UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

SUMMARIES OF DATA ON AND LISTS OF REFERENCES TO METALLIC AND SELECTED NONMETALLIC MINERAL OCCURRENCES IN THE MOUNT FAIRWEATHER QUADRANGLE, ALASKA, SUPPLEMENT TO OPEN-FILE REPORT 78-316

PART A -- SUMMARIES OF DATA TO JANUARY 1, 1980

By

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Open-file Report 81-249A

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This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards.

Introduction

This report was prepared as a supplement to a 1978 report, part of which summarized data on mineral occurrences in the Mount Fairweather quadrangle, Alaska (Cobb, E. H., 1978, Summary of references to mineral occurrences (other than mineral fuels and construction materials) in the Mt. Fairweather and Skagway quadrangles, Alaska: U.S. Geological Survey Open-File Report 78-316, 128 p.). As a result of suggestions from users of the series of which the 1978 report is a part, this supplement is released in two parts; Part A, which presents summaries of data to January 1, 1980, and Part B, which consists of reference lists for each occurrence.

In Part A data from reports released between the cut-off date (November 1, 1977) for the original report and January 1, 1980 have been incorporated in rewritten or new summaries where appropriate; if there are no new data on a deposit the original summary is repeated. For each deposit the name, list of mineral commodities, and location data are in the same format as is the 1978 report. Also included is an updated list of synonyms, owner, operator, and claim names.

In Part B citations are in standard bibliographic format with the exception that references to reports and maps in numbered publication series also show, in parentheses, an abbreviation for the report or map series and the number of the report or map. Abbreviations used are:

AOF	Alaska Division of Geological and Geophysical Surveys Open-File Report
B	U.S. Geological Survey Bulletin
C	U.S. Geological Survey Circular
IC	U.S. Bureau of Mines Information Circular
OF	U.S. Geological Survey Open-File Report
MF	U.S. Geological Survey Miscellaneous Field Studies Map
P	U.S. Geological Survey Professional Paper
RI	U.S. Bureau of Mines Report of Investigations

Citations to the principal references used in preparing the summaries in Part A are preceded by an asterisk.

Because the form of citation used in the reference list for each deposit constitutes sufficient identification of each numbered report or map to allow it to be found easily in most libraries, the general reference list in this report consists only of reports without formal identifying numbers. Numbers given to Geological Survey Open-File Reports listed with complete titles are informal and are used mainly in the Branch of Alaskan Geology of the Geological Survey.

(Abyss Lake) Copper, Iron, Silver

Juneau district Mt. Fairweather (17.3, 7.9)
MF-436, loc. 53 58°26'N, 136°37'W

Magnetite-garnet lenses (as large as 30 ft long and 10 ft thick) with minor chalcopyrite and pyrite between marble and granite. Sample from one lens contained 1.5 ppm Ag. Bodies exposed too small to be exploitable.

(Adams Inlet) Molybdenum

Juneau district Mt. Fairweather (22.25, 15.4)
MF-436, loc. 45 58°51'N, 136°03'W

Molybdenite reported to occur on fracture surfaces in metamorphic rocks; granitic rocks nearby; deposit probably contact metamorphic in origin.

Alaska Chief Copper, Gold, Silver, Zinc(?)

Juneau district Mt. Fairweather (21.85, 8.2)
MF-436, loc. 59 58°27'N, 136°07'W

Massive sulfides (chalcopyrite, pyrite, pyrrhotite, and probably sphalerite) replaced tactite, hornfels, and marble in contact zone of a granitic mass; some surface oxidation; gangue mainly calcite with smaller amounts of quartz. Prospect consists of stripped area about 150 ft by 55 ft and a 40-ft adit; work probably done in early 1900's. Chip samples of stripped area contained as much as 15,000 ppm Cu, 700 ppm Zn, 300 ppm Co, 8 ppm Au (0.232 oz per ton), and 150 ppm Ag (4.377 oz per ton). Indicated resource estimated at 27,000 tons containing 1% Cu, 0.1 oz Au, and 2 oz Ag per ton. Lateral extent of deposit and grade at depth not known.

Alaska Independence Mining Co. Gold(?)

Juneau district Mt. Fairweather
N 1/2 SE 1/4 quad.

Prospecting, 1932-33. No other data available. Probably was a gold prospect.

(Astrolabe Peninsula) Iron, Titanium

Yakutat district Mt. Fairweather (14.75, 6.55)
MF-436, loc. 9 58°22'N, 136°54'W

Layered gabbro stock makes up mountain on peninsula. Float samples from a zone about 900 ft thick that appears to extend through the mountain contained 8%-22% magnetite and 2% ilmenite.

(Blue Mouse Cove) Gold, Silver, Zinc

Juneau district Mt. Fairweather (18.2, 14.2)
MF-436, loc. 37 58°48'N, 136°30'W

Quartz vein in shear zone in granitic rocks contains tetrahedrite, pyrite, and gold. Sample, possibly not from same spot, contained an unidentified zinc mineral and a trace of silver.

(Brady Glacier) Cobalt, Copper, Nickel, Platinum

Juneau district Mt. Fairweather (14.4, 9.85)(in part)
MF-436, loc. 8 (in part) 58°33'N, 136°56'W (in part)

Deposit near east edge and probably fairly near base of a large mafic and ultramafic layered pluton that elsewhere is exposed over a vertical range of about 32,000 ft. Deposit exposed in small nunataks and partially explored (largely by drilling through the ice) by 46 diamond-drill holes. Ore minerals (listed in order of abundance) are pyrrhotite, pentlandite, and chalcopyrite, which occur as small massive sulfide bodies and scattered through all rock types except a few aplite dikes. In the nunataks the average grades are probably less than 0.5% each of nickel and copper; sulfide masses run 2%-3% nickel, 1%-1.21% copper, and 0.25% cobalt. Identified resource as of 1973 was listed as 20,000,000 tons containing 0.25% nickel. Analyses of 17 samples for platinum-group metals showed average contents of 1.29 ppm for massive sulfides, 0.18 ppm for gabbroic rocks with disseminated sulfides, and 0.23 ppm for ultramafic rocks with disseminated sulfides. Radar measurements of ice thicknesses suggest that deposit may have been removed a short distance north of nunataks. On the basis of additional drilling reported in 1978, resources are estimated at 80 million metric tons (90 million tons) each of indicated and inferred identified resources with an estimated average grade of 0.53% Ni and 0.33% Cu.

(Brady Glacier, near snout) Copper, Gold, Molybdenum

Juneau district Mt. Fairweather (17.4, 6.9)
MF-436, loc. 54 (in part) 58°23'N, 136°37'W

Float specimens of molybdenite-bearing quartz have been found on glacier. Small gold-bearing quartz veins in mafic gneiss and diorite reported; veins are only a few inches thick and are exposed for only short distances along strike. Quartz fragments in stream-sediment sample contained finely disseminated pyrite and chalcopyrite. See also (Taylor Bay).

(Bruce Hills) Copper, Lead, Molybdenum, Silver, Zinc

Juneau district Mt. Fairweather (19.45, 17.6)
MF-436, loc. 41 58°59'N, 136°21'W

Metallic minerals in thin quartz veins, in disseminated deposits, and as mineralized fracture coatings. Near a steep fault zone (with a few branching faults) in granodiorite with a few small hornfels roof pendants and cut by a few andesite dikes. Ore minerals, associated with pyrite and(or) pyrrhotite, include chalcopyrite, molybdenite, and malachite and minor amounts of molybdite, sphalerite, and galena. Analyses of samples showed as much as 3 ppm Ag.

(Contact nunatak) — Gold

Juneau district — Mt. Fairweather (15.7, 12.75)
58°43'N, 136°47'W

0.10-0.20 ppm Au in samples of hornfels containing pyrite and pyrrhotite. Hornfels in bands of limestone near granodiorite.

(De Langle Mtn.) — Iron, Titanium

Yakutat district — Mt. Fairweather (14.5, 7.3)
58°24'N, 136°55'W

Magnetite-rich zones in Astrolabe-De Langle layered gabbro stock; probably contain about 10% Fe; one band 2 ft wide and 225 ft long said to contain about 64% Fe, 20% Ti, and 0.28% Ni.

(Desolation Glacier) — Copper, Gold, Nickel

Yakutat district — Mt. Fairweather (8.45, 13.7)
58°47'N, 137°33'W

Mafic dike 5-6 ft wide and exposed for about 200 ft contains disseminated nickeliferous pyrrhotite, pyrite, and chalcopyrite. Analysis said to have shown 0.59% Ni, 0.62% Cu, and 0.01 oz Au per ton.

(Dundas Bay) — Copper, Gold, Iron

Juneau district — Mt. Fairweather (18.55-21.4, 6.4-7.0)
MF-436, locs. 57, 58, 60 — 58°21'-58°23'N, 136°11-'136°29'W

Pods of pyrite and minor chalcopyrite in quartz-rich metamorphic rocks in contact with metabasalt. Samples contained traces of Ag, Mo, and Pb; minerals carrying these metals not identified. Thin quartz veins about a foot apart also carry Cu and Mo. Lode gold and iron (probably magnetite-rich skarn) reported by reliable observers. See also Iron Mountain.

(Dundas Bay, East Arm) — Gold, Molybdenum, Tungsten

Juneau district — Mt. Fairweather (17.8, 8.3)
58°28'N, 136°34'W

Skarn developed in unassimilated limestone inclusion in Cretaceous diorite at contact with Tertiary granite contains powellite; chip sample contained 0.10 ppm Au. Stream-sediment samples from vicinity contained powellite and scheelite. Float contains molybdenite.

(Dundas Bay, West Arm) — Cobalt, Copper, Silver

Juneau district — Mt. Fairweather (18.35, 6.5)
MF-436, loc. 55 — 58°25'N, 136°30'W

Chalcopyrite and other sulfide(s) in hornblendite dikes in a gneissic dioritic rock that locally is garnetiferous. Samples contained 18,000 ppm Cu, 3 ppm Ag, and 700 ppm Co.

(Dundas R.) — Gold

Juneau district — Mt. Fairweather (19.45, 8.25) approx.
MF-436, loc. 69 — 58°27'N, 136°23'W approx.

Placer gold has been recovered from glacially derived gravels. Amount recovered not known, but undoubtedly very small. See also Valley of Tears.

(Fourth of July Mtn.) — Copper, Silver

Juneau district — Mt. Fairweather (16.3, 11.5)
58°39'N, 136°44'W

Traces of chalcopyrite in samples of gossan; country rock sericitized and chloritized dioritic rock. Samples contained as much as 2 ppm Ag.

(Francis I.) — Copper, Gold, Silver, Zinc(?)
MF-436, loc. 47
Juneau district — Mt. Fairweather (21.25, 11.35)
58°38'N, 136°11'W

Quartz diorite body intruded marble; contact aureole of hornfels and tactite 5 ft wide. Silicified fault zone 10 ft wide along contact between quartz diorite and tactite contains irregularly distributed chalcopyrite, bornite, malachite, pyrite, secondary iron minerals, and possibly sphalerite, tetrahedrite, chalcocite, and pyrolusite. Samples contained as much as 7,000 ppm Cu; 1,000 ppm Zn; 200 ppm Sb; 150 ppm Bi; and 1.46 oz silver per ton. Old prospect (now covered by landslide debris) reported to have carried gold and silver values in bornite.

Galena — Gold, Lead, Silver, Zinc

Juneau district — Mt. Fairweather (15.2, 15.05)
MF-436, loc. 25 — 58°51'N, 136°50'W

Vein of banded, vuggy quartz 4-18 in thick was exposed for about 60 ft. Country rock is granodiorite with subordinate schist and a few lampro-

phyric dikes. Assay of a sample where vein is 12 in thick showed 0.16 oz gold and 0.30 oz silver per ton and 0.79% zinc. Vein contains abundant pyrite, sphalerite, and galena. About 30 tons of ore (probably decomposed surface material) was reported to have been mined in 1939.

(Geikie Inlet) — Chromite, Gold, Molybdenum

Juneau district — Mt. Fairweather (18.05-18.4, 10.5)
MF-436, loc. 52 (in part) — 58°35'N, 136°30'-136°32'W

Molybdenite in tactite reported before 1930. Chromite with subordinate clinochlore in blebs in lamprophyre dikes in diorite near a dunite body; chip sample of dike carries 0.01 ppm Au. Includes reference to Yehring.

(Gilbert I.) — Copper, Gold, Lead, Molybdenum, Silver, Zinc

Juneau district — Mt. Fairweather (17.25-17.8, 13.75-14.55)
MF-436, locs. 34-36 — 58°46'-58°49'N, 136°33'-136°36'W

Stockworks of quartz veinlets in bleached and altered quartz diorite in west and southwest parts of island and on a small adjacent unnamed island contain chalcopyrite and molybdenite and as much as 0.292 oz silver a ton. Also reported are tetrahedrite, galena, sphalerite, pyrite, and free gold.

Highland Chief — Gold, Lead, Silver
MF-436, loc. 24
Juneau district — Mt. Fairweather (15.0, 14.95)
58°51'N, 136°51'W

Country rock is amphibolite, schist, and marble locally intruded by salients of granodiorite. Veins that contain free gold are as much as 2 ft thick (one is as much as 6 ft thick) and can be traced for as much as 700 ft; covered at south ends. Some samples (collected in 1978) contained arsenopyrite and galena; one sample 0.3 ft long assayed 3.49 oz gold and 1.25 oz silver per ton; most were much leaner. Prospect would be promising if less inaccessible; snow covered for much of the year.

Hopalong — Gold

Juneau district — Mt. Fairweather (15.6, 15.1) approx.
MF-436, loc. 27 — 58°51'N, 136°47'W. approx.

Vertical quartz-calcite veins as much as one foot thick in fine-grained diorite or quartz diorite contain uncommon pyrite and arsenopyrite. Gold reported to have been recovered from weathered surficial parts of veins.

Incas — Gold

Juneau district — Mt. Fairweather (15.1, 15.3)
MF-436, loc. 27 — 58°52'N, 136°50'W.

Quartz lenses in fault zone along which granodiorite wall rock is hydrothermally altered contain minor amounts of sulfides (chiefly arsenopyrite) and sporadically distributed gold. About 200 ft of underground workings; all production (probably small) was from trench along outcrop of fault zone and consisted of weathered lode material. Altered granodiorite also contains trace of sulfides and gold.

Iron Mountain	Iron
Juneau district	Mt. Fairweather (20.75, 7.1) approx. 58°23'N, 136°15' approx.

Magnetite in pods as much as 30 ft wide in a string 500 ft long; replaces limestone near contact with igneous rock. No sulfides with the magnetite. See also (Dundas Bay).

(Johns Hopkins Inlet)	Copper, Gold, Molybdenum, Silver
Juneau district MF-436, locs. 10, 11, 14, 15	Mt. Fairweather (12.95-13.7, 15.5-16.3) 58°52'-58°55'N, 137°00-137°04"W

Altered zones in metamorphic and granitic rocks, generally near intrusive contacts, contain very small amounts of chalcopyrite or bornite and some coatings of secondary copper minerals. Float samples collected by U.S. Bureau of Mines also contained molybdenite and as much as 0.2 ppm Au and 7 ppm Ag; 3 samples contained some Sn and one some W. Includes references to (Kashoto Glacier). See also (Orange Point).

(Johns Hopkins Inlet, entrance)	Copper(?), Gold, Lead(?), Silver, Zinc(?)
Juneau district	Mt. Fairweather (14.25, 16.35) 58°55'N, 136°56'W

Massive sulfides in carbonate-quartz vein as much as 3.5 ft wide in gneiss. Sulfides probably include chalcopyrite, sphalerite, and galena. Chip sample across vein contained 0.03 ppm Au, 15 ppm Ag, 770 ppm Cu, 250 ppm Pb, and 4,300 ppm Zn.

(Lamplugh Glacier)	Copper
Juneau district MR-436, loc. 28	Mt. Fairweather (14.4, 14.4) 58°49'N, 136°55'W

Copper stain on wallrock adjacent to pyrite-bearing quartz veins in hornfels. Samples only slightly anomalous in Cu and Mo.

(Lemesurier I.)	Asbestos [paligorskite], Copper, Molybdenum
Chichagof district MF-436, locs. 61, 62	Mt. Fairweather (22.2-22.45, 4.9-5.35) 58°15'-58°17'N, 136°04'-136°06'W

On south tip of island garnet-pyroxene hornfels at contact between marble and quartz diorite contains molybdenite along small gash veins and disseminated in contact rock. Molybdenite generally sparse, but forms several percent of rock in small pockets. Deposit also contains chalcopyrite and graphite. Deposit was opened by a 78-foot tunnel and a 25-foot crosscut; no record of production. At SW headland of Willoughby Cove small veins in limestone contain quartz, garnet, epidote, molybdenite, chalcopyrite, and bornite. Paligorskite was formed in or on top of beds near the top of a Silurian limestone formation; it has been found on limestone beneath soil cover, in a solution cavity, and in near-surface fractures cut by calcite veinlets. Most of material in 2 deposits has been removed.

LeRoy — Cadmium, Copper, Gold, Lead, Silver, Zinc

Juneau district — Mt. Fairweather (14.7, 15.55)
MR-436, loc. 17 — 58°53'N, 136°53'W

Veins and veinlets of quartz with minor amounts of feldspars, calcite, and clay minerals, gold and silver, and the sulfides arsenopyrite, pyrite, galena, sphalerite, and chalcopyrite transect steeply dipping metamorphic rocks that form a screen between granitic bodies; altered zones along veins also carry a little gold. Samples contained as much as 10.34 oz gold and 7.40 oz silver per ton; 1,000 ppm Cd; 70 ppm Cu; 1,500 ppm Pb; and 15,000 ppm Zn. Mine developed by 4 adits on LeRoy vein (as much as 3 ft thick); most of ore mined out from stopes above and below main adit level. Total production about $100,000 (2,857 fine oz) in gold. Deposit discovered 1938 and mined until 1945 or later.

(Lituya Bay) — Copper, Gold, Iron, Molybdenum, Platinum, Titanium, Tungsten

Yakutat district — Mt. Fairweather (5.2-9.85, 9.25-13.85)
MF-436, locs. 1, 2, 65, 66 — 58°31'-58°47'N, 137°26'-137°56'W

Beach placers discovered and mined by Russians before 1867. Americans began mining in about 1890. Total production through 1917 was worth about $75,000 (3,625 fine oz) in gold, plus a little platinum. Mining continued until as recently as 1940, but production was small. Proximate source of gold, platinum, and other heavy minerals is glacial deposits that are eroded by storms; deposits are thin and patchy on modern and old raised beaches; all mining small scale. Ultimate source of heavy minerals is layered mafic and ultramafic plutons in Fairweather Range. Beach deposits contain as much as 16.5 lb iron and 90.1 lb TiO_2 per cubic yard of material in place; in magnetite and ilmenite. Gabbro dike exposed on shore of SE arm of bay contains irregular veinlets and blebs of pyrrhotite and chalcopyrite. Altered zones SE of bay carry a little gold (one assay showed 0.24 oz per ton) and traces of powellite; a little gold in a stream draining an altered zone. Includes reference to: (Coal Cr.), (Crillon Inlet, west side), (Fall Cr.). See also (Pacific beach sands).

Marvitz — Gold, Lead

Chichagof district — Mt. Fairweather (19.2, 2.35)
MF-436, loc. 63 — 58°07'N, 136°25'W

Quartz veins that appear to be lenticular and as much as 5 ft thick and andesite dikes occupy closely spaced joints in quartz-sericite schist and slate. Veins carry free gold, pyrite, arsenopyrite, and galena. In late 1920's or early 1930's the prospect was developed by 3 tunnels, the longest about 210 ft long. No record of any production.

(Miner I.) Gold(?)

Chichagof district Mt. Fairweather (20.1, 0.5)
58°01'N, 136°21'W

Gold prospect in albite quartz diorite. This may be the same as (Yakobi I.); reference in Buddington and Chapin, 1929 (B 800), p. 378 is very sketchy.

Monarch Gold, Lead, RE

Juneau district Mt. Fairweather (14.95, 15.4)
MR-436, loc. 19 58°52'N, 136°51'W

Altered zones in granodiorite contain quartz lenses and thin veins with gouge. Some of altered granodiorite contains allanite; quartz contains arsenopyrite, pyrite, galena, and free gold. Explored by 2 adits about 210 and 120 ft long, short drifts, and a small stope. Ore, mainly weathered material from surface at Monarch No. 1 workings, taken to Lemesurier I. for milling; operation not profitable. Deposits discovered in 1924; development and mining from about 1941 to 1947 or 1948.

(Mt. Fairweather) Chromite, Copper, Nickel, Platinum

Yakutat district Mt. Fairweather (8.25, 15.75) approx.
58°54'N, 137°36'W. approx.

Float specimens of material from layered mafic and ultramafic pluton that underlies about 15 square miles high on SW flank of Mt. Fairweather contained chalcopyrite, cubanite, pyrrhotite, pentlandite, chromite, magnetite, ilmenite, platinum-group metals, and as much as 200 ppm cobalt.

(Mt. Marchainville) Copper, Iron, Titanium

Yakutat district Mt. Fairweather (13.0, 8.4)
MF-436, loc. 7 58°29'N, 137°05'W

Samples of a 50-ft-thick layer in Crillon-La Perouse stock near contact contained as much as 11.4% ilmenite; a little garnet in rock. Copper-stained gneiss along contact.

(Mt. Orville) Molybdenum(?)

Yakutat district Mt. Fairweather (11.25, 12.65)
58°43'N, 137°16'W

Molybdenite or graphite in rock fragment from iron-stained zone on an arête.

(Mt. Parker) — Gold

Juneau district — Mt. Fairweather (14.7, 15.4) approx.
58°52'N, 136°53'W approx.

Sample of fairly prominent vein contained 0.94 oz gold per ton. Location uncertain; coordinates given above may be in error by as much as 1.5 mi.

(North Crillon Glacier) — Chromite, Copper, Iron, Platinum, Titanium

Yakutat district — Mt. Fairweather (9.7-11.25, 11.3-12.25)
MF-436, locs. 4-6 (in part) — 58°38'-58°42'N, 137°16'-137°26'W

Layered mafic pluton. One layer about 5 ft thick and extending for several thousand feet along south wall of valley contains as much as 60% ilmenite and 2%-3% pyrrhotite and chalcopyrite. Fragments of schist and quartz-garnet veins in moraine on glacier are copper stained. Float chromite reported; none found in place. An accessible shear zone contains pyrrhotite, chalcopyrite, and ilmenite; chip samples contained as much as 980 ppm Cu, 3,000 ppm Ni, 0.70 ppm Pt. Mineralized zones are similar to those exposed in north wall of South Crillon Glacier. Amphibolite schist copper stained near contact with layered intrusive near head of glacier.

(North Marble I.) — Copper, Iron, Zinc

Juneau district — Mt. Fairweather (22.25, 12.15)
MF-436, loc. 50 — 58°40'N, 136°04'W

Marble cut by a few mafic dikes. Sulfides in bodies as much as 1-1/2 ft thick and 15 ft long in marble near and along dikes and in many joints in dikes. Sulfides identified are pyrite, pyrrhotite, chalcopyrite, covellite, and sphalerite; magnetite also present.

(Nunatak) — Copper, Gold, Molybdenum, Silver

Juneau district — Mt. Fairweather (21.7, 17.7)
MF-436, loc. 43 — 58°59'N, 136°06'W

Stockwork of quartz veins, mainly in hornfels around a quartz monzonite porphyry stock intruded into tightly folded metasedimentary rocks, but also in the quartz monzonite porphyry and in a silicified zone near the edge of the stock. Molybdenite in stockwork, in a mineralized fault zone, and disseminated in hornfels. Pyrite, pyrrhotite, chalcopyrite, and traces of silver associated with molybdenite in parts of the deposit. Resource estimates are (MacKevett and others, 1971): in stockwork above sea level near Muir Inlet--2,247,000 tons averaging 0.067% MoS_2 and 0.016% Cu; remainder of stockwork and fault-zone deposit--129,530,250 tons averaging 0.026% MoS_2 and 0.018% Cu; additional 18,000,000 tons averaging 0.026% MoS_2 and 0.018% Cu under steep cliffs at south end of stockworks; similar tonnage of similar-grade material below sea level. Samples that contained

0.04 oz gold and 7.07 oz silver a ton were not duplicated in most recent investigations; only traces of silver were found. Most recent resource estimates (Brew and others, 1978) are 145 million tons of indicated material at a grade of 0.04%-0.06% Mo and 0.02% Cu (accessible to surface mining) and an additional 9.1 million tons of inferred material at a grade of 0.06% Mo and 0.02% Cu below sea level near coastline. Material accessible to surface mining contains potentially richer material that would have to be mined underground if mined by itself. Chalcopyrite, minor tetrahedrite, bornite, and enargite outside of molybdenum area disseminated in epidote skarn and in shear zones in skarn; estimated to average 0.1%-0.2% Cu.

(Orange Point) — Copper, Gold, Silver, Zinc

Juneau district — Mt. Fairweather (13.6, 16.35)
MF-436, loc. 11 — 58°55'N, 137°00'W

Volcanogenic sulfide deposits in Permian(?) meta-andesite in series of metavolcanic and metasedimentary rocks partially assimilated by Cretaceous diorite. Sulfides (pyrite, pyrrhotite, sphalerite, and chalcopyrite; gold and silver values) grade from disseminations in andesite to massive bodies, one of which has an average thickness of 65 ft and is exposed over a strike length of 400 ft and a vertical distance of 100 ft. Analyses of samples showed more than 0.5% Ba in many and, in some, as much as 1,600 ppm Pb, 100 ppm Mo, 500 ppm Sr, 150 ppm V, 150 ppm Co, and (in a few) 500 ppm Cd; no As, Sb, Bi, Sn, or W. Identified resource estimated at 270,000 tons containing 2.7% Cu, 5.2% Zn, and 0.03 oz Au and 1 oz Ag per ton; and 530,000 tons containing 0.4% Cu, 0.3% Zn, and 0.006 oz Au and 0.35 oz Ag per ton. See also (Johns Hopkins Inlet).

Oregon King Consolidated — Gold

Yakutat district — Mt. Fairweather (10.2, 9.0)
MF-436, loc. 67 — 58°30'N, 137°23'W

36 placer claims on beach and probably stream and terrace deposits. See also (Pacific beach sands).

(Pacific beach sands) — Gold, Iron, Platinum, Titanium

Yakutat district — Mt. Fairweather (5.05-14.7, 6.95-15.5)
MF-436, locs. 65-67 (in part) — 58°23'-58°53'N, 136°54'-137°57'W

Data [in Brew and others, 1978 (OF-494)] are generally similar to those summarized under (Lituya Bay) in Cobb, 1978 (OF 78-316, p. 32), but the area is extended about 20 mi southeastward to Boussole Bay and 6 mi northward to Sea Otter Cr. Detailed investigation of 1 mi^2 of the 8 mi^2 of beach sands resulted in estimating 6,000,000 yd^3 of material containing 120,000 tons of ilmenite and 1,200 oz of gold in the 1 m^2 area. See also (Lituya Bay).

(Palma R.) Copper

Yakutat district Mt. Fairweather (13.65, 7.35)
58°25'N, 137°01'W

Malachite and azurite stain on cliff face in amphibolite schist.

Parker, A. F. Gold, Lead, Silver

Juneau district Mt. Fairweather (14.5, 15.7)
MF-436, loc. 16 58°53'N, 136°54'W

Quartz veinlets 1/2 to 1 in thick in 10 in of gouge in a fault zone in granodiorite contain galena, pyrite, and free gold. Developed between 1938 and 1941 by a 20-ft tunnel. 7 or 8 tons of ore mined. Six U.S. Bureau of Mines grab and short channel samples contained as much as 5.13 oz gold and 1.55 oz silver per ton; values spotty.

(Ptarmigan Cr.) Zinc

Juneau district Mt. Fairweather (14.75, 15.35)
MF-436, loc. 18 58°52'N, 136°52'W

Discontinuous lenticular quartz vein in fault zone contains sphalerite. Fault can be traced for 4,500 ft; wall rock altered. Much of creek staked in placer claims; no workable placers found.

(Queen Inlet) Copper, Iron

Juneau district Mt. Fairweather (18.0, 16.0)
MF-436, loc. 39 58°54'N, 136°31'W

Small tactite bodies along contacts between alaskite (with associated porphyritic volcanic rocks) and marble locally contain enough magnetite to be called skarn. Skarn and mafic dikes that cut alaskite and marble contain veins and pods of sulfides (mainly pyrite, but some chalcopyrite and secondary copper minerals). Spectrographic analyses indicated that samples contained as much as 300 ppm Cu, 300 ppm Co, and 30 ppm Sn. Magnetometer traverse suggested more magnetite-bearing bodies under glacial drift. Known bodies too small and too lean to warrant economic interest.

Rainbow Gold, Lead, Silver, Zinc

Juneau district Mt. Fairweather (15.0, 15.65)
MF-436, loc. 20 58°53'N, 136°51'W

Steeply dipping altered zone in granodiorite and alaskite extends about 1/2 mi SW from sea level and contains quartz-calcite veins. Ore mined from brecciated vein material that contains gold and a mineral assemblage similar to that at LeRoy mine; 180 ft adit (portal 15 ft above sea level),

crosscut, and stopes. Ore also mined from pit at SW end of altered zone. Altered rock along fault contains a little gold. Total production not known, but probably second only to LeRoy mine in Reid Inlet area. Samples contained as much as 10.211 oz gold and 2.043 oz silver per ton; 1,500 ppm As; 500 ppm Pb; and 2,000 ppm Zn. Sphalerite and galena assumed to be present. See also LeRoy.

Rambler	Gold, Lead, Silver, Zinc
Juneau district MF-436, loc. 23	Mt. Fairweather (14.7, 14.95) 58°50'N, 136°53'W

Veins that pinch and swell (about an inch to 3 ft) cut granodiorite that contains screens of metamorphic rock and is cut by mafic dikes contain quartz, calcite, feldspars, barite, arsenopyrite, pyrite, galena, and traces of gold. Highest assay of samples taken during U.S. Bureau of Mines investigation was 6.45 oz gold and 1.72 oz silver per ton from a width of 0.35 ft in a vein about 1 ft thick; other samples all much less rich; extent of vein not known. Float contains abundant galena and sphalerite and considerable free gold.

(Red Mtn.)	Cadmium, Zinc
Juneau district MF-436, loc. 44	Mt. Fairweather (22.15, 17.25) 58°58'N, 136°03'W

Small pods and impregnations in Middle Devonian limestone near a granodiorite cupola. Encrustations of a secondary zinc mineral. A sample contained 7,000 ppm Zn, 500 ppm Pb, 70 ppm Cd, and a trace of Ag. Deposits too small to be of economic interest.

(Reid Glacier, east of head)	Copper, Gold, Silver
Juneau district	Mt. Fairweather (15.8, 13.95) 58°47'N, 136°46'W

Pyrite, arsenopyrite, and chalcopyrite in bands as much as 3 ft wide in garnet-epidote skarn. Samples contained as much as 0.15 ppm Au and 1.5 ppm Ag.

(Rendu Inlet)	Cobalt, Copper, Iron, Molybdenum, Silver
Juneau district MF-436, locs. 30-33	Mt. Fairweather (16.4-16.95, 16.2-16.55) 58°55'-58°56'N, 136°38'-136°41'W

2 claims patented in 1895 as a silver prospect; now owned by National Park Service. Developed by a short adit from which some ore may have been taken before 1900, carbonate-quartz vein about 6 in thick along contact between marble and a diorite dike and several feet of altered wall

rock; wire silver, tetrahedrite, and copper (potential byproduct) reported. Near mouth of inlet are scattered sulfides in bleached marble; principal sulfide is pyrite; sample contained 1,500 ppm Cu; 1,000 ppm Ni; and 700 ppm Co. In peninsula west of inlet are magnetite-rich pods of skarn or tactite in quartz diorite and near contact between it and marble; deposits appear to be small, but much of nearby bedrock is covered by surficial deposits. Thin quartz veins and thin quartz-rich pegmatite dikes in granitic rocks west of inlet contain scattered molybdenite, chalcopyrite, pyrite, and pyrrhotite.

Richtmeyer	Gold(?)
Juneau district	Mt. Fairweather (14.15, 15.7) 58°53'N, 136°56'W

Gold claim. No specific data; probably on quartz veins in granitic rock near contact with hornfels. Could not be found during recent investigation.

(Russell I.)	Gold, Silver, Tungsten
Juneau district MF-436, loc. 29	Mt. Fairweather (15.3, 16.7) 58°56'N, 136°49'W

Narrow (no more than 0.5 ft wide) quartz veins in 4-ft-wide iron-stained altered zone in granodiorite contain pyrite, pyrrhotite, and traces of scheelite. Highest assay of samples collected by U.S. Bureau of Mines was 5.81 oz gold and 2.64 oz silver per ton; most assays were much lower.

Sentinel	Gold, Lead
Juneau district MF-436, loc. 21	Mt. Fairweather (15.1, 15.5) 58°52'N, 136°50'W

Hydrothermally altered zone about a foot thick in granodiorite sparsely impregnated by galena and other sulfides; abundant secondary iron minerals. An unknown, but undoubtedly small, amount of gold was recovered from shallow surficial workings.

(Shag Cove)	Copper
Juneau district MF-436, loc. 46	Mt. Fairweather (19.7, 11.55) 58°39'N, 130°21'W

Pyrrhotite, pyrite, chalcopyrite, azurite, and cuprite(?) in small sulfide-rich pods in sheared and altered zone in quartzose rocks. Sample contained 3,000 ppm Cu, 700 ppm Zn, 200 ppm Co, and a trace of Ag. Probably are not minable quantities of ore.

(South Crillon Glacier) — Chromite, Cobalt, Copper, Gold, Iron, Nickel, Titanium

Yakutat district — Mt. Fairweather (10.8, 11.25)
MF-436, loc. 3 — 58°38'N, 137°19'W

Iron-stained shear zones in layered gabbro near basal contact with amphibolite schist as much as 20 ft thick and thousands of feet long; most are inaccessible. One small (6-8 ft thick) zone contained a small pod of sulfides (pyrrhotite, chalcopyrite, and pentlandite); sample contained 3,000 ppm Cu, 2,500 ppm Ni, and 700 ppm Co. Sample across rest of zone, which carries disseminated sulfides, carried smaller amounts of these elements and as much as 0.10 ppm Au. Intrusive contains ilmenite-rich zones. Chromite has been found in float on the glacier, but not in place.

(South Marble I.) — Copper(?)

Juneau district — Mt. Fairweather (22.45, 11.65)
MF-436, loc. 51 — 58°39'N, 136°03'W

Sulfide mineralization reported to be similar to that on North Marble I., where pyrite, pyrrhotite, chalcopyrite, and covellite are in marble near dikes and in joints in dikes. Recent investigation reported only pyrite in silicified marble and mafic dikes on South Marble I. Samples contained as much as 100 ppm Ni, 200 ppm Cu, and 1% Ti.

Sunrise — Copper, Gold, Silver, Tungsten(?)

Juneau district — Mt. Fairweather (15.45, 15.25)
MF-436, loc. 26 — 58°51'N, 136°48'W

Altered zones in marble and hornfels cut by lamprophyre dikes contain small pods of sulfides, mainly chalcopyrite and pyrrhotite. Small quartz vein about parallel to bedding contains small amounts of gold and silver and some pyrite. Also a report of scheelite being found nearby. See also unnamed occurrence at 58°23'N, 136°37'W (group of claims with same name).

(Surge Bay) — Copper(?), Nickel(?)

Chichagof district — Mt. Fairweather (18.25, 0.5) approx.
58°01'N, 136°21'W approx.

Area of gabbroic rocks. Claim located in 1923, presumably for nickel and copper.

(Tarr Inlet) — Copper

Juneau district — Mt. Fairweather (13.55-14.2, 16.9-17.3)

MF-436, locs. 12, 13 — 58°58'-58°59'N, 136°56'-137°00'W

Veins and lenses of sulfide minerals contain chalcopyrite and secondary copper minerals. Sample from one lens contained 1,000 ppm Cu, 300 ppm Zn, and a trace of Ag.

(Taylor Bay) — Gold

Juneau district — Mt. Fairweather (17.0-17.5, 6.2-6.6)
MF-436, loc. 68 (in part) — 58°20'-58°22'N, 136°36'-136°39'W

Very fine gold in outwash was mined for a short time in early 1900's. Includes references to (Brady Glacier outwash).

(Threesome Mtn.) — Molybdenum, Silver, Tungsten

Juneau district — Mt. Fairweather (17.75, 9.5)
58°32'N, 136°34'W

Fracture coatings and fracture fillings no more than 0.2 ft (average about 0.08 ft) thick made up of quartz, molybdenite, and scheelite in Tertiary granodiorite stock. Samples contained more than 2,000 ppm Mo and as much as 7 ppm Ag, 330 ppm Cu, and 4,917 ppm W. Was a little exploratory drilling; claims inactive in 1977.

(3,850 nanatak) — Copper, Silver

Juneau district — Mt. Fairweather (13.65, 16.9)
58°57'N, 137°00'W

Sulfides in small pods in contact-metamorphosed limestone and/or volcanic rocks near contact with granitic body are pyrite, pyrrhotite, and some chalcopyrite. Chip samples contained as much as 1.5 ppm Ag.

(Tidal Inlet) — Copper

Juneau district — Mt. Fairweather (19.6, 14.2)
MF-436, loc. 42 — 58°48'N, 136°21'W

Sample of sulfide-bearing quartz veins in marble near contact with diorite carried 1,000 ppm Cu, 200 ppm Ni, and 300 ppm Co. Sulfides are pyrite, chalcopyrite, and pyrrhotite(?).

(Torch Bay) — Copper

Yakutat district — Mt. Fairweather (15.45, 5.6)
58°19'N, 136°50'W

50-ft^2 area of seacliff of graywacke and schist is malachite and azurite stained.

(Triangle I.) Molybdenum

Juneau district Mt. Fairweather (17.85, 17.05)
MF-436, loc. 38 58°57'N, 136°32'W

Island is fine-grained granodiorite cut by a few aplitic dikes. A few hundred pounds of molybdenite was found; most was removed by one man in one day.

Valley of Tears Gold

Juneau district Mt. Fairweather (19.6, 9.3)
58°31'N, 136°22'W

Placer claims in reworked glacial material. A little gold present. May be the same as (Dundas R.) occurrence. See also (Dundas R.)

(Wachusett Inlet) Copper, Molybdenum, Silver

Juneau district Mt. Fairweather (19.45, 17.05)
58°57'N, 136°21'W

Quartz vein as much as 0.7 ft wide and 50 ft long; in quartz diorite; contains pyrite, molybdenite, chalcopyrite, and secondary iron minerals. Samples contained as much as 74,000 ppm Cu, 1,500 ppm Mo, and 30 ppm Ag. Assuming a mining width of 4 ft, deposit contains an inferred 800 tons with an average sample assay of 0.44% Cu, 0.005% Mo, and 0.034 oz Ag per ton. Not of economic size or grade. Data in MacKevett and others, 1971 (P 632), and Brew and others, 1977 (OF 77-494), do not agree well.

Whirlaway Gold

Juneau district Mt. Fairweather (15.6, 15.1) approx.
MF-436, loc. 27 58°51'N, 136°47'W approx.

Vertical quartz-calcite veins as much as 1 ft thick in fine-grained diorite or quartz diorite contain uncommon pyrite and arsenopyrite. Gold reported from weathered surficial parts of veins.

(Willoughby I.) Antimony, Copper, Gold, Lead, Silver

Juneau district Mt. Fairweather (21.55-21.75, 10.75-10.9)
MF-436, locs. 48, 49 58°36'N, 136°07'-136°08'W

Island mainly limestone (marble in places) cut by lamprophyre dikes. Deposit in northeast part of island is on replacement body of pyrite, löllingite, and chalcopyrite. Deposit on southwest side of island is at intersection of 2 lamprophyre dikes; sulfides include chalcopyrite, pyrite, and tetrahedrite, some of which are argentiferous; some silver ore reported to have been mined. Sample contained 25% Pb, 25% Sb, and 1.74 oz gold and 42 oz silver per ton. Jamesonite also reported.

(Wood Lake) Gold

Juneau district
MF-436, loc. 70

Mt. Fairweather (18.5, 9.65) approx.
58°32'N, 136°29'W approx.

Placer gold has been mined from glacially derived gravels.

(Yakobi I.) Copper, Gold

Chichagof district
MF-436, loc. 64

Mt. Fairweather (20.1, 0.45)
58°01'N, 136°20'W

Claims located in about 1887, tunnel driven about 35 ft on quartz vein in shear zone in mafic intrusive rock; $1,100 in gold (1887 price) reported to have been mined. Quartz vein above old tunnel contains a little chalcopyrite and visible gold.

Unnamed occurrence Gold

Chichagof district
MF-436, loc. 71

Mt. Fairweather (19.2, 2.4-2.5
58°07'N, 136°26'W

A little gold in beach gravel at mouth of a small stream.

Unnamed occurrence Gold, Silver

Juneau district
MF-436, loc. 56

Mt. Fairweather (17.4, 6.95)
58°23'N, 136°37'W

Sample of quartz vein with gouge zone contained 5 ppm Ag and 0.275 oz gold per ton. Remains of old mining equipment and building.

Unnamed occurrence Gold, Tungsten(?)

Juneau district
MF-436, loc. 27

Mt. Fairweather (15.6, 15.1) approx.
58°51'N, 136°47'W approx.

Gold-bearing vein in shattered metasedimentary rock. Reported to contain a little scheelite.

Unnamed occurrence Iron, Titanium

Yakutat district

Mt. Fairweather (11.25, 10.75)
58°36'N, 137°16'W

Part of gabbro in contact zone between layered gabbro of Crillon-La Perouse stock and schist probably contains 10%-25% ilmenite.

Unnamed occurrence Nickel

Yakutat district

Mt. Fairweather (13.3, 8.75)
58°30'N, 137°03'W

Lenses of disseminated nickel-bearing pyrrhotite as much as 10 ft wide and 500 ft long in diorite; exposed in sheer cliff at head of glacier.

Synonyms, Owners, Operators, and Claim Names

Alvenco, Inc. -- see (Threesome Mtn.)
American Exploration & Mining Co. -- see (Nunatak)
Bjorn -- see (Adams Inlet)
(Boussole Bay) -- see (Pacific beach sands)
(Brady Glacier outwash) -- see (Taylor Bay)
Bruce -- see (Bruce Hills)
Challenger -- see Rambler
Christmas -- see (Lemesurier I.)
Churchill -- see Richtmeyer
Cities Service Minerals Corp. -- see (Brady Glacier)
(Coal Cr.) -- see (Lituya Bay)
(Crillon Inlet, west side) -- see (Lituya Bay)
Dodson -- see Monarch
Dog -- see (Bruce Hills)
(Echo Cr.) -- see (Pacific beach sands)
Enterprise -- see (Lemesurier I.)
(Fall Cr.) -- see (Lituya Bay)
Fremont Mining Co. -- see (Brady Glacier
Gold Reserve Mining Co. -- see (Pacific beach sands)
Ibach -- see Galena, Hopalong, Incas, (Lemesurier I.), Marvitz, Monarch, Rainbow, Sentinel, Whirlaway
Ibach & Beach -- see Highland Chief, Incas, Monarch, Sunrise
Ibach & Ibach -- see Incas, Monarch, Sunrise
Ibach & Smith -- see Galena, Rainbow
Joe's Dream -- see Highland Chief
Johnson & Smith -- see (Nunatak)
(Kashoto Glacier) -- see (Johns Hopkins Inlet)
Koby -- see (Geikie Inlet)
LeRoy Mining Co. -- see Incas, LeRoy, Rainbow
Lincoln -- see LeRoy, Marvitz
Little Jennie -- see (Rendu Inlet)
Lituya Bay Gold Mining Co. -- see (Lituya Bay)
Manville & Smith -- see (Francis I.)
Martin -- see (Dundas R.)
Moly -- see (Threesome Mtn.)
Mount Fairweather Mining Co. -- see Monarch
(Mt. Merriam) -- see (Queen Inlet)
Mount Parker Mining Co. -- see LeRoy
Muir -- see (Nunatak)
(Muir Inlet) -- see (Nunatak)
Nature Conservancy (League) -- see Alaska Chief
Newmont Exploration Co. -- see (Brady Glacier)
Newmont Mining Co. -- see (Brady Glacier), Highland Chief, Rainbow, Rambler, Sentinel
Newsboy -- see unnamed occurrence at 58°23'N, 136°37'W
Nuna -- see (Nunatak)
Nunatak (claim) -- see (Brady Glacier)
O.K. -- see (Nunatak)
Parker, A. L., (, & Parker, A. F.) -- see LeRoy
Presbyterian Home for Elders -- see (Rendu Inlet)

Red Top -- see unnamed occurrence at 58°23'N, 136°37'W
Schlotter -- see (Triangle I.)
Sentinal -- see Sentinel
Silver Dick -- see (Rendu Inlet)
Silver, "Doc" -- see unnamed occurrence at 58°23'N, 136°37'W
Smith -- see (Willoughby I.)
Spring Maid -- see (Adams Inlet)
Sullivan -- see Marvitz
Sunrise (claim) -- see unnamed occurrence at 58°23'N, 136°37'W
Superior Oil Co. -- see (Nunatak)
Treadwell Yukon Co. -- see (Willoughby I.)
Triton -- see (Nunatak)
Union Pacific Mining Corp. -- see (Brady Glacier)
Vevelstad (& Comstock) -- see (Nunatak)
Vevelstad, C. -- see (Nunatak)
Vevelstad, S. H. P. -- see (Surge Bay)
Walper -- see (Nunatak)
Whitney -- see (Lemesurier I.)
(Willoughby Cove) -- see (Lemesurier I.)
Yehring -- see (Geikie Inlet)