLUE STREAK,GUENTHER&PETERS
USGS COORD  6.1  6.2  8.3  8.4   NO.CLAIMS  18 YEAR 1962 LODE
LATITUDE 61 27 LONGITUDE 149 15  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU FE  S

DIST 4    QUAD  85   SERIAL 297  NAME BLUE-GREEN,ZIMMERMAN
USGS COORD 20.7 20.8 14.8 14.9   NO.CLAIMS  10 YEAR 1966 LODE
LATITUDE 61 49 LONGITUDE 147 30  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU AG

DIST 4    QUAD  85   SERIAL 298  NAME MINERS BAY,E.SIATKOWSKI
USGS COORD 20.8 21.1  1.2  1.4   NO.CLAIMS   8 YEAR 1962 LODE
LATITUDE 61  4 LONGITUDE 147 31  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU

DIST 4    QUAD  85   SERIAL 300  NAME HI RISE,A.W.SMITH
USGS COORD  8.0  8.2 13.4 13.5   NO.CLAIMS  10 YEAR 1966 LODE
LATITUDE 61 46 LONGITUDE 149  1  PROD 0  DEV 0 MERIT 0  EXPL 3 5
ACTIVE  YES         PATENTED  NO  COMMODITY     CU AU AG ZN
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DIST 4    QUAD  85   SERIAL 308  NAME BAILEY RICE&LANE&,
USGS COORD  6.0  7.0  0.0 14.6   NO.CLAIMS   2 YEAR 1967 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU MO

DIST 4    QUAD  85   SERIAL 309  NAME RU-FEL,MAX M.RUSAW
USGS COORD  0.0 20.5  0.0 15.1   NO.CLAIMS   4 YEAR 1967 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  85   SERIAL 314  NAME LONE STAR,WILLIAM ROGERS
USGS COORD 20.0 21.0 14.5 15.5   NO.CLAIMS  70 YEAR 1967 PLACER
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  86   SERIAL  17  NAME SPIRITED MTN.NICKEL
USGS COORD  0.0 22.9  0.0  5.7   NO.CLAIMS  45 YEAR 1907 LODE
LATITUDE 61 19 LONGITUDE 144 18  PROD 0  DEV 0 MERIT 0  EXPL 2 2
ACTIVE  YES         PATENTED  NO  COMMODITY     BE CU NI  S

DIST 4    QUAD  86   SERIAL  49  NAME WILLOW,H.LUND,H.MCWILLIAMS
USGS COORD  0.0 15.1  0.0 13.7   NO.CLAIMS   9 YEAR 1956 LODE
LATITUDE 61 45 LONGITUDE 145 10  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU

DIST 4    QUAD  86   SERIAL  50  NAME MS630-2,658-63,665,HUBBARD
USGS COORD 23.5 24.7 11.7 12.2   NO.CLAIMS  56 YEAR 1899 LODE
LATITUDE 61 38 LONGITUDE 144  8  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU AU

DIST 4    QUAD  86   SERIAL  51  NAME HUBBARD ELLIOT COPPER CO
USGS COORD 23.5 24.7 11.7 12.2   NO.CLAIMS  84 YEAR 1899 LODE
LATITUDE 61 38 LONGITUDE 144  8  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU

DIST 4    QUAD  86   SERIAL  52  NAME HUBBARD ELLIOT COPPER CO.
USGS COORD 23.5 24.7 11.7 12.2   NO.CLAIMS   1 YEAR 1900 PLACER
LATITUDE 61 38 LONGITUDE 144  8  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU

DIST 4    QUAD  86   SERIAL  64  NAME AK.COPPER MNG CO.,MULLEN CL
USGS COORD  0.0 24.4  0.0 12.3   NO.CLAIMS  25 YEAR 1907 LODE
LATITUDE 61 40 LONGITUDE 144  5  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AG

DIST 4    QUAD  86   SERIAL  72  NAME N. JACK BAY
USGS COORD  3.4  3.7  0.5  0.8   NO.CLAIMS   2 YEAR 1900 LODE
LATITUDE 61  3 LONGITUDE 146 34  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU PB ZN
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DIST 4    QUAD  86   SERIAL 109  NAME BAYVIEW CLAIM
USGS COORD  0.0  6.2  0.0  0.1   NO.CLAIMS   1 YEAR 1900 LODE
LATITUDE 61  0 LONGITUDE 146 18  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  86   SERIAL 116  NAME SULFIDE GCH&KARLA J,ALDRIDG
USGS COORD  0.0  7.6  0.0  0.1   NO.CLAIMS   8 YEAR 1916 LODE
LATITUDE 61  0 LONGITUDE 146  7  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU

DIST 4    QUAD  86   SERIAL 134  NAME MS613&654, H.HOERTER
USGS COORD  0.0 22.4  0.0  8.3   NO.CLAIMS   3 YEAR 1909 LODE
LATITUDE 61 26 LONGITUDE 144 20  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     CU

DIST 4    QUAD  86   SERIAL 135  NAME DIVIDE CREEK
USGS COORD  0.0 22.9  0.0  6.8   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 61 23 LONGITUDE 144 15  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  86   SERIAL 136  NAME SURPRISE CREEK
USGS COORD  0.0 22.9  0.0  7.6   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 61 24 LONGITUDE 144 15  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  86   SERIAL 137  NAME FALLS CREEK
USGS COORD  0.0 23.0  0.0  6.6   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 61 21 LONGITUDE 144 15  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  86   SERIAL 138  NAME MS655-656,THOMAS&MCDONOUGH
USGS COORD  0.0 23.0  0.0 15.0   NO.CLAIMS   3 YEAR 1902 LODE
LATITUDE 61 48 LONGITUDE 144 15  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     CU AU AG

DIST 4    QUAD  86   SERIAL 140  NAME COPPER CR,A.AMMAN,CORONADO
USGS COORD 24.3 24.9 12.1 12.3   NO.CLAIMS  13 YEAR 1926 LODE
LATITUDE 61 40 LONGITUDE 144  0  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  86   SERIAL 141  NAME HOFFMAN PROSPECT
USGS COORD 24.3 24.9 12.1 12.3   NO.CLAIMS   1 YEAR 1900 LODE
LATITUDE 61 40 LONGITUDE 144  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  86   SERIAL 142  NAME MS 918, GRT NO DEVELOP CO
USGS COORD  0.0 24.0  0.0 11.0   NO.CLAIMS  54 YEAR 1916 LODE
LATITUDE 61 38 LONGITUDE 144  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     CU
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DIST 4    QUAD  86   SERIAL 147  NAME IRON,CORONADO COPPER&ZINC
USGS COORD  0.0 21.2  0.0  8.1   NO.CLAIMS   1 YEAR 1956 LODE
LATITUDE 61 27 LONGITUDE 144 30  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU FE NI

DIST 4    QUAD  86   SERIAL 148  NAME MS904-6-8,GALENA BAY MNG CO
USGS COORD  0.0 24.4  0.0 12.3   NO.CLAIMS   6 YEAR 1916 LODE
LATITUDE 61 40 LONGITUDE 144  5  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU AG

DIST 4    QUAD  86   SERIAL 149  NAME CANYON CR SULPHIDE,A.BOOTHB
USGS COORD 22.0 24.0  5.0  6.5   NO.CLAIMS  36 YEAR 1957 LODE
LATITUDE 61 15 LONGITUDE 141 15  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO COMMODITY     CU NI

DIST 4    QUAD  86   SERIAL 150  NAME MS 779 - JUMBO =1,ST AMAND
USGS COORD  0.0  6.1  0.0  0.4   NO.CLAIMS   1 YEAR 1913 LODE
LATITUDE 61  2 LONGITUDE 146 17  PROD 0  DEV 2 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED YES COMMODITY     CU AU AG ZN

DIST 4    QUAD  86   SERIAL 153  NAME SPORT,AK COPPER MINES
USGS COORD  0.0 24.3  0.0 13.0   NO.CLAIMS   2 YEAR 1958 LODE
LATITUDE 61 41 LONGITUDE 144  3  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  86   SERIAL 154  NAME BARRY&SIMPSON,E.BARRY,F.SIM
USGS COORD 10.6 10.7  2.4  2.5   NO.CLAIMS   4 YEAR 1965 LODE
LATITUDE 61  7 LONGITUDE 145 44  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO COMMODITY     CU AU

DIST 4    QUAD  86   SERIAL 158  NAME WHALE=1-2,N.MISHKO
USGS COORD  0.0  5.5  0.0  3.2   NO.CLAIMS   2 YEAR 1967 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU AU PB AG

DIST 4    QUAD  86   SERIAL 165  NAME PROTECTION=1-7,COPPER R EXP
USGS COORD  0.0 24.5  0.0 12.8   NO.CLAIMS   7 YEAR 1969 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL   1  NAME TRIASSIC GP&GPS,DELANO MNG
USGS COORD 13.7 13.8  7.2  7.6   NO.CLAIMS  26 YEAR 1953 LODE
LATITUDE 61 23 LONGITUDE 142 27  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL   4  NAME NIZINA GP,C.SCHULZE
USGS COORD 10.0 11.0  8.0  9.0   NO.CLAIMS   5 YEAR 1953 LODE
LATITUDE 61 30 LONGITUDE 142 45  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO COMMODITY     CU
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DIST 4    QUAD  87   SERIAL   5  NAME KAN&KIET GPS,D.BURTON
USGS COORD  0.0 24.5  0.0 11.3   NO.CLAIMS  16 YEAR 1954 LODE
LATITUDE 61 37 LONGITUDE 141  3  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL   9  NAME MS1081-2,A&B,1572,HANNA MNG
USGS COORD  0.0  9.8  0.0  9.1   NO.CLAIMS   5 YEAR 1927 LODE
LATITUDE 61 30 LONGITUDE 142 58  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE  YES         PATENTED YES  COMMODITY     CU AG

DIST 4    QUAD  87   SERIAL  14  NAME N.MIDAS GP&GPS,C.BURDICK
USGS COORD  0.0  1.7  0.0  9.6   NO.CLAIMS  18 YEAR 1921 LODE
LATITUDE 61 32 LONGITUDE 143 50  PROD 1  DEV 1 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU AG

DIST 4    QUAD  87   SERIAL  25  NAME MS1588,C.NELSON&C.MCCARTHY
USGS COORD  0.0 13.6  0.0  8.0   NO.CLAIMS   6 YEAR 1935 LODE
LATITUDE 61 25 LONGITUDE 142 25  PROD 1  DEV 2 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED YES  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  26  NAME CASCADE QTZ,C.NELSON
USGS COORD  0.0 13.6  0.0  8.0   NO.CLAIMS   1 YEAR 1929 LODE
LATITUDE 61 25 LONGITUDE 142 25  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  27  NAME BINOCULAR PROSP.,M.RADOVAN
USGS COORD  0.0 13.7  0.0  7.3   NO.CLAIMS   0 YEAR 1951 LODE
LATITUDE 61 24 LONGITUDE 142 25  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  29  NAME MS1578,M.HARRIS
USGS COORD 20.2 20.5  0.7  0.9   NO.CLAIMS  18 YEAR 1936 LODE
LATITUDE 61  2 LONGITUDE 141 38  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     CU PB AG ZN

DIST 4    QUAD  87   SERIAL  30  NAME STRELNA CR
USGS COORD  0.0  0.0  0.0 11.0   NO.CLAIMS   0 YEAR 1901 LODE
LATITUDE 61 38 LONGITUDE 144  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  31  NAME MS547,J.HUBER
USGS COORD  0.0  0.3  0.0 12.3   NO.CLAIMS   2 YEAR 1904 LODE
LATITUDE 61 43 LONGITUDE 143 59  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  32  NAME SKYSCRAPER GP,A.AMMANN
USGS COORD  1.0 17.0 12.1 13.9   NO.CLAIMS  23 YEAR 1907 LODE
LATITUDE 61 40 LONGITUDE 143 50  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AG
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DIST 4    QUAD  87   SERIAL  33  NAME G&B,UNITED VERDE,D.GILLENAU
USGS COORD  0.0  0.5  0.0 12.0   NO.CLAIMS   2 YEAR 1900 LODE
LATITUDE 61 40 LONGITUDE 143 58  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  34  NAME GREAT NORTHERN DEVEL. CO
USGS COORD  0.9  1.2  0.0 12.5   NO.CLAIMS   0 YEAR 1907 LODE
LATITUDE 61 42 LONGITUDE 143 57  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  35  NAME CAPTAIN HARTMAN&ASSOCS.
USGS COORD  0.0  0.6  0.0 12.5   NO.CLAIMS   0 YEAR 1907 LODE
LATITUDE 61 42 LONGITUDE 143 58  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  36  NAME VALDEZ GP,A.BARRETT&E.YOUNG
USGS COORD  0.0  0.8  0.0 13.1   NO.CLAIMS   6 YEAR 1923 LODE
LATITUDE 61 45 LONGITUDE 143 57  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU

DIST 4    QUAD  87   SERIAL  37  NAME BLACKBURN&GP,A.BARRETT
USGS COORD  1.2  1.7 10.8 11.1   NO.CLAIMS   4 YEAR 1900 LODE
LATITUDE 61 38 LONGITUDE 143 50  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  38  NAME SILVER STAR GP,N.FENNESAND
USGS COORD  0.0  0.8  0.0 12.8   NO.CLAIMS   0 YEAR 1916 LODE
LATITUDE 61 44 LONGITUDE 143 57  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     BI CU AG

DIST 4    QUAD  87   SERIAL  39  NAME T.LARSON
USGS COORD  0.0  1.0  0.0 12.2   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 61 42 LONGITUDE 143 55  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  40  NAME COPPER MTN GP,GR.NORTH.DEV.
USGS COORD  1.2  1.4 10.7 11.0   NO.CLAIMS  23 YEAR 1916 LODE
LATITUDE 61 38 LONGITUDE 143 52  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  41  NAME MS912-CU MTN, GR.NORTH.DEV.
USGS COORD  1.2  1.4 10.7 11.0   NO.CLAIMS  35 YEAR 1916 LODE
LATITUDE 61 38 LONGITUDE 143 52  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU

DIST 4    QUAD  87   SERIAL  42  NAME GREAT NORTHERN DEVELOPMENT
USGS COORD  1.2  2.0  0.0 12.3   NO.CLAIMS   0 YEAR 1906 LODE
LATITUDE 61 40 LONGITUDE 143 55  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU
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DIST 4    QUAD  87   SERIAL  43  NAME SURPRISE CR GP,AK.KOTSINA
USGS COORD  0.0  1.5  0.0 12.9   NO.CLAIMS   5 YEAR 1900 LODE
LATITUDE 61 44 LONGITUDE 143 50  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU SN

DIST 4    QUAD  87   SERIAL  44  NAME COPPER QUEEN GP,MT.WRANGEL
USGS COORD  0.0  1.9  0.0  9.2   NO.CLAIMS   0 YEAR 1915 LODE
LATITUDE 61 31 LONGITUDE 143 50  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU FE

DIST 4    QUAD  87   SERIAL  45  NAME MS893,O.H.THORGAARD
USGS COORD  2.2  2.4 11.2 11.3   NO.CLAIMS  36 YEAR 1900 LODE
LATITUDE 61 38 LONGITUDE 143 48  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU AU AG

DIST 4    QUAD  87   SERIAL  46  NAME WAR EAGLE&CALCITE GP
USGS COORD  2.0  2.2  9.4  9.8   NO.CLAIMS  16 YEAR 1900 LODE
LATITUDE 61 32 LONGITUDE 143 50  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU FE

DIST 4    QUAD  87   SERIAL  47  NAME SHOWER GULCH,J.DRAKE&GRENIG
USGS COORD  0.0  2.2  0.0 12.7   NO.CLAIMS   4 YEAR 1914 LODE
LATITUDE 61 40 LONGITUDE 143 45  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  48  NAME MS873,W.WIGGER
USGS COORD  0.0  2.3  0.0  9.9   NO.CLAIMS  14 YEAR 1909 LODE
LATITUDE 61 35 LONGITUDE 143 45  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU

DIST 4    QUAD  87   SERIAL  49  NAME PIERSON CLAIM,O.PIERSON
USGS COORD  0.0  2.5  0.0 10.6   NO.CLAIMS   1 YEAR 1900 LODE
LATITUDE 61 36 LONGITUDE 143 44  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU

DIST 4    QUAD  87   SERIAL  51  NAME MAYFLOWER CLAIM,J.MCCONNELL
USGS COORD  0.0  3.0  0.0 11.0   NO.CLAIMS   1 YEAR 1900 LODE
LATITUDE 61 38 LONGITUDE 143 40  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  52  NAME MS1455,J.HUBER
USGS COORD  0.0  3.1  0.0 11.4   NO.CLAIMS  10 YEAR 1926 LODE
LATITUDE 61 40 LONGITUDE 143 37  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU

DIST 4    QUAD  87   SERIAL  53  NAME KINNEY-GOLDEN
USGS COORD  0.0  2.8  0.0  9.0   NO.CLAIMS   7 YEAR 1900 LODE
LATITUDE 61 31 LONGITUDE 143 40  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU
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DIST 4    QUAD  87   SERIAL  56  NAME LAKINA COPPER CO.
USGS COORD  5.0  5.4  9.7  9.9   NO.CLAIMS  36 YEAR 1900 LODE
LATITUDE 61 35 LONGITUDE 143 27  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  58  NAME MS 1423-1424,H.KNUTSON
USGS COORD  6.8  7.1  9.3  9.7   NO.CLAIMS  15 YEAR 1924 LODE
LATITUDE 61 32 LONGITUDE 143 10  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  59  NAME NEBRASKA CLAIM
USGS COORD  0.0  7.0  0.0  9.5   NO.CLAIMS   1 YEAR 1900 LODE
LATITUDE 61 33 LONGITUDE 143 10  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  61  NAME BEKKA&ELI,WOODIN&HERMAN
USGS COORD  0.0  7.1  0.0  9.1   NO.CLAIMS  11 YEAR 1900 LODE
LATITUDE 61 31 LONGITUDE 143 10  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  63  NAME MS1464,REGAL MINES CO
USGS COORD  0.0  8.5  0.0  9.6   NO.CLAIMS  17 YEAR 1910 LODE
LATITUDE 61 32 LONGITUDE 143  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  64  NAME KENNECOTT COPPER CORP MINE
USGS COORD  9.2  9.9  9.0  9.4   NO.CLAIMS 143 YEAR 1911 LODE
LATITUDE 61 30 LONGITUDE 142 58  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED YES  COMMODITY     CU AG

DIST 4    QUAD  87   SERIAL  65  NAME MS875-BONANZA ,HANNA MNG CO
USGS COORD  9.9 10.2  9.1  9.4   NO.CLAIMS  12 YEAR 1908 LODE
LATITUDE 61 31 LONGITUDE 142 50  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  66  NAME MS875-SKOKANE GP,H.DEWITT
USGS COORD  9.9 10.2  9.1  9.4   NO.CLAIMS   8 YEAR 1908 LODE
LATITUDE 61 31 LONGITUDE 142 50  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  68  NAME MS1512,J.TJASERIG  JACKSON
USGS COORD  0.0 10.3  0.0  8.8   NO.CLAIMS   8 YEAR 1923 LODE
LATITUDE 61 30 LONGITUDE 142 46  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  69  NAME MS1098A&B,GREEN BUTTE CU CO
USGS COORD 10.2 10.5  8.4  8.9   NO.CLAIMS  17 YEAR 1909 LODE
LATITUDE 61 30 LONGITUDE 142 45  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED YES  COMMODITY     CU AG
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DIST 4    QUAD  87   SERIAL  70  NAME MS546,GALENA BAY MNG
USGS COORD 10.8 11.1  8.0  8.2   NO.CLAIMS   7 YEAR 1904 LODE
LATITUDE 61 28 LONGITUDE 142 40  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU

DIST 4    QUAD  87   SERIAL  71  NAME MS1087-8&1401,5-6,J.ANDRUS
USGS COORD 11.4 11.9  5.2  5.6   NO.CLAIMS  21 YEAR 1923 PLACER
LATITUDE 61 18 LONGITUDE 142 35  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED YES COMMODITY     SB CU AU AG

DIST 4    QUAD  87   SERIAL  73  NAME M.HARRIS
USGS COORD 11.5 13.2  4.0  4.4   NO.CLAIMS   0 YEAR 1924 PLACER
LATITUDE 61 15 LONGITUDE 142 28  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO COMMODITY     CU AU

DIST 4    QUAD  87   SERIAL  74  NAME WHITE CR OF CHITITU CR
USGS COORD 11.9 12.5  4.9  5.2   NO.CLAIMS   0 YEAR 1900 PLACER
LATITUDE 61 17 LONGITUDE 142 31  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU AU AG

DIST 4    QUAD  87   SERIAL  75  NAME DAN CR,NICOLAI PLACER MINES
USGS COORD 12.1 12.8  6.6  6.7   NO.CLAIMS   0 YEAR 1924 PLACER
LATITUDE 61 20 LONGITUDE 142 30  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO COMMODITY     CU AU AG

DIST 4    QUAD  87   SERIAL  77  NAME BEAR PAW GP&GPS,AK.UN.CU.EX
USGS COORD 12.4 12.5  6.8  7.0   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 61 23 LONGITUDE 142 31  PROD 0  DEV 0 MERIT 8  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL  78  NAME WESTOVER COPPER GP,J.ONEILL
USGS COORD  0.0 12.5  0.0  7.0   NO.CLAIMS   6 YEAR 1906 LODE
LATITUDE 61 23 LONGITUDE 142 31  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE  YES         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL  80  NAME PEAVINE PROSPECT,W.MAHAR
USGS COORD  0.0 12.9  0.0  8.0   NO.CLAIMS   6 YEAR 1921 LODE
LATITUDE 61 26 LONGITUDE 142 30  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL  81  NAME MS949,DAN CR MNG CO
USGS COORD  0.0 12.9  0.0  6.5   NO.CLAIMS   3 YEAR 1913 PLACER
LATITUDE 61 20 LONGITUDE 142 30  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU

DIST 4    QUAD  87   SERIAL  82  NAME HOUGHTON ALASKA EXPL CO
USGS COORD  0.0 13.3  0.0  8.4   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 61 26 LONGITUDE 142 28  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU
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DIST 4    QUAD  87   SERIAL  86  NAME CONTACT GULCH,AK.UN.CU.EX.C
USGS COORD  0.0 13.6  0.0  8.7   NO.CLAIMS    0 YEAR 1920 LODE
LATITUDE 61 28 LONGITUDE 142 28  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  87  NAME MS1466&7,MCGAVOK&ANDERSON
USGS COORD  0.0 14.7  0.0  7.4   NO.CLAIMS    5 YEAR 1927 LODE
LATITUDE 61 23 LONGITUDE 142 15  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  89  NAME CANYON CR
USGS COORD  0.0 15.5  0.0  5.4   NO.CLAIMS    0 YEAR 1900 LODE
LATITUDE 61 17 LONGITUDE 142 10  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  91  NAME DISCOVERY LODE,P.WHITE
USGS COORD  0.0 16.6  0.0 13.6   NO.CLAIMS    1 YEAR 1908 LODE
LATITUDE 61 45 LONGITUDE 142  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  92  NAME VERDI & GP,H.WILEY
USGS COORD  0.0 17.9 12.4 12.5   NO.CLAIMS    0 YEAR 1907 LODE
LATITUDE 61 43 LONGITUDE 141 47  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  93  NAME SKOLAI MNG CO
USGS COORD 17.1 17.2  0.0 13.5   NO.CLAIMS    7 YEAR 1914 LODE
LATITUDE 61 44 LONGITUDE 141 55  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  94  NAME SKOLAI MNG CO
USGS COORD  0.0 18.4  0.0 12.6   NO.CLAIMS    6 YEAR 1914 LODE
LATITUDE 61 42 LONGITUDE 141 48  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  95  NAME NORTHERN COMMERCIAL CO
USGS COORD  0.0 17.3  0.0 13.0   NO.CLAIMS    0 YEAR 1907 LODE
LATITUDE 61 43 LONGITUDE 141 56  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  97  NAME MORAINE CR
USGS COORD  0.0 18.5  0.0 11.7   NO.CLAIMS    0 YEAR 1907 LODE
LATITUDE 61 38 LONGITUDE 141 45  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  87   SERIAL  98  NAME SHEEP CR OF WHITE RIVER
USGS COORD  0.0 19.6  0.0 12.2   NO.CLAIMS    0 YEAR 1900 LODE
LATITUDE 61 40 LONGITUDE 141 40  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU
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DIST 4    QUAD  87   SERIAL  99  NAME KLETSAN CR,J.DALTON
USGS COORD  0.0 24.0 10.0 11.0   NO.CLAIMS   0 YEAR 1897 PLACER
LATITUDE 61 35 LONGITUDE 141 10  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL 101  NAME COPPER CHIEF CLAIM,S.ABERT
USGS COORD  0.0 24.0  0.0 14.6   NO.CLAIMS   1 YEAR 1907 LODE
LATITUDE 61 49 LONGITUDE 141  8  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL 102  NAME WILEY PROSPECT,ACME MNG CO
USGS COORD  0.0 24.3  0.0 17.4   NO.CLAIMS   0 YEAR 1907 LODE
LATITUDE 61 57 LONGITUDE 141  2  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO COMMODITY     CU AU AG

DIST 4    QUAD  87   SERIAL 105  NAME COPPER KING CLAIM- KOTSINA
USGS COORD  0.0  2.0  0.0 12.0   NO.CLAIMS   1 YEAR 1900 LODE
LATITUDE 61 42 LONGITUDE 143 45  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL 106  NAME KEYSTONE CLAIM - KOTSINA
USGS COORD  0.0  2.0  0.0 12.0   NO.CLAIMS   1 YEAR 1900 LODE
LATITUDE 61 42 LONGITUDE 143 45  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL 107  NAME MN,KING&BROKEN LEG GPS
USGS COORD  0.0  2.0  0.0  9.0   NO.CLAIMS   0 YEAR 1919 LODE
LATITUDE 61 30 LONGITUDE 143 40  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL 109  NAME MINT &,ALASKA KOTSINA CU CO
USGS COORD  0.0  1.0  0.0 12.0   NO.CLAIMS   4 YEAR 1907 LODE
LATITUDE 61 40 LONGITUDE 143 45  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL 110  NAME ROARING CR,GR.NORTHERN DEV.
USGS COORD  1.1  1.4 11.8 12.3   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 61 40 LONGITUDE 143 50  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL 112  NAME TRIASSIC,RADOVAN GULCH MNG
USGS COORD 13.7 13.8  7.2  7.6   NO.CLAIMS 182 YEAR 1956 LODE
LATITUDE 61 23 LONGITUDE 142 27  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL 113  NAME DISCOVERY LODE,P.WHITE
USGS COORD  0.0 17.1  0.0 13.3   NO.CLAIMS   0 YEAR 1956 LODE
LATITUDE 61 44 LONGITUDE 141 58  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU
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DIST 4    QUAD  87   SERIAL 114  NAME CHITI LODE GP,BEAR CR MNG
USGS COORD  9.0 10.2  7.2 10.5   NO.CLAIMS  14 YEAR 1956 LODE
LATITUDE 61 30 LONGITUDE 142 40  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL 115  NAME MS 920,STATE OF ALASKA
USGS COORD 17.3 17.4 13.3 13.4   NO.CLAIMS   8 YEAR 1913 LODE
LATITUDE 61 44 LONGITUDE 141 55  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU

DIST 4    QUAD  87   SERIAL 116  NAME MS 1511,E.ANDERSON
USGS COORD  0.0 16.6  0.0 17.4   NO.CLAIMS   5 YEAR 1929 LODE
LATITUDE 61 58 LONGITUDE 142  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU

DIST 4    QUAD  87   SERIAL 117  NAME MS 941- 942,STATE OF ALASKA
USGS COORD 15.1 15.4  0.0 12.4   NO.CLAIMS  10 YEAR 1915 LODE
LATITUDE 61 42 LONGITUDE 142 10  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU

DIST 4    QUAD  87   SERIAL 118  NAME MS943,STATE OF ALASKA
USGS COORD  0.0 12.1  0.0 14.1   NO.CLAIMS   5 YEAR 1915 LODE
LATITUDE 61 47 LONGITUDE 142 32  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU

DIST 4    QUAD  87   SERIAL 119  NAME MS944,STATE OF ALASKA
USGS COORD  0.0 12.8  0.0 13.7   NO.CLAIMS   4 YEAR 1915 LODE
LATITUDE 61 45 LONGITUDE 142 26  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU

DIST 4    QUAD  87   SERIAL 123  NAME HARRIS
USGS COORD 24.6 24.8 13.3 13.5   NO.CLAIMS  20 YEAR 1907 LODE
LATITUDE 61 45 LONGITUDE 141  0  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL 124  NAME WARNER
USGS COORD  0.0 17.2  0.0 10.9   NO.CLAIMS   0 YEAR 1907 LODE
LATITUDE 61 36 LONGITUDE 141 56  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL 127  NAME SIMPSON,R.BERG
USGS COORD 18.6 18.7 12.2 12.3   NO.CLAIMS   3 YEAR 1959 LODE
LATITUDE 61 40 LONGITUDE 141 45  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL 129  NAME KENYA,R.TROTOCHAU
USGS COORD  0.0  9.8  0.0  9.1   NO.CLAIMS   1 YEAR 1959 LODE
LATITUDE 61 30 LONGITUDE 142 58  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU AG
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DIST 4    QUAD  87   SERIAL 130  NAME NIZINA GP,FREMONT MNG CO
USGS COORD 10.3 11.6  7.4  8.4   NO.CLAIMS  42 YEAR 1961 LODE
LATITUDE 61 25 LONGITUDE 142 37  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL 132  NAME PANDORA GP,N.FINNESAND
USGS COORD  1.6  1.7 12.8 12.9   NO.CLAIMS   3 YEAR 1963 LODE
LATITUDE 61 44 LONGITUDE 143 51  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO COMMODITY     CU AG

DIST 4    QUAD  87   SERIAL 133  NAME FRIEDA M &,R.MOORE
USGS COORD  0.0  1.7  0.0  9.8   NO.CLAIMS   5 YEAR 1965 LODE
LATITUDE 61 33 LONGITUDE 143 48  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU AU

DIST 4    QUAD  87   SERIAL 134  NAME COLORADO DISC.,J.HANNA
USGS COORD  0.0 24.1  0.0 17.5   NO.CLAIMS   4 YEAR 1967 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 3 1
ACTIVE  YES         PATENTED  NO COMMODITY     CU AU

DIST 4    QUAD  87   SERIAL 136  NAME J.WILSON
USGS COORD  0.0 13.7  0.0  8.4   NO.CLAIMS  54 YEAR 1968 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL 137  NAME FEPCO GP,F.POTTS
USGS COORD  0.0 12.0  0.0  7.0   NO.CLAIMS  16 YEAR 1966 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL 138  NAME NORTH&EAST BUTTE GP,BOOTHBY
USGS COORD  0.0 10.4  0.0  8.4   NO.CLAIMS  10 YEAR 1968 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO COMMODITY     CU AG

DIST 4    QUAD  87   SERIAL 141  NAME FRED'S FOLLY GP,KING RES.CO
USGS COORD  9.2 10.3  8.7  9.9   NO.CLAIMS 127 YEAR 1969 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO COMMODITY     CU AG

DIST 4    QUAD  87   SERIAL 142  NAME NICOLIE BUTT GP,J.WILSON
USGS COORD  0.0 13.3  0.0  6.7   NO.CLAIMS  20 YEAR 1969 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  87   SERIAL 143  NAME KALS GP,KING RESOURCES CO
USGS COORD  7.0  7.6  9.8  9.9   NO.CLAIMS  46 YEAR 1967 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO COMMODITY     CU
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DIST 4    QUAD  87   SERIAL 144  NAME COASTAL MNG CO BY HANNA MNG
USGS COORD  9.2 10.3  8.7  9.9   NO.CLAIMS 119 YEAR 1969 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO  COMMODITY     CU AG

DIST 4    QUAD  87   SERIAL 147  NAME NIKOLAI GP,P.HOLDSWORTH
USGS COORD  0.0 12.5  0.0  7.6   NO.CLAIMS  50 YEAR 1969 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  95   SERIAL  52  NAME MS970,TERRITORY OF ALASKA
USGS COORD  0.0 18.6  0.0  1.2   NO.CLAIMS   1 YEAR 1917 LODE
LATITUDE 60  3 LONGITUDE 147 54  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     CU

DIST 4    QUAD  95   SERIAL  88  NAME BEATSON MINE,KENNICOT CORP
USGS COORD  0.0 18.4  1.1  1.2   NO.CLAIMS   1 YEAR 1925 LODE
LATITUDE 60  5 LONGITUDE 147 56  PROD 4  DEV 4 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU PB NI AG ZN

DIST 4    QUAD  95   SERIAL  89  NAME SHOO FLY CLAIMS
USGS COORD  0.0 15.7  0.0  1.8   NO.CLAIMS   4 YEAR 1926 LODE
LATITUDE 60  6 LONGITUDE 148 12  PROD 1  DEV 1 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  95   SERIAL  97  NAME LENORA GRP,S.GAMBLIN
USGS COORD  0.0 22.4  0.0 17.3   NO.CLAIMS   5 YEAR 1917 LODE
LATITUDE 60 56 LONGITUDE 147 23  PROD 2  DEV 2 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU ZN

DIST 4    QUAD  95   SERIAL  98  NAME MS993,FRED B SNYDER
USGS COORD 20.3 20.6  6.4  6.7   NO.CLAIMS   2 YEAR 1908 LODE
LATITUDE 60 20 LONGITUDE 147 33  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED YES  COMMODITY     CU ZN

DIST 4    QUAD  95   SERIAL  99  NAME BULLION,F.DICKEY
USGS COORD 20.3 20.6  6.4  6.7   NO.CLAIMS  19 YEAR 1908 LODE
LATITUDE 60 20 LONGITUDE 147 33  PROD 0  DEV 0 MERIT 0  EXPL 1 5
ACTIVE  YES         PATENTED  NO  COMMODITY     CU ZN

DIST 4    QUAD  95   SERIAL 157  NAME LYNX CR,READY BULLION CO.
USGS COORD  0.0  5.9  0.0 11.8   NO.CLAIMS   0 YEAR 1904 LODE
LATITUDE 60 40 LONGITUDE 149 20  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  95   SERIAL 159  NAME LYNX CREEK,C.W.STONE
USGS COORD  6.0  6.1 12.2 12.4   NO.CLAIMS   0 YEAR 1895 PLACER
LATITUDE 60 43 LONGITUDE 149 20  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU
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DIST 4    QUAD  95   SERIAL 162  NAME GOD-WIN,A.W.SMITH
USGS COORD  0.0  6.3  0.0  2.0   NO.CLAIMS   7 YEAR 1908 LODE
LATITUDE 60  7 LONGITUDE 149 17  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO  COMMODITY     CU AU

DIST 4    QUAD  95   SERIAL 166  NAME REAL THING GRP,S.LIKES
USGS COORD  6.4  6.6  0.2  0.5   NO.CLAIMS  23 YEAR 1908 LODE
LATITUDE 60  3 LONGITUDE 149 15  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU FE

DIST 4    QUAD  95   SERIAL 174  NAME DAY HARBOR
USGS COORD  0.0  7.4  0.0  0.6   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 60  4 LONGITUDE 149 10  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  95   SERIAL 175  NAME CROW CREEK,PETERSON&MAYFIEL
USGS COORD  7.8  7.9 17.5 17.6   NO.CLAIMS   0 YEAR 1906 PLACER
LATITUDE 61  0 LONGITUDE 149  5  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU AG

DIST 4    QUAD  95   SERIAL 224  NAME COPPER BAY-KNIGHT ISLAND
USGS COORD  0.0 18.6  0.0  5.1   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 60 15 LONGITUDE 147 53  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU ZN

DIST 4    QUAD  95   SERIAL 225  NAME DRIER BAY,H.MOORE
USGS COORD 18.7 19.8  5.0  6.7   NO.CLAIMS   0 YEAR 1917 LODE
LATITUDE 60 15 LONGITUDE 147 45  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  95   SERIAL 226  NAME ALAMEDA,LATOUCHE IS.COPPER
USGS COORD 18.7 19.1  0.3  1.1   NO.CLAIMS   1 YEAR 1916 LODE
LATITUDE 60 14 LONGITUDE 748  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU ZN

DIST 4    QUAD  95   SERIAL 227  NAME MS782JAMES SUMPTER
USGS COORD  0.0 18.4  0.0  1.2   NO.CLAIMS   6 YEAR 1917 LODE
LATITUDE 60  4 LONGITUDE 147 50  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU AU PB NI AG ZN

DIST 4    QUAD  95   SERIAL 228  NAME CATHEAD BAY
USGS COORD  0.0 18.7  0.0  5.3   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 60 16 LONGITUDE 147 53  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  95   SERIAL 229  NAME MALLARD GROUP
USGS COORD  0.0 18.9  0.0  5.1   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 60 15 LONGITUDE 147 53  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU
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DIST 4    QUAD  95   SERIAL 230  NAME U&I,UNA&ALHAMBRA
USGS COORD 18.0 19.0  5.0  6.0   NO.CLAIMS   3 YEAR 1900 LODE
LATITUDE 60 15 LONGITUDE 147 57  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  95   SERIAL 231  NAME MS774IRON MT.GRP,RADCO
USGS COORD 18.1 18.3  0.5  0.7   NO.CLAIMS  48 YEAR 1920 LODE
LATITUDE 60  3 LONGITUDE 147 55  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU AU AG ZN

DIST 4    QUAD  95   SERIAL 233  NAME BAZARD &,LATOUCHE MNG.CO.
USGS COORD 18.3 18.4  0.9  1.0   NO.CLAIMS   6 YEAR 1908 LODE
LATITUDE 60  4 LONGITUDE 147 55  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  95   SERIAL 235  NAME H.J.HARVEY
USGS COORD  0.0 19.2  4.5  4.8   NO.CLAIMS   2 YEAR 1908 LODE
LATITUDE 60 13 LONGITUDE 147 48  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  95   SERIAL 236  NAME MONARCH,KNIGHT IS.CONS.CU
USGS COORD  0.0 19.2  0.0  6.6   NO.CLAIMS   1 YEAR 1908 LODE
LATITUDE 60 21 LONGITUDE 147 48  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  95   SERIAL 237  NAME HOME CAMP GRP,C.SCHULTZ
USGS COORD  0.0 19.3  0.0  4.5   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 60 13 LONGITUDE 147 47  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU ZN

DIST 4    QUAD  95   SERIAL 238  NAME COPPER COIN GRP,RUSSELL CO.
USGS COORD  0.0 19.3  0.0  5.6   NO.CLAIMS   3 YEAR 1908 LODE
LATITUDE 60 18 LONGITUDE 147 47  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  95   SERIAL 239  NAME LOWER HERING BAY
USGS COORD  0.0 19.3  0.0  7.2   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 60 23 LONGITUDE 147 47  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  95   SERIAL 240  NAME MINNIE CLAIM
USGS COORD  0.0 19.4  0.0  4.3   NO.CLAIMS   1 YEAR 1900 LODE
LATITUDE 60 12 LONGITUDE 147 47  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU ZN

DIST 4    QUAD  95   SERIAL 241  NAME HOGAN,HAMPLE&EGAN
USGS COORD  0.0 19.5  0.0  3.9   NO.CLAIMS   0 YEAR 1908 LODE
LATITUDE 60 12 LONGITUDE 147 46  PROD 0  DEV 0 MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO COMMODITY     CU
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DIST 4    QUAD  95   SERIAL 242  NAME BALD EAGLE,KNIGHT IS.CO.
USGS COORD  0.0 19.5  0.0  6.4   NO.CLAIMS    1 YEAR 1900 LODE
LATITUDE 60 21 LONGITUDE 147 46  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  95   SERIAL 243  NAME MS736HERCULES &,STATE OF AK
USGS COORD  0.0 19.5  0.0  5.8   NO.CLAIMS    6 YEAR 1915 LODE
LATITUDE 60 18 LONGITUDE 147 47  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     CU

DIST 4    QUAD  95   SERIAL 244  NAME FRACTION &,WILCOX
USGS COORD  0.0 19.6  4.0  4.1   NO.CLAIMS    7 YEAR 1908 LODE
LATITUDE 60 10 LONGITUDE 147 45  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  95   SERIAL 245  NAME GRAHAM&HARRIS
USGS COORD 19.6 19.7  5.0  5.2   NO.CLAIMS    0 YEAR 1908 LODE
LATITUDE 60 15 LONGITUDE 147 45  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  95   SERIAL 246  NAME NELLIE GROUP
USGS COORD  0.0 19.6  0.0  6.2   NO.CLAIMS    0 YEAR 1900 LODE
LATITUDE 60 20 LONGITUDE 147 45  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  95   SERIAL 247  NAME HAPPY JACK COPPER MNG&DEV
USGS COORD  0.0 19.6  0.0  3.5   NO.CLAIMS    3 YEAR 1908 LODE
LATITUDE 60 10 LONGITUDE 147 45  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU ZN

DIST 4    QUAD  95   SERIAL 248  NAME KNIGHT IS COPPER MNG CO.
USGS COORD  0.0 19.6  0.0  5.8   NO.CLAIMS    9 YEAR 1908 LODE
LATITUDE 60 18 LONGITUDE 147 45  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  95   SERIAL 249  NAME MS954,REASOR&CLOUSE
USGS COORD  0.0 19.8  0.0  6.0   NO.CLAIMS    9 YEAR 1908 LODE
LATITUDE 60 20 LONGITUDE 147 44  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED YES  COMMODITY     CU ZN

DIST 4    QUAD  95   SERIAL 250  NAME J.BETTLES
USGS COORD  0.0 19.8  0.0  4.9   NO.CLAIMS    0 YEAR 1900 LODE
LATITUDE 60 15 LONGITUDE 147 44  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU ZN

DIST 4    QUAD  95   SERIAL 251  NAME CROWN COPPER CO.
USGS COORD  0.0 19.8  0.0  7.8   NO.CLAIMS    0 YEAR 1908 LODE
LATITUDE 60 24 LONGITUDE 147 44  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU ZN
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DIST 4    QUAD  95   SERIAL 252  NAME MS1493PANDORA,C.WALLACE &
USGS COORD  0.0 19.9  0.0  6.6   NO.CLAIMS    4 YEAR 1908 LODE
LATITUDE 60 22 LONGITUDE 147 43  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU ZN

DIST 4    QUAD  95   SERIAL 253  NAME SNOWSTONE GRP,C.WALLACE &
USGS COORD  0.0 20.1  0.0  7.5   NO.CLAIMS    0 YEAR 1900 LODE
LATITUDE 60 23 LONGITUDE 147 42  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU ZN

DIST 4    QUAD  95   SERIAL 254  NAME BEACHCOMBER &,ANDERSON
USGS COORD  0.0 20.3 17.0 17.1   NO.CLAIMS    0 YEAR 1966 LODE
LATITUDE 60 58 LONGITUDE 147 32  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  95   SERIAL 255  NAME WAGNER PROSPECT
USGS COORD  0.0 20.2  0.0 17.3   NO.CLAIMS    1 YEAR 1916 LODE
LATITUDE 60 56 LONGITUDE 147 39  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  95   SERIAL 256  NAME KNIGHT IS MNG&DEV.CO
USGS COORD 20.1 20.3  8.0  8.9   NO.CLAIMS    0 YEAR 1908 LODE
LATITUDE 60 25 LONGITUDE 147 40  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU ZN

DIST 4    QUAD  95   SERIAL 257  NAME MS1067GLENDENNING PROPERTY
USGS COORD  0.0 21.5  0.0 17.9   NO.CLAIMS    6 YEAR 1920 LODE
LATITUDE 60 59 LONGITUDE 147 30  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU

DIST 4    QUAD  95   SERIAL 258  NAME PORTSMOUTH&SCOTIA BELL,JENS
USGS COORD  0.0 24.9  0.0 16.1   NO.CLAIMS    2 YEAR 1917 LODE
LATITUDE 60 54 LONGITUDE 147  5  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  95   SERIAL 259  NAME PORTAGE PASS MNG CO.
USGS COORD  0.0  0.0  0.0  0.0   NO.CLAIMS    0 YEAR 1937 LODE
LATITUDE 60 45 LONGITUDE 148 45  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  95   SERIAL 260  NAME WELLS BAY GOLD&COPPER MNG
USGS COORD  0.0  0.0  0.0  0.0   NO.CLAIMS    0 YEAR 1916 LODE
LATITUDE 60 58 LONGITUDE 147 30  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  95   SERIAL 267  NAME PATTON COOPERATING CO
USGS COORD  0.0  0.0  0.0  0.0   NO.CLAIMS    0 YEAR 1917 LODE
LATITUDE 60 30 LONGITUDE 147  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU
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DIST 4    QUAD  95   SERIAL 274  NAME MS584KENNECOT COPPER CORP
USGS COORD  0.0 18.3  1.0  1.2   NO.CLAIMS  17 YEAR 1905 LODE
LATITUDE 60  3 LONGITUDE 147 54  PROD 0  DEV 0  MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU

DIST 4    QUAD  95   SERIAL 342  NAME DUNROVIN,W.DAVIS
USGS COORD  6.6  6.7  7.9  8.1   NO.CLAIMS   3 YEAR 1965 LODE
LATITUDE 60 28 LONGITUDE 149 16  PROD 0  DEV 0  MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO COMMODITY     CU AU

DIST 4    QUAD  95   SERIAL 347  NAME DUNROVIN ANNEX,TYSON&LEMONS
USGS COORD  0.0  6.8  0.0  7.5   NO.CLAIMS  13 YEAR 1967 PLACER
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0  MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED  NO COMMODITY     CU AU

DIST 4    QUAD  95   SERIAL 348  NAME BILLIE,WILMA HACKNEY
USGS COORD  0.0  6.7  0.0  7.4   NO.CLAIMS   1 YEAR 1967 PLACER
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0  MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU AU

DIST 4    QUAD  96   SERIAL   3  NAME MS1584,ALASKA COPPER CORP
USGS COORD  0.0  5.0  0.0 13.5   NO.CLAIMS  15 YEAR 1934 LODE
LATITUDE 60 46 LONGITUDE 146 25  PROD 4  DEV 4  MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED YES COMMODITY     CU

DIST 4    QUAD  96   SERIAL   4  NAME THREEMAN COPPER CO
USGS COORD  0.0  4.0  0.0 15.0   NO.CLAIMS  21 YEAR 1952 LODE
LATITUDE 60 51 LONGITUDE 146 33  PROD 0  DEV 0  MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  96   SERIAL   5  NAME MS669-700,J.PETERSEN
USGS COORD  0.0  4.0  0.0 15.0   NO.CLAIMS  11 YEAR 1952 LODE
LATITUDE 60 51 LONGITUDE 146 33  PROD 3  DEV 4  MERIT 0  EXPL 1 3
ACTIVE   NO         PATENTED YES COMMODITY     CU

DIST 4    QUAD  96   SERIAL   8  NAME GREEN TOP GP,J.IBACH
USGS COORD  0.0 13.5 11.0 12.0   NO.CLAIMS   4 YEAR 1955 LODE
LATITUDE 60 38 LONGITUDE 145 24  PROD 0  DEV 0  MERIT 0  EXPL 1 3
ACTIVE  YES         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  96   SERIAL   9  NAME GLACIER ISLAND COPPER CO
USGS COORD  0.0  1.0  0.0 15.0   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 60 50 LONGITUDE 146 55  PROD 0  DEV 0  MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  96   SERIAL  11  NAME CLOUDMAN BAY
USGS COORD  0.0  2.3  0.0 14.6   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 60 50 LONGITUDE 146 15  PROD 0  DEV 0  MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU AU ZN
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DIST 4    QUAD  96   SERIAL  12  NAME ELLAMAR MINE,CENTAL AK.MISS
USGS COORD  0.0  2.6  0.0 15.7  NO.CLAIMS  14 YEAR 1897 LODE
LATITUDE 60 53 LONGITUDE 146 43  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     CU AU PB AG ZN

DIST 4    QUAD  96   SERIAL  13  NAME BOULDER BAY,C.RUA
USGS COORD  0.0  3.1  0.0 15.5  NO.CLAIMS   0 YEAR 1915 LODE
LATITUDE 60 50 LONGITUDE 146 40  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  96   SERIAL  15  NAME BOULDER BAY,L.WAGNER
USGS COORD  0.0  3.1  0.0 15.6  NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 60 53 LONGITUDE 146 40  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  96   SERIAL  16  NAME BOULDER BAY,REYNOLDS AK.DEV
USGS COORD  0.0  3.2  0.0 15.5  NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 60 53 LONGITUDE 146 40  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  96   SERIAL  17  NAME BOULDER BAY,FIELDER&HEMPLE
USGS COORD  0.0  3.2  0.0 15.6  NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 60 54 LONGITUDE 146 40  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  96   SERIAL  18  NAME MOGUL GP,G.BANTA&F.CAMERON
USGS COORD  0.0  3.3  0.0 15.7  NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 60 55 LONGITUDE 146 38  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU ZN

DIST 4    QUAD  96   SERIAL  19  NAME MS1017,GALENA BAY MNG CO
USGS COORD  3.4  3.6 15.4 15.6  NO.CLAIMS  21 YEAR 1899 LODE
LATITUDE 60 50 LONGITUDE 146 40  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     CU AU ZN

DIST 4    QUAD  96   SERIAL  21  NAME COPPER MOUNTAIN
USGS COORD  0.0  3.7  0.0 15.2  NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 60 53 LONGITUDE 146 35  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  96   SERIAL  22  NAME MS879,J.PETERSON
USGS COORD  0.0  3.7  0.0 15.3  NO.CLAIMS   4 YEAR 1912 LODE
LATITUDE 60 53 LONGITUDE 146 33  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     CU

DIST 4    QUAD  96   SERIAL  23  NAME MS1485&HILLTOP,THREEMAN MNG
USGS COORD  0.0  3.9  0.0 15.0  NO.CLAIMS   2 YEAR 1897 LODE
LATITUDE 60 53 LONGITUDE 146 32  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     AS CU AU PB AG ZN
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DIST 4    QUAD  96   SERIAL  24   NAME MONTEZUMA,THREEMAN MNG CO
USGS COORD  0.0  3.8  0.0 15.1    NO.CLAIMS   1 YEAR 1900 LODE
LATITUDE 60 53 LONGITUDE 146 35   PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  96   SERIAL  25   NAME P.STEINMETZ
USGS COORD  0.0  3.8  0.0 15.3    NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 60 54 LONGITUDE 146 34   PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  96   SERIAL  26   NAME COPPER MTN GP,H.REYNOLDS
USGS COORD  0.0  3.8 15.2 15.3    NO.CLAIMS  10 YEAR 1899 LODE
LATITUDE 60 53 LONGITUDE 146 32   PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  96   SERIAL  27   NAME L.BANZER
USGS COORD  0.0  3.8  0.0 14.4    NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 60 48 LONGITUDE 146 32   PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU AU PB ZN

DIST 4    QUAD  96   SERIAL  28   NAME MOONSHINE,LANDLOCK BAY CU
USGS COORD  3.8  3.9 14.8 14.9    NO.CLAIMS   0 YEAR 1903 LODE
LATITUDE 60 53 LONGITUDE 146 33   PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU ZN

DIST 4    QUAD  96   SERIAL  29   NAME BUCKEYE GP
USGS COORD  0.0  3.9  0.0 14.9    NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 60 51 LONGITUDE 146 32   PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  96   SERIAL  31   NAME MS1486,THREEMAN MNG CO
USGS COORD  0.0  3.9  0.0 14.9    NO.CLAIMS   2 YEAR 1904 LODE
LATITUDE 60 51 LONGITUDE 146 33   PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     CU AU ZN

DIST 4    QUAD  96   SERIAL  32   NAME MS737,J.PETERSON
USGS COORD  3.9  4.0  0.0 15.0    NO.CLAIMS   6 YEAR 1909 LODE
LATITUDE 60 53 LONGITUDE 146 32   PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES  COMMODITY     CU AU AG ZN

DIST 4    QUAD  96   SERIAL  33   NAME ALASKA LODE,P.STEINMETZ
USGS COORD  0.0  4.0  0.0 14.9    NO.CLAIMS   3 YEAR 1900 LODE
LATITUDE 60 52 LONGITUDE 146 31   PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU

DIST 4    QUAD  96   SERIAL  34   NAME THREEMAN MNG CO.
USGS COORD  0.0  4.0  0.0 14.8    NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 60 50 LONGITUDE 146 31   PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO  COMMODITY     CU
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DIST 4    QUAD  96   SERIAL  35  NAME CHISNA CONSOLIDATED MINES
USGS COORD  0.0  4.0  0.0 14.8   NO.CLAIMS    0 YEAR 1909 LODE
LATITUDE 60 50 LONGITUDE 146 31  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  96   SERIAL  36  NAME THREEMAN MNG CO
USGS COORD  0.0  4.2  0.0 14.5   NO.CLAIMS    0 YEAR 1900 LODE
LATITUDE 60 48 LONGITUDE 146 30  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  96   SERIAL  37  NAME IRISH COVE COPPER CO.
USGS COORD  0.0  4.9  0.0 13.5   NO.CLAIMS    0 YEAR 1900 LODE
LATITUDE 60 45 LONGITUDE 146 28  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  96   SERIAL  38  NAME BLACK BEAR,DICKEY COPPER CO
USGS COORD  0.0  5.0  0.0 13.5   NO.CLAIMS    0 YEAR 1907 LODE
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU AU ZN

DIST 4    QUAD  96   SERIAL  39  NAME MS969,W.GRILL
USGS COORD  0.0  6.2  0.0 14.1   NO.CLAIMS   24 YEAR 1905 LODE
LATITUDE 60 48 LONGITUDE 146 15  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES         PATENTED YES COMMODITY     CU AU

DIST 4    QUAD  96   SERIAL  42  NAME MS1061,W.HEWITT
USGS COORD  0.0 10.9  0.0 10.1   NO.CLAIMS   21 YEAR 1923 LODE
LATITUDE 60 35 LONGITUDE 145 40  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU

DIST 4    QUAD  96   SERIAL  43  NAME CORDOVA COPPER CO
USGS COORD  0.0 10.9  0.0 10.1   NO.CLAIMS    0 YEAR 1900 LODE
LATITUDE 60 35 LONGITUDE 145 43  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  96   SERIAL  45  NAME HEAD-OF-THE-BAY,CORDOVA-TCC
USGS COORD  0.0 12.5  0.0 11.7   NO.CLAIMS    0 YEAR 1909 LODE
LATITUDE 60 40 LONGITUDE 145 31  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  96   SERIAL  88  NAME A.MCNAUGHTON&E.TURNER
USGS COORD  0.0  3.1  0.0 16.0   NO.CLAIMS    0 YEAR 1900 LODE
LATITUDE 60 55 LONGITUDE 146 40  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  96   SERIAL  95  NAME LANDLOCKED BAY
USGS COORD  0.0  3.0  0.0 14.0   NO.CLAIMS    0 YEAR 1900 LODE
LATITUDE 60 53 LONGITUDE 146 32  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU
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DIST 4    QUAD  96   SERIAL  99  NAME MS738,J.PETERSEN
USGS COORD  3.6  3.7  0.0 15.1   NO.CLAIMS   7 YEAR 1912 LODE
LATITUDE 60 53 LONGITUDE 146 36  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU ZN

DIST 4    QUAD  96   SERIAL 100  NAME CHUGAT=1,A.MADONNA
USGS COORD  0.0 16.5  0.0  8.1   NO.CLAIMS   1 YEAR 1957 LODE
LATITUDE 60 26 LONGITUDE 145  2  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD  96   SERIAL 101  NAME MS557,B.RUA
USGS COORD  0.0  2.5  0.0 15.9   NO.CLAIMS   1 YEAR 1904 LODE
LATITUDE 60 54 LONGITUDE 146 43  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED YES COMMODITY     CU AU PB ZN

DIST 4    QUAD 105   SERIAL   3  NAME ALPHA,OWEN ORE CO
USGS COORD  0.0 17.7  0.0 17.1   NO.CLAIMS  74 YEAR 1908 LODE
LATITUDE 59 58 LONGITUDE 148  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU AU ZN

DIST 4    QUAD 105   SERIAL   4  NAME FEATHER BED GRP,E.PITMAN
USGS COORD  6.2  6.6 17.2 17.3   NO.CLAIMS   6 YEAR 1915 LODE
LATITUDE 59 59 LONGITUDE 149 15  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD 105   SERIAL   5  NAME W.R.LIETZKE
USGS COORD  6.3  6.4 15.4 15.5   NO.CLAIMS   1 YEAR 1908 LODE
LATITUDE 59 53 LONGITUDE 149 15  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD 105   SERIAL   7  NAME PETERSON CLAIM,W.HART
USGS COORD  0.0  6.3  0.0 16.9   NO.CLAIMS   1 YEAR 1908 LODE
LATITUDE 59 58 LONGITUDE 149 15  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU AU AG ZN

DIST 4    QUAD 105   SERIAL   8  NAME FAIRVIEW GRP,E.PITMAN
USGS COORD  0.0  6.4  0.0 15.8   NO.CLAIMS   3 YEAR 1908 LODE
LATITUDE 59 55 LONGITUDE 149 15  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD 105   SERIAL   9  NAME REYNOLDS,AK.DEV.CO.
USGS COORD  0.0  6.7  0.0 17.7   NO.CLAIMS   1 YEAR 1908 LODE
LATITUDE 59 55 LONGITUDE 149 14  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU

DIST 4    QUAD 105   SERIAL  10  NAME LATOUCHE CONSOL.COPPER CO
USGS COORD  0.0 17.3  0.0 16.8   NO.CLAIMS   1 YEAR 1908 LODE
LATITUDE 59 57 LONGITUDE 148  1  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO         PATENTED  NO COMMODITY     CU
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DIST 4    QUAD 105   SERIAL  11  NAME WHALE
USGS COORD 17.0 18.0 17.0 18.0   NO.CLAIMS   0 YEAR 1900 LODE
LATITUDE 59 57 LONGITUDE 148  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE   NO        PATENTED  NO  COMMODITY     CU

DIST 4    QUAD 105   SERIAL  16  NAME KEITH=1-130,G.MOERLEIN
USGS COORD 17.4 18.0 17.0 18.0   NO.CLAIMS 130 YEAR 1969 PLACER
LATITUDE  0  0 LONGITUDE   0  0  PROD 0  DEV 0 MERIT 0  EXPL 0 0
ACTIVE  YES        PATENTED  NO  COMMODITY     CU AU ZN
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