

CLASS



(200)  
R 290  
no. 79-1241

USGS LIBRARY-RESTON



3 1818 00074366 4

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

[Reports-Openfile series]

74

un

→ 79-1241

SUMMARY OF REFERENCES TO MINERAL OCCURRENCES

(OTHER THAN MINERAL FUELS AND CONSTRUCTION MATERIALS)

IN THE VALDEZ QUADRANGLE, ALASKA

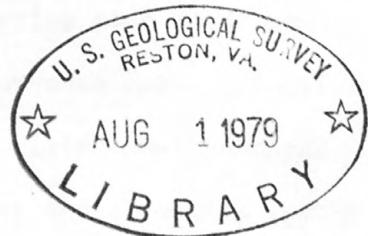
By

Edward H. Cobb

298283

Open-File Report 79-1241

1979



This report is preliminary  
and has not been edited or  
reviewed for conformity with  
Geological Survey standards  
and nomenclature.

## Introduction

These summaries of references are designed to aid in library research on metallic and nonmetallic (other than mineral fuels and construction materials) mineral occurrences in the Valdez quadrangle, Alaska. All references to most reports of the Geological Survey, the U.S. Bureau of Mines, and the State of Alaska Division of Geological and Geophysical Surveys and its predecessor State and Territorial agencies released before April 1, 1979, are summarized. Certain, mainly statistical, reports such as the annual Minerals Yearbook of the U.S. Bureau of Mines and the biennial and annual reports of the State of Alaska Division of Geological and Geophysical Surveys and its predecessor State and Territorial agencies are not included. Also not included are data on many claims about which little more than their locations is known (for example, MacKevett and Holloway, 1977 (OF 77-169A), p. 83). These omissions should not be interpreted as a judgment on my part that the claims are not valid mineral occurrences, but only that there are insufficient data to describe any mineral deposit that might be present.

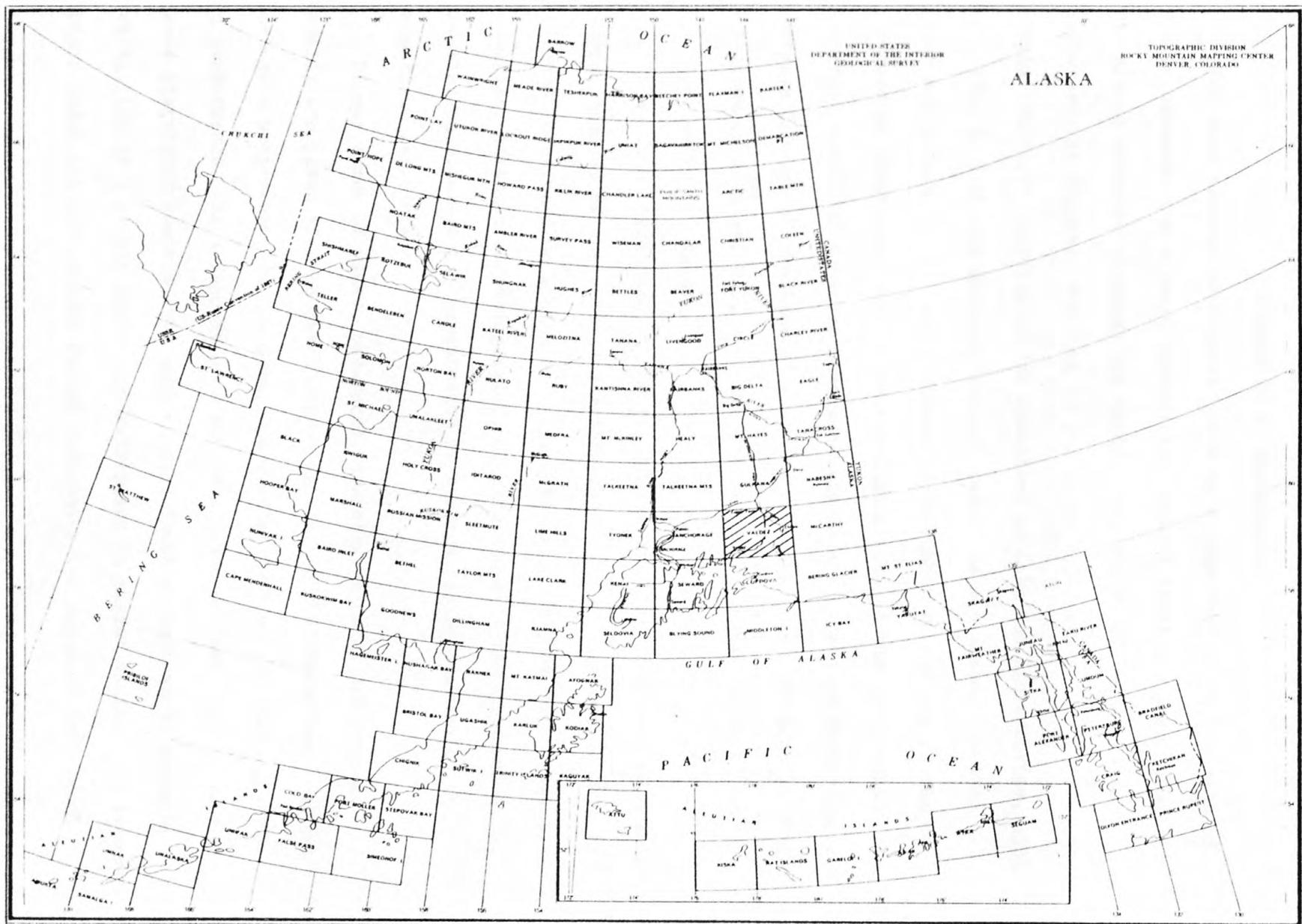
This report is divided into three parts: a section made up of summaries of references arranged alphabetically by occurrence name; a section that lists synonyms for names in the first section, claim names, and the names of operators and owners of mines and prospects; and a section that lists, by author, all references summarized in the first section.

## ALASKA

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

TOPOGRAPHIC DIVISION  
ROCKY MOUNTAIN MAPPING CENTER  
DENVER, COLORADO

## Index map



### Summaries of References

For each mineral occurrence there is a page that gives the name of the occurrence; the mineral commodities present (listed alphabetically); the mining district (Ransome and Kerns, 1954 (IC 7679)) in which the occurrence is located; the name of the 1:250,000-scale topographic quadrangle (Valdez); coordinates (as described by Cobb and Kachadoorian, 1961 (B 1139), p. 3-4); the metallic mineral resources map number (MF-438) [Cobb and Matson, 1972] and the occurrence number on the map if the occurrence is shown; and the latitude and longitude of the occurrence. Numerical coordinates become progressively less accurate as their numbers increase because of the lack of scale stability of the base maps on which I plotted localities; all, however, are probably accurate within about 0.1 inch (about 0.4 mile).

These data, presented at the top of the page, are followed by a short, general summary of the published information on the occurrence. This is followed (continued on additional pages, if necessary) by more detailed summaries, arranged chronologically, of references to the occurrence. Material in brackets is interpretive or explanatory and is not in the summarized reference.

Proper names of mines, prospects, and other mineral occurrences usually are given if such names appear in the reports summarized. If a part of a proper name is not always used, that part of the name is shown in parentheses. If a deposit does not have a proper name, but is near a named geographic feature, the name of that feature is shown in parentheses in lieu of a proper name. All references to placer mining on a stream appear under the stream name rather than under the names of individual

claims or of operators. Several deposits have no proper name and cannot be unambiguously referred to a named geographic feature; such occurrences are called "Unnamed occurrence" or "Unnamed prospect" and appear at the end of this section.

Citations are given 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 report or map number. Abbreviations used are:

AOF	Alaska Division of Geological and Geophysical Surveys Open-File Report
B	U.S. Geological Survey Bulletin
BMB	U.S. Bureau of Mines Bulletin
C	U.S. Geological Survey Circular
GC	Alaska Division of Geological and Geophysical Surveys (and predecessor State agencies) Geochemical Report
GR	Alaska Division of Geological and Geophysical Surveys (and predecessor State agencies) Geologic Report
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

Summaries are as I made them while reading the cited reports. I made no attempt to use complete sentences and did not edit for grammatical consistency, although I have tried to avoid ambiguities.

Addison Powell

Copper(?), Gold(?)

Prince William Sound district  
MF-438, loc. 41

Valdez (7.95, 0.35) approx.(?)  
61°01'N, 146°04'W approx.(?)

**Summary:** Reported to be a low-grade copper prospect with chalcopyrite, malachite, and a little gold. Said to have been restaked in 1915 and about 150 ft. of open cuts and stripping done and 100 ft. of tunnel driven. No sign of this work could be found when Rose searched for the prospect, even though evidence of work at other prospects done at about the same time and in places where it would be much more likely to go unnoticed was very evident. Data given Johnson may not have been correct.

Johnson, 1916 (B 642), p. 140 -- Large low-grade copper prospect. Principal copper mineral is chalcopyrite; some malachite; a little gold also reported. Restaked in 1915 and about 150 ft. of open cuts and stripping and 100 ft. of tunnel reported done in 1915.

Johnson, 1918 (B 662), p. 185 -- Assessment work reported, 1916.

Moffit and Fellows, 1950 (B 963-B), p. 52-53 -- References to above.

Rose, 1965 (GR 15), p. 1, 12, 19 -- Rose could not find the old prospect and suspects that data given to USGS geologists may not have been correct.

Jasper, 1967 (GC 15), p. 3 -- Reference to Johnson, 1916 (B 642) [incorrectly cited as Johnson, 1915]; prospect discovered several years before 1915 and abandoned after a few years.

Mulligan, 1974 (IC 8626), p. 21 -- Data from Johnson, 1916 (B 642); actual location in doubt.

MacKevett and Holloway, 1977 (OF 77-169A), p. 80, loc. 33 -- References to Johnson, 1916 (B 642), and Moffit and Fellows, 1950 (B 963-B).

Alaska Gold Hill

Gold

Prince William Sound district  
MF-438, loc. 20

Valdez (4.1, 2.25) approx.  
61°08'N, 146°31'W approx.

**Summary:** More than 600 ft. of underground workings and some surface excavations, 1910-17. No data on mineral deposit, but, in view of the amount of work done, it seems safe to assume that at least some gold is present. Includes references to Black Diamond.

Johnson, 1915 (B 622), p. 152-153 -- Located in 1910.

    p. 183 -- Several hundred feet of tunnels reported on this and other properties between Cliff mine and Gold Cr.; not visited by Johnson.

Johnson, 1918 (B 662), p. 191 -- Tunnel driven 140 ft. during 1916; also open-cut work and stripping.

Johnson, 1919 (B 692), p. 151 -- Upper tunnel extended to length of 605 ft. Also some surface improvements, 1916.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 17 -- Reference to Johnson, 1919 (B 692). Probably gold-bearing quartz veins in Valdez Gp.

Alaskan

Copper, Gold, Lead, Zinc

Prince William Sound district  
MF-438, loc. 27

Valdez (5.85, 3.2)  
61°11'N, 146°19'W

Summary: Quartz vein(s) containing pyrite, galena, sphalerite, chalcopyrite, and free gold in sheared graywacke of Valdez Gp. No data on tenor of deposit. Some exploration in and before 1914; no record of production.

Johnson, 1916 (B 622), p. 169 -- Quartz vein in sheared graywacke is from 6 in. to 5 ft. wide along 150 ft. of outcrop; general trend is N 77° W and dip vertical to 60° N; small fold in outcrop of vein. A vein exposed 200 ft. away may be a continuation of this vein or a separate one. Vein materials are quartz, pyrite, galena, sphalerite, chalcopyrite, and free gold. Developments as of 1914 were a 17-ft. shaft and a tunnel being driven (200 ft. completed) to undercut second vein at depth.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 22 -- Reference to above. Quartz vein in sheared graywacke of Valdez Gp.

Alder

Gold(?)

Prince William Sound district

Valdez (3.7, 2.5) approx.  
61°08'N, 146°41'W approx.

Summary: Iron-stained quartz stringers in shear zone in slate.

Brooks, 1912 (B 520), p. 124 -- Shear zone in slate strikes about N 40° W.  
Iron-stained quartz stringers have been staked as Alder claim.

Alice (Mines, Ltd.)

Copper, Gold, Lead, Silver, Zinc

Prince William Sound district  
MF-438, loc. 13

Valdez (3.4, 2.35)  
61°08'N, 146°36'N

Summary: Gold, silver, pyrite, chalcopyrite, arsenopyrite, sphalerite, and galena in gangue of quartz, carbonates, and chlorite in shear zone in rocks of Valdez Gp. More than 500 ft. of workings. Small ore shipments in 1912 and 1916 reported.

Brooks, 1912 (B 520), p. 123 -- Well-defined fissure trends about N 62° W and dips 70°-80° S crosscutting interbedded slate and graywacke; traceable for about 1,100 ft. Footwall slickensided; some slicken-siding on hanging wall. Vein 7-22 in. thick; made up of iron-stained, brecciated, silicified country rock cemented by pyritiferous quartz and carrying considerable visible gold.

Brooks, 1913 (B 542), p. 35 -- 2-compartment shaft sunk to a depth of more than 100 ft., 1912.

Johnson, 1914 (B 592), p. 238-239 -- Work stopped, February 1913. Mine consists of a tunnel, a 100-ft. shaft, 100 ft. of drifts, and a raise from the tunnel to the surface.

Johnson, 1915 (B 622), p. 152-153 -- Located in 1910.

p. 175-176 -- 30 tons of ore shipped, 1912. Over 500 ft. of underground workings; surface excavations. Only assessment work in 1914. Country rock schistose graywacke, slate, and a little green schist. Schistosity strikes N 70°-80° E and dips 50°-70° N. Deposit in a fissure as much as 6 ft. wide striking N 60°-65° W and dipping 70° S to vertical; traceable for about 1,100 ft. Sheared country rock contains quartz veinlets; metallic minerals include gold, silver (reported in assays), pyrite, chalcopyrite, arsenopyrite, and sphalerite; galena reported also. Gangue is quartz, calcite, another carbonate mineral, and chlorite.

Johnson, 1916 (B 642), p. 144 -- Assessment work, 1915.

Smith, 1917 (BMB 153), p. 43 -- About 520 ft. of underground workings.

Johnson, 1918 (B 662), p. 190-191 -- Assessment work and a small ore shipment, 1916.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 10 -- Reference to Johnson, 1915 (B 622). Deposit in shear zone in rocks of Valdez Gp.

Ammann

Copper

Chistochina district  
MF-438, loc. 70

Valdez (24.45, 12.35)  
61°41'N, 144°02'W

Summary: Prospect in Chitistone limestone. Thin veinlets contain malachite and azurite. Breccia zone contains pyrite, bornite, chalcopyrite, chalcocite, covellite, malachite, and azurite. Explored by 2 adits with combined length of about 605 ft. No ore body encountered in workings. See also: Blue Bird (Kotsina R.), Bunker Hill (Kotsina R.), Cave, (Copper Cr.), Forget-me-not, Mountain Boy, Mountain Sheep, Peacock.

Van Alstine and Black, 1946 (B 947-G), p. 125-126 -- Developed since 1914 by upper adit about 25 ft. long and lower adit about 580 ft. long. Main adit in Chitistone Ls. on nose of a small anticline; cut by a few discontinuous irregular veinlets of malachite, azurite, and calcite; veinlets less than 1/4 in. thick. No copper minerals in upper adit, which was driven to undercut a breccia zone in limestone which crops out 25 ft. above adit. Polished section of specimen from breccia zone contains (listed in paragenetic sequence) quartz, pyrite, bornite, chalcopyrite, chalcocite, covellite, malachite, and azurite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, loc. 58 -- Data from above [not cited].

(Bear Cr.)

Copper, Gold, Silver

Chistochina district

Valdez

NE 1/4 NE 1/4 NE 1/4 quad.

Summary: Chalcopyrite, probably from quartz-epidote veins in Nikolai Greenstone near contact with Chitistone Ls., in specimens given to Mendenhall and Schrader in 1902. Chalcopyrite contained trace of gold and 1.8 oz. silver per metric ton. No record of any development. Native copper nuggets in creek.

Mendenhall and Schrader, 1903 (P 15), p. 18 -- Specimens consist of solid masses of chalcopyrite or of chalcopyrite associated with epidote and quartz. The chalcopyrite contained a trace of gold and 1.8 oz. silver per metric ton. Nuggets of native copper found in stream wash.

Mendenhall, 1905 (P 41), p. 94 -- Same as above.

Berg and Cobb, 1967 (B 1246), p. 46 -- Quartz-epidote veins carrying chalcopyrite, bornite, and native copper probably in Nikolai Greenstone near contact with Chitistone Ls. at Bear Cr. and Mt. Chitty. Assay data from above.

Bence-McDonald

Gold(?)

Prince William Sound district

Valdez (3.0, 3.5) approx.  
61°12'N, 146°38' approx.

Summary: 130-ft. adit driven in 1912. Assessment work reported in 1913 and 1915. No other data available.

Johnson, 1914 (B 592), p. 238 -- Adit said to have been driven 130 ft. in 1912; only assessment work in 1913.

Johnson, 1915 (B 622), p. 183 -- 130-ft. adit has been driven.

Johnson, 1916 (B 642), p. 144 -- Assessment work, 1915.

(Benito Cr.)

Copper, Gold, Silver

Chistochina district  
MF-438, loc. 74

Valdez (23.9, 11.3) approx.  
61°37'N, 144°09'W approx.

**Summary:** Quartz veins (with subordinate calcite) cut gabbro and metavolcanic rocks of Skolai Gp.; contain free gold (some beautiful specimens), pyrite, arsenopyrite, chalcopyrite, and silver. Principal vein 2-3 ft. thick; exposed by ground sluicing and sinking test pits for about 600 ft. along strike. In most places vein is fractured and much oxidized. Very little exploration of smaller similar veins in neighborhood. No record of production.

Moffit, 1915 (B 622), p. 115 -- Discovered in 1912. Nearly vertical quartz-calcite vein strikes N 10° W. Contains chalcopyrite, bornite, pyrite, and free gold. Some beautiful gold-in-quartz specimens have been prepared. Explored by shallow shafts; considerable overburden ground-sluiced off.

Moffit, 1921 (B 714), p. 193-194 -- Quartz-calcite vein 2-3 ft. thick strikes N 70°-75° W and dips steeply eastward. Cuts dark-colored sheared and altered mafic rocks. Vein traced for at least 500 ft. in shallow pits. Vein contains iron and copper sulfides which are oxidized near surface; free gold with alloyed or associated silver. Similar veins in neighborhood contain pyrite, arsenopyrite, and, in one, hematite(?)

Moffit and Mertie, 1923 (B 745), p. 142-143 -- Quartz vein (with a little calcite) is 2-3 ft. thick, strikes N 30° W, and dips 70°-75° E; well defined for nearly 600 ft. by open cuts sluiced through the overburden and by a line of 5 shallow holes, one of which penetrates vein to depth of 15 ft. Country rock is sheared and altered basalt irregularly intruded by altered coarse-grained diorite. Metallic constituents of vein are pyrite, arsenopyrite, chalcopyrite, silver, and free gold. In most places vein is fractured and much oxidized, yielding a rusty, cavernous mass containing free gold; azurite and malachite stains on fresh surfaces. Other veins nearby contain arsenopyrite and specular hematite(?) or pyrite; holes sunk on one did not give encouraging results.

p. 146 -- One of veins staked nearby may be an extension of vein described above.

Moffit, 1924 (B 755), p. 69 -- Vein of quartz and subordinate amount of coarsely crystalline calcite contains chalcopyrite, bornite, pyrite, and free gold; azurite and malachite stains. In rocks of Strelna Fm.

Moffit, 1938 (B 894), p. 127 -- Essentially the same as Moffit, 1924 (B 755).

Berg and Cobb, 1967 (B 1246), p. 47 -- Data from Moffit and Mertie, 1923 (B 745) summarized [not specifically cited].

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, loc. 59 -- Reference to Moffit and Mertie, 1923 (B 745). Gold-bearing quartz veins cut gabbro and metavolcanic rocks of Skolai Gp.

(Bernard Mtn.)

Chromite, Nickel, Platinum

Nelchina district  
MF-438, loc. 51

Valdez (15.45, 9.5)  
61°32'N, 145°09'W

Summary: Part of dismembered dunite sill (total size 12 mi. long and 1-1/2 mi. long) is about 2.2 mi. long and 1.3 mi. wide; contains layers as much as 50 ft. thick that contain from 5% to 32% chromite; magmatic deposit. Concentrate from composite samples contained 48% chromite with chrome:iron ratio of 2.7. Deposit contains anomalous amounts of platinum-group elements and nickel. Correlative rocks extend eastward into McCarthy quad. Has been geological, geochemical, and geophysical exploration; also some trenching, stripping, and sampling. Includes references to (Red Mtn.). See also (Dust Mtn.), which is at other end of dunite sill.

Berg and Cobb, 1967 (B 1246), p. 49, 52 - Dunite sill crops out intermittently over an area 12 mi. long and 1-1/2 mi. wide; Bernard Mtn. at western end of sill. Layers as much as several tens of feet thick contain up to 30% chromite.

Jasper, 1967 (GC 15), p. 2 -- Chromite occurrences suggest that ultramafic rocks underlie a considerable area.

p. 4 -- Only known mineral deposit along Valdez-Tonsina road in which there is definite interest. Claims restaked in 1966 and some surface stripping done.

Mulligan, 1974 (IC 8626), p. 18 -- Layers, lenses, and disseminated grains of chromite in dunite intrusive about 1.3 mi. wide and 2.2 mi. long. Layers as much as 50 ft. wide contain from 5% to 32% chromite; concentrates from composite of cut samples contained 48% chromite with chrome-iron ratio of 2.7. Similar deposits 4 and 7 mi. to east.

Explored by geologic mapping, geophysical and geochemical surveys, trenching, stripping, and sampling.

MacKevett, 1976 (MF-733B) -- Correlative ultramafic rocks in the McCarthy quad. Reference to Hoffman, Barry, 1974, Geology of the Bernard Mountain area, Tonsina, Alaska: Alaska University M.S. thesis.

MacKevett and Holloway, 1977 (OF 77-169A), p. 81, loc. 42 -- References to Berg and Cobb, 1967 (B 1246), Jasper, 1967 (GC 13), and Hoffman, 1974 [reference given above]. Magmatic deposit consisting of layers, lenses, and disseminations of chromite in dunite. Minor anomalous concentrations of platinum-group elements, copper, and nickel in some of ultramafic and associated rocks.

MacKevett and others, 1978 (OF 78-1-E), p. 19 -- One of best-known deposits in ultramafic rocks in area 21 outside of McCarthy quad.

Bessie Williams

Gold(?)

Prince William Sound district  
MF-438, loc. 8

Valdez (2.0, 2.6)  
61°09'N, 146°46'W

Summary: In metasedimentary rocks of Valdez Gp. Deposit probably is auriferous quartz vein(s). Staked in 1911 and restaked in 1914.

Johnson, 1915 (B 622), p. 153 -- Staked in 1911.

p. 186 -- Restaked in 1914 by Mammoth Mining Co.; preparations for development.

MacKevett and Holloway, 1977 (OF 77-169A), p. 68, loc. 5 -- Reference to above. Quartz veins in metasedimentary rocks of Valdez Gp.

Big Four (McAllister Cr.)

Gold, Lead

Prince William Sound district  
MF-438, loc. 9

Valdez (2.9, 2.3)  
61°08'N, 146°40'W

Summary: Vein 1-3 ft. thick crosscuts slate of Valdez Gp. Ore contains pyrite and galena; only a little gold. Some calcite in gangue.

Brooks, 1912 (B 520), p. 124 -- Vein 1-3 ft. thick crosscuts slate bedrock; strikes N 35° E, dips 70° NW. Ore banded; pyrite and galena; reported to carry only a little gold; some calcite. Another vein 1-2 ft. thick about 30 ft. away.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 6 -- Reference to above. Country rock mainly slate of Valdez Gp.

Big Four (Mineral Cr.)

Gold, Lead, Zinc

Prince William Sound district  
MF-438, loc. 22

Valdez (5.2, 3.95)  
61°13'N, 146°23'W

Summary: Iron-stained quartz veins in slate of Valdez Gp. contain pyrite, galena, sphalerite, and free gold. Sporadic work from 1911 to as recently as 1939; a few hundred feet of workings. An unknown, but undoubtedly small, amount of ore was mined and put through mill on property.

Brooks, 1912 (B 520), p. 125 -- Quartz vein 1-5 ft. thick trends from N 55° to 80° E and dips 70°-80° N; can be traced for about 200 ft.; offset by several faults which trend N 10° E; cut out in 2 places by faulting. Vein is iron-stained vitreous quartz; said to carry considerable gold.

Johnson, 1914 (B 592), p. 239 -- Assessment and/or development work, 1913.

Johnson, 1915 (B 622), p. 153 -- Located, 1911.

p. 164-165 -- 2 tunnels with aggregate length of about 200 ft. Vein as much as 3 ft. thick consists of shattered quartz containing pyrite, galena, sphalerite, and gold; vein exposed for 20 ft. in one tunnel, where it strikes N 75° W; offset by fault that strikes N 15°-20° E. Mill tests of ore from both tunnels in mill installed on property in 1914.

Johnson, 1916 (B 642), p. 144 -- Assessment work, 1915; mill idle.

Smith, 1917 (BMB 142), p. 39 -- Only assessment work, 1915.

Johnson, 1918 (B 662), p. 190 -- Only assessment work, 1916.

Martin, 1920 (B 712), p. 33 -- Operated in a small way, 1918; reported that a stamp mill was being installed [odd; was reported mine had a mill in 1914].

Brooks, 1923 (B 739), p. 24 -- About 450 ft. of work done and a little ore milled, 1921.

Brooks and Capps, 1924 (B 755), p. 28-29 -- Operated part of summer of 1922; Some gold produced.

Smith, 1930 (B 810), p. 16 -- Near property of Ethel Mining Co.

Smith, 1937 (B 880-A), p. 23-24 -- Ore bodies are veins of iron-stained quartz in slate bedrock; contain pyrite, galena, sphalerite, and free gold. Ore mined and milled in 1934.

Smith, 1938 (B 897-A), p. 24 -- Work discontinued in 1936.

Smith, 1939 (B 910-A), p. 27-28 -- Some ore milled early in 1937 season; no work later in year, but stopes filled with ore ready for milling.

Smith, 1941 (B 926-A), p. 26-27 -- Work resumed, 1939.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 19 -- References to Johnson, 1915 (B 622), and Smith, 1937 (B 880-A). In slate of Valdez Gp.

Blackney

Copper

Nizina district  
MF-438, loc. 57

Valdez (22.4, 8.3)  
61°27'N, 144°20'W

Summary: Parallel veins of pyrite and chalcopyrite separated by thin sheets of greenstone in fault zone cutting metavolcanic rocks of Skolai Gp. near a diorite intrusive body. Mineralized body is about 3 ft. thick and extends for 200 ft. along strike. Was some physical exploration and claim was patented in 1911 or earlier.

Moffit, 1912 (B 520), p. 101-102 -- Preliminary to Moffit, 1914 (B 576).  
Moffit, 1914 (B 576), p. 51-52 -- Patented claim. Crushed and altered greenstone is country rock; diorite body a short distance to east. Deposit in fault zone made up of parallel fractures filled with copper and iron sulfides. Ore body consists of parallel veins of pyrite and chalcopyrite separated by thin sheets of greenstone; 3 ft. wide, strikes N 75° W and dips 45° SW; incline sunk on lowest exposure in creek; vein extends up creek for 200 ft., where it is cut off by a steeply dipping cross fault. Largest ore body yet [1911] found near Taral.

Berg and Cobb, 1967 (B 1246), p. 62 -- Summary of data in Moffit, 1914 (B 576) [not specifically cited].

Jasper, 1967 (GC 15), p. 4 -- Patented claim.

MacKevett and Holloway, 1977 (OF 77-169A), p. 81, loc. 48 -- Reference to Moffit, 1914 (B 576). In metavolcanic rocks of Skolai Gp.

Blue Bird (Kotsina R.)

Copper, Gold(?)

Chistochina district  
MF-438, loc. 72

Valdez (24.8, 12.15)  
61°40'N, 144°02'W

Summary: Shear zones in Nikolai Greenstone about 100 ft. stratigraphically below contact with Chitistone Ls. contain bornite, enargite, possibly chalcopyrite, and small amounts of covellite and chalcocite. No ore body discovered. Explored by 2 small open cuts, in each of which is piled about 100 lbs. of sorted ore.

Moffit and Mertie, 1923 (B 745), p. 103 -- In greenstone near contact with limestone, which is a fault striking N 60° E cut in turn by a cross fault which strikes N 60° W. Bornite and some chalcopyrite in small irregular vein in opening in fractured greenstone and replacing greenstone. Large open cut on outcrop; considerable ore piled in cut. Report that free gold was panned from one iron-stained quartz vein on this or the neighboring Mountain Boy claim.

Van Alstine and Black, 1946 (B 947-G), p. 131 -- Country rock is [Nikolai] greenstone cut by vertical shear zones ranging in strike from N 45° W to N 65° W, which are stained with malachite and are not persistent along strike. Two open cuts in greenstone (about 100 ft. stratigraphically below Chitistone Ls.) and adjacent outcrops show a few small veinlets and disseminated grains of pyrite, bornite, and enargite; a little covellite in enargite; chalcocite along grain boundaries of bornite and enargite and as veinlets in and irregular patches replacing bornite. Enargite partly replaced by bornite. About 100 lbs. of sorted bornite-enargite ore piled by each open cut. Prospecting did not reveal an ore body.

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, loc. 58 -- References to above.

Bluebird (Shoup Bay)

Copper, Gold, Lead

Prince William Sound district  
MF-438, loc. 12

Valdez (3.3, 2.2)  
61°07'N, 146°37'W

Summary: Shear zone in graywacke of Valdez Gp. contains fragments of mafic dike cemented by network of quartz veins. Metallic minerals include pyrrhotite, chalcopyrite, galena, pyrite, and gold in gangue of quartz, calcite, and chlorite. More than 125 ft. of underground workings; no recorded production.

Brooks, 1912 (B 520), p. 120 -- Pyrrhotite reported.

p. 123 -- Quartz vein said to be parallel to slate bedrock; strikes E. Exposed in open cuts for about 100 ft. Reported to contain pyrite, a little pyrrhotite, and free gold.

Brooks, 1913 (B 542), p. 35 -- Beginning of systematic development in 1912 reported.

Johnson, 1914 (B 592), p. 239 -- Assessment work, 1913. Developments include 115 ft. of crosscut tunnel, stripping, and surface improvements.

Johnson, 1915 (B 622), p. 182 -- Country rock schistose graywacke. Shear zone 4-10 ft. wide at surface made up of lenticular masses of shattered mineralized dark-colored basic dike rock cemented in places by an irregular network of mineralized quartz. Ore is quartz, calcite, chlorite, pyrrhotite, chalcopyrite, galena, and pyrite. Developed by 100-ft. tunnel, 10-ft. drift at end, and a 10-ft. tunnel; also some open cuts.

Shear zone indistinct in tunnel. [No data on gold content of ore.]

Johnson, 1918 (B 662), p. 191 -- Tunnel extended 20 ft., 1916.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 9 -- References to Brooks, 1912 (B 520) and Johnson, 1915 (B 622). Country rock Valdez Gp.

Blue Ribbon

Gold

Prince William Sound district  
MF-438, loc. 31

Valdez (6.3, 3.7)  
61°12'N, 146°15'W

Summary: Fissure parallel to foliation of slate of Valdez Gp. has been traced for about 1,000 ft. in one exposure. 8 in. of ribbon quartz carries gold; 4-6 in. of white quartz carries only pyrite.

Brooks, 1912 (B 520), p. 127 -- Vein parallel to east-striking foliation of slate has been traced for about 1,000 ft. Widest place seen contained about 8 in. of ribbon quartz carrying gold and 4-6 in. of white quartz carrying pyrite, but no gold. Fissure continues, but quartz pinches out at west end.

Johnson, 1914 (B 592), p. 239 -- Some work reported, 1913.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 24 -- Reference to Brooks, 1912 (B 520). Country rock Valdez Gp.

Bluff

Gold(?)

Prince William Sound district

Valdez (3.65, 2.2) approx.(?)  
61°08'N, 146°34'W approx.(?)

Summary: Development in 1912 reported. No other data. Property is probably one reported under another name in other years.

Brooks, 1913 (B 542), p. 35 -- Development reported, 1912.

(Boulder Cr.)

Gold

Nelchina district  
MF-438, loc. 85

Valdez (13.9, 6.1) approx.  
61°20'N, 145°21'W approx.

Summary: Has been placer mining on creek. References to lode gold prospecting on Boulder Cr. are probably to Eagle and/or Ross.  
See also: Eagle, Ross.

Johnson, 1914 (B 592), p. 237 -- Considerable development work on this and other gold-quartz prospects in Tiekel district in 1913.

Smith, 1929 (B 797), p. 11 -- Prospecting, 1926.

Moxham and Nelson, 1952 (C 184), p. 3 -- Has been placer mining.

Mulligan, 1974 (IC 8626), p. 19 -- Old placer workings on creek; no other data available.

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, loc. 66 -- Reference to Moxham and Nelson, 1952 (C 184).

Bunker Hill (Kotsina R.)

Copper

Chistochina district  
MF-438, loc. 73

Valdez (24.9, 12.2)  
61°40'N, 144°01'W

Summary: Shear zone cutting Chitistone Ls. and Nikolai Greenstone, which is repeated above limestone by thrust fault, contains veinlets carrying bornite, chalcopyrite, covellite, malachite, and azurite in gangue of quartz, calcite, and epidote. Developments consist of a 15-ft. adit and a small open cut.

Moffit and Mertie, 1923 (B 745), p. 104 -- Shattered [Nikolai] greenstone contains open-space fillings of quartz, calcite, bornite, pyrite, and chalcopyrite; sulfides have also replaced greenstone. Greenstone thrust over Triassic shales to north; probably several hundred feet stratigraphically below base of Chitistone Ls. Tunnel being driven.

Van Alstine and Black, 1946 (B 947-G), p. 131-132 -- Adit driven 15 ft. along veinlet no more than 1 in. thick in fractured Chitistone Ls. sliver beneath thrust fault that caused Nikolai Greenstone to be repeated above limestone. Veinlet contains malachite, azurite, bornite, chalcopyrite, calcite, and epidote. About 100 ft. above adit fractured zone in greenstone contains veinlets of quartz, calcite, malachite, azurite, epidote, and small amounts of chalcopyrite, bornite, and covellite. Fracture zone 6 in. to 3 ft. thick, strikes N 30° W, dips 75° SW, and probably is part of zone in adit; small open cut only development.

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, loc. 58 -- References to above.

Bunker Hill (Shoup Glacier)

Gold, Lead, Zinc

Prince William Sound district  
MF-438, loc. 14

Valdez (3.6, 2.6)  
61°09'N, 146°35'W

Summary: 100-ft. adit in schistose graywacke of Valdez Gp. follows quartz-calcite vein in fissure; metallic minerals include arsenopyrite, galena, pyrite, and sphalerite; gold assumed to be present, though no tenor data are available. No record of production.

Johnson, 1915 (B 622), p. 153 -- Staked in 1911.

p. 181 -- Quartz fissure vein 4-25 in. thick in schistose graywacke strikes N to N 70° E and dips 63° W. Followed by adit 100 ft. long. In places quartz is shattered, in others shows secondary banding parallel to fissure walls, which in places are marked by gouge. Ore minerals are arsenopyrite, galena, pyrite, sphalerite, and limonite in gangue of quartz, calcite, and chlorite. [No data on gold content.]

Johnson, 1918 (B 662), p. 192 -- Assessment work reported, 1916.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 11 -- Reference to Johnson, 1915 (B 622). Country rock Valdez Gp.

Buster

Gold(?)

Prince William Sound district

Valdez (5.55, 4.0)

61°14'N, 146°20'W

Summary: Shear zone in graywacke and argillite contains as much as 18 in. of quartz and some pyrite. No data on gold content, if any. Tunnel driven 200 ft.; much (probably most) not on vein.

Brooks, 1912 (B 520), p. 125 -- Vein containing about 18 in. of quartz strikes about N 50° E and is exposed at surface.

Johnson, 1915 (B 622), p. 165 -- Tunnel 200 ft. long follows vein for 25 ft., where vein pinches out; encounters vein farther in, where a winze was sunk on it. At portal shear zone 3 ft. wide in graywacke and argillite contains about 18 in. of quartz; pyrite only sulfide seen. [No data on possible gold content.]

Cameron-Johnson (Gold Mining Co.)

Gold, Lead, Zinc

Prince William Sound district  
MF-438, locs. 3, 4

Valdez (2.8-3.0, 3.5-3.65)  
61°12'N, 146°38'-146°40'W

Summary: Fissure veins in graywacke and argillite of Valdez Gp. contain gold quartz and about 3% sulfides, including pyrite, galena, sphalerite, and arsenopyrite. Veins are as much as 11-1/2 ft. thick, but most are an average of 3 ft. or less thick. Mines (2 sets of workings) consist of more than 2,000 ft. of underground workings. Production of gold (amount not known) reported in many years between 1912 and 1921. Attempt to reopen in 1935. Includes references to Valdez Gold (Co.).

Brooks, 1913 (B 542), p. 35 -- 267 ft. of adits in 1912. Have been some ore shipments.

Brooks, 1914 (B 592), p. 63 -- Mill erected, 1913.

Johnson, 1914 (B 592), p. 238 -- Mill installed, reported to have milled nearly 200 tons of ore, 1913. About 1,000 ft. of tunnels and 76 ft. of raises.

Brooks, 1915 (B 622), p. 45 -- Gold produced, 1914.

Johnson, 1915 (B 622), p. 153 -- Located, 1911.

p. 172-174 -- Considerable data on surface improvements. Workings at several places on the 17 claims that constitute the property; between elevations of about 2,400 and 4,500 ft. Ore deposits are fissure veins in graywacke and argillite; vein at lower workings as much as 11-1/2 ft. thick (average about 3 ft.); other veins are thinner. Ore is free-milling gold quartz with about 3% sulfides (pyrite, galena, sphalerite, and arsenopyrite) in gangue that is principally quartz (some carbonate). Mill on property; production reported 1912-14 [amount not stated]. A little over 700 ft. of underground work reported, 1914.

Smith, 1917 (BMB 142), p. 41 -- Assessment work only, 1915.

Smith, 1917 (BMB 153), p. 51 -- Company reorganized as Valdez Gold Co., 1916.

Johnson, 1918 (B 662), p. 190, 192 -- Several hundred feet of work reported and a few tons of ore milled, 1916.

Johnson, 1919 (B 692), p. 15-151 -- Assessment work and a very few tons of ore milled, 1917.

Brooks, 1922 (B 722), p. 39 -- A little ore produced, 1920.

Brooks, 1923 (B 739), p. 24 -- 400 ft. of underground work done and a little ore milled, 1921.

Smith, 1937 (B 880-A), p. 24 -- Some of old data summarized. Mine on patented ground; mining suspended since World War [I]; in 1935 lessee began to reopen mine; supplies taken in by airplane.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 3 -- References to Johnson, 1915 (B 622) and Johnson, 1918 (B 662). Claims on quartz veins in graywacke and argillite of Valdez Gp.

Cave

Copper

Chistochina district  
MF-438, loc. 70

Valdez (24.45, 12.35)  
61°41'N, 144°04'W

Summary: Adit driven 223 ft. in Nikolai Greenstone near and below contact with Chitistone Ls., which had been partly duplicated by a thrust fault. Shear zone in greenstone encountered in adit; 2-12 in. thick; contains quartz, malachite, bornite, and a little chalcopyrite. Other shear zones in adit barren. A little chalcopyrite in greenstone outcrop; films of malachite and azurite in joint faces in limestone.

Moffit and Mertie, 1923 (B 745), p. 102-103 -- Claim on contact between Chitistone Ls. and [Nikolai] greenstone; part of limestone duplicated by thrust fault. Malachite and azurite staining on limestone near contact. Tunnel driven 50 ft. into greenstone did not reach contact with limestone or discover any ore.

Van Alstine and Black, 1946 (B 947-G), p. 129-130 -- Adit driven 223 ft. in Nikolai Greenstone beneath Chitistone Ls., which strikes N 40° W and dips 25° SW. Shear zone in adit is 2-12 in. thick, strikes N 14° W, dips 7° W, and contains sheared greenstone, quartz, malachite, bornite, and a little chalcopyrite. Other shear zones in adit not mineralized. A little chalcopyrite in greenstone outcrop. Malachite and azurite films on joint faces in limestone.

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, loc. 57 -- References to above.

Chesna

Gold .

Prince William Sound district  
MF-438, loc. 24

Valdez (5.55, 4.0)  
61°14'N, 146°20'W

Summary: Quartz veins in slate and graywacke of Valdez Gp. contain pyrite and (reportedly) high values in gold in at least two places. Developed by about 750 ft. of workings on 3 levels. No record of production.

Brooks, 1912 (B 520), p. 126 -- Tunnel driven on quartz vein that is 3-4 ft. thick at outcrop, but pinches out 50 ft. from portal; beyond that is a stockwork of quartz stringers in slate country rock. Stockwork has well-defined south wall, but no definite north boundary; strike nearly due east. Network of veins exposed in creek bed nearby. Specimens from quartz near tunnel portal and from creek bed said to have carried high values in gold.

Johnson, 1915 (B 622), p. 165 -- 3 tunnels with total length of workings of about 750 ft. Lower tunnel driven on quartz stringers 2-3 in. thick separated by 6-8 in. of graywacke; quartz iron stained and carries a little pyrite and carbonate. Upper tunnel driven on 4-ft. shear zone in slate and graywacke; as much as 2 ft. of quartz; only metallic mineral seen was pyrite. Middle tunnel said to include about 350 ft. of workings; no other data on it.

MacKevett and Holloway, 1977 (OF 77-169A), p. 69, loc. 20 -- References to above. In slate and graywacke of Valdez Gp.

Cliff (Port Valdez)

Gold, Lead, Zinc

Prince William Sound district  
MF-438, loc. 18

Valdez (3.75, 2.15)  
61°07'N, 146°33'W

Summary: Largest lode-gold mine in district; staked in 1906 and worked (with interruptions) until 1940; amount of production not known, but annual production for many years was worth several hundred thousand dollars. Workings on several interconnected levels from 442 ft. above to 332 ft. below sea level and extending from outcrop for a horizontal distance of about 1,700 ft. Deposit consists of a complicated system of intersecting faults containing quartz veins generally less than a meter thick and carrying gold, arsenopyrite, pyrite, sphalerite, and galena; sulfides 3%-5% of ore. Country rock schistose graywacke of Valdez Gp.; some interbedded slate. Much of ore milled ran about \$50 a ton (gold probably at \$20.67 an ounce). Includes references to Cliff Gold Mining Co.

Grant, 1910 (B 442), p. 165 -- Gold-bearing quartz veins in slate and graywacke. Ore reported to be free milling; some very rich. Stamp mill erected, 1909.

Grant and Higgins, 1910 (B 443), p. 72-74 -- Fissure in dark, siliceous slate is as much as 4-1/2 ft. wide (in most places less than 3 ft.) marked by auriferous gouge and slickensiding along footwall; hanging wall well defined, but with no evidence of movement; strikes N 30°-45° W across foliation of country rock and dips about 50°-70° SW; has some rolls. In places no quartz in fissure. Filling is blue quartz, banded in places, carrying finely disseminated pyrite, small amounts of arsenopyrite and galena, and free gold. Fissure has been traced 300-400 ft. with certainty and (by float) considerably farther. Recovery of ore milled is about \$50 a ton in free gold; concentrates said to run about 7% and to be worth \$100 a ton. Quartz stringers extend from vein into hanging wall; values of \$1.50 to \$6 a ton reported for material in hanging wall. Developed by 2 adits 54 ft. apart (connected by raises) and an intermediate drift. Mill on property.

p. 76-77 -- Producing mine, 1910.

Brooks, 1911 (B 480), p. 29-31 -- Same as Grant and Higgins, 1910 (B 443), p. 72-74.

Brooks, 1911 (B 480), p. 62 -- Ore is blue quartz carrying finely disseminated pyrite, minute quantities of arsenopyrite, and high values in free gold.

Brooks, 1912 (B 520), p. 27 -- Gold produced, 1911.

Brooks, 1912 (B 520), p. 108 -- Began production, 1910.

p. 117-118 -- As of 1911 was the only important gold mine in the area. Vein has been followed to a depth of 400 ft. below outcrop.

p. 121-123 -- Most of data the same as in Grant and Higgins, 1910 (B 443), but in less detail. Evidence of oxidation 100 ft. from surface; distinctly marked for only about 50 ft. Smaller, but similar, vein opened on lower level, 1911. Mill burned and was replaced during 1911.

Brooks, 1913 (B 542), p. 35 -- Operated throughout 1912.

Brooks, 1914 (B 592), p. 63 -- Operated throughout 1913.

Cliff (Port Valdez) -- Continued

Johnson, 1914 (B 592), p. 237 -- Operated throughout 1913. Mine now consists of at least 8,000 ft. of workings. Water could not be controlled on 500-ft. level, so pumps were pulled and mine was allowed to flood to within a few feet of 300-ft. level.

Brooks, 1915 (B 622), p. 45 -- Operated until early in summer, 1914.

Johnson, 1915 (B 622), p. 135 -- Mine closed; now (1914) Granite mine [Seward quad.] is largest gold producer in district.

    p. 152-153 -- Located, 1906; became productive, 1910. Has mill. Mined to depth of about 500 ft.; deepest in district.

    p. 156 -- Ore shoot has been followed from 200 ft. above to 300 ft. below sea level; so far is longest ore shoot in district.

    p. 170-172 -- Historical data; mine consisted of at least 8,000 ft. of underground workings (over 900 ft. on 500-ft. level); mine closed July 6, 1914, and filled with water to just below 300-ft. level. Country rock is schistose graywacke (strikes about E and dips 65° N) impregnated with pyrite and acicular crystals of arsenopyrite near vein; cut by small mineralized quartz veins. Ore body is a system of linked fissure veins that cut across schistosity of country rock; large lenticular masses of country rock enclosed in vein system. System strikes generally from N 28° W to N 47° W; dips range from 65° E to 48° W. Individual fissures are from an inch or so (filled with gouge) to as much as 5 ft. wide; in places completely filled with quartz. Ore is bluish-white quartz with minor amounts of calcite, another carbonate, albite, chlorite, and metallic minerals, including gold, arsenopyrite, pyrite, sphalerite, and galena; sulfides constitute 3% to 5% of ore.

Johnson, 1916 (B 642), p. 143-144 -- New vein with 1-6 in. of quartz discovered, 175 ft. of adit driven, and some ore stoped and milled, 1915. Also ore mined and milled from old workings.

Smith, 1917 (BMB 142), p. 39 -- Mill run intermittently, 1915.

Smith, 1917 (BMB 153), p. 44 -- Ore from new workings above old ones milled, 1916.

Johnson, 1918 (B 662), p. 190-191 -- Underground development; some ore stoped between 100 ft. and 200 ft. levels; mill run intermittently, 1916.

Johnson, 1919 (B 692), p. 149-150 -- Mining and milling, 1917. About 450 ft. of drifts and crosscuts driven.

Martin, 1920 (B 712), p. 33 -- Operated under lease for part of 1918 by 3 men.

Brooks, 1922 (B 722), p. 14 -- Mine may be productive in 1921.

    p. 40 -- Mine dewatered and about 119 ft. of underground work done, 1920.

Smith, 1926 (B 783), p. 8 -- Work preparatory to reopening, 1924.

Smith, 1929 (B 797), p. 11 -- Mine taken over by a new company; hope to begin operating in 1927.

Smith, 1934 (B 864-A), p. 23-24 -- Hope to reopen mine, 1933. Production until mine flooded was worth several hundred thousand dollars annually.

Smith, 1937 (B 880-A), p. 23 -- Being reopened by Alaska Chugach Mines, Inc., 1935.

Moffit, 1938 (B 894), p. 127 -- Largest and most productive gold-bearing vein in general area.

Cliff (Port Valdez) -- Continued

Smith, 1928 (B 897-A), p. 24 -- Work preparatory to reopening mine, 1936.

Smith, 1939 (B 910-A), p. 26-27 -- Mine reopened and some production recorded, 1937. Part of mine below sea level not dewatered; all work was above mill level.

Smith, 1939 (B 917-A), p. 27 -- Production, 1938. Lower levels of old mine pumped out.

Smith, 1941 (B 926-A), p. 26 -- Mine dewatered to 500 ft. level. Mill operated part of 1939.

Smith, 1942 (B 933-A), p. 26 -- New vein discovered on 500-ft. level, 1940. Mill operated for about 6 weeks toward end of year.

Moffit, 1954 (B 989-E), p. 304-306 -- Ore bodies typical of gold quartz lodes of Prince William Sound [geologically; larger in size and amount of development]. Bedrock is slightly schistose graywacke with included beds of dark gray or black slate. Ore in quartz veins ranging in thickness from less than an inch to as much as 4-1/2 ft. in exceptional cases. Veins follow a fault system in which the individual faults have widely varying strikes and (in most instances) steep dips on either side of vertical. This system is crossed by another series of unmineralized faults parallel to bedding of country rock. Mineralized faults carry free gold (visible in much of ore), arsenopyrite, pyrite, sphalerite, and galena in gangue of quartz and minor amounts of calcite, albite, chlorite, and a brownish-weathering carbonate; sulfides made up no more than 3%-5% of the ore milled. Data on total production not available, but much of ore milled ran about \$50 a ton. Mine consisted of several levels from 442 ft. above to 332 ft. below sea level and extending from outcrop for a horizontal distance of about 1,700 ft.

Coulter and Migliaccio, 1966 (P 542-C), p. C30 -- First slide-generated wave after earthquake of March 27, 1964, obliterated abandoned installations at Cliff mine; runup marked on snow 170 ft. above mean sea level.

Berg and Cobb, 1967 (B 1246), p. 72 -- Data from Moffit, 1954 (B 989-E) [not specifically cited].

Jasper, 1967 (GC 15), p. 3 -- Discovery of high-grade gold-quartz veins at Cliff mine in 1910 resulted in search for and discovery of other occurrences in vicinity.

Koschmann and Bergendahl, 1968 (P 610), p. 31-32 -- Staked in 1906; became largest gold producer in district in the early years.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 15 -- References to Johnson, 1915 (B 622) and Moffit, 1954 (B 989-E). Hydrothermal vein and impregnation deposit in quartz veins less than 1 meter thick cutting schistose graywacke of Valdez Gp.; veins contain gold, arsenopyrite, pyrite, sphalerite, and galena. Largest producer in district.

(Copper Cr.)

Copper, Gold, Silver

Chistochina district  
MF-438, locs. 70-73

Valdez (24.45-24.9, 12.2-12.35)  
61°40'-61°41'N, 144°01'-144°04'W

Summary: Many claims staked along contact between Nikolai Greenstone and Chitistone Ls. Ore mainly chalcopyrite and bornite. Includes references to Hoffman. See also: Ammann, Blue Bird (Kotsina R.), Bunker Hill (Kotsina R.), Cave, Forget-me-not, Mountain Boy, Mountain Sheep, Mullen, Peacock.

Schrader and Spencer, 1901, p. 84-85 -- Chalcopyrite and bornite appear to have replaced limestone in poorly defined zones near base of Chitistone Ls. Opened by shallow open cut about 15 ft. long and a shallow shaft. Selected samples from the ton or so of material taken out contained more than 30% copper and as much as 2 oz. silver and 0.1 oz. gold per ton.

Mendenhall and Schrader, 1903 (P 15), p. 18 -- Prospect described above is Hoffman prospect.

p. 21-22 -- Description from Schrader and Spencer (above) quoted.

Mendenhall, 1905 (P 41), p. 94, 97 -- Same as Mendenhall and Schrader (P 15).

Moffit and Mertie, 1923 (B 745), p. 101 -- Creek has 3 branches, all of which cross a narrow belt of Nikolai Greenstone (overlain by Chitistone Ls.) which was thrust northward over younger Triassic shales. Copper minerals in greenstone at numerous places and in limestone near greenstone at one place. Many claims staked.

Smith, 1929 (B 797), p. 101 -- Development work, 1926.

Smith, 1930 (B 810), p. 46-47 -- Prospecting and dead work, 1927.

Smith, 1930 (B 813), p. 54 -- Some development work, 1928.

Smith, 1932 (B 824), p. 60 -- Probably was some work, 1929.

Smith, 1933 (B 836), p. 63 -- Prospecting and/or development, 1930.

Cube (Mines Co.)

Copper, Gold, Lead, Zinc

Prince William Sound district  
MF-438, loc. 17

Valdez (3.75, 2.35)  
61°08'N, 146°33'W

Summary: Average of 2 ft. of quartz in fissure in schistose graywacke and argillite of Valdez Gp. contains gold, chalcopyrite, sphalerite, galena, and arsenopyrite. Developed by 600 or more ft. of underground workings. Had own mill that operated for part of 1917; no data on amount of gold produced. Includes references to Three-in-One.

Johnson, 1914 (B 592), p. 239 -- 3 men doing development work, 1913.

Johnson, 1915 (B 622), p. 176-177 -- Fissure in schistose graywacke and argillite strikes N 15°-35° W and dips 50° W to vertical; reported to extend for more than 2 claim lengths over a vertical distance of more than 1,000 ft.; 3-10 ft. wide; contains an average of 2 ft. of quartz in long narrow lenses. Ore minerals include gold, chalcopyrite, sphalerite, galena, and arsenopyrite. Three kinds of quartz reported. Developed in 1914 by a 500-ft. adit, a 160-ft. raise, and 50 ft. of workings from it, as well as surface excavations.

Johnson, 1916 (B 642), p. 144 -- Some work by 3 men for part of season, 1915.

Smith, 1917 (BMB 153), p. 44 -- 2 drifts (total length 1,300 ft.) connected by raise 175 ft. long. Mill has been purchased, 1916. Another drift has been run 30 ft. on complex ore containing gold, copper, and iron.

Johnson, 1918 (B 662), p. 190-191 -- Reported that 600 ft. of tunnel had been driven and a mill installed, 1916.

Johnson, 1919 (B 692), p. 150-151 -- Mill operated part of 1917; closed down in July. [Amount produced not given.]

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 14 -- References to Johnson, 1915 (B 622) and Johnson, 1919 (B 692). Vein cuts schistose graywacke and argillite of Valdez Gp.

Curly Kidney

Gold

Prince William Sound district  
MF-438, loc. 39

Valdez (3.25, 0.1)  
61°00'N, 146°37'W

Summary: Parallel shear zones cutting graywacke and minor argillite contain small bodies of quartz. Pyrite in one shear zone and arsenopyrite and gold (reported in assays) in another. Only development was a 25-ft. tunnel on the shear zone with pyrite.

Johnson, 1919 (B 692), p. 172 -- Country rock graywacke and a little argillite. 25-ft. tunnel driven on a shear zone 2-4 ft. wide that strikes N 5° W and dips about 80° E; pyrite in very small quartz stringers and sheared rock. Another approximately parallel shear zone exposed in a canyon bottom is 2-10 or more ft. wide and contains as much as 3 ft. of quartz in small stringers and lenses; arsenopyrite present and assays reported to show gold in quartz.

MacKevett and Holloway, 1977 (OF 77-169A), p. 80, loc. 31 -- Reference to above.

Devinney & Dolan

Gold, Lead

Prince William Sound district

Valdez

NE 1/4 SW 1/4 SW 1/4 quad.

Summary: Ore consisting mainly of galena, but also carrying considerable gold, reported. Some production in 1930 reported. No other data; this property may also have been described under another name. Includes reference to Devenny & Dolan.

Smith, 1932 (B 824), p. 22 -- Excellent ore disclosed in prospecting property on Mineral Cr., 1929. Ore largely galena, but also carries considerable gold.

Smith, 1933 (B 836), p. 22 -- Production reported, 1930.

(Divide Cr.)

Copper

Nizina district  
MF-438, loc. 59

Valdez (22.9, 6.85)  
61°22'N, 144°17'W

Summary: Chalcopyrite and bornite disseminated and in veins in sheared and jointed greenstone of Skolai Gp. Small amounts of covellite and carbonates. Only development was small open cut.

Moffit, 1912 (B 520), p. 103 -- Preliminary to Moffit, 1914 (B 576).  
Moffit, 1914 (B 576), p. 52 -- Small open cut on divide between Falls and Divide Creeks showed chalcopyrite and bornite disseminated and as veins in jointed and sheared greenstone. Covellite and carbonates also present in small amounts.  
Berg and Cobb, 1967 (B 1246), p. 62-63 -- Deposit similar to that on Blackney property.  
MacKevett and Holloway, 1977 (OF 77-169A), p. 81, loc. 50 -- Reference to Moffit, 1914 (B 576). Veins and disseminations that carry chalcopyrite, bornite, covellite, and malachite in fractured greenstone of Skolai Gp.

(Dust Mtn.)

Chromite, Nickel, Platinum

Nelchina district  
MF-438, loc. 52

Valdez (17.25, 10.85)  
61°36'N, 144°56'W

Summary: Segregation of chromite in dunite sill contains traces of nickel and platinum. Assays of samples showed 36.0% to 57.7% chromite with chrome:iron ratio of 1.21 to 3.06. See also (Bernard Mtn.), which is at other end of dunite sill.

Berg and Cobb, 1967 (B 1246), p. 49, 52 -- Dunite sill crops out intermittently over an area 12 mi. long and up to 1-1/2 mi. wide; Dust Mtn. at NE end of intrusive. Body of massive chromite as much as 10 ft. thick exposed for a distance of 75 ft. Samples assay 36.0%-57.7% chromite with Cr:Fe ratio of 1.21-3.06. Assays also show traces of nickel and platinum.

MacKevett and Holloway, 1977 (OF 77-169A), p. 81, loc. 43 -- Reference to above. Chromite-rich lens in dunite; traces of nickel and platinum.

Eagle

Gold, Lead

Nelchina district  
MF-438, loc. 44

Valdez (13.5, 5.7)  
61°19'N, 145°24'W

Summary: Partly oxidized quartz veins in joints in graywacke and slate of Valdez Gp. near Tertiary felsic porphyry dikes are as much as 6 ft. thick; some contain gold and a little arsenopyrite and galena. Developed by open cut and about 125 ft. of underground workings. Produced a few hundred (less than 1,000) oz. of gold, probably in 1917 and 1918. No more than assessment work since before 1932. Includes references to: American Eagle, Ellis (Boulder Cr.), Meckem, and to lode gold on Boulder Cr. if definitely to this occurrence.

Moffit, 1918 (B 662), p. 178-179 -- Meckem property in terrane of slate or schist and graywacke, which strike east and dip south; broken by joints striking N 20° W and dipping steeply south. Quartz veins and diorite dike parallel joints. Tunnel driven about 75 ft. in crumpled slate and graywacke. Above tunnel are lenticular branching veins of quartz as much as 8 ft. thick; none traceable on surface for more than 100 ft.; most are bull quartz, but some of smaller ones are cavernous and iron-stained. Unoxidized parts of veins contain arsenopyrite and galena.

Martin, 1919 (B 692), p. 31 -- Underground work and a little production, 1917. Reported that a small mill was installed in 1918.

Moffit, 1935 (B 866), p. 29-32 -- Partly oxidized gold-bearing quartz veins in slate and graywacke intruded by light-colored porphyry dikes. Most veins and all dikes follow vertical northward-trending joints; a few veins are irregular; one strikes about NW. Veins 1-6 ft. thick; dikes 10 in. to 30 or more feet thick. Mineralized veins contain quartz, gold, and not very abundant arsenopyrite and galena. Developed by open cut (or short tunnel), from which probably \$10,000-\$20,000 worth [484-966 oz.] of gold was recovered, and more than 125 ft. of adit and crosscut. No more than assessment work since before 1932.

Moffit, 1938 (B 894), p. 127 -- Gold-bearing quartz vein in northward-striking joint in slate and graywacke yielded \$10,000-\$20,000 in gold.

Berg and Cobb, 1967 (B 1246), p. 48 -- Data from Moffit, 1918 (B 662) and Moffit, 1935 (B 866) [not specifically cited].

Jasper, 1967 (GC 13), p. 3 -- Reference to Moffit, 1935 (B 866).

Mulligan, 1974 (IC 8626), p. 19 -- Data from Moffit, 1935 (B 866).

MacKevett and Holloway, 1977 (OF 77-169A), p. 80, loc. 36 -- Reference to Moffit, 1935 (B 866). Quartz veins in slate and graywacke of Valdez Gp. near Tertiary felsic porphyry dikes.

(Elliott Cr.)

Copper, Gold, Silver

Chistochina district  
MF-438, locs. 62-69

Valdez (23.4-24.7, 11.3-12.35)  
61°38'-61°41'N, 144°02'-144°12'W

Summary: Many copper prospects in complexly faulted and sheared Nikolai Greenstone (one in Chitistone Ls. near Nikolai Greenstone). Consist of a total of 1,500-2,000 ft. of underground workings and many open cuts; no record of any production. Originally staked in 1899; most exploration in next 17 years. Deposits are veins, thin films, and disseminated grains of principally bornite and chalcopyrite with smaller amounts of pyrite and chalcocite; gangue, where present, quartz, calcite, and epidote. Secondary minerals malachite, azurite, and a little chalcanthite. Some deposits contain a little gold, silver, and native copper. One quartz-calcite vein along a fault contains a little gold. Includes references to: Albert Johnson, Chance, Cliff (Kotsina R.), Copper King, Copper Queen, Curtis, Elizabeth, Fog, Goodyear, Guthrie, Henry Prather, Hubbard & Elliott (Co.), Hubbard-Elliott Copper Co., Hubbard Elliott (Copper Mines Development Co.), Kings, Lawton, Leland, Lizzie G., Louise, Marie Antoinette, Marmot, Mary Ellen, Mineral King (Kotsina R.), Swazie.

Schrader and Spencer, 1901, p. 84 -- Good copper prospects reported. Mendenhall and Schrader, 1903 (P 15), p. 16-19 -- Ore deposits in Nikolai Greenstone near contact with overlying Chitistone Ls. Some deposits are tabular (as at Goodyear and Henry Prather prospects) and were formed along fissures and other planar structural elements; they characteristically have indefinite boundaries in one or two directions. Other deposits are irregular bunches of ore from a few inches to a few feet in diameter with no obvious relationship to planar features in host greenstone; grade out into unmineralized rock. Chief sulfide is bornite; smaller amounts of chalcopyrite at most prospects; some quartz and calcite gangue; malachite and azurite staining ubiquitous.

p. 22-26 -- Creek flows on Nikolai Greenstone near south flank of a breached anticline; most prospects north of creek in greenstone within a few hundred feet of contact with Chitistone Ls. Some chalcocite at some prospects. Descriptions of individual prospects; in 1902 there were open cuts at some of them.

Mendenhall and Schrader, 1903 (B 213), p. 145 -- Same data on 2 claims as in Mendenhall and Schrader, 1903 (P 15).

Mendenhall, 1905 (P 41), p. 92-93, 98-102 -- Same as Mendenhall and Schrader, 1903 (P 15).

Brooks, 1907 (B 314), p. 28 -- Systematic development on Hubbard-Elliott reported, 1906.

Moffit and Maddren, 1908 (B 345), p. 146-152 -- Preliminary to Moffit and Maddren, 1908 (B 374).

Moffit and Maddren, 1908 (B 374), p. 65-71 -- Mainly detailed descriptions of individual claims. All prospects are in Nikolai Greenstone, mainly on shear zones and along faults. Copper minerals are bornite, chalcopyrite, malachite and azurite, and chalcocite; pyrite present in some places; Sulfides are disseminated in greenstone and are components of

Chistochina district  
MF-438, locs. 62-69

Valdez (23.4-24.7, 11.3-12.35)  
61°38'-61°41'N, 144°02'-144°12'W

calcite and (less commonly) quartz veins. Most of work on prospects (as of 1907) was open cuts; a few tunnels, the longest of which (on Elizabeth claim) was 240 ft. long and had not reached ore body toward which it was being driven. Hubbard-Elliott Co. controls all but 8 of the 43 claims.

Moffit, 1909 (B 379), p. 155 -- Underground workings on Elizabeth claim extended to total length of 475 ft. in 1908 [ambiguous; 475 ft. may be length of drifts only or may also include main adit]. 2 calcite veins, one carrying iron and copper sulfides, cut in adit.

Moffit, 1910 (B 442), p. 161 -- Prospecting and/or development, 1909.

Moffit, 1913 (B 542), p. 83 -- 118 ft. of adit on Albert Johnson claim and assessment work on other claims, 1912.

Brooks, 1914 (B 592), p. 61 -- Development reported, 1913.

Brooks, 1915 (B 622), p. 44 -- Development reported, 1914.

Moffit, 1915 (B 622), p. 112-113 -- Main tunnel on Albert Johnson claim lengthened to 850 ft.; some other underground work, in greenstone; bodies of chalcopyrite and bornite found. Tunnel on Mary Ellen claim being driven in shattered greenstone mineralized with pyrite and a little chalcopyrite; weathered surface material contains considerable gold; amount much less in less weathered material in tunnel. Assessment work on other claims, 1914.

Brooks, 1916 (B 642), p. 54 -- Work reported, 1915.

Smith, 1917 (BMB 142), p. 37 -- Development continued, 1915.

Smith, 1917 (BMB 153), p. 30 -- Development continued, 1916.

Moffit, 1918 (B 662), p. 156-157 -- Tunnel on Albert Johnson claim was 1,076 ft. long (not including crosscuts) in August, 1916. Shattered greenstone near end of tunnel contains a little native copper. In tunnel are irregular veins of bornite and chalcopyrite (part of a sheeted zone in greenstone); cut off by younger faults, so few veins can be followed far.

Moffit and Mertie, 1923 (B 745), p. 82-83 -- First discoveries of copper minerals, 1899. By 1907 much ground had been patented.

p. 89-90 -- Data on study of a polished section of a specimen of bornite-chalcocite ore. Some or all of chalcocite younger than bornite. Bornite appears to be primary and chalcocite secondary; relative age of quartz (makes up about a third of the section) not determined.

p. 115-125 -- Creek flows in Nikolai Greenstone, which is overlain by Chitistone Ls.; prominent limestone cliffs form upper part of north valley wall. Thin-bedded Triassic limestone and shale occur with Chitistone Ls. in some places. Kotsina Conglomerate (Jurassic) capping mountains to north and tuff and basalt of mountains to south apparently have no connection with the copper deposits. Rocks of entire area much faulted; largest displacements probably along bedding faults and along Nikolai-Chitistone contact. Transverse shear zones are locally mineralized. Copper deposits all in greenstone and all generally similar, though mineralogy of deposits differs from place to place. Deposits commonly consist of bornite and chalcopyrite or chalcocite and bornite;

pyrite, native copper, malachite, azurite, and chalcanthite also present. Usually very little or no gangue, but quartz and epidote or calcite (with or without quartz) may be present. Copper sulfides occur as irregular veins along fracture planes filling cavities or replacing country rock, as films and veinlets in sheared greenstone, and as disseminated grains near faults and fractures. Some deposits have sharp boundaries; others fade out into country rock. References to older reports; most work has been on Albert Johnson, Goodyear, and Elizabeth claims, where there are a total of 1,500-2,000 ft. of underground workings and several open cuts. Very little work on other claims since they were patented; work was mainly making open cuts. [The bulk of this reference is descriptions of individual claims.]

p. 146 -- A little gold reported from a quartz-calcite vein which follows a fault. Assays of \$2-\$3 a ton reported from some copper ore. Brooks and Capps, 1924 (B 755), p. 26 -- Development work reported, 1922. Smith, 1926 (B 783), p. 21-22 -- Assessment work, 1924.

Van Alstine and Black, 1946 (B 947-G), p. 141 -- Data from Moffit and Mertie, 1923 (B 745). "As far as is known no prospecting has been done at Elliott Creek since 1916." [Does not agree with 2 references immediately above.]

Berg and Cobb, 1967 (B 1246), p. 43 -- Prospects in complexly faulted Nikolai Greenstone. Deposits consist of veins, films, and disseminated grains of pyrite, bornite, chalcopyrite, and chalcocite with quartz, calcite, and epidote. Some deposits also contain a little gold, silver, and native copper. Minerals fill cavities or replace greenstone, especially near faults. Abundant malachite stains. Deposits staked in 1899 and explored for about 17 years; no record of any production.

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, locs. 53-56 -- References to Mendenhall, 1905 (P 41), and Moffit and Mertie, 1923 (B 745).

Many prospects in sheared Nikolai Greenstone (one in base of Chitistone Ls.). Type listed as "Hydrothermal, subaerial volcanogenic(?)".

(Ernestine Cr.)

Gold

Nelchina district

Valdez (16.0, 7.7) approx.  
61°25'N, 145°06'W approx.

Summary: Placer gold found before 1900. Not minable. In region underlain by rocks of Valdez Gp.

Rohn, 1900, p. 436-437 -- "Considerable work has been done on Quartz Creek--- and on Ernestine and Fall Creeks, tributaries of the Upper Kanata Tiekel R.]. Enough coarse gold has been taken out of these streams to show the presence of gold-bearing rocks in the vicinity. Working the deposits found on these streams has, however, thus far not proved economically successful on account of the great thickness of glacial drift."

Mulligan, 1974 (IC 8626), p. 18 -- Placer explored between 1898 and 1900; no economic gold production recorded.

MacKevett and Holloway, 1977 (OF 77-169A), p. 83, loc. 72 -- Reference to Rohn, 1900. Country rock Valdez Gp.

Ethel (Mining Co.)

Gold, Lead

Prince William Sound district  
MF-438, loc. 30

Valdez (6.2, 3.8)  
61°13'N, 146°16'W

Summary: Quartz vein 18-24 in. thick in rocks of Valdez Gp. contains pyrrhotite, pyrite, galena, and gold. Exploration or development work reported in several years between 1910 and 1928. Probably was a little gold production shortly before 1915; no good data available. Includes references to: Genzler, Williams-Genzler. Clipping, Alaska Weekly, 9/17/26, states that Ethel Mining Co. was organized and took over old Williams Gentzler group.

Brooks, 1911 (B 480), p. 31 -- 18-in. quartz vein carrying high gold values reported, 1910.

Brooks, 1912 (B 520), p. 127 -- Vein said to be 18-24 in. wide, to have good walls, and to carry considerable gold, 1911.

Johnson, 1914 (B 592), p. 239 -- Assessment and/or development work, 1913.

Johnson, 1915 (B 622), p. 164 -- About 100 ft. of workings, including 30 ft. of drift along vein, which contains an ore shoot 25-30 ft. long. Vein contains pyrrhotite, pyrite, and galena. Ore treated in a gaso-line-engine-powered arrastre; some of concentrate saved on riffles [so there must also be some gold].

Smith, 1929 (B 797), p. 11 -- Some exploratory work, but no production, 1926.

Smith, 1930 (B 810), p. 16 -- Development work, 1927; hope to put in a mill in 1928.

Smith, 1930 (B 813), p. 18 -- New mill being built, 1928.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 24 -- References to Brooks, 1912 (B 520), Johnson, 1915 (B 622), Smith, 1930 (B 810). Quartz veins in Valdez Gp. rocks. Has been minor production.

(Fall Cr.)

Gold

Nelchina district  
MF-438, loc. 87

Valdez (15.55-15.8, 6.7-7.5)  
61°22'-61°25'N, 145°07'-145°09'W

Summary: A little placer gold mined, 1898-99, 1910, 1916, from stream and low bench placers. Concentrated from glacial gravels; probably originally came from quartz veins in slate and graywacke.

Rohn, 1900, p. 436-437 -- Placer gold present; mining has not been economically successful because of great thickness of glacial drift.

Schrader and Spencer, 1901, p. 90 -- Placer gold discovered, 1898. Estimated \$500 worth produced in 1899; concentrated on bedrock from glacial gravels from a few to 600 ft. thick. Some nuggets worth as much as \$5 or \$6. Diggings extend 5 or 6 miles up creek.

Mendenhall and Schrader, 1903 (P 15), p. 62 -- Above reference quoted.

Mendenhall, 1905 (P 41), p. 121 -- Same as above.

Johnson, 1914 (B 592), p. 237 -- Development on gold-quartz prospect reported, 1913.

Moffit, 1918 (B 662), p. 181-182 -- Gold-bearing veins have been staked in valley, but only placer claims were receiving attention in 1916.

Prospected in 1898-99 and 1910; in 1916 only 3 men were working; mainly preparatory work. In one place stream gravels carry some gold on and in top of bedrock; at another gold is heavy and found only in bedrock beneath a low bench. Also some gold in a bar in stream (one man recovered \$21 in 5 hours with a rocker).

Moffit, 1935 (B 866), p. 36 -- Was a little placer mining in 1916; results not encouraging; little work since then.

Moffit, 1938 (B 894), p. 126-127 -- A little placer gold mined, 1898-99.

Gold probably derived from quartz veins in northward-striking joints in slate and graywacke.

Moxham and Nelson, 1952 (C 184), p. 3 -- Has been placer mining.

Jasper, 1967 (GC 15), p. 3 -- Reference to Moffit, 1935 (B 866).

Cobb, 1973 (B 1374), p. 29 -- Small amount of placer gold has been mined.

Mulligan, 1974 (IC 8626), p. 19 -- Small amount of coarse, rounded gold was produced from channel and low bench workings; shallow overburden mostly boulders.

MacKevett and Holloway, 1977 (OF 77-169A), p. 82 -- loc. 67 -- Reference to Moffit, 1918 (B 662).

(Falls Cr.)

Copper

Nizina district  
MF-438, loc. 60

Valdez (23.1, 6.65)  
61°21'N, 144°15'W

Summary: 2 tunnels driven in greenstone of Skolai Gp. in 1911. Specimens of ore contained disseminated bornite, covellite, and chalcopyrite. No data on tenor.

Moffit, 1912 (B 520), p. 103 -- Preliminary to Moffit, 1914 (B 576).  
Moffit, 1914 (B 576), p. 52 -- Basin of creek underlain by greenstone and altered sedimentary beds, including slate, schist, and highly siliceous limestone; mainly greenstone south of creek. In 1911 2 tunnels were driven south of creek about 400 ft. apart; one tunnel is 105 ft. long and the other 150 ft. long. Specimens of ore from longer tunnel show disseminated bornite, covellite, and chalcopyrite in greenstone.  
Berg and Cobb, 1967 (B 1246), p. 62-63 -- Deposit similar to that at Blackney property.  
MacKevett and Holloway, 1977 (OF 77-169A), p. 81, loc. 51 -- Reference to Moffit, 1914 (B 576). Disseminated bornite, chalcopyrite, and covellite in metavolcanic rocks of Skolai Gp.

(Fivemile Cr.)

Gold, Lead, Silver

Nelchina district  
MF-438, loc. 55

Valdez (20.4, 9.75) approx.  
61°32'N, 144°34'W approx.

Summary: Lode reported to contain gold and silver. Specimen said to be from this occurrence was rich in galena. Country rock probably metamorphic rocks of Skolai Gp.

Berg and Cobb, 1967 (B 1246), p. 49 -- Lode reportedly containing gold and silver at altitude of about 4,000 ft. 4 mi. WNW of Chitina. Specimen said to be from this occurrence was rich in galena, a possible host for silver. Geologic setting not known.

MacKevett and Holloway, 1977 (OF 77-169A), p. 81, loc. 46 -- Reference to above. Probably in metamorphic rocks of Skolai Gp.

Forget-me-not

Copper

Chistochina district  
MF-438, loc. 72

Valdez (24.8, 12.15)  
61°40'N, 144°02'W

Summary: Small open cut in fracture zone in Nikolai Greenstone near contact with Chitistone Ls. uncovered a little disseminated bornite, chalcopyrite, and pyrite; some malachite in fractures. No ore body discovered.

Moffit and Mertie, 1923 (B 745), p. 103 -- Open cut in greenstone near contact with limestone uncovered chalcopyrite and a little bornite.

Van Alstine and Black, 1946 (B 947-G), p. 120-131 -- Small open cut in irregular fracture zone in [Nikolai] greenstone. Pyrite and a little bornite disseminated in some of greenstone; malachite coats fractures. No indication of an ore body.

MacKevett and Holloway, 1977 (OF 77-169A), p. 83, loc. 58 -- References to above.

Prince William Sound district  
MF-438, loc. 25

Valdez (5.5, 3.65)  
61°12'N, 146°21'W

Summary: Fractures in sheared graywacke of Valdez Gp. filled with quartz carrying pyrite, galena, sphalerite, chalcopyrite, and free gold. Explored by 20-ft. adit and an open cut. No record of production or of any work after 1914.

Johnson, 1916 (B 622), p. 166-167 -- Fractures in schistose graywacke strike SE and dip 70° E; 1-6 in. wide; filled with crystalline quartz; lenses of pyrite as much as 6 in. in diameter and 1/2 in. or more thick. Other metallic minerals present are galena, sphalerite, chalcopyrite, and free gold. In 1913 a 20-ft. tunnel was driven and an open cut excavated. In 1914 assessment work was trail building.  
MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 21 -- Reference to above. In sheared graywacke of Valdez Gp.

(Fourth of July Cr.)

Gold

Nelchina district  
MF-438, loc. 88

Valdez (15.0, 8.55)  
61°14'N, 145°13'W

Summary: A little placer gold recovered during prospecting or development work, 1929-30.

Smith, 1932 (B 824), p. 28 -- A little gold reported to have been taken out in the course of development work, 1929.

Smith, 1933 (B 836), p. 28 -- A little gold reported to have been taken out during prospecting, 1930.

Cobb, 1973 (B 1374), p. 29 -- Development work, 1929-30, is the most recent placer mining activity reported for the area.

Mulligan, 1974 (IC 8626), p. 18 -- Small amount of placer gold taken out during exploration work in 1929-30.

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, loc. 68 -- Reference to Smith, 1932 (B 824).

(Glorious Fourth Cr.)

Gold(?)

Nelchina district

Valdez

NW 1/4 SE 1/4 quad.

Summary: Gold quartz prospect; development in 1913 reported. No other data.

Johnson, 1914 (B 592), p. 237 -- Development of gold quartz prospect reported, 1913.

Gold Bluff

Copper, Gold

Prince William Sound district  
MF-438, loc. 15

Valdez (3.65, 2.2)  
61°08'N, 146°34'W

Summary: More than 200 ft. of underground exploration of a shear zone in schistose graywacke of Valdez Gp. Shear zone contains small lenses of quartz with pyrite, pyrrhotite, chalcopyrite, and, probably, gold. No data on gold content, but, considering the amount of work done, there must be some. No record of production or of any work after about 1914.

Brooks, 1912 (B 520), p. 124 -- Brooks did not visit claim in 1910-11.  
Brooks, 1913 (B 542), p. 35 -- About 240 ft. of underground work done in 1912.

Johnson, 1915 (B 622), p. 182 -- 200-ft. adit and 5-ft. crosscut on a shear zone in schistose graywacke, the schistosity of which strikes N 85° E and dips 52° N. The shear zone strikes from N 80° E to S 88° E, dips 55°-63° N, and is 2-1/2 to 4 ft. thick; contains a few short lenses of white quartz no more than 4 in. thick. Minerals recognized in hand specimens include quartz, calcite, chlorite, pyrite, pyrrhotite, and chalcopyrite [no data on gold content, if any].

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 12 -- Reference to Johnson, 1915 (B 622). In schistose graywacke of Valdez Gp.

(Gold Cr.)

Gold

Prince William Sound district  
MF-238, loc. 75

Valdez (4.4, 2.5)  
61°08'N, 146°28'W

Summary: Sporadic small-scale placer mining near mouth in early part of century. Production undoubtedly small.

Grant, 1906 (B 284), p. 86 -- Small amounts of placer gold have been reported from near mouth of creek. No work in 1905.

Grant, 1909 (B 379), p. 97 -- Placer gold present; work done has not proved really profitable.

Grant and Higgins, 1910 (B 443), p. 71 -- Has been a little placer gold recovered.

Brooks, 1912 (B 520), p. 121 -- Has been a little small-scale placer mining. Hydraulic plant being installed, 1911.

Brooks, 1914 (B 592), p. 62 -- Installation of hydraulic plant begun, 1913; destroyed by flood in June. Gravels said to be 9-50 (average about 25) ft. thick.

Johnson, 1915 (B 622), p. 159 -- Small amounts of placer gold have been recovered.

    p. 187 -- Considerable work preparatory to hydraulicking, 1914. Work stopped in June.

Moxham and Nelson, 1952 (C 184), p. 4 -- Has been placer mining.

Moffit, 1954 (B 989-E), p. 307 -- Has been small-scale placer mining.

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, loc. 62 -- Reference to Johnson, 1915 (B 622).

Golden Dollar

Gold(?)

Prince William Sound district

Valdez (5.65, 3.5) approx.

61°12'N, 146°20'W approx.

Summary: Claim on quartz vein reported to be 2-3 ft. wide. No other data.

Brooks, 1912 (B 520), p. 127 -- Claim reported to have been staked on a  
quartz vein 2-3 ft. thick.

Gold King

Antimony, Copper, Gold, Lead, Zinc

Prince William Sound district  
MF-438, loc. 2

Valdez (2.3, 3.6)  
61°12'N, 146°44'W

Summary: 2 or more quartz fissure veins in graywacke and argillite of Valdez Gp. near a small granite intrusive body contain gold, pyrite, galena, sphalerite, chalcopyrite, and stibnite; sulfides make up about 3% of ore; minor amounts of carbonate minerals in gangue. Mine consisted of 2,000 ft. or more of workings. Mining (probably not continuously) from 1911 to as recently as 1924; amount of production not known. Had own mill.

Brooks, 1914 (B 592), p. 63 -- Small mill erected, 1913.

Johnson, 1914 (B 592), p. 237-238 -- Small mill installed and 200-300 tons of ore milled, 1913. Underground workings total about 1,320 ft. in length; also some open cuts and stripping.

Brooks, 1915 (B 622), p. 45 -- Gold produced, 1914.

Johnson, 1915 (B 622), p. 152-153 -- Located in 1910.  
p. 157 -- Stibnite present.

p. 183-185 -- Ore body located July 26, 1911; a few hundred pounds of high-grade ore taken out. Larger-scale development began in 1912; ore milled in 1913 and 1914. Extensive workings from 3 tunnels. Country rock mainly graywacke; some interbedded argillite. Small granite body cut by mineralized vein reported nearby. Vein on which most work has been done strikes N 60° W and dips 50°-60° S; average width probably less than one foot; gouge along one wall; in many places quartz is banded; at one point lode is narrow quartz stringers in belt of shattered graywacke 5 ft. wide. Other vein which has been developed strikes N 70°-77° W and dips 65°-70° N; 8-36 in. (in one place 5 ft.) wide; gouge along one or both walls. Gangue mainly quartz; some calcite and another carbonate; metallic minerals are gold, pyrite, galena, sphalerite, chalcopyrite, and stibnite; sulfides make up about 3% of ore.

Brooks, 1916 (B 649), p. 61 -- Stibnite is an accessory mineral in an auriferous quartz vein. [Reference given is incorrect.]

Johnson, 1916 (B 642), p. 143-145 -- Ore milled, 1915. Mining on a smaller scale than in year before.

Smith, 1917 (BMB 142), p. 40 -- Mill run for a short time, 1915.

Smith, 1917 (BMB 153), p. 46 -- Mine operated for a short time, 1916.

Johnson, 1918 (B 662), p. 190 -- Producing property, 1916.  
p. 192 -- Mill operated most of summer of 1916. During year 298 ft. of workings (plus stopes) were completed.

Johnson, 1919 (B 692), p. 151 -- Some development; mill not operated, 1917.

Martin, 1920 (B 712), p. 33 -- Some ore mined and milled, 1918.

Brooks and Capps, 1924 (B 755), p. 28-29 -- Production and development reported, 1922.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 2 -- Reference to Johnson, 1915 (B 622). Quartz veins and stringers in graywacke and argillite of Valdez Gp. near granite.

Gold Standard

Gold(?)

Prince William Sound district

Valdez (3.0, 3.5) approx.  
61°12'N, 146°38'W approx.

Summary: Work reported, 1916. No other data. This property may also have been reported under another name in other reports.

Johnson, 1918 (B 662), p. 191 -- "Both tunnels on the Gold Standard were extended a few feet." 1916. [Entire reference.]

Summary: By 1916 were about 290 ft. of workings on a quartz vein 1-10 ft. thick in sheared graywacke and argillite of Valdez Gp. Contains pyrite, chalcopyrite, arsenopyrite, sphalerite, and galena in quartz-calcite-chlorite gangue. No data on possible gold content, but there probably is some in view of the amount of work done.

Johnson, 1914 (B 592), p. 239 -- About 50 ft. of underground work, 1913.

Total to date is a tunnel about 150 ft. long.

Johnson, 1915 (B 622), p. 181 -- Tunnel driven about 150 ft. On a quartz vein that strikes from N 25° W to N 73° W and dips [north]eastward; from 1 to 10 ft. wide; traceable for about 100 ft. on surface. Cuts sheared graywacke and argillite, the schistosity of which strikes N 87° E and dips 63° N. Metallic minerals include pyrite, chalcopyrite, arsenopyrite, sphalerite, and galena in a gangue of quartz, calcite, and chlorite. [No data on gold content.]

Johnson, 1918 (B 662), p. 191 -- In 1916 new crosscut was driven 90 ft.; intersected vein; drifts run about 25 ft. each way on vein.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 13 -- Reference to Johnson, 1915 (B 622). Quartz vein cuts graywacke and argillite of Valdez Gp.

Hecla (Mineral Cr.)

Gold(?)

Prince William Sound district

Valdez (5.85, 3.2) approx.  
61°11'N, 146°19'W approx.

Summary: Two tunnels driven on edges of a zone of sheared graywacke and slate carrying pyrite and stringers and lenticular masses of quartz. No data on gold content, if any. Work done in 1914 or earlier.

Johnson, 1915 (B 622), p. 169-170 -- 2 tunnels, said to be 76 and 65 ft. long, on sides of a 300-ft.-wide zone of shattered graywacke and black, graphitic slate containing pyrite and stringers and lenticular masses of quartz. One tunnel follows a quartz vein as much as 6 ft. thick exposed over a vertical distance of 150 ft. [No data on possible gold content.]

Hecla (Shoup Glacier)

Gold, Lead, Silver

Prince William Sound district  
MF-438, loc. 9

Valdez (2.9, 2.3)  
61°08'N, 146°40'W

Summary: Quartz in shear zone in slate and graywacke of Valdez Gp. contains pyrite, arsenopyrite, galena, gold and silver.

Brooks, 1912 (B 520), p. 124 -- 2 claims on parallel shear zones (strike about N 40° W) that crosscut graywacke and slate. One shear zone is 7-8 ft. wide and includes irregularly distributed masses of quartz that carries pyrite, arsenopyrite, and galena; reported to carry some gold and higher values in silver. Same shear zone said to have been recognized half a mile away, where it is 10-15 ft. wide.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 6 -- Reference to above. Country rock mainly slate of Valdez Gp.

## Hercules

Copper(?), Gold, Lead, Zinc

Prince William Sound district  
MF-438, loc. 23Valdez (5.45, 3.95)  
61°13'N, 146°21'W

**Summary:** About 500 ft. of workings on quartz-carbonate-chlorite vein carrying gold, pyrite, galena, sphalerite, pyrrhotite, and chalcopyrite(?); vein closely follows schistosity of graywacke country rock (part of Valdez Gp.). Probably was some gold production in 1916.

Brooks, 1912 (B 520), p. 125 -- Vein 18-30 in. wide crops out for 50-70 ft. Strikes about N 80° E and dips 70° N. High free gold values reported.

Brooks, 1913 (B 542), p. 35 -- Development continued, 1912.

Johnson, 1914 (B 592), p. 239 -- Assessment and development work, 1913.

Johnson, 1915 (B 622), p. 165 -- Somewhat more than 245 ft. of workings by late 1914. Vein as much as 20 in. wide (appears to be pinching out) closely follows attitude of schistosity (N 80° W strike, 65°-70° dip) of graywacke country rock. Contains quartz, gold, pyrite, galena, sphalerite, chlorite, carbonate, pyrrhotite, and chalcopyrite(?).

Johnson, 1918 (B 662), p. 190 -- 200-ft. crosscut and 40-50 ft. of drifts driven, 1916. Mineral Creek Development Co. built a mill and operated it for about a month and a half; company was developing both Hercules and Millionaire claims [ore probably from Hercules].

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 20 -- References to Brooks, 1912 (B 520) and Johnson, 1915 (B 622). Country rock in vicinity is slate and graywacke of Valdez Gp.

High Grade

Gold, Lead

Prince William Sound district  
MF-438, loc. 26

Valdez (5.65, 3.5) approx.  
61°12'N, 146°20'W approx.

Summary: Shear zones in graywacke of Valdez Gp. contain quartz-carbonate veins as much as 8 in. thick that carry pyrite and galena; gold values said to be mainly in sulfides. Developed by 2 tunnels 140 and 60 ft. long. No record of production. Includes reference to Gold Sunlight.

Brooks, 1912 (B 520), p. 126 -- Gold Sunlight claim staked on shear zone in slate and graywacke; shear zone 2-2-1/2 ft. wide; contains quartz veins no more than 3 in. thick. Veins and crushed rock of shear zone iron stained.

Johnson, 1915 (B 622), p. 166 -- One tunnel (not visited by Johnson) said to be 140 ft. long. Other tunnel driven 60 ft. on a 3-ft. shear zone made up of sheared graywacke country rock and as much as 6 to 8 inches of quartz; shear zone only 1 ft. wide at face of tunnel. Metallic minerals are pyrite and galena in quartz and carbonate gangue; much of gold said to be in sulfides. Longer tunnel said to have been driven on quartz vein 8 in. wide in places; vein and fissure said to be traceable for half a mile or more; mineralogy said to be about the same as in other vein.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 21 -- Reference to Johnson, 1915 (B 622). In sheared graywacke of Valdez Gp.

(Hurtle Cr.)

Gold

Nelchina district

Valdez (13.1-13.15, 6.6-6.75  
61°22'-61°23'N, 145°26'-145°27'W

Summary: Gold quartz lodes in basin. Was a little placer mining; not very productive. Includes reference to (Hurdle Cr.). See also: Telluride, Wetzler.

Johnson, 1914 (B 592), p. 237 -- Considerable development on this and other gold-quartz prospects in Tiekel district reported, 1913.

Smith, 1929 (B 797), p. 11 -- Prospecting, 1926.

Moffit, 1938 (B 894), p. 127 -- Gold-bearing quartz deposited in one of the systems of north-south joint planes that cut slate and graywacke.

Moxham and Nelson, 1952 (C 184), p. 3 -- Has been placer mining.

Jasper, 1967 (GC 15), p. 3 -- Several gold claims were staked in drainage basin; Wetzler considered most promising.

Mulligan, 1974 (IC 8626), p. 18 -- Early placer exploration; no significant production.

MacKevett and Holloway, 1977 (OF 77-169A), p. 83, loc. 73 -- Reference to Moxham and Nelson, 1952 (C 184).

Ibex

Gold

Prince William Sound district  
MF-438, loc. 33

Valdez (6.8, 3.55)  
61°12'N, 146°12'W

Summary: Vein 4 ft. wide has well-defined walls; in Valdez Gp. rocks; banded quartz said to carry high gold values. Tunnel driven 200ft. lost vein 100 ft. from portal.

Brooks, 1912 (B 520), p. 128 -- Claims on what is believed to be extension of vein at Valdez prospect about 1/4 mi. to SE. Vein is 4 ft. wide and has well-defined walls; banded quartz in vein reported to carry high gold values. Tunnel driven 200 ft. lost vein after first 100 ft.

Johnson, 1915 (B 622), p. 152-153 -- Located in 1910.

p. 162 -- Quotation from above.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 25 -- Reference to Johnson, 1915 (B 622). Quartz vein(s) in Valdez Gp. rocks.

Imperial

Gold(?)

Prince William Sound district

Valdez (4.6, 2.4) approx.

61°08'N, 146°27'W approx.

Summary: Located in 1909. Adit was driven about 100 ft. along a vein in about 1909. No other data definitely applicable to this property. Includes references to Ellis Imperial.

Grant and Higgins, 1910 (B 443), p. 74-75 -- Adit driven from a point near sea level along vein for more than 100 ft.

Brooks, 1911 (B 480), p. 31 -- Adit has been driven along vein for 100 ft. 3-stamp mill in area probably is on this claim.

Brooks, 1912 (B 520), p. 123 -- Adit has been driven at sea level. Idle in 1911.

Johnson, 1915 (B 622), p. 152 -- Located in 1909.

p. 183 -- Several hundred feet of tunnels on properties, including Ellis Imperial, between Cliff mine and Gold Cr. These properties have not been visited.

(Iron Mtn.)

Copper(?)

Chistochina district

Valdez

E 1/4 SE 1/4 NE 1/4 quad.

Summary: Considerable underground development reported in 1908-09. No data on deposit, but there must be some mineralization for there to have been 700-800 ft. of workings.

Moffit, 1909 (B 379), p. 156 -- Great Northern Development Co. continued work in 1908 at Iron Mtn., west of Strelna Cr., where there are 2 tunnels with a total length of at least 635 ft.; 159-ft. raise in longer tunnel.

Moffit, 1910 (B 442), p. 161 -- Work continued, 1909.

Ivanhoe

Gold(?)

Prince William Sound district

Valdez (3.4, 3.8)(?)

61°13'N, 146°13'W(?)

Summary: Prospect near head of Shoup Glacier; only data location and that a short tunnel was reported in 1914.

Johnson, 1915 (B 622), p. 183 -- Short tunnel reported, 1914. Near head of Shoup Glacier.

I.X.L.

Gold

Prince William Sound district Valdez (3.25, 2.4)  
MF-438, loc. 11 61°08'N, 146°37'W

Summary: Fissure in Valdez Group contains one-foot-wide vein of brecciated slate, quartz, pyrite, and free gold.

Brooks, 1912 (B 520), p. 124 -- Vein about a foot wide in fissure that strikes N  $70^{\circ}$ - $85^{\circ}$  W contains brecciated slate, quartz, pyrite, and free gold. Intersects another vein that strikes about N  $45^{\circ}$  W; at junction is about 3 ft. of fragments of country rock cemented by quartz and pyrite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 8 -- Reference to above. Country rock is Valdez Gp.

(Jack Bay)

Copper, Lead, Zinc

Prince William Sound district  
MF-438, locs. 37, 38

Valdez (3.5-3.75, 0.55-0.8)  
61°02'-61°03'N, 146°33'-146°35'W

Summary: 2 occurrences. MF-438, loc. 37, is a shear zone 2-4 ft. wide in fine-grained graywacke of Valdez Gp.; slightly mineralized with arsenopyrite, chalcopyrite, pyrrhotite, sphalerite, and galena in gangue of quartz, calcite, and altered country rock; explored by tunnel about 40 ft. long. MF-438, loc. 38 is inclusions of slate and argillite in greenstone (all belonging to Valdez Gp.) which contain disseminated pyrite, pyrrhotite, chalcopyrite, and sphalerite; tunnel driven 25 ft. in one of larger inclusions did not find an ore body.

Johnson, 1919 (B 692), p. 171-172 -- North of north arm of Jack Bay [MF-438, loc. 37] tunnel has been driven about 40 ft. on a shear zone in fine-grained graywacke. Shear zone is 2-4 ft. wide, strikes N 10° E, and dips 70° W; exposed in bluff above tunnel for about 50 ft.; walls free and well defined with thin gouge in places. Shear zone slightly mineralized with arsenopyrite, chalcopyrite, pyrrhotite, sphalerite, and galena in gangue of quartz, calcite, and crushed and altered country rock. North of south arm of Jack Bay [MF-438, loc. 38] inclusions of slate and argillite country rock in a small mass of greenstone have been staked as copper prospects; tunnel driven 25 ft. in one of larger inclusions; pyrite, pyrrhotite, chalcopyrite, sphalerite, and a very small amount of quartz recognizable in rock.

Moffit and Fellows, 1950 (B 963-B), p. 53 -- Data from above.

MacKevett and Holloway, 1977 (OF 77-169A), p. 80, locs. 29, 30 -- References to above. All rocks in Valdez Gp.

July

Gold, Lead, Zinc

Prince William Sound district      Valdez (6.0, 3.85)  
MF-438, loc. 29      61°13'N, 146°17'W

Summary: Quartz vein 6-10 in. thick in schistose graywacke of Valdez Gp. carries pyrite, galena, sphalerite, and free gold. Only development was 25 ft. of stripping along vein in 1913 or 1914.

Johnson, 1915 (B 622), p. 168-169 -- Staked in 1913 or 1914. Vein stripped for about 25 ft.; 6-10 in. of porous, crystallized, iron-stained quartz shows pyrite, galena, sphalerite, and free gold. Strike of vein swings from about NW to about E. [Probably really NW to W.]

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 23 -- Reference to above. In schistose graywacke of Valdez Gp.

Knowles (& Backman)

Gold, Lead

Nelchina district  
MF-438, loc. 43

Valdez (13.2, 5.6)  
61°19'N, 145°26'W

Summary: Country rock slate and graywacke of Valdez Gp. cut by diorite and porphyry dikes. Lenticular quartz veins in joints and irregular masses of quartz in faults and joints not following regional pattern contain free gold and a little pyrite and galena; some surface oxidation. Only development by open cuts. Little if any production. Includes references to: (Mill Cr.), lode deposits near Stuart Cr.

Smith, 1929 (B 797), p. 11 -- Lode prospecting on Stuart Cr., 1926.  
Smith, 1930 (B 810), p. 16-17 -- Ownership of claims changed hands, 1927.  
Moffit, 1935 (B 866), p. 32-35 -- Discovered, 1923. Country rock slate and graywacke cut by diorite and light-colored porphyry dikes. Lenticular quartz veins, mainly in north-striking joints, contain free gold and a little pyrite and galena; also irregular masses of sheared quartz and veins in faults and joints not following regional N-S pattern. Quartz bodies partly oxidized at surface. All development by open cuts. [No mention of production.]  
Moffit, 1938 (B 894), p. 127 -- Gold-bearing quartz veins in N-S joints cutting slate and graywacke.  
Berg and Cobb, 1967 (B 1246), p. 48-49 -- Data from Moffit, 1935 (B 866) [not specifically cited].  
Jasper, 1967 (GC 15), p. 3 -- Reference to Moffit, 1935 (B 866).  
Mulligan, 1974 (IC 8626), p. 19 -- Data from Moffit, 1935 (B 866).  
MacKevett and Holloway, 1977 (OF 77-169A), p. 80, loc. 35 -- Reference to Moffit, 1935 (B 866). Quartz veins in slate and graywacke of Valdez Gp.

(Liberty Falls)

Manganese

Nelchina district  
MF-438, loc. 56

Valdez (20.45, 11.15)  
61°37'N, 144°33'W

Summary: Manganite-bearing quartz veinlets in chloritic schist of Skolai Gp.; selected specimens assayed as much as 58.7% manganese. Tonnage of manganese-rich rock evidently small.

Berg and Cobb, 1967 (B 1246), p. 49 -- Quartz veinlets as much as 3 in. thick in chlorite schist; contain mineral tentatively identified as manganite. Selected specimens assayed as much as 58.7% manganese. Tonnage of manganese-rich rock evidently small.

Jasper, 1967 (GC 15), p. 4 -- Manganite discovery in Strelna Greenstone, 1960. Small isolated lenses over a strike length of about a mile; outcrops said to be 1-5 ft. wide. Has not been systematic sampling.

MacKevett and Holloway, 1977 (OF 77-169A), p. 81, loc. 47 -- References to above.

(Little Bremner R.)

Gold

Nizina district  
MF-438, loc. 92

Valdez (21°.9-22.35, 2.6-3.05)  
61°07'-61°09'N, 144°22'-144°25'W

Summary: Flat filled with outwash in glaciated valley in slate and gray-wacke. Coarse gold in upper 7 ft. of gravel; 40 ft. of mud beneath. Gold discovered in 1901; a little mining in 1910-11; production small.

Mendenhall, 1905 (P 41), p. 120 -- Probably was work on placer deposits in 1902 or 1903. [Reference vague; data may be geographic only.]

Moffit, 1912 (B 520), p. 94, 100-101 -- Preliminary to Moffit, 1914 (B 576).

Moffit, 1914 (B 576), p. 43-45 -- Gold discovered in 1901. Reconcentrated from bench deposits. Only a little has been mined.

p. 48-49 -- A little mining in 1910-11. Bedrock slate and gray-wacke. Valley glaciated. In 1911 activity was confined to the lower end of the flat between upper canyon and glacier. Flat is 1-2 mi. long and about a quarter of a mile wide; filled with outwash. Gold only in surficial 7 ft. of gravel; 40 ft. of mud beneath. Gold is coarse.

Cobb, 1973 (B 1374), p. 32 -- Attempts to mine gold in glaciofluvial deposits in early 1900's; amount of gold recovered was small and enterprise abandoned within a few years.

Henning and Dobey, 1973 (AOF 25), p. 10 -- Gold-bearing gravels present.

p. 13 -- Coarse gold in flat composed of glacial outwash material.

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, loc. 71 -- Reference to Moffit, 1914 (B 576).

Little Giant

Copper, Gold, Lead, Zinc

Prince William Sound district  
MF-438, loc. 29

Valdez (6.0, 3.85)  
61°13'N, 146°17'W

Summary: Quartz veins in schistose graywacke of Valdez Gp. as much as 4 ft. thick carry free gold, pyrite, galena, sphalerite, pyrrhotite, and chalcopyrite (gold in sulfides as well as free). Activity (not continuous) from about 1913 to as recently as 1939. Has been unknown, but undoubtedly small, amount of production of gold. Extent of workings not known.

Johnson, 1914 (B 592), p. 239 -- 4 men working, summer of 1913.

Johnson, 1915 (B 622), p. 168-169 -- 2 or more (third vein possibly an extension of one of the others) quartz (some carbonate also) veins carrying free gold, pyrite, galena, sphalerite, and pyrrhotite strike roughly parallel to country rock; from an inch to as much as 4 ft. wide in surface exposures. About 120 ft. of underground workings and some surface stripping. Several tons of ore gathered from outcrops milled in 1914.

Johnson, 1918 (B 662), p. 190 -- Assessment work only, 1916.

Smith, 1926 (B 783), p. 8 -- Preparations for further prospecting, 1924.

Moffit, 1927 (B 792), p. 10 -- Development, 1925; mill on property, but no production.

Smith, 1929 (B 797), p. 11 -- Exploratory work, 1926.

Smith, 1930 (B 810), p. 16 -- Near property of Ethel Mining Co.

Smith, 1930 (B 813), p. 18 -- Development work, 1928.

Smith, 1932 (B 824), p. 22 -- A little ore mined and milled, 1929.

Smith, 1933 (B 836), p. 22 -- Free gold recovered; the considerable amount of gold in sulfides not saved. About 50 ft. of underground and surface excavation, 1930.

Smith, 1936 (B 868-A), p. 22 -- Production reported, 1934.

Smith, 1937 (B 880-A), p. 22, 24 -- Ore bodies at Little Giant and Rose Quartz are quartz veins containing gold, pyrite, chalcopyrite, and galena. Work in 1935 was mainly installing mill underground; freight brought in by airplane.

Smith, 1939 (B 910-A), p. 27-28 -- 6 or 7 men employed, 1937. Mill not in operation in late summer.

Moxham and Nelson, 1952 (C 184), p. 4 -- Insignificant radioactivity in quartz veins.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 23 -- References to Johnson, 1915 (B 622) and Smith, 1937 (B 880-A). In schistose graywacke of Valdez Gp.

(Little Tonsina R.)

Tungsten

Nelchina district  
MF-438, loc. 90

Valdez (14.9, 10.35)  
61°35'N, 145°13'W

Summary: Scheelite in stream-sediment concentrate.

Jasper, 1967 (GC 15) p. 17, loc. 89 -- Concentrate from stream-sediment sample contained magnetite, scheelite, pyrrhotite, and pyrite.  
Cobb, 1973 (B 1374), p. 29 -- Reference to above.

(Lowe R.)

Copper(?), Gold, Tungsten

Prince William Sound district  
MF-438, locs. 80, 81 (in part)

Valdez  
SE 1/4 SW 1/4 quad.

Summary: Copper lode said to have been found about 15 mi. east of Valdez. Considerable ground explored as possible site for large-scale placer mining; results unsatisfactory; some gold reported to have been recovered, including coarse gold before 1900. Stream-sediment samples (MF-438, locs. 80, 81) contained traces of scheelite.

Schrader, 1900, p. 422 -- Coarse gold has been panned in Dutch Camp Basin.  
[Near Wortmanns.]

Johnson, 1915 (B 622), p. 158-159 -- Has been some placer gold recovered; largely from outwash with very little reconcentration.

p. 186 -- Small amount of placer gold recovered from upper reaches of Lowe R. in 1914.

Johnson, 1916 (B 642), p. 140 -- Copper lode said to have been found on south side of river about 15 mi. east of Valdez.

p. 145 -- Entire valley above Keystone Canyon staked in 1915.

Churn drilled, apparently with unsatisfactory results.

Moffit, 1954 (B 989-E), p. 308 -- "Placer mining on a still smaller scale was undertaken on Lowe River and Solomon Gulch. It was not successful and was given up many years ago."

Jasper, 1967 (GC 15), p. 3 -- Reference to Johnson, 1915 [should be to Johnson, 1916 (B 642)].

p. 7, locs. 3, 4 -- Concentrates of stream-sediment samples contained traces of magnetite, zircon, and scheelite. [MF-438, locs. 80, 81.]

Cobb, 1973 (B 1374), p. 32 -- Reference to Jasper, 1967 (GC 15).

Mulligan, 1974 (IC 8626), p. 21 -- Placer gold claims located before 1915 along about 6 mi. of river above Keystone Canyon. Property considered unsuitable for large-scale mining after exploratory churn drilling. Minor production has been reported.

MacKevett and Holloway, 1977 (OF 77-169A), p. 83, loc. 74 -- Reference to Johnson, 1915 (B 622).

Lucky Six

Gold(?)

[District not known]

Valdez(?)

NE 1/4 quad.(?)

Summary: Lode claims in Copper River region.

Smith, 1930 (B 810), p. 17 -- "In the Copper River region a number of lode claims formerly organized as the Lucky Six group are said to have been acquired by eastern people who propose to develop them as soon as plans are completed." 1927.

(Mahlo R.)

Gold(?)

Nelchina district

Valdez

NE 1/4 SE 1/4 NW 1/4 quad.

Summary: Prospecting in early days evidently was not successful.

Schrader, 1900, p. 422 -- "Latest reports from Mr. Charles Brown, United States quartermaster, now at Valdez, accredits men with working on Manker Creek and Mahlo River....."

Moffit, 1935 (B 866), p. 36 -- Abandoned workings and equipment are evidence for prospecting for placer gold in the early days. The efforts evidently were not successful.

(Manker Cr.)

Gold(?)

### Nelchina district

Valdez

NE 1/4 SE 1/4 NW 1/4 quad.

Summary: Prospecting reported in about 1900.

Schrader, 1900, p. 422 -- "Latest reports from Mr. Charles Brown, United States quartermaster, now at Valdes, accredits men with working on Manker Creek and Mahlo River...."

Mayfield

Copper, Gold, Lead, Zinc

Prince William Sound district  
MF-438, loc. 7.

Valdez (1.5, 2.8)  
61°10'N, 146°49'W

Summary: Fissures cut graywacke and argillite of Valdez Gp.; contain quartz, gold, pyrite, chalcopyrite, galena, sphalerite, and arsenopyrite. Located in 1911; intermittently reported development until as recently as 1938; production reported in 1936 and 1938 (probably was some in other years also). Mine consisted of more than (possibly considerably more than) 600 ft. of underground workings and some surface stripping. Includes references to: Alaska Mayfield (Mines, Inc.), Mayfield (Gold) Mining Co.

Brooks, 1912 (B 520), p. 125 -- Vein said to strike about E and to have been traced for about 1,000 ft., to be from 4 to 8 ft. wide, and to have an offshoot that trends NW. Tunnel about 50 ft. long intersects vein about 55 ft. below outcrop. Ore is iron-stained quartz with much pyrite; said to carry high gold values. Not visited by Brooks.

Brooks, 1913 (B 542), p. 35 -- Has been developed by 2 adit levels aggregating over 500 ft. in length, 1912.

Johnson, 1915 (B 622), p. 53 -- Located in 1911.

p. 185-186 -- Only assessment work since 1912. In late 1914 developments were an upper tunnel 105 ft. long and a lower tunnel with nearly 350 ft. of crosscuts and drifts. Country rock is closely folded graywacke and argillite; bedding and schistosity strike N 70°-80° E and dip 50°-60° N; vertical jointing strikes N 20°-30° W. Poorly defined fissure exposed on surface traceable for several hundred feet S 70° E along hillside; in places contains stringers, bunches, and lenses of quartz; can also be traced to west, but there contains practically no quartz. Ore body being developed is at junction of this fissure and a spur lead that strikes N 20°-30° W, dips 50° E, and has been stripped for about 50 ft. Main fissure and spur lead contain considerable quartz (as much as 8 ft.) near and in workings. Metallic minerals include gold, pyrite, chalcopyrite, galena, sphalerite, and arsenopyrite in quartz gangue; some secondary iron and arsenic minerals on weathered outcrops.

Johnson, 1916 (B 642), p. 145 -- Assessment work, 1915.

Johnson, 1919 (B 692), p. 151 -- Assessment work, 1917; drove about 20 ft. of tunnel.

Smith, 1932 (B 824), p. 22 -- Development work reported, 1929.

Smith, 1937 (B 880-A), p. 24-25 -- Slate and graywacke country rock is cut by fissure along which are stringers, bunches, and lenses of mineralized quartz. 4 men working in 1935. Workings totalled about 600 ft. before 1935 activity.

Smith, 1938 (B 897-A), p. 24 -- Production reported, 1936.

Smith, 1939 (B 910-A), p. 27 -- Development work reported, 1937.

Smith, 1939 (B 917-A), p. 27 -- Production reported, 1938.

Smith, 1941 (B 926-A), p. 26 -- No mining, 1939.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 4 -- References to Johnson, 1915 (B 622), and Johnson, 1916 (B 642). Quartz veins, lenses, and stringers in graywacke and argillite of Valdez Gp.

McCallum

Gold(?)

Prince William Sound district

Valdez

NE 1/4 SW 1/4 SW 1/4 quad.

Summary: Claims near head of Gold Cr. Underground development work reported, 1915-16.

Johnson, 1916 (B 642), p. 144 -- Claims near head of Gold Cr.; some underground development work reported, 1915.

Johnson, 1918 (B 662), p. 191 -- Underground development work reported, 1916.

McDonald

Gold(?)

Prince William Sound district

Valdez (3.0, 3.5) approx.(?)  
61°12'N, 146°38'W approx.(?)

Summary: Work on McDonald property reported in 1917. No other data.

Johnson, 1919 (B 692), p. 151 -- Work reported, 1917.

McIntosh

Gold(?)

Prince William Sound district

Valdez (5.6, 3.3)

64°11'N, 146°20'W

Summary: Irregular shear zone in graywacke contains 1-3 ft. of shattered rock and some quartz veins. No data on possible gold content.

Brooks, 1912 (B 520), p. 127 -- Irregular shear zone in graywacke trends about N 70° W; is 1-3 ft. wide; contains shattered rock and some quartz veins.

Midas (Copper Co.)

Copper, Gold, Lead, Silver, Zinc

Prince William Sound district  
MF-438, loc. 40

Valdez (6.2-6.25, 0.15-0.25)  
61°01'N, 146°16'W

Summary: Mine that produced more than 1,000,000 pounds of copper between 1911 or 1912 and 1919, all from Jumbo lode. Mine said to have closed because ships were not available to take ore to smelter. Mine consisted of interconnected workings on 4 adit levels, all but one of which had caved by 1964. Ore consisted of chalcopyrite, pyrite, pyrrhotite, sphalerite, and traces of galena (also values in silver and gold) in a shear zone averaging about 3-4 ft. wide and about 1,000 ft. long; country rock mainly black slate of Valdez Gp. (some interbedded graywacke) near a schistose greenstone intrusive. Submarine volcanogenic deposit. Recent interest in property by industry. Probably some resources remain in mine. All old surface improvements are in ruins or were removed. Very little work on the generally similar, but leaner All-American lode.

Grant, 1906 (B 284), p. 82-83 -- Schistose slate and graywacke near a mass of altered greenstone (probably a dike) contains a belt at least 30 and possibly 80 ft. wide of siliceous schist, flinty slate, quartz, pyrite, chalcopyrite, and pyrrhotite. Some exploration in 1905.

Brooks, 1912 (B 520), p. 117 -- Copper shipment said to have been made, 1911.

Brooks, 1913 (B 542), p. 36 -- Taken over by a new company in 1912 and some ore shipped. Several hundred feet of underground work.

Brooks, 1914 (B 592), p. 62 -- Work suspended for part of 1913. Changed hands in fall.

Johnson, 1914 (B 592), p. 240 -- In June 1913, when Alaska Development & Mineral Co. gave up its option underground development work amounted to more than 1,500 ft. of adits, drifts, and raises; 2 levels 92 ft. apart connected by raises. Property bought by Granby Consolidated Mining, Smelting & Power Co. (Ltd.) in fall.

Brooks, 1915 (B 622), p. 45 -- Considerable development, 1914, before mine closed because of decline in value of copper.

Johnson, 1915 (B 622), p. 132-133 -- Preparation to put mine into production in 1914 ceased late in summer. Reference to another section of Bulletin 622 [see following entries].

Johnson, 1915 (B 622), p. 151-153 -- Several tons of ore shipped in 1912 or 1913. Located in 1901. Extensive developments justify assumption that mine will become a major producer.

p. 156-157 -- In shear zone that cuts black slate, greenstone, and graywacke; ore associated with black slate.

p. 187-188 -- Country rock is a mixture of black slate, argillite, graywacke, chert, schist, and greenstone; some associated aphanitic silicic intrusive rocks. 2 separate ore bodies in shear zones in rocks of sedimentary origin. One that has been most developed is in shear zone 1-14 ft. wide (average 3-4 ft. of ore); the other ore zone is wider, but lower grade. Formed partly by replacement of crushed country rock and partly by cementation of small fractures.

Midas (Copper Co.) -- Continued

Ore minerals are pyrite, chalcopyrite, and pyrrhotite; sphalerite may be present in nonmegascopic grains, but presence was not confirmed in assays. Gold and silver in assays.

Johnson, 1916 (B 642), p. 140 -- Considerable development and dead work, but no ore shipped, 1915.

Smith, 1917 (BMB 142), p. 38 -- Tramway to beach completed, 1915.

p. 40 -- Ore principally chalcopyrite in quartz and pyritic gangue.

Ore body strikes nearly E and dips 45° N; average width about 4-1/2 ft.

Data on tramway and ore bunkers. Drifting and dead work, 1915.

Smith, 1917 (BMB 153), p. 46-47 -- 14,000 tons of ore shipped to smelter at Anyox, B.C., 1916. Only high-grade ore mined. Data on equipment.

Brooks, 1918 (B 662), p. 44 -- Copper produced, 1916.

Johnson, 1918 (B 662), p. 184-185 -- Considerable underground development work, 1916. Regular shipments to smelter began in August.

Johnson, 1919 (B 692), p. 144, 147 -- Mining, 1917; considerable ore shipped.

Johnson, 1919 (B 692), p. 157 -- Data on transportation facilities.

p. 164-166 -- Ore contains considerable gold and silver in addition to copper. Ore hand sorted before shipment. All-American lode staked in 1901; development began in 1905; Jumbo lode located in 1906; development, 1911-13; major work begun in fall of 1913. Only property in Jack Bay area on which there was more than assessment work in 1917.

p. 168-171 -- Detailed account of history and ownership changes and description of surface improvements. Country rock chiefly black slate (some interbedded argillite, chert, graywacke, and quartzite) intruded by small greenstone bodies. Ore formed by impregnation and replacement of country rock and by cementation of small fractures; in eastward-striking shear zones. Jumbo lode is from a few inches to 20 ft. (average 3-4 ft.) wide and has been followed by workings 800 ft. into hillside; highest showing on surface about 650 ft. above lower tunnel. All-American lode wider, but of lower grade; exposed by open cuts. Minor showings of copper minerals in other shear zones, all of which are short and narrow. Metallic minerals include pyrite, chalcopyrite, chalmersite, pyrrhotite, and sphalerite; gold and silver in ore; quartz associated with sulfides; some secondary iron and copper minerals on surface.

Martin, 1920 (B 712), p. 33 -- Mining and development until September 1918, when it became impossible to ship ore; some diamond drilling after that.

Brooks, 1921 (B 714), p. 22 -- Deposit in shear zone in slate folded against hard graywacke.

Brooks, 1923 (B 739), p. 24 -- No work, 1921.

Moffit and Fellows, 1950 (B 963-B), p. 51-52 -- Most of data from Johnson, 1919 (B 692), p. 168-171. In 1943 surface improvements were practically all in ruins or had been removed.

Moffit, 1954 (B 989-E), p. 298 -- Was a producing copper mine. Ore in faulted sedimentary beds. Chalcopyrite principal copper mineral.

p. 302 -- Production greater than 1,000,000 pounds of copper.

Midas (Copper Co.) -- Continued

Rose, 1965 (GR 15), p. 1 -- Produced more than 1,000,000 pounds of copper. Mineralization reported to be related to greenstone intrusive body in slate and graywacke.

p. 5-12 -- In 1917, 21,000 tons of ore shipped contained 4.15% copper, 0.42 oz. silver a ton, and 0.062 oz. gold a ton. In 1918, 25,350 tons of ore contained 3.24% copper, 0.25 oz. silver a ton, and 0.05 oz. gold a ton. About 3,000 tons of ore shipped in 1919. Closing of mine in 1919 attributed to shortage of shipping space. Mine workings on Jumbo lode on 4 levels. In 1964 the third level was open and about 600 ft. long from portal to face; other levels caved at or fairly near portals; also were some surface excavations. All-American workings consisted of a shallow shaft (caved in 1964) and shallow trenches (badly sloughed in 1964). Country rock mainly black slate; some interbedded graywacke; greenstone body (some included slate) at least 300 ft. by 1,200 ft. as exposed south of workings. N-S fault probably cuts rocks about 1,000 ft. west of mine; might cut off ore body. Ore consists of sulfides with some quartz and narrow sulfide veinlets in shear zone in slate and graywacke; shear zone generally (but not everywhere) parallel to foliation; sulfide minerals include pyrite, pyrrhotite, chalcopyrite, sphalerite, and traces of galena. Sulfides sparse or absent more than a foot or two from veins. Tables give assay and analytical data on samples [data given above on composition of ore shipped probably more valuable for evaluating mineral deposit.]

p. 19 -- Summary of data given above.

Berg and Cobb, 1967 (B 1246), p. 69-70 -- Quotation from Moffit, 1954 (B 989-E).

Mulligan, 1974 (IC 8626), p. 21 -- Sheared and brecciated zones in late Cretaceous slate and graywacke near an intrusive greenstone body; chalcopyrite, pyrite, pyrrhotite, and sphalerite occur as replacements and disseminations. Jumbo lode developed by interconnected workings on 4 adit levels; shaft sunk 200 ft. below lowest (haulage) level. Regular shipments of mine-run and hand-sorted copper ore, 1914-19. 15 lode claims and 2 mill sites, all patented.

MacKevett and Holloway, 1977 (OF 77-169A), p. 80, loc. 32 -- References to Johnson, 1915 (B 622), Moffit and Fellows, 1950 (B 989-E), Rose, 1965 (GR 15). Mineralized shear zone averages about 1 m wide and is about 300 m long in black slate of Valdez Gp. near schistose greenstone. Submarine volcanogenic, hydrothermal deposit. A few other showings nearby.

MacKevett and others, 1978 (OF 78-1-E), p. 14 -- Only production from area was more than 450 [metric] tons (a million pounds) of copper; main ore zone about 1 m wide and 300 m long; contains some reserves. Recent exploration by industry. In area characterized by submarine volcanogenic copper deposits.

Millionaire

Copper, Gold, Lead

Prince William Sound district  
MF-438, loc. 23

Valdez (5.45, 3.95)  
61°13'N, 146°21'W

Summary: Quartz vein as much as about 2 ft. thick cuts slate and graywacke country rock; carries pyrite, pyrrhotite, chalcopyrite, galena, and visible gold. Developed by 130 or more feet of workings. Was some production of gold in 1937 and possibly some other years. Another tunnel was driven 450 ft. on a shear zone with some quartz and pyrite, but only a little gold.

Brooks, 1912 (B 520), p. 125 -- Irregular quartz vein 4-24 in. wide said to carry much gold; strikes about E and dips 70°-80° N; country rock slate and graywacke that strike about N 70° E and dip 60° N.

Brooks, 1913 (B 542), p. 35 -- Development continued, 1912.

Johnson, 1914 (B 592), p. 239 -- Assessment and development work, 1913.

Johnson, 1915 (B 622), p. 152-153 -- Located in 1910.

p. 165-166 -- 2 sets of workings. Upper is on a quartz vein 6-20 in. thick that strikes N 60° W and dips 70° N; about 130 ft. of workings and some stoping; ore contains pyrite, pyrrhotite, chalcopyrite, galena, and visible gold. Lower tunnel (100 ft. below upper) was driven 450 ft. on a shear zone containing numerous quartz stringers with a little pyrite; only a little gold reported.

Johnson, 1918 (B 662), p. 190 -- A little work, 1916.

Smith, 1939 (B 910-A), p. 28 -- Mining, 1937; a little production reported from small mill run by water power, 1937.

(Mineral Cr.)

Gold

Prince William Sound district  
MF-438, loc. 76, 77

Valdez (5.4-5.7, 2.55-3.6)  
61°09'-61°12'N, 146°19'-146°22'W

Summary: Sporadic small-scale placer mining for gold from as early as 1894 to as recently as 1914 or possibly a little later. Total production undoubtedly small.

Schrader, 1900, p. 421 -- Gravel at mouth of creek reported to have yielded fair pay before 1898.

Grant, 1906 (B 284), p. 86 -- Small amounts of placer gold reported from near mouth. No work in 1905.

Grant, 1909 (B 379), p. 97 -- Placer gold present; work was not really profitable.

Grant and Higgins, 1910 (B 443), p. 71-72 -- Has been a little placer mining; was some sluicing in 1894.

Brooks, 1912 (B 520), p. 121 -- Has been small-scale placer mining.

Johnson, 1915 (B 622), p. 158-159 -- Colors of gold in gravels; some gold has been recovered.

p. 186 -- In 1914 a little placer gold was recovered from sluicing on upper end of Mineral Cr. Also some test drilling.

Johnson, 1916 (B 642), p. 145 -- Hydraulic company did not operate, 1915. No more than assessment work elsewhere on creek.

Moxham and Nelson, 1952 (C 184), p. 4 -- Has been placer mining.

Moffit, 1954 (B 989-E), p. 283 -- Shallow stream gravels auriferous, but concentration not enough for extensive mining.

p. 307 -- Have been small mining operations.

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, loc. 63 -- References to Grant and Higgins, 1910 (B 443) and Johnson, 1915 (B 622).

Mineral King (near Valdez)

Gold(?)

Prince William Sound district

Valdez (5.7, 3.8)  
61°13'N, 146°20'W

Summary: Quartz vein about a foot thick was followed by a 30-ft. tunnel.  
Mouth covered by a slide by autumn, 1914.

Brooks, 1912 (B 520), p. 126 -- 30-ft. tunnel has been driven on quartz  
vein about a foot wide that strikes about N 40° W and is about verti-  
cal.

Johnson, 1915 (B 622), p. 168 -- Reference to above. In September 1914,  
tunnel mouth had been covered by a slide.

Minnie

Gold, Lead

Prince William Sound district  
MF-438, loc. 4

Valdez (3.0, 3.5)  
61°12'N, 146°38'W

Summary: Short tunnels and some surface stripping on a quartz fissure vein that contains pyrite, galena, and gold; country rock graywacke and argillite of Valdez Gp. About 4 tons of ore mined and milled in 1913.

Brooks, 1914 (B 592), p. 63 -- Small mill erected, 1913.

Johnson, 1914 (B 592), p. 238 -- Small mill erected; about 4 tons of ore said to have been milled, 1913. 4 short tunnels (longest 35 ft.) only development.

Johnson, 1915 (B 622), p. 180 -- Fissure in graywacke and argillite (bedding and schistosity strike N 84° E and dip 75° N; fissure strikes N 70° W and dips 55° S) contains 4-24 (average 9) in. of quartz. Metallic minerals are pyrite, galena, and gold. Developed by 3 or 4 tunnels (longest are 35 and 20 ft. long) and some surface stripping. Several attempts to ship ore to custom mills were stopped by accidents; 1-stamp mill installed in 1913 and run for about 25 days.

Johnson, 1918 (B 662), p. 192 -- Assessment work, 1916.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 3 -- References to Johnson, 1915 (B 622) and Johnson, 1918 (B 662). Quartz vein(s) cut graywacke and argillite of Valdez Gp.

Monte Carlo

Gold, Lead

Prince William Sound district  
MF-438, loc. 24

Valdez (5.55, 4.0)  
61°14'N, 146°20'W

Summary: Quartz vein as much as 5 ft. thick contains free gold, pyrite, and galena; country rock schistose graywacke of Valdez Gp. Developed by surface cuts from which 4 tons of ore was mined in 1913 and about 170 ft. of underground workings, most of which were not on vein.

Brooks, 1912 (B 520), p. 126 -- Staked on irregular body of quartz that can be traced for only about 50 ft., but in places is 8-9 ft. wide. Vein is iron-stained quartz (some drusy) with disseminated pyrite, some galena, and considerable gold in specimens from surface.

Johnson, 1915 (B 622), p. 168 -- Prospect on a quartz vein (maximum thickness 5 ft.) that is an offshoot of a larger vein (maximum thickness 15 ft.). Larger vein carries only a little pyrite; smaller vein carries pyrite, galena, and free gold. 2 levels of workings; lower (about 145 ft. long) did not reach vein; upper reached vein 36 ft. from portal. 4 tons of ore from surface cuts on smaller vein taken to Valdez in 1913. Country rock schistose graywacke that strikes N 70° E and dips about 70° N; smaller vein strikes about parallel to country rock, but has irregular dip.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 20 -- References to above. Country rock part of Valdez Gp.

Mountain Boy

Copper, Gold(?)

Chistochina district  
MF-438, loc. 72

Valdez (24.8, 12.15)  
61°40'N, 144°02'W

Summary: Veinlets and a few small bunches of bornite and chalcopyrite in Nikolai Greenstone about 150 ft. below base of Chitistone Ls.; malachite-stained fractures in adjacent greenstone. Only developments are several open cuts and a 10-ft. adit. Reported that free gold was panned from an iron-stained quartz vein on this or the neighboring Blue Bird claim. Includes reference to Montana Boy.

Moffit and Mertie, 1923 (B 745), p. 103 -- Bornite and a little chalcocite in greenstone near contact with limestone. Report that free gold was panned from an iron-stained quartz vein on this or the neighboring Blue Bird claim. Developed by open cuts and a short tunnel.

Van Alstine and Black, 1946 (B 947-G), p. 131 -- Veinlets and a few small, irregular bunches of bornite and chalcopyrite in [Nikolai] greenstone about 150 ft. below Chitistone Ls. Fractures in adjacent greenstone malachite stained. Largest vein is a few inches thick, strikes N 48° E, and is vertical; much of vein has been removed. Developments are several open cuts and a 10-ft. tunnel.

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, loc. 58 -- References to above.

Mountain King (Mining Co.)

Copper, Gold, Lead, Zinc

Prince William Sound district  
MF-438, loc. 29

Valdez (6.0, 3.85)  
61°13'N, 146°17'W

**Summary:** Vein made up of lenses of quartz joined by quartz stringers is as much as 18 in. thick, in schistose graywacke of Valdez Gp. Ore stoped from 3 levels of workings; a fourth level was being driven to intersect the vein at a lower elevation in 1914, the last year in which more than assessment work was reported. Metallic minerals in vein include pyrite, galena, chalcopyrite, sphalerite, and free gold. Had own mill, which processed more than 120 tons of ore in 1914. Was also some exploration of other generally similar veins in vicinity.

Brooks, 1914 (B 592), p. 63 -- Mill erected, 1913.

Johnson, 1914 (B 592), p. 239 -- Mill erected and 15-18 men doing development work, 1913. 3 tunnels, total length 630 ft.

Brooks, 1915 (B 622), p. 45 -- Gold produced, 1914.

Johnson, 1915 (B 622), p. 153 -- Located in 1911.

p. 163-164 -- Vein 1-18 in. thick in sheared graywacke opened up by 3 levels of workings, each consisting of a crosscut, and drifts and/or stopes. A fourth level is being driven to intersect the vein at a lower elevation. Vein consists of lenticular masses of quartz joined by quartz stringers; carries pyrite, galena, chalcopyrite, sphalerite, and free gold. In 1914 mill processed more than 120 tons of ore. Development work (about 200 ft. of tunnels) reported to have been done by same company on other claims nearby where the same minerals, with the addition of arsenopyrite, were reported.

Johnson, 1916 (B 642), p. 144 -- Only assessment work; mill idle, 1915.

Smith, 1917 (BMB 142), p. 42 -- Only assessment work, 1915.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 23 -- Reference to Johnson, 1915 (B 622). Deposit in schistose graywacke of Valdez Gp.

## Mountain Sheep

## Copper

Chistochina district  
MF-438, loc. 71

Valdez (24.55, 12.25)  
61°40'N, e44°03'W

Summary: Fractured Nikolai Greenstone about 60 ft. below base of Chitistone Ls. contains disseminated pyrite, bornite, and a little chalcopyrite; a few thin zones contain about 1% bornite. Some malachite staining. Developments consist of a 20-ft. adit and one or more small open cuts.

Moffit and Mertie, 1923 (B 745), p. 103 -- Greenstone contains bornite and a little chalcopyrite; malachite staining on surface. Several open cuts and tunnels in greenstone a short distance below contact with limestone.

Van Alstine and Black, 1946 (B 947-G), p. 130 -- 20-ft. adit about 60 ft. below Chitistone Ls. driven in shattered [Nikolai] greenstone which locally contains disseminated pyrite, bornite, and a little chalcopyrite. A few zones no more than 1 in. thick contain an estimated 1% (by volume) of bornite. Small open cut about 200 ft. from adit exposes similar small showings of copper minerals.

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, loc. 57 -- References to above.

Mountain View

Gold, Lead

Prince William Sound district  
MF-438, loc. 22

Valdez (5.85, 3.9)  
61°13'N, 146°18'W

Summary: Lode of iron-stained quartz and fragments of schistose graywacke country rock (Valdez Gp.) as much as 3 ft. thick. Contains visible specks of gold, pyrite, and a little galena. Has been surface stripping and a few tens of feet of underground work. No record of production.

Brooks, 1912 (B 520), p. 126 -- Lode consisting of 18 in. of massive, iron-stained quartz with some slate fragments and 18 in. of slate fragments and vein quartz; strikes about E and dips steeply N; intersected by tunnel at depth of 30 ft., where it is 30 in. thick. In tunnel lode was lost, but may be represented in a crosscut by a small vein. Gold content of lode reported to be much higher at outcrop than in tunnel.

Johnson, 1915 (B 622), p. 167-168 -- Restaked in 1914. Vein is from 8 in. to 3 ft. thick; some quartz stringers 2-3 in. thick extend into hanging wall. Country rock platy graywacke. About 30 ft. of vein stripped; specks of gold visible. Mineralized material carries very few sulfides, though at one place there is considerable pyrite and a little galena.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 23 -- Reference to Johnson, 1915 (B 622). In schistose graywacke of Valdez Gp.

(Mt. Chitty)

Copper, Gold, Silver

Chistochina district

Valdez

NE 1/4 NE 1/4 NE 1/4 quad.

Summary: Sample of bornite in quartz (probably from Nikolai Greenstone near contact with Chitistone Ls.) contained 4.52 oz. silver and 0.1 oz. gold per metric ton. Exact location of Mt. Chitty not known.

Mendenhall and Schrader, 1903 (P 15), p. 18 -- Selected sample of bornite in quartz from Mt. Chitty assayed 4.52 oz. silver and 0.1 oz. gold per metric ton.

Mendenhall, 1905 (P 41), p. 94 -- Same as above.

Berg and Cobb, 1967 (B 1246), p. 46 -- Data from above [not cited]; probably in Nikolai Greenstone near contact with Chitistone Ls.

Mullen

Copper, Gold, Silver

Chistochina district  
MF-438, loc. 70

Valdez (24.45, 12.35)  
61°41'N, 144°04'W

**Summary:** Open cut and more than 800 ft. of underground workings explored much-faulted Chitistone Ls. (Nikolai Greenstone in some of workings, but not exposed at surface) intruded by small bodies of diorite (now extensively altered). Veins as much as a foot thick, lenticular bodies, and irregular small bunches of pyrite, bornite, chalcopyrite, covellite, chalcocite, and secondary copper and iron minerals in quartz and calcite gangue. Sulfides replaced limestone. Resources estimated to be about 1,325 tons of material containing 1.55%-5.82% copper, a trace of gold, and as much as 0.28 oz. silver a ton. No record of production.

Moffit and Maddren, 1908 (B 374), p. 62-63 -- In Chitistone Ls. at foot of a cliff; Nikolai Greenstone not exposed at prospect. Limestone much broken, particularly near the many faults that cut it. Bornite and smaller amounts of chalcopyrite replaced broken limestone in veinlike bodies and irregular bunches. Azurite more common than malachite where sulfides have been oxidized. Explored by 3 open cuts.

Moffit, 1915 (B 622), p. 111-112 -- Summary of above data.

Moffit and Mertie, 1923 (B 745), p. 101-102 -- 3 claims near contact between [Chitistone] limestone and [Nikolai] greenstone; also cover or are close to fault contact of limestone and greenstone with black shales. Bornite, a little chalcopyrite, azurite, and malachite in limestone; exposed in several short tunnels and open cuts excavated as assessment work. In one open cut crushed limestone almost completely replaced by copper sulfides forms a poorly defined vein 12-18 in. thick, most of which has been removed.

Van Alstine and Black, 1946 (B 947-G), p. 126-129 -- Open cut and 800 ft. of underground workings, plus 2 inclined winzes of unknown depths and possibly some flooded workings on lower levels. Most of workings in Chitistone Ls.; Nikolai Greenstone in southern ends of some crosscuts. Small bodies of extensively altered diorite along contact and intrusive into both formations. Many generally NE-striking faults, some mineralized and others barren. Copper minerals in veins from 2 inches to a foot thick, in lenticular bodies, and in irregular small bunches. Sulfides include pyrite, bornite, chalcopyrite, covellite, and chalcocite; malachite, azurite, and limonite also present; gangue mainly quartz and calcite. Indicated reserves estimated at 1,263 tons of material containing 1.55% copper and 59 tons of material containing 5.82% copper, a trace of gold, and 0.28 oz. silver a ton. [No mention of any production.]

Berg and Cobb, 1967 (B 1246), p. 41 -- Data from Van Alstine and Black, 1946 (B 947-G) [not specifically cited].

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, loc. 57 -- References to Moffit and Mertie, 1923 (B 745) and Van Alstine and Black, 1946 (B 947-G).

(Nadina R.)

Gold(?), Platinum(?)

Chistochina district

Valdez

NW 1/4 NE 1/4 quad.

Summary: Reports of platinum and gold in valley of Nadina River, which drains Mt. Drum volcano and is choked by glacial deposits, unverified. Presence of any platinum or of much gold highly unlikely.

Mendenhall and Schrader, 1903 (P 15), p. 63-64 -- Since 1899 there have been extravagant claims of rich platinum- and gold-bearing sand in valley of Nadina R. Many claims staked and considerable fruitless work done. Valley choked with glacial material derived from volcanic rocks of Mt. Drum. Not a trace of gold or platinum in any of samples collected by Survey. [Not definitely stated, but conclusion to be drawn from description is that the whole thing was strictly promotional.]

Mendenhall, 1905 (P 41), p. 121-122 -- About the same as above.

National

Gold

Prince William Sound district  
MF-438, loc. 6

Valdez (1.35, 2.75) approx.  
61°09'N, 146°50'W approx.

Summary: Country rock is graywacke and argillite of Valdez Gp. No data on mineral deposit. A little gold mortared out, probably during assessment work, in 1915.

Johnson, 1916 (B 642), p. 143 -- Small amount of gold mortared out, 1915.  
p. 145 -- Assessment work, 1915.

MacKevett and Holloway, 1977 (OF 77-169-A), p. 78, loc. 4 --Reference to above. In graywacke and argillite of Valdez Gp.

Nymond

Gold(?)

Prince William Sound district

Valdez (3.0, 3.5) approx.  
61°12'N, 146°38'W approx.

Summary: Assessment work (or possibly a little more) reported, 1915 to 1917. No data on mineral deposit.

Johnson, 1916 (B 642), p. 144 -- Assessment work, 1915.

Johnson, 1918 (B 662), p. 191 -- One man worked part of summer, 1916.

Johnson, 1919 (B 692), p. 151 -- 2 men worked, 1917; about 100 ft. of tunnel said to have been driven.

Olson

Gold, Lead, Zinc

Prince William Sound district  
MF-438, loc. 4

Valdez (3.0, 3.5)  
61°12'N, 146°38'W

**Summary:** Some development from 1913 to 1917; about 250 ft. of underground workings. Quartz veins cutting schistose graywacke and argillite contain pyrite, galena, sphalerite, and almost certainly gold (no data on tenor of ore) in gangue of quartz and a brown-weathering carbonate. Includes references to Bald Mountain.

Johnson, 1914 (B 592), p. 238 -- Developments in 1913 included 173 ft. of underground workings, some stripping, and some open cuts.

Johnson, 1915 (B 622), p. 153 -- Located in 1911.

p. 179-180 -- Country rock is schistose graywacke and argillite; schistosity and bedding strike N 60°-80° E and dip 70°-77° N. Cut by several veins, 2 of which have had some development work. Veins strike about N 75° W; upper one dips 65° N and is from 4-18 in. wide; other is as much as 7 ft. wide. Developments include 216 ft. of tunnels and drift. Ore is pyrite, sphalerite, and galena [and probably gold] in gangue of quartz and a brown-weathering carbonate.

Johnson, 1916 (B 642), p. 144 -- One man doing development work, 1915.

Johnson, 1918 (B 662), p. 191 -- 30-35 ft. of drifting accomplished, 1916.

Johnson, 1919 (B 692), p. 151 -- Work reported, 1917.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 3 -- Reference to Johnson, 1915 (B 622). Quartz veins in graywacke and argillite of Valdez Gp.

Olson & Wood(s)

Gold(?)

Prince William Sound district

Valdez (5.65, 3.5) approx.  
61°12'N, 146°20'W approx.

Summary: Tunnel driven 200 ft. to intersect a 4-ft. shear zone in slate that is permeated by quartz stringers. No data on whether tunnel reached shear zone or on tenor of ore, if any. Includes reference to Oleson & Woods.

Brooks, 1912 (B 520), p. 126-127 -- Crushed zone in slate trends N 25° W and dips 70° E; permeated by iron-stained quartz veins no more than 1 ft. thick.

Johnson, 1914 (B 592), p. 239 -- Assessment and development work, 1914.

Johnson, 1915 (B 622), p. 170 -- Reference to Brooks, 1912 (B 520).  
Tunnel reported to be 200 ft. long; being driven to intersect a 4-ft. shear zone that contains many irregularly distributed quartz stringers.

Opal

Gold, Lead, Silver, Zinc

Nelchina district  
MF-438, loc. 54

Valdez (19.7, 9.6) approx.  
61°32'N, 144°39'W approx.

Summary: Quartz veins less than 1 m thick in schist of Skolai Gp. and Jurassic(?) granitic rocks contain arsenopyrite, pyrite, galena, sphalerite, gold, and silver. Hydrothermal deposit. Probably has been recent minor production.

MacKevett and Holloway, 1977 (OF 77-169A), p. 81, loc. 45 -- Hydrothermal deposit consisting of quartz veins generally less than 1 m thick cutting schist of Skolai Gp. and Jurassic(?) granitic rocks contains arsenopyrite, pyrite, galena, and sphalerite. Resources listed as gold, silver, lead, and zinc. Probably has been recent minor production.

Orion

Gold(?)

Prince William Sound district

Valdez (4.2, 0.0)  
61°00'N, 146°30'W

Summary: Quartz vein traceable for about 75 ft. contains arsenopyrite and pyrrhotite; no data on gold content, if any. Explored by tunnel about 75 ft. long. Country rock graywacke and a little argillite.

Johnson, 1919 (B 692), p. 173 -- Curving quartz vein 1-10 in. thick in graywacke with a little argillite; traceable for about 75 ft. in beach and a tunnel with a total length of about 75 ft. Arsenopyrite and pyrrhotite only metallic minerals visible. Some of quartz is banded parallel to well-defined walls of vein.

Owl (Mining Co.)

Copper, Gold(?), Lead, Zinc

Prince William Sound district  
MF-438, loc. 19

Valdez (4.0, 2.65)  
61°09'N, 146°32'W

**Summary:** Quartz stringers and lenses in a shear zone in graywacke and argillite of Valdez Gp. contain pyrite, chalcopyrite, galena, and sphalerite in quartz-calcite-chlorite gangue. Gold probably present; no data on tenor. Developed by about 190 ft. of underground workings.

Brooks, 1913 (B 542), p. 35 -- As of 1912 developments reported to consist of 230 ft. of adit.

Johnson, 1915 (B 622), p. 180-181 -- Sheeted or sheared zone in graywacke and argillite (strike of schistosity N 85° E, dip 55° N) is several feet wide and contains several large stringers and lenses of quartz as much as 18 in. thick; zone strikes about NW and dips 30° E; can be traced for about 150 ft. along strike. Pyrite, chalcopyrite, galena, and sphalerite in gangue of quartz, calcite, and chlorite; limonite and malachite in weathered outcrops. Underground developments total about 190 ft.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 66 -- Reference to Johnson, 1915 (B 622). Country rock part of Valdez Gp.

Palmer

Gold

Prince William Sound district  
MF-438, loc. 10

Valdez (3.1, 2.5)  
61°08'N, 146°38'W

Summary: Shear zone in rocks of Valdez Gp. contains pyritiferous quartz stringers; free gold reported. Explored by 100-ft. tunnel.

Brooks, 1912 (B 520), p. 124 -- Said to be on same fissure as I.X,L.; zone of crushed rock 2-1/2 - 4-1/2 ft. wide strikes about N 60° W and is nearly vertical; hanging wall defined by slickenside; footwall not as well marked; gouge on hanging wall side. Zone of crushed rock permeated by pyritiferous quartz stringers; said to carry free gold. Explored by 100-ft. tunnel.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 7 -- Reference to above. Country rock Valdez Gp.

Patten Mining Co.

Gold(?)

Prince William Sound district

Valdez (5.0, 1.5) approx.

61°05'N, 146°25'W approx.

Summary: 160-ft. adit reported to have been driven on auriferous quartz veins in 1917. No data on tenor or mode of occurrence. Includes references to: Golden, Happy Days.

Johnson, 1919 (B 692), p. 151 -- Development reported, 1917; force of 6 or 7 men.

Mulligan, 1974 (IC 8626), p. 21 -- Gold-bearing veins being actively explored in 1917; adit, reported to be 160 ft. long, driven and other work done. May have been restaked as Golden and Happy Days in 1954.

Peacock

Copper

Chistochina district  
MF-438, loc. 70

Valdez (24.45, 12.35)  
61°41'N, t44°04'W

Summary: Malachite- and azurite-stained amygdaloidal Nikolai Greenstone about 200 ft. below base of Chitistone Ls. contains a few grains and veinlets of bornite, chalcocite, and pyrite. Brecciated greenstone cemented by calcite, epidote, and bornite. Adit caved 40 ft. from portal; no data on total length.

Moffit and Mertie, 1923 (B 745), p. 103 -- Tunnel started in greenstone stratigraphically near base of limestone. Greenstone impregnated with bornite and a little chalcocite.

Van Alstine and Black, 1946 (B 947-G), p. 130 -- Adit (caved 40 ft. from portal) in amygdaloidal [Nikolai] greenstone about 200 ft. below base of Chitistone Ls. Specimens from adit, dump, and outcrops contain a few grains and veinlets (maximum thickness 1 in.) of pyrite, bornite, and chalcocite; some of greenstone stained by malachite and azurite. Greenstone above adit brecciated and cemented by calcite, epidote, and bornite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, loc. 57 -- References to above.

Pinochle

Gold

Prince William Sound district  
MF-438, loc. 35

Valdez (7.4, 3.6)  
61°12'N, 146°08'W

Summary: Fissures in graywacke and argillite of Valdez Gp. contain variable amounts of quartz (as much as 3 ft.). Pyrite only visible sulfide. In view of the more than 200 ft. of underground workings it seems almost certain that there is some gold present, even though probably not in economic amounts.

Johnson, 1915 (B 622), p. 153 -- Located in 1911.

p. 161-162 -- Country rock closely folded graywacke and argillite; strikes (at mouth of adit) N 67° W and dips 86° N. Vertical fissure strikes N 30°-60° W; traceable for 110 ft. on surface; 4-36 in. wide; contains widely varying thickness of quartz (from practically none to as much as 3 ft.). Developed by a short tunnel on fissure, a 115-ft. crosscut, a 10-ft. shaft, and some stripping. In face of crosscut is a vertical shear zone striking N 85° W with a width of quartz of 12 in. in floor of crosscut. Pyrite only recognizable sulfide.

Johnson, 1916 (B 642), p. 143 -- Lower tunnel said to have been extended 60 or 70 ft. and to have cut vein, 1915.

Johnson, 1918 (B 662), p. 190 -- In 1916 two men drifted about 40 ft. on vein.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 27 -- Reference to Johnson, 1915 (B 622). Small quartz veins and lenses in graywacke and argillite of Valdez Gp.

Portland (near Tiekel)

Gold

Nelchina district  
MF-438, loc. 46

Valdez (14.55, 5.2) approx.  
61°18'N, 145°18'W approx.

Summary: Small gold-bearing quartz veins in altered slate and graywacke of Valdez Gp. cut by light-colored dikes of diorite porphyry. Claims located before 1916.

Moffit, 1918 (B 662), p. 177 -- Group of claims on small gold-bearing quartz veins high on mountain west of [Tiekel] R. Country rock in general area is much-altered slate and graywacke cut by light-colored dikes of diorite porphyry.

Mulligan, 1974 (IC 8626), p. 19 -- Gold-bearing quartz veins located before 1916.

MacKevett and Holloway, 1977 (OF 77-169A), p. 80, loc. 38 -- Reference to Moffit, 1918 (B 662). Thin quartz veins and lenses in rocks of Valdez Gp.

(Ptarmigan)

Tungsten

Nelchina district  
MF-438, loc. 83

Valdez (11.7, 3.35)  
61°11'N, 145°37'W

Summary: Trace of scheelite in stream-sediment sample.

Jasper, 1967 (GC 15), p. 10 (loc. 31) -- Concentrate from stream-sediment sample contained magnetite, pyrite, zircon, and one grain of scheelite. In graywacke and slate terrane; graywacke, argillite, slate, and greenstone in float in creek.

(Quartz Cr.)

Copper, Gold, Lead

Nelchina district  
MF-438, locs. 50, 89

Valdez (13.35-13.85, 7.4-8.85)  
61°25'-61°30'N, 145°21'-145°24'W

Summary: Quartz veins 1-2 ft. thick in black schist and banded quartz and graywacke of Valdez Gp. cut by diorite porphyry dikes carry arsenopyrite, galena, and chalcopyrite; gold undoubtedly present, but no data on amount; explored by open cuts and tunnels 175 and 65 ft. long (MF-438, loc. 50). Near mouth of Bear Cr. (MF-438, loc. 89) 50-60 oz. of placer gold was mined in 1898-99; probably concentrated from glacial deposits.

Rohn, 1900, p. 402 -- Gold discovered, August 1898.

p. 326-437 -- Has been considerable work; has not been economically successful because of thick glacial drift.

Schrader, 1900, p. 422 -- Coarse gold was found; some men wintered at Quartz Cr., 1899.

Schrader and Spencer, 1901, p. 90 -- Gold discovered, 1898. Probably concentrated from glacial deposits. Production probably not more than \$1,200 [as of 1901].

Mendenhall and Schrader, 1903 (P 15), p. 63 -- Quotation from Schrader and Spencer, 1901.

Mendenhall, 1905 (P 41), p. 121 -- Quotation from Schrader and Spencer, 1901.

Moffit, 1918 (B 662), p. 179-180 -- Rocks in upper part of valley are slate, highly siliceous and crumpled schist, and graywacke; rocks exposed in mountains NE of creek below Rainbow Cr. are slate, altered dioritic rocks, and crystalline limestone and are probably older than those farther upstream (Carboniferous in part (?)). Was considerable placer mining near mouth of Bear Cr. [MF-438, loc. 89] in 1898-99; mined out. Lode prospect [MF-438, loc. 50] explored by 2 tunnels 175 and 65 ft. long. Many mineralized quartz veins, some carrying arsenopyrite, galena, and chalcopyrite, are in black schist and banded quartz and graywacke cut by diorite porphyry dikes. One iron-oxide-stained vein is 1-2 ft. thick and can be traced for at least 400 ft. [No data on gold content.]

Moffit, 1935 (B 866), p. 35-36 -- Reference to Moffit, 1918 (B 662). Lode claims have been abandoned. Placer claims staked and a little work done in about 1898; soon abandoned.

Moffit, 1938 (B 894), p. 127 -- Placer gold (a little produced in 1898-99) probably derived from quartz veins in N-S joints in slate and graywacke.

Cobb, 1973 (B 1374), p. 29 -- Placer deposit mined out, 1898-99.

Mulligan, 1974 (IC 8626), p. 18 -- Small production reported, 1898-99; limited later activity. Data on lode deposits from Moffit, 1918 (B 662).

McKevett and Holloway, 1977 (OF 77-169A), p. 80, locs. 41, 69 -- References to Moffit, 1918 (B 662). In terrane of Valdez Gp. rocks.

Queen of Sheba

Gold(?)

Prince William Sound district

Valdez (5.85, 3.2) approx.  
61°11'N, 146°19'W approx.

Summary: 36-ft. tunnel driven on shattered quartz vein that contains a little pyrite. No data on possible gold content.

Johnson, 1915 (B 622), p. 169-170 -- Tunnel driven N 58° W for 36 ft. on a generally vertical vein 1 to 6-1/2 ft. wide. Vein matter is shattered iron-stained quartz containing only a small amount of pyrite. Vein exposed on surface for about 60 ft.

Quitsch

Gold, Lead

Prince William Sound district  
MF-438, loc. 21

Valdez (5.9, 4.75)  
61°16'N, 146°18'W

Summary: Minor exploration in 1914 of a quartz vein in graywacke of Valdez Gp. Metallic minerals include galena, pyrite, and free gold. See also Little Giant, which Quitsch operated in 1929.

Johnson, 1915 (B 622), p. 167 -- In 1914 about 12 ft. of tunnel was driven on a vein in graywacke. Specimens of ore show quartz, galena, pyrite, and a small amount of free gold.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 18 -- Reference to above. Vein in graywacke of Valdez Gp.

Rambler (Gold Mining Co.)

Gold

Prince William Sound district  
MF-438, loc. 5

Valdez (3.2, 3.6)  
61°12'N, 146°37'W

Summary: About 400 ft. of workings on an auriferous quartz vein in rocks of Valdez Gp. Small shipment of ore for mill test in 1916. No data on tenor or mineralogy of ore; no description of deposit.

Johnson, 1914 (B 592), p. 238 -- Work in 1913; total length of workings is about 268 ft.

Johnson, 1915 (B 622), p. 153 -- Located in 1911.  
p. 183 -- Same as Johnson, 1914 (B 592).

Johnson, 1918 (B 662), p. 190 -- Small test shipment, 1916.  
p. 192 -- 150 ft. of tunnel driven and small shipment of ore for mill test, 1916.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 3 -- Reference to Johnson, 1918 (B 662). In graywacke and argillite of Valdez Gp.

Ramsay-Rutherford (Gold Mining Co.)      Copper, Gold, Lead, Silver, Zinc

Prince William Sound district      Valdez (7.6, 3.6)  
MF-438, loc. 36      61°12'N, 146°06'W

Summary: Quartz fissure veins in rocks (mainly graywacke) of Valdez Gp. contain gold, silver, pyrrhotite, pyrite, chalcopyrite, sphalerite, galena, and arsenopyrite(?); veins as much as 6 ft. thick; gangue is mainly quartz, with some carbonates and crushed country rock. Mined from about 1914 to 1935 (with some interruptions); amount of production no known. Mine consisted of extensive workings (certainly more than 1,500 ft.) on several levels; had own mill. One of major gold mines of district.

Brooks, 1913 (B 542), p. 35 -- 2 intersecting auriferous quartz veins 1-7 ft. thick reported. One vein exposed in workings 90 ft. below surface is 2 or more ft. wide.

Johnson, 1914 (B 592), p. 239 -- Developments as of October 1913, reported to have included a 130-ft. shaft and 400-500 ft. of tunnels and drifts.

Brooks, 1915 (B 622), p. 45 -- Mill installed and some gold produced, 1914.

Johnson, 1915 (B 622), p. 153 -- Located in 1911.

    p. 159-161 -- Main lode is a steeply dipping quartz fissure vein that strikes E to SE and is as much as 6 ft. (average about 2-1/2 to 3) ft. wide; in graywacke with a little argillite; strikes E and dips 75° N. In most places vein contains very little sulfide, but in some places there are bunches of nearly solid sulfide (mainly pyrrhotite). Metallic minerals are gold, pyrrhotite, pyrite, chalcopyrite, sphalerite, and galena; silver present, probably alloyed with the gold; arsenopyrite also reported. A second vein that averages 3-1/2 ft. in width exposed in an open cut. Workings on main vein include a 162-ft. shaft, 300 ft. of drifts, 190 ft. of crosscuts, and stopes between the 50-ft. level and the surface. Mill installed in 1914 and operated for 5-6 weeks before freezeup.

Johnson, 1915 (B 642), p. 141 -- Second largest gold producer in Prince William Sound, 1915.

    p. 143 -- Mine and mill operated from June to December, 1915. Mill-level crosscut driven 742 ft. to vein about 310 ft. below outcrop. 1,400 or more ft. of underground workings plus stopes.

Smith, 1917 (BMB 142), p. 42 -- Mainly data on mill.

Smith, 1917 (BMB 153), p. 49 -- Data on mining and milling practices.

Brooks, 1918 (B 662), p. 44 -- One of 2 largest lode-gold producers in district, 1916.

Johnson, 1918 (B 662), p. 190 -- Mining and milling, 1916.

Johnson, 1919 (B 692), p. 149-151 -- Operated part of year; closed down in June 1917; still was one of 2 most productive gold mines in district.

Brooks and Capps, 1924 (B 755), p. 28-29 -- Gold reported to have been produced, 1922; may have resulted from work done in 1921.

Smith, 1926 (B 783), p. 8 -- Largest gold producer in district, 1924.

Moffit, 1927 (B 792), p. 10 -- Has been small production for last 3 years, 1925.

Smith, 1929 (B 797), p. 11 -- Production, 1926.

Smith, 1930 (B 810), p. 16 -- Production reported, 1927.

Smith, 1930 (B 813), p. 18 -- New lease taken on property, 1928.

Ramsay-Rutherford (Gold Mining Co.) -- Continued

Smith, 1932 (B 824), p. 22 -- Development reported, 1929.

Smith, 1933 (B 836), p. 22 -- Production, 1930; "a good deal of ore has been blocked out."

Smith, 1936 (B 868-A), p. 22 -- Production reported, 1934.

Smith, 1937 (B 880-A), p. 22, 24 -- Production, 1935.

Smith, 1939 (B 910-A), p. 28 -- No mining, 1937.

Smith, 1941 (B 926-A), p. 26 -- No mining, 1938.

Moffit, 1954 (B 989-E), p. 304 -- Has been productive gold mine.  
p. 306 -- Essentially the same data as in Johnson, 1915 (B 622),  
p. 159-161; summarized.

Berg and Cobb, 1967 (B 1246), p. 72 -- Lodes in graywacke and argillite;  
consist of veins a few inches to several ft. thick of quartz and  
subordinate calcite and siderite(?) and crushed country rock; con-  
tain small amounts of gold, silver, pyrrhotite, pyrite, chalcopyrite,  
sphalerite, and galena.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 28 -- References to  
Johnson, 1915 (B 622) and Moffit, 1954 (B 989-E). Quartz veins, locally  
brecciated, cut rocks (chiefly graywacke) of Valdez Gp.

Reis

Gold

Nelchina district  
MF-438, loc. 47

Valdez (14.3, 5.4) approx.  
61°17'N, 145°17'W approx.

Summary: Small gold-bearing quartz vein(s) in much-altered slate and graywacke of Valdez Gp. cut by light-colored diorite porphyry dikes. Claims located before 1916.

Moffit, 1918 (B 662), p. 177 -- Prospect on small gold-bearing quartz vein(s) about 3 mi. south of Tiekel Road House. Country rock in general area is much-altered slate and graywacke cut by light-colored dikes of diorite porphyry.

Mulligan, 1974 (IC 8626), p. 19 -- Claims located before 1916 on auriferous quartz veins.

MacKevett and Holloway, 1977 (OF 77-169A), p. 80, loc. 39 -- Reference to Moffit, 1918 (B 662). Thin quartz veins and lenses in Valdez Group.

Rose

Copper(?), Gold, Lead

Prince William Sound district  
MF-438, loc. 29

Valdez (6.0, 3.85)  
61°13'N, 146°17'W

**Summary:** Quartz vein as much as 18 in. thick in schistose graywacke of Valdez Gp. contains gold, pyrite, galena, and possibly chalcopyrite (reference that lists chalcopyrite not clear). Some underground work and surface stripping. Minor production; amount not known. Includes reference to Rose Quartz.

Johnson, 1915 (B 622), p. 168-169 -- Staked in 1913 or 1914. Country rock is graywacke with slaty cleavage that strikes about E and dips steeply (but variably) to N. Quartz vein from 1 to 18 in. thick strikes N 85° W; contains gold, pyrite, and galena. Crosscut 36 ft. long said to tap vein at depth of 40 ft. Vein stripped for 40 ft. to a depth of 8 ft. About a ton of ore was milled in Valdez in 1914.

Johnson, 1918 (B 662), p. 190 -- Assessment work, 1916.

Smith, 1936 (B 868-A), p. 22 -- Production reported, 1934.

Smith, 1937 (B 880-A), p. 22 -- Production reported, 1935.

p. 24 -- Ore bodies at Little Giant and Rose Quartz are quartz veins containing chalcopyrite, pyrite, galena, and gold. Not being mined in 1935; mill being installed underground. [References to this and other claims of C. W. Poy seem to be a little confused, both as to when there was mining, and where it was. Also, chalcopyrite may have been at Little Giant only.]

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 23 -- References to Johnson, 1915 (B 622) and Smith, 1937 (B 880-A). In schistose graywacke of Valdez Gp.



Ross

Gold, Lead

Nelchina district  
MF-438, loc. 45

Valdez (13.9, 5.75)  
61°19'N, 145°21'W

Summary: Gold-bearing quartz vein in crumpled and sheared black siliceous slate of Valdez Gp. near felsic dikes contains gold, arsenopyrite, and galena. Some very high gold assays, but values are bunchy. Tunnel driven about 200 ft. on vein in or before 1916.

Moffit, 1918 (B 662), p. 178 -- Gold-bearing vein in crumpled and sheared black siliceous slate. Tunnel about 200 ft. long driven on vein.

Vein made up of quartz, arsenopyrite, and galena; some very high gold assays, but values "bunchy."

Mulligan, 1974 (IC 8626), p. 19 -- Data from above.

MacKevett and Holloway, 1977 (OF 77-169A), p. 80, loc. 37 -- Reference to Moffit, 1918 (B 662). Thin quartz veins and lenses in siliceous rocks of Valdez Gp. near felsic dikes. Quartz contains minor gold, arsenopyrite, and galena.

Rough & Tough

Gold, Silver

Prince William Sound district  
MF-438, loc. 1

Valdez (2.75, 3.65)  
61°12'N, 146°47'W

Summary: Quartz veins in slate and graywacke of Cretaceous Valdez Gp. and a body of Tertiary diorite contain iron sulfide mineral or minerals, gold, and silver. Has been minor production. Mine consists of at least 90 ft. of tunnel and an open cut. Includes reference to Ruff & Tuff.

Smith, 1937 (B 880-A), p. 25 -- Mineralized quartz veins at and near contact of a granite intrusive and graywacke and slate. No underground work has been done, but in 1935 several tons of ore was recovered from open cuts. Ore contains gold and silver and sulfide minerals [which not specified] commonly found with auriferous veins of the district.

Smith, 1939 (B 910-A), p. 27 -- Work continued in 1937. On nunatak in Columbia Glacier. Slate and graywacke country rock intruded by a body of diorite that is exposed at the surface and has an outcrop length of 465 ft. and a width of 56 ft. Fractures in country rock and intrusive filled with quartz that contains gold, silver, and sulfide (mainly iron) minerals. Development work includes an open cut and 90 ft. of tunnel. Access by airplane.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 1 -- Reference to Smith, 1939 (B 910-A). Thin pyrite-bearing quartz veins in slate and graywacke of Valdez Gp. (Cretaceous) and Tertiary diorite. Minor production.

Prince William Sound district Valdez (3.6, 2.6)  
MF-438, loc. 14 61°09'N, 146°35'W

Summary: Quartz fissure veins cut graywacke and argillite of Valdez Gp.; contain pyrite, galena, gold, pyrrhotite, chalcopyrite, and sphalerite in quartz-carbonate-chlorite gangue. At least 725 ft. of underground workings and some surface excavations. Mill and many other surface improvements probably were never used. Only recorded production was a small test shipment in about 1914. All work between about 1913 and 1916.

Johnson, 1914 (B 592), p. 239 -- In October 1913, underground workings consisted of 2 tunnels, 50 and 238 ft. long, open cuts, and stripping.

Johnson, 1915 (B 622), p. 178-179 -- Developments consist of a 265-ft. cross-cut tunnel with a 4-ft. winze and a 10-ft. raise, a 50-ft. crosscut tunnel, a shallow shaft, and surface excavations. Country rock is schistose graywacke and argillite that strike N  $60^{\circ}$ - $80^{\circ}$  E and dip  $60^{\circ}$  N. Several fissure veins cut across schistosity and are from a fraction of an inch to as much as 11 ft. wide. One quartz lens is 10 ft. thick; pinches out in raise above tunnel; most of lenses in fissures are much thinner. Metallic minerals reported are pyrite, galena, gold, pyrrhotite, chalcopyrite, and sphalerite; gangue made up of quartz, calcite, another carbonate, and chlorite; some limonite and malachite oxidation products. Has been a small shipment of ore to Seattle for mill test.

Johnson, 1916 (B 642), p. 144 -- 25-ft. raise driven, 1915.

Smith, 1917 (BMB 153), p. 49 -- Mill and other surface improvements erected by parties who had property under bond, 1916; gave up option late in season.

Johnson, 1918 (B 662), p. 191 -- 400 ft. of drifting and extensive surface improvements, 1916.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 11 -- Reference to Johnson, 1915 (B 622). In schistose graywacke and argillite of Valdez Gp.

Sealy-Davis (Mining Co.)

Copper, Gold, Lead, Zinc

Prince William Sound district  
MF-438, loc. 15

Valdez (3.65, 2.2)  
61°08'N, 146°34'W

Summary: Quartz fissure vein as much as 2 ft. thick cuts schistose graywacke and argillite of Valdez Gp. Metallic minerals in vein include gold, pyrite, arsenopyrite, chalcopyrite, sphalerite, galena, and pyrrhotite. More than 1,500 ft. of underground workings and some surface excavations, 1911 to about 1915. Two ore shipments reported.

Brooks, 1912 (B 520), p. 124 -- Vein said to have been opened by 3 cross-cuts. Not visited by Brooks.

Brooks, 1913 (B 542), p. 35 -- Developments reported, 1912.

Johnson, 1914 (B 592), p. 239 -- Development work, 1913.

Johnson, 1915 (B 622), p. 152-153 -- Located in 1910.

p. 174-175 -- Country rock is schistose graywacke with a little argillite; schistosity strikes about west and dips 55° N. Deposit is a fissure vein as much as 2 ft. thick; strikes N 23°-35° W and dips 75° E to 85° W; extends over a vertical distance of at least 225 ft. Workings on 4 levels have a length of at least 1,500 ft.; some stopes; some stripping and open cuts. Two ore shipments have been reported. Metallic minerals in vein include gold, pyrite, arsenopyrite, chalcopyrite, sphalerite, galena, and pyrrhotite in quartz, chlorite, and calcite gangue.

Johnson, 1916 (B 642), p. 144 -- 200 ft. of drifting, 1915.

Smith, 1917 (BMB 142), p. 42 -- Vein has average width of about 42 in.; strikes N 50° W, and dips 61° SW. Opened by 60-ft. open cut, 2 drifts, and a crosscut; total depth on vein of about 450 ft. [These data are at considerable variance with those in above reference.]

Smith, 1917 (BMB 153), p. 49-50 -- About the same data as in Smith, 1917 (BMB 142).

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 12 -- Reference to Johnson, 1915 (B 622). Quartz vein cuts graywacke and argillite of Valdez Gp.

(Shoup Bay)

Gold

Prince William Sound district

Valdez (3.5, 2.5) approx.  
61°08'N, 146°35'W approx.

Summary: Some coarse gold was sluiced out, probably all before 1900. Includes references to: (Canyon Creek Bay) [old name for Shoup Bay], streams near Shoup Glacier.

Schrader, 1900, p. 421-422 -- Some coarse gold has been sluiced.

Grant, 1906 (B 284), p. 86 -- Small amount of placer gold reported from creeks entering bay. No work in 1905.

Grant, 1909 (B 379), p. 97 -- Placer gold present; work was not really profitable.

Grant and Higgins, 1910 (B 443), p. 71 -- A little placer gold has been recovered.

Shoup Bay Mining Co.

Gold, Lead, Silver

Prince William Sound district  
MF-438, loc. 11

Valdez (3.25, 2.4)  
61°08'N, 146°37'W

Summary: Prospect on fissure in slate of Valdez Gp. Fissure is as much as 18 in. wide and contains slate fragments and quartz that carry pyrite, galena, a little gold and considerable silver.

Brooks, 1912 (B 520), p. 123 -- Fissure as much as 18 in. wide is traceable for over half a mile from tidewater; strikes about N 10° W and dips 70°-80° W. Hanging wall well defined and slickensided; made up of slate fragments and quartz; carries pyrite and galena; very little gold, but considerable silver. Silver Gem and Shoup Bay Mining Co. are about half a mile apart on this fissure.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 8 -- Reference to above. Country rock Valdez Gp.

Silver Gem

Antimony, Gold, Lead, Silver, Zinc

Prince William Sound district  
MF-438, loc. 11

Valdez (3.2, 2.4)  
61°08'N, 146°37'W

**Summary:** Fissure in schistose graywacke of Valdez Gp. has average thickness of 2-1/2 ft. and contains sheared country rock and small stringers and lenses of quartz. Metallic minerals include pyrite, arsenopyrite, sphalerite, stibnite, galena, and free gold; ore contains considerable silver, but very little gold. Developed by 500-ft. adit. Ore shipment reported.

Brooks, 1912 (B 520), p. 123 -- Fissure as much as 18 in. wide is traceable for over half a mile from tidewater; strikes about N 10° W and dips 70°-80° W. Hanging wall well defined and slickensided; made up of slate fragments and quartz; carries pyrite and galena; very little gold, but considerable silver. Silver Gem and Shoup Bay Mining Co. are about half a mile apart on this fissure.

Johnson, 1915 (B 622), p. 152-153 -- Located in 1910.

p. 157 -- Stibnite present.

p. 179 -- Country rock is schistose graywacke; schistosity strikes N 68°-88° E and dips 62°-66° N. Fissure strikes from N 10° W to N 35° E and dips from 55° to 80° W. Fissure filling 6 in. to 9 ft. (average about 2-1/2 ft.) thick. In places country rock is impregnated with pyrite. Fissure filling is crushed and shattered country rock with varying amounts of quartz in small stringers and lenses. Metallic minerals observed in ore are pyrite, arsenopyrite, sphalerite, and stibnite; galena and gold reported. Shipments of ore to custom mill in Valdez reported. Developed by 500-ft. adit.

Brooks, 1916 (B 649), p. 61 -- Reference to Johnson, 1915 (B 622).

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 8 -- References to Brooks, 1912 (B 520), and Johnson, 1915 (B 622). Country rock in Valdez Gp.

Slide

Gold

Prince William Sound district

Valdez (5.9, 4.75)(?)  
61°16'N, 146°18'W(?)

Summary: Small shipment of ore from Slide gold-quartz claim reported, 1917.  
No other mention of this property; may also have been known by  
another name.

Johnson, 1919 (B 692), p. 150-151 -- Small shipment of ore from Slide gold-  
quartz claim near head on Mineral Cr., 1917.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 20 -- Reference to  
above. In slate and graywacke of Valdez Gp.

(Solomon Gulch) (Basin)

Gold

Prince William Sound district  
MF-438, loc. 78

Valdez (6.05, 0.85) approx.  
61°03'N, 146°17'W approx.

Summary: A little generally unsuccessful small-scale placer mining at about the turn of the century. See also Midas.

Schrader, 1900, p. 421 -- Placer deposits reported to have yielded fair pay.

Grant, 1906 (B 284), p. 86 -- Gravels explored several years ago [as of 1905] for gold; evidently without success.

Grant, 1909 (B 379), p. 97 -- Placer gold present; work was not really profitable.

Grant and Higgins, 1910 (B 443), p. 71-72 -- Placer claims staked in 1898 and a little sluicing attempted. A later plan for extensive placer mining in upper part of Gulch was not completed.

Moffit, 1954 (B 989-E), p. 308 -- Was very small-scale unsuccessful placer mining many years ago.

Mulligan, 1974 (IC 8626), p. 21 -- Gold placers explored before 1914; not mined on a significant scale.

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, loc. 64 -- Reference to Moffit, 1954 (B 989-E).

Spanish

Gold

Prince William Sound district  
MF-438, loc. 11

Valdez (3.25, 2.4)  
61°08'N, 146°37'W

Summary: On same fissure as I.X.L. Vein as exposed is about a foot wide and includes brecciated slate of Valdez Gp., quartz, pyrite, and (reportedly) gold. No data on tenor.

Brooks, 1912 (B 520), p. 124 -- On same fissure as I.X.L. prospect. Fissure strikes N 70°-85° W; both walls slickensided. Vein as so far exposed is about a foot wide and includes brecciated slate, quartz, pyrite, and (reportedly) free gold.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 8 -- Reference to above. In rocks of Valdez Gp.

Spirit Mountain

Cobalt, Copper, Lead, Nickel, Platinum,  
Silver, Zinc

Nizina district  
MF-438, loc. 61

Valdez (23.05, 5.85)  
61°18'N, 144°16'W

**Summary:** Copper-nickel prospect examined from time to time between 1907 and as recently as sometime between 1959 and 1969. In ultramafic sills in metamorphosed schist and limestone of Skolai Gp. cut by granitic and gabbroic intrusive bodies; ultramafic rocks mainly altered peridotite and pyroxenite; deposits magmatic in origin; both massive and disseminated metallic minerals (listed in order of formation) are pyrite, pyrrhotite, pentlandite and bravoite, chalcopyrite, sphalerite, magnetite, and limonite; also reported is galena. Cobalt (as much as 0.18% in one sample), silver (as much as 2 oz. per ton), and anomalous amounts of platinum-group elements (chiefly palladium) also present. Inferred resource estimated to be about 6,500 tons of material averaging 0.7% nickel and 0.5% copper; deposit probably too small and too low grade to be mined at a profit. Includes references to (Canyon Cr.).

Moffit, 1912 (B 520), p. 103-104 -- Preliminary to Moffit, 1914 (B 576).

Moffit, 1914 (B 576), p. 52-53 -- Dike of fine-grained peridotite cuts schist, which is probably faulted into siliceous limestone; contains pyrite or pyrite and chalcopyrite; assays reported to show nickel as well as copper. Tunnel was driven along a copper-stained fault (strikes N 40° E and dips about 45° NW). Developments in late 1911 consisted of an open cut and a 20-ft. drift.

Brooks, 1918 (B 662), p. 25, 43 -- Survey received specimen of nickel-bearing ore said to have come from near Spirit Mtn.

Brooks, 1919 (B 666), p. 97 -- Specimen from a copper lode at or near Spirit Mtn. contains considerable nickel.

Martin, 1919 (B 692), p. 23 -- Claims have been staked on outcrops of basic dikes which cut schist; very little underground work has been done. Selected specimen of ore contains 7.23% nickel and a trace of cobalt; most of known ore believed to be of much lower grade.

Overbeck, 1920 (B 712), p. 91-98 -- Country rock calcareous and quartzose schist and impure schistose limestone intruded by a light-colored igneous rock made up of quartz, orthoclase, and altered plagioclase (some garnet and micas also present) and by highly altered coarse-grained peridotite. Peridotite contains chalcopyrite, pyrrhotite, and 2 unidentifiable nickeliferous minerals, and an unknown bluish mineral that may be part chalcocite and part hematite. Best assays reported to have contained about 11% nickel and about 2 oz. silver a ton. Exploration consists of a few shallow pits and a tunnel driven 50 ft. in an attempt to undercut an exposed ore body. Not enough work to assess value of prospect or to determine whether exposures have been leached of nickel or whether they have been enriched in nickel by weathering.

Brooks, 1921 (B 714), p. 40 -- Reference to Overbeck, 1920 (B 712).

Moffit, 1938 (B 894), p. 105 -- Peridotite dike which cuts schist and limestone carries nickel.

Spirit Mountain -- Continued

Kingston and Miller, 1945 (B 943-C), p. 49-57 -- 16 claims staked, some development between 1907 and 1917; no ore produced. Country rock metamorphosed bedded rocks of Mississippian age; consists of schist, greenstone, gneiss, and recrystallized limestone; intruded by diorite, diabase, and sill-like bodies of highly altered peridotite and pyroxenite. Altered peridotite and pyroxenite in 2 bodies contain disseminated interstitial grains and small massive lenses of sulfide minerals and their alteration products. Metallic minerals (listed in order of formation) are pyrite, pyrrhotite, pentlandite and bravoite, chalcopyrite, sphalerite, magnetite, and limonite. Samples contained from 0.9 to 7.61% nickel, from 0.6 to 1.56% copper, and, in one sample, 0.18% cobalt. Deposit estimated to contain about 6,500 tons of material ranging in grade from 0.22% nickel and 0.12% copper for the lowest grade disseminated material to 7.61% nickel and 1.56% copper for massive-sulfide material. Because of small tonnage and low grade, deposit probably cannot be mined at a profit.

Bain, 1946 (IC 7379), p. 70-71 -- Nickel prospect; richer than other nickel ores in Alaska.

Pierce, 1946 (RI 3913) -- Most of data quoted from USGS reports. In 1945 USBM collected and analyzed for nickel and copper 23 samples; highest nickel content was 1.70%; highest copper content was 2.95%.

Twenhofel, 1953 (C 252), p. 7 -- References to Kingston and Miller, 1945 (B 943-C) and Pierce, 1946 (RI 3913).

Berg and Cobb, 1967 (B 1246), p. 62 -- Nickel and copper minerals associated with ultramafic intrusive rocks.

p. 64 -- First prospected as a copper deposit, 1907-17. Reexamined as nickel prospect, beginning in 1942. Data on deposit from Kingston and Miller, 1945 (B 943-C).

Cornwall, 1968 (B 1223), p. 13 -- In table of marginal and submarginal nickel resources; sulfide deposit contains inferred resource of 6,500 tons of material with grade of 0.7% nickel.

p. 39 -- Summary of data in Kingston and Miller, 1945 (B 943-C). Inferred tonnage of deposit is 6,500 tons averaging 0.7% nickel and 0.5% copper.

Herreid, 1970 (GR 40), p. 2 -- References to several of above and to 2 unpublished reports by Jasper in 1960. Results of drilling by industry sometime between 1959 and 1969 not known.

p. 5-6 -- Band of mafic and ultramafic rocks ranging in composition from quartz diorite to hornblendite; richest part of prospect on much-altered small body of peridotite. Sulfides recognized by Herreid are pyrrhotite, pyrite, pentlandite, chalcopyrite, bravoite, and sphalerite. Jasper reported galena and repeated a report of ullmannite (sulfantimonide of nickel). Assays of samples from quartz diorite-hornblendite rock showed as much as 0.18% nickel and 0.37% copper. Disseminated material in an open cut exposing peridotite contained as much as 0.88% nickel and 0.89% copper; large body of ore probably not present. Old adit driven on altered hornblendite dike (without olivine or pyroxene) 3 ft. wide; rock contains 0.18% nickel and 0.89% copper; body not ore grade or size.

Spirit Mountain -- Continued

MacKevett, 1976 (MF-733B) -- Correlative ultramafic rocks in McCarthy quad.  
References to Kingston and Miller, 1945 (B 943-C) and Herreid, 1970  
(GR 40).

MacKevett and Holloway, 1977 (OF 77-169A), p. 81, loc. 52 -- References to  
Kingston and Miller, 1945 (B 943-C) and Herreid, 1970 (GR 40). Mag-  
matic deposit of massive and disseminated sulfides and their altera-  
tion products in peridotite and pyroxenite sills in metamorphosed rocks  
of Skolai Gp. Some granitic and gabbroic intrusives in vicinity.  
Sulfides include bravoite, pentlandite, chalcopyrite, pyrrhotite, and  
pyrite; some analyses show fairly abundant arsenic and minor anomalous  
amounts of cobalt, silver, and platinum-group elements (chiefly palla-  
dium).

MacKevett and others, 1978 (OF 78-1-E), p. 19 -- One of best-known deposits  
in ultramafic rocks in area 21 outside of the McCarthy quad.

Star

Gold

Prince William Sound district      Valdez (6.0, 3.85)  
MF-438, loc. 29      61°13'N, 146°17'W

Summary: One of groups of claims of Clarence Poy and associates. Production reported, 1934-35. See also Rose.

Smith, 1936 (B 868-A), p. 22 -- Production reported, 1934.

Smith, 1937 (B 880-A), p. 22 -- Production reported, 1935; one of groups of claims of Clarence Poy and associates.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 23 -- Reference to Smith, 1937 (B 880-A).

Stevens

Gold(?)

Prince William Sound district

Valdez (3.6, 2.6) approx.  
61°01'N, 146°35'W approx.

Summary: Short tunnel reported to have been driven, 1914. No other data except that claim is near Seacoast Mining Co.

Johnson, 1915 (B 622), p. 183 -- Short tunnel reported to have been driven, 1914. Near property of Seacoast Mining Co.

(Stuart Cr.)

Tungsten

Nelchina district  
MF-438, loc. 84

Valdez (14.5, 4.8)  
61°16'N, 145°17'W

Summary: Trace of scheelite in stream-sediment sample. See also Knowles.

Jasper, 1967 (GC 15), p. 12 (loc. 47) -- Concentrate of stream-sediment sample contained magnetite, pyrite, zircon, and one piece of scheelite. Bedrock graywacke, slate, shale, and sandstone. Float in creek made up of graywacke, argillite, slate, sandstone, and about 2% quartz.

(Sulphide Gulch)

Copper, Gold, Silver, Tungsten

Prince William Sound district  
MF-438, locs. 41, 79

Valdez (7.95-8.05, 0.35-0.4) approx.  
61°01'N, 146°03'-146°04'W approx.

Summary: Slate and greenstone contain disseminated and small veinlets of sulfide minerals, including pyrite, pyrrhotite, and chalcopyrite; assay of one sample indicated a trace of gold and 0.25 oz. silver a ton. Panned concentrate samples contained colors of gold, chalcopyrite, and a trace of scheelite. See also Addison Powell.

Rose, 1965 (GR 15), p. 10 -- Grab sample of pyritized slate with minor pyrrhotite and chalcopyrite contained less than 0.1% copper, a trace of gold, and 0.25 oz. silver a ton [MF-438, loc. 41].

p. 12-14 -- Prospect with shallow shaft reported. Nearby are iron stained zones containing some pyrite, pyrrhotite, and chalcopyrite and veinlets of chalcopyrite; mainly in greenstone; some in slate near contact with greenstone. Panned concentrate samples [MF-438, loc. 79] contained colors of gold, pyroxene, garnet, limonite, pyrite, chalcopyrite, zircon, and a trace of scheelite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 80, 81, locs. 33, 65 -- References to above.

Sunshine

Gold, Lead

Prince William Sound district  
MF-438, loc. 24

Valdez (5.55, 4.0)  
61°14'N, 146°20'W

Summary: Short tunnel on quartz vein as much as 1 ft. thick in slate and graywacke of Valdez Gp. Free gold, galena, and pyrite reported.

Brooks, 1912 (B 520), p. 125 -- 25-ft. tunnel has been driven on a vein 2 in. to 1 ft. thick; vein trends from N 60° E to E. Ore reported to carry free gold, galena, and pyrite in white quartz gangue.

Johnson, 1915 (B 622), p. 165 -- Work reported, 1914.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 20 -- References to above. In slate and graywacke of Valdez Gp.

(Surprise Cr.)

Copper

Nizina district  
MF-438, loc. 58

Valdez (23.15, 7.5)  
61°24'N, 144°15'W

Summary: Short tunnel driven in brecciated zone in greenstone of Skolai Gp. in which fractures contain veins of intergrown quartz and epidote. Quartz and greenstone contain chalcopyrite, pyrite, chrysocolla, chalcocite, and bornite.

Moffit, 1912 (B 520), p. 103-103 -- Preliminary to Moffit, 1914 (B 576).

Moffit, 1914 (B 576), p. 52 -- Country rock greenstone; intruded by diorite body near mouth of creek; associated with schist and altered siliceous limestone farther upstream. About 1-1/2 mi. above mouth short tunnel has been driven in shattered zone in greenstone. Fractures are veined with intergrown quartz and epidote. Quartz and greenstone contain chalcopyrite, pyrite, chrysocolla, chalcocite, and bornite.

Berg and Cobb, 1967 (B 1246), p. 62-63 -- Deposit similar to that on Blackney property.

MacKevett and Holloway, 1977 (OF 77-169A), p. 81, loc. 49 -- Reference to Moffit, 1914 (B 576). Mineralized zone in brecciated volcanic rocks of Skolai Gp.

Telluride

Gold

Nelchina district  
MF-438, loc. 48

Valdez (13.15, 6.6) approx.  
61°22'N, 145°26'W approx.

Summary: Group of 9 claims staked on gold-bearing quartz veins in rocks of Valdez Gp. Some development in 1916.

Moffit, 1918 (B 662), p. 180 -- Group of 9 claims staked on gold-bearing quartz veins; some development in 1916.

Mulligan, 1974 (IC 8626), p. 19 -- Data from above.

MacKevett and Holloway, 1977 (OF 77-169A), p. 80, loc. 40 -- Reference to Moffit, 1918 (B 662). In rocks of Valdez Gp.

Prince William Sound district Valdez (4.0, 2.65)  
MF-438, loc. 19 61°09'N, 146°32'W

**Summary:** More than 725 ft. of workings on quartz fissure vein in sheared graywacke and argillite of Valdez Gp. Vein averages about 8 in. in thickness; contains pyrite, galena, sphalerite, chalcopyrite, and free gold. Work was between about 1911 and 1916; ore shipment reported in 1913. Includes reference to Ford & Thomson Mining Co.

Brooks, 1912 (B 520), p. 125 -- Quartz vein 18-26 in. thick reported to have been traced over 100 ft.; about vertical and strikes about N 60° W. Quartz well crystallized and carries pyrite, galena, and free gold.

Brooks, 1913 (B 542), p. 35 -- Reported in 1912 to have been developed by a 400-ft. adit and 2 crosscuts.

Johnson, 1914 (B 592), p. 239 -- Development work, 1913. In fall developments consisted of 2 tunnels with a total of 710 ft. of workings.

consisted of 2 tunnels with a total of 710 ft. of workings.  
Johnson, 1915 (B 622), p. 177 -- Country rock sheared graywacke and argillite; schistosity strikes N  $75^{\circ}$ - $80^{\circ}$  E and dips  $65^{\circ}$ - $75^{\circ}$  N. Fissure vein strikes N  $35^{\circ}$ - $60^{\circ}$  W and dips both sides of vertical in workings; is as much as 18 in. (average about 8 in.) wide; in one place includes 10-ft. horse of sheared country rock; traced 115 ft. on surface. Pyrite most abundant sulfide; also present are galena, sphalerite, and chalcopyrite; gangue is quartz and a little calcite. Free-milling gold ore. About 735 ft. of underground workings. Ore shipment to Tacoma smelter, 1913.

Johnson, 1918 (B 662), p. 192 -- Assessment work, 1916.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 16 -- Reference to Johnson, 1915 (B 622). In rocks of Valdez Gp.

(Tiekel R.)

Gold

Nelchina district  
MF-438, loc. 91

Valdez (17.5, 4.4)  
61°14'N, 144°56'W

Summary: Placer gold on bench. Planned to install hydraulic plant in 1914.

Brooks, 1914 (B 592), p. 62 -- Several years before 1913 placer gold was discovered on bench of right side of river about 3 mi. above mouth. Prospecting indicated that there is enough gold to warrant putting in a hydraulic plant, which is planned for 1914.

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, loc. 70 -- Reference to above.

Tiger

Gold(?)

Prince William Sound district

Valdez (5.85, 3.2) approx.  
61°11'N, 146°19'W approx.

Summary: Shear zones with as much as 2 ft. of pyritized slaty gouge containing many quartz stringers. 10-ft. tunnel has been driven on claim. No data on gold content, if any, or on possible presence of sulfides other than pyrite.

Johnson, 1915 (B 622), p. 169-170 -- Numerous shear zones with as much as 2 ft. of pyritized black slaty gouge containing many stringers of quartz. Massive beds of graywacke plicated. 10-ft. tunnel has been driven on claim.

Townsend & Holland

Gold

Nelchina district  
MF-438, loc. 42

Valdez (13.3, 3.8)  
61°12'N, 145°26'W

Summary: Two tunnels driven, one probably more than 300 ft. long, on quartz vein 3-5 ft. thick and the other, about 150 ft. long, in much-broken slate of Valdez Gp. Also some open cuts. Quartz vein gold bearing. No record of production.

Moffit, 1935 (B 866), p. 35-36 -- 2 tunnels driven under Richardson Highway. Longer driven for probably more than 300 ft. on a gold-bearing quartz vein 3-5 ft. thick which strikes N 60° E; raise to surface; no record of production. Other tunnel driven about 150 ft. in much-broken slate. Also several open cuts.

Berg and Cobb, 1967 (B 1246), p. 49 -- Data from above [not specifically cited].

Jasper, 1967 (GC 15), p. 4 -- Reference to above.

Mulligan, 1974 (IC 8626), p. 20 -- Data from above.

MacKevett and Holloway, 1977 (OF 77-169A), p. 80, loc. 34 -- Reference to above. Country rock part of Valdez Gp.

Tuscarora

Gold

Prince William Sound district

Valdez (3.0, 3.5) approx.(?)  
61°12'N, 146°38'W approx.(?)

Summary: Production of a little gold reported, 1921, 1923-25. Nothing else (other than approximate location) reported about this mine.

Johnson, 1918 (B 662), p. 192 -- Development and assessment work, 1916; 45 ft. of underground work completed.

Brooks, 1923 (B 739), p. 24 -- A little gold ore milled, 1921. About 110 ft. of underground work done.

Brooks, 1925 (B 773), p. 15,38 -- Productive mining, 1923. Only productive gold mine on Prince William Sound.

Smith, 1926 (B 783), p. 8 -- Some production reported, 1924.

Moffit, 1927 (B 792), p. 10 -- A few ounces of gold produced, 1925. Mine near Shoup Glacier.

Valdez Bonanza

Gold

Prince William Sound district  
MF-438, loc. 32

Valdez (6.55, 3.35)  
61°11'N, 146°14'W

Summary: Quartz body 2-5 ft. thick about parallel to cleavage in slaty country rock of Valdez Gp.; traceable for about 50 ft. in surface exposure; pinches out in 100-ft. tunnel driven just below outcrop. Another quartz body carries pyrite, but not much gold.

Brooks, 1912 (B 520), p. 127 -- Irregular mass exposed in cliff is 2-5 ft. thick and traceable for about 50 ft.; about parallel to cleavage of slate country rock. Body pinches out in 100-ft. tunnel driven just below outcrop. Footwall defined by slickenside that continues after vein pinches out. Crosscut revealed another large body of quartz that carries pyrite, but (reportedly) not much gold.

Johnson, 1914 (B 592), p. 239 -- Assessment and development work, 1913.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 25 -- Reference to Brooks, 1912 (B 520). In Valdez Gp. rocks.

Valdez (Mining Co.)

Gold

Prince William Sound district  
MF-438, loc. 33

Valdez (6.8, 3.55)  
61°12'N, 146°12'W

Summary: Quartz vein reported to be as much as 10-1/2 ft. thick in interbedded schistose graywacke and slate of Valdez Gp.; ribbon quartz carried pyrite and considerable gold; white quartz that makes up more than half of the vein also carries gold, but is less rich than the ribbon quartz. Developed from about 1911 to as recently as 1920. Probably about 1,000 ft. of underground workings. Some gold produced incidental to development; amount not known.

Brooks, 1912 (B 520), p. 127-128 -- Country rock interbedded schistose graywacke and slate that strike about N 75° E and dip about 75° N. Vein strikes about N 60° W, dips 75° S, and at outcrop is about 5-6 ft. thick. Vein intersected by adit about 60 ft. below outcrop; winze sunk 50 ft. and drift run 40 ft. on vein, which is 3-8 ft. wide in workings; includes 2 ft. to 50 in. of ribbon quartz that carries pyrite and considerable gold; the white quartz that makes up the rest of the vein also carries gold (ribbon quartz higher grade). Deposit being undercut by another adit expected to reach vein at a depth of 330 ft.

Johnson, 1914 (B 592), p. 239 -- 100 ft. of main crosscut driven, 1913 (total length now about 230 ft.

Johnson, 1915 (B 622), p. 152-153 -- Located, 1910.

p. 162 -- Quotation from Brooks, 1912 (B 520). In 1913 crosscut was extended to about 230 ft.

Johnson, 1916 (B 642), p. 143 -- In 1915 157 ft. of underground work was done, including drifting 34 ft. along footwall of vein. Where cut by crosscut vein reported to be 10-1/2 ft. thick.

Smith, 1917 (BMB 153), p. 51 -- Contracts let to do assessment work, 1916.

Johnson, 1918 (B 662), p. 190 -- 100 ft. of tunnel driven, 1916.

Johnson, 1919 (B 692), p. 151 -- Contract let to extend tunnel 75 ft., 1917.

Brooks, 1922 (B 722), p. 40 -- Main adit driven 400 ft. during 1920; is now 800 ft. long. Some ore recovered incidental to development was milled.

MacKevett and Holloway, 1977 (OF 77-169A), p. 79, loc. 25 -- References to Brooks, 1912 (B 520), and Johnson, 1915 (B 622). Quartz vein in Valdez Gp. rocks. Has been minor production.

von Gunther

Gold(?)

Prince William Sound district

Valdez (5.75, 4.25) approx.  
61°15'N, 146°19'W approx.

Summary: Quartz vein in fissure in graywacke carries pyrite and its alteration products. No data on gold content, if any. Explored by 18-ft. tunnel.

Johnson, 1915 (B 622), p. 167 -- Quartz vein about 2 ft. thick in nearly vertical fissure that trends N 47° W can be traced for about 20 ft. vertically and horizontally on surface. Disappears in 18-ft. tunnel driven along fissure; a few clear-white quartz stringers cut across face. Pyrite and its oxidation products only metallic minerals [mentioned in description]; calcite accompanies quartz in gangue. Wallrock graywacke.

Wetzler

Copper, Gold, Lead, Zinc

Nelchina district  
MF-438, loc. 49

Valdez (13.1, 6.75)  
61°23'N, 145°27'W

**Summary:** Quartz veins about a foot thick in sheared schistose graywacke and slate of Valdez Gp. (about 500 ft. from a porphyry sill) contain free gold, galena, sphalerite, arsenopyrite, and chalcopyrite; oxidized in places. Developed by open cuts and about 200 ft. (or possibly more) of underground workings. 3 tons of ore shipped to smelter in 1914; may also have been some production from arrastre on property. Assessment work reported as recently as 1971. Includes references to: Quail, lode on Hurtle Cr. unless specifically to Telluride. See also (Hurtle Cr.).

Moffit, 1918 (B 662), p. 180-181 -- Country rock at Quail group of 10 claims is much-folded and sheared gray slate or schist cut by closely spaced northward-trending, eastward-dipping fractures, at least 4 of which contain mineralized quartz veins as much as 18 in. thick carrying arsenopyrite, galena, and free gold. Veins exposed in open cuts for about 300 ft. along strike; cut off or offset at north end by diorite porphyry dike which strikes E and dips S. In addition to open cuts, a shaft was sunk 10 ft. and a tunnel is being driven to undercut veins. Nearly 3 tons of ore was shipped to Tacoma smelter in 1914.

Moffit, 1935 (B 866), p. 27-29 -- 2 en echelon quartz veins separated by about 30 ft. of country rock strike N 5° W, dip 60° E, and are about a foot thick; contain free gold, galena, sphalerite, arsenopyrite, and chalcopyrite; oxidized in places. In sheared graywacke (locally schistose) and slate; white porphyry sill about 500 ft. to east; bedrock in entire area much faulted. Developed by several open cuts and nearly 200 ft. of adit and crosscuts. Arrastre on property; not known if any gold was produced from it. Other quartz veins on property not developed.

Berg and Cobb, 1967 (B 1246), p. 48-49 -- Description based on Moffit, 1935 (B 866). [Name not used; called deposit on Hurtle Cr. Reference not specifically cited.]

Jasper, 1967 (GC 15), p. 3 -- Most promising of gold prospects in basin of Hurtle Cr.

Mulligan, 1974 (IC 8626), p. 19 -- Data from Moffit, 1935 (B 866). Claims re-located in 1959 and assessment work reported through 1971.

MacKevett and Holloway, 1977 (OF 77-169A), p. 80, loc. 40 -- References to Moffit, 1918 (B 662), and Moffit, 1935 (B 866). Bedrock part of Valdez Gp.

Whistler

Gold

Prince William Sound district      Valdez (3.3, 2.2)  
MF-438, loc. 12      61°07'N, 146°37'W

Summary: Quartz vein contains mineralized fragments of slate of Valdez  
Gp., pyrite, and gold.

Brooks, 1912 (B 520), p. 123 -- Silicified slate fragments and quartz carry  
pyrite and free gold.

MacKevett and Holloway, 1977 (OF 77-169A), p. 78, loc. 9 -- Reference to  
above. On quartz vein that contains fragments of mineralized Valdez Group  
slate, pyrite, and gold.

(Willow Mtn.)

Copper, Gold(?), Zinc

Nelchina district  
MF-438, loc. 53

Valdez (15.05, 13.85)  
61°46'N, 145°11'W

Summary: Hydrozincite, chalcopyrite, and malachite sparsely, but widely, distributed in brecciated and hydrothermally altered limestone; locators of claims also reported values in gold.

Berg and Cobb, 1967 (B 1246), p. 52 -- Hydrozincite (secondary hydrous carbonate of zinc) and a little chalcopyrite and malachite sparsely, but widely, distributed in brecciated and hydrothermally altered limestone.

Mulligan, 1974 (IC 8626), p. 18 -- Same data as above. Also, locators of claims reported values in copper, gold, and zinc.

MacKevett and Holloway, 1977 (OF 77-169A), p. 81, loc. 44 -- Reference to Berg and Cobb, 1967 (B 1246).

(Worthington Glacier)

Tungsten

Nelchina district  
MF-438, loc. 82

Valdez (10.95, 3.05)  
61°10'N, 145°42'W

Summary: Traces of scheelite in stream-sediment concentrate.

Jasper, 1967 (GC 15), p. 10, loc. 26 -- Concentrate from stream-sediment sample contained some zircon, a little pyrite, and traces of scheelite. Cobb, 1973 (B 1374), p. 29 -- Reference to above.

Unnamed prospect

Chromite

Nelchina district

Valdez (16.8, 10.2) approx.  
61°34'N, 145°00'W approx.

Summary: Chromite disseminated in ultramafic rocks.

MacKevett and Holloway, 1977 (OF 77-169A), p. 83, loc. 77 -- Disseminated chromite in ultramafic rocks. Prospect with apparent post-1950 activity.

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, loc. 61 -- Porphyry-type deposit. Sparsely distributed chalcopyrite and molybdenite in granitic rocks. Prospect with apparent post-1950 activity.

Unnamed prospect

Gold

Nelchina district

Valdez (19.1, 11.1) approx.  
61°37'N, 144°43'W approx.

Summary: Gold-bearing vein in metamorphosed rocks of Skolai Gp.

MacKevett and Holloway, 1977 (OF 77-169A), p. 83, loc. 76 -- Hydrothermal deposit. Gold-bearing vein in metamorphosed rocks of Skolai Gp. Prospect with apparent post-1950 activity.

Unnamed prospect Gold, Silver, Zinc

Summary: Quartz veins in rocks of Valdez Gp. contain gold, silver, and zinc.

MacKevett and Holloway, 1977 (OF 77-169A), p. 82, loc. 60 -- Hydrothermal deposit. Quartz veins in rocks of Valdez Gp. contain gold, silver, and zinc. Prospect with apparent post-1950 activity.

Unnamed occurrence

Tungsten

Nelchina district  
MF-438, loc. 86

Valdez (15.55, 7.7)  
61°25'N, 145°09'W

Summary: Trace of scheelite in stream-sediment concentrate.

Jasper, 1967 (GC 15), p. 15, loc. 73 -- Concentrate from stream-sediment sample contained a little magnetite and traces of zircon and scheelite.

## Synonyms, Claim Names, Operators, and Owners

Many mines and prospects have undergone changes in both their own names and in the names of their operators and owners. All names that appear in the cited references appear in this summary either in the first section as occurrence names or in this section as synonyms.

Alaska Chugach Mines, Inc. -- see Cliff (Port Valdez)  
Alaska Development & Mining Co. -- see Midas  
Alaska Finley Co. -- see Ramsay-Rutherford  
Alaska Mayfield (Mines, Inc.) -- see Mayfield  
Albert Johnson -- see (Elliott Cr.)

All-American -- see Midas  
American Eagle -- see Eagle  
Bald Mountain -- see Olson .  
Bayview -- see Bayview, Cordova quad.  
Bertha -- see Knowles

Black Diamond -- see Alaska Gold Hill  
Bud(d) Mining Co. -- see (Gold Cr.)  
Canning & Centino -- see (Benito Cr.)  
(Canyon Cr,) -- see Spirit Mountain  
(Canyon Creek Bay) -- see (Shoup Bay)

Chance -- see (Elliott Cr.)  
(Cheshnina R.) -- see (Bear Cr.), (Mt. Chitty)  
Cliff (Kotsina R.) -- see (Elliott Cr.)  
Cliff Gold Mines, Inc. -- see Cliff (Port Valdez)  
Cliff (Gold) Mining Co. -- see Cliff (Port Valdez)

Cliff Mines, Inc. -- see Cliff (Port Valdez)  
Cook & Barrett -- see Monte Carlo  
Copper Creek Copper Mining Co. -- see Mullen  
Copper King -- see (Elliott Cr.)  
Copper Queen -- see (Elliott Cr.)

Crawford & Ammann -- see Ammann, Blue Bird (Kotsina R.), Bunker Hill  
(Kotsina R.), Cave, (Copper Cr.), Forget-me-not, Mountain  
Boy, Mountain Sheep, Peacock

Cube Mining Co. -- see Cube  
Curtis -- see (Elliott Cr.)  
Denby -- see Midas  
Devenney & Dolan -- see Devinney & Dolan

(Dutch Camp Basin) -- see (Lowe R.)  
Elizabeth -- see (Elliott Cr.)  
Ellis -- see Cliff (Port Valdez), Eagle, Midas  
Ellis & Meckem -- see Eagle  
Ellis Imperial -- see Imperial

Foaming Falls -- see Thompson-Ford  
Fog -- see (Elliott Cr.)  
Ford & Thomson Mining Co. -- see Thompson-Ford  
Galena Bay Mining Co. -- see Mullen  
Genzler -- see Ethel

Golden -- see Patten Mining Co.  
Gold Sunlight -- see High Grade  
Goodyear -- see (Elliott Cr.)  
Granby Consolidated Mining, Smelting & Power Co. (Ltd.) -- see Midas  
Great Northern Development Co. -- see (Iron Mtn.)

Guthrie -- see (Elliott Cr.)  
Halvorsen, Finnisand & Nelson -- see Spirit Mountain  
Happy Days -- see Patten Mining Co.  
Henry Prather -- see (Elliott Cr.)  
Hewitt -- see Cameron-Johnson

Hickey -- see Mountain View  
Hoffman -- see (Copper Cr.)  
Hogan -- see Mayfield  
Hubbard & Elliott (Co.) -- see (Elliott Cr.)  
Hubbard-Elliott Copper Co. -- see (Elliott Cr.)

Hubbard Elliott (Copper Mines Development Co.) -- see (Elliott Cr.)  
Hughes -- see Cliff (Port Valdez)  
(Hurdle Cr.) -- see (Hurtle Cr.)  
Jaynes -- see July, Little Giant, Rose  
Jumbo -- see Midas

Kings -- see (Elliott Cr.)  
King Solomon's Copper Mines -- see Midas  
Lawton -- see (Elliott Cr.)  
Layton & Nelson -- see Telluride, Wetzler  
Leland -- see (Elliott Cr.)

Lizzie G. -- see (Elliott Cr.)  
Lost Hope -- see Ramsay-Rutherford  
Louise -- see (Elliott Cr.)  
Lucky Strike -- see Knowles  
Mammoth Mining Co. -- see Bessie Williams

Marie Antoinette -- see (Elliott Cr.)  
Marmot -- see (Elliott Cr.)  
Mary Ellen -- see (Elliott Cr.)  
Mayfield (Gold) Mining Co. -- see Mayfield  
Mazuma -- see Cameron-Johnson

McWilliams -- see (Bernard Mtn.), (Dust Mtn.)  
Meckem -- see Eagle  
Meckem & Reis -- see (Fall Cr.)  
(Mile 40) -- see Townsend & Holland  
(Mill Cr.) -- see Knowles

Mineral Creek Development Co. -- see Hercules, Millionaire  
Mineral Creek Mining Co. -- see Buster, Chesna, Hercules, Millionaire,  
    Mineral King (near Valdez), Mountain View, Sunshine  
Mineral King (Kotsina R.) -- see (Elliott Cr.)  
Montana Boy -- see Mountain Boy  
Mystic -- see Cliff (Port Valdez)

North Star -- see Knowles  
Oleson & Woods -- see Olson & Woods  
Olsen, Gustafson & Anderson -- see Gold King  
Oregon -- see Owl  
Peabody Alaska Copper Corp. -- see Addison Powell

Peterson, Young & Halvorsen -- see Spirit Mountain  
Portland (near Valdez) -- see Seacoast  
Poy (and associates) -- see Big Four (Mineral Cr.), Little Giant,  
    Rose, Star  
Pulver & Baker -- see Owl  
Quail -- see Wetzler

Quartz Creek Gold Mining Co. -- see (Quartz Cr.)  
Ramsay-Rutherford Mining Co. -- see Ramsay-Rutherford  
Rankin and associates -- see Cameron-Johnson  
(Red Mtn.) -- see (Bernard Mtn.)  
Reeve & Thompson -- see Rough & Tough

Reynolds -- see (Fall Cr.)  
Rose Quartz -- see Rose  
Ruff & Tuff -- see Rough & Tough  
St. Amand -- see Midas  
Shoup Glacier Co. -- see Palmer

Silver Falls -- see Thompson-Ford  
Smith -- see Mountain King  
Swazie -- see (Elliott Cr.)  
Three-in-One -- see Cube  
Tiger Mining Co. -- see Opal

Treasury Note -- see Cameron-Johnson  
Valdez Gold (Co.) -- see Cameron-Johnson  
Washington -- see Owl  
Williams-Gentzler -- see Ethel

## References Cited

Bain, H. F., 1946, Alaska's minerals as a basis for industry: U.S. Bureau of Mines Information Circular 7379, 89 p.

Berg, H. C., and Cobb, E. H., 1967, Metalliferous lode deposits of Alaska: U.S. Geological Survey Bulletin 1246, 254 p.

Brooks, A. H., 1907, The mining industry in 1906: U.S. Geological Survey Bulletin 314, p. 19-39.

Brooks, A. H., 1911, The mining industry in 1910: U.S. Geological Survey Bulletin 480, p. 21-42

Brooks, A. H., 1911, Geologic features of Alaskan metalliferous lodes: U.S. Geological Survey Bulletin 480, p. 43-93.

Brooks, A. H., 1912, The mining industry in 1911: U.S. Geological Survey Bulletin 520, p. 17-44.

Brooks, A. H., 1912, Gold deposits near Valdez: U.S. Geological Survey Bulletin 520, p. 108-130.

Brooks, A. H., 1913, The mining industry in 1912: U.S. Geological Survey Bulletin 542, p. 18-51.

Brooks, A. H., 1914, The Alaskan mining industry in 1913: U.S. Geological Survey Bulletin 592, p. 45-74.

Brooks, A. H., 1915, The Alaskan mining industry in 1914: U.S. Geological Survey Bulletin 622, p. 15-68.

Brooks, A. H., 1916, The Alaskan mining industry in 1915: U.S. Geological Survey Bulletin 642, p. 16-71.

Brooks, A. H., 1916, Antimony deposits of Alaska: U.S. Geological Survey Bulletin 649, 67 p.

Brooks, A. H., 1918, The Alaskan mining industry in 1916: U.S. Geological Survey Bulletin 662, p. 11-62.

Brooks, A. H., 1919, Alaska's mineral supplies: U.S. Geological Survey Bulletin 666, p. 89-102.

Brooks, A. H., 1921, The future of Alaska mining: U.S. Geological Survey Bulletin 714, p. 5-57.

Brooks, A. H., 1922, The Alaskan mining industry in 1920: U.S. Geological Survey Bulletin 722, p. 7-67.

Brooks, A. H., 1923, The Alaska mining industry in 1921: U.S. Geological Survey Bulletin 739, p. 1-44.

Brooks, A. H., 1925, Alaska's mineral resources and production, 1923: U.S. Geological Survey Bulletin 773, p. 3-52.

Brooks, A. H., and Capps, S. R., 1924, The Alaska mining industry in 1922: U.S. Geological Survey Bulletin 755, p. 3-49.

Cobb, E. H., 1973, Placer deposits of Alaska: U.S. Geological Survey Bulletin 1374, 213 p.

Cobb, E. H., and Kachadoorian, Reuben, 1961, Index of metallic and nonmetallic mineral deposits of Alaska compiled from published reports of Federal and State agencies through 1959: U.S. Geological Survey Bulletin 1139, 363 p.

Cobb, E. H., and Matson, N. A., Jr., 1972, Metallic mineral resources map of the Valdez quadrangle, Alaska: U.S. Geological Survey Miscellaneous Field Studies Map MF-438, 1 sheet, scale 1:250,000.

Cornwall, H. R., 1968, Nickel deposits of North America: U.S. Geological Survey Bulletin 1223, 62 p.

Coulter, H. W., and Migliaccio, R. R., 1966, Effects of the earthquake of March 27, 1964, at Valdez, Alaska: U.S. Geological Survey Professional Paper 542-C, p. C1-C36.

Grant, U. S., 1906, Copper and other mineral resources of Prince William Sound: U.S. Geological Survey Bulletin 284, p. 78-87.

Grant, U. S., 1909, Gold on Prince William Sound: U.S. Geological Survey Bulletin 379, p. 97.

Grant, U. S., 1910, Mining and prospecting on Prince William Sound in 1909: U.S. Geological Survey Bulletin 442, p. 164-165.

Grant, U. S., and Higgins, D. F., 1910, Reconnaissance of the geology and mineral resources of Prince William Sound, Alaska: U.S. Geological Survey Bulletin 443, 89 p.

Henning, M. W., and Dobey, P., 1973, Geologic and mineral evaluation of the Chitina and Bremner River drainage basins: Alaska Division of Geological and Geophysical Surveys Open-file Report AOF-25, 20 p.

Herreid, Gordon, 1970, Geology of the Spirit Mountain nickel-copper prospect and surrounding area: Alaska Division of Mines and Geology Geologic Report 40, 19 p.

Jasper, M. W., 1967, Geochemical investigations along the Valdez to Chitina Highway in southcentral Alaska, 1966: Alaska Division of Mines and Minerals Geochemical Report 15, 19 p.

Johnson, B. L., 1914, Mining on Prince William Sound: U.S. Geological Survey Bulletin 592, p. 237-243.

Johnson, B. L., 1915, Mining on Prince William Sound: U.S. Geological Survey Bulletin 622, p. 131-139.

Johnson, B. L., 1915, The gold and copper deposits of the Port Valdez district: U.S. Geological Survey Bulletin 622, p. 140-188.

Johnson, B. L., 1916, Mining on Prince William Sound: U.S. Geological Survey Bulletin 642, p. 137-145.

Johnson, B. L., 1918, Mining on Prince William Sound: U.S. Geological Survey Bulletin 662, p. 183-192.

Johnson, B. L., 1919, Mining on Prince William Sound: U.S. Geological Survey Bulletin 692, p. 143-151.

Johnson, B. L., 1919, Mineral resources of Jack Bay district and vicinity, Prince William Sound: U.S. Geological Survey Bulletin 692, p. 153-173.

Kingston, Jack, and Miller, D. J., 1945, Nickel-copper prospect near Spirit Mountain, Copper River region, Alaska: U.S. Geological Survey Bulletin 943-C, p. 49-57.

Koschmann, A. H., and Bergendahl, M. H., 1968, Principal gold-producing districts of the United States: U.S. Geological Survey Professional Paper 610, 283 p.

MacKevett, E. M., Jr., 1976, Mineral deposits and occurrences in the McCarthy quadrangle, Alaska: U.S. Geological Survey Miscellaneous Field Studies Map MF-773B, 2 sheets, scale 1:250,000.

MacKevett, E. M., Jr., and Holloway, C. D., 1977, Map showing metalliferous and selected nonmetalliferous mineral deposits in the eastern part of southern Alaska: U.S. Geological Survey Open-file Report 77-169A, 1 sheet + 99 p. tabular material, scale 1:1,000,000.

---

MacKevett, E. M., Jr., Singer, D. A., and Holloway, C. D., 1978, Maps and tables describing metalliferous mineral resource potential of southern Alaska: U.S. Geological Survey Open-file Report 78-1-E, 45 p. + maps, scale 1:1,000,000.

Martin, G. C., 1919, The Alaskan mining industry in 1917: U.S. Geological Survey Bulletin 692, p. 11-42.

Martin, G. C., 1920, The Alaskan mining industry in 1918: U.S. Geological Survey Bulletin 712, p. 11-52.

Mendenhall, W. C., 1905, Geology of the central Copper River region, Alaska: U.S. Geological Survey Professional Paper 41, 133 p.

Mendenhall, W. C., and Schrader, F. C., 1903, The mineral resources of the Mount Wrangell district, Alaska: U.S. Geological Survey Professional Paper 15, 71 p.

Mendenhall, W. C., and Schrader, F. C., 1903, Copper deposits of the Mount Wrangell region, Alaska: U.S. Geological Survey Bulletin 213, p. 141-148.

Moffit, F. H., 1909, Mining in the Kotsina-Chitina, Chistochina, and Valdez Creek regions: U.S. Geological Survey Bulletin 379, p. 153-160.

Moffit, F. H., 1910, Mining in the Chitina district: U.S. Geological Survey Bulletin 442, p. 158-163.

Moffit, F. H., 1912, The Taral and Bremner River districts: U.S. Geological Survey Bulletin 520, p. 93-104.

Moffit, F. H., 1913, Mining in Chitina Valley: U.S. Geological Survey Bulletin 542, p. 81-85.

Moffit, F. H., 1914, Geology of the Hanagita-Bremner region, Alaska: U.S. Geological Survey Bulletin 576, 56 p.

Moffit, F. H., 1915, Mineral deposits of the Kotsina-Kuskulana district, with notes on mining in Chitina Valley: U.S. Geological Survey Bulletin 622, p. 103-117.

Moffit, F. H., 1918, Mining in the lower Copper River basin: U.S. Geological Survey Bulletin 662, p. 155-182.

Moffit, F. H., 1921, Mining in Chitina Valley: U.S. Geological Survey Bulletin 714, p. 189-196.

Moffit, F. H., 1924, The metalliferous deposits of Chitina Valley, Alaska: U.S. Geological Survey Bulletin 755, p. 57-72.

Moffit, F. H., 1927, Mineral industry of Alaska in 1925: U.S. Geological Survey Bulletin 792, p. 1-39.

Moffit, F. H., 1935, Geology of the Tonsina district, Alaska: U.S. Geological Survey Bulletin 866, 38 p.

Moffit, F. H., 1938, Geology of the Chitina Valley and adjacent area: U.S. Geological Survey Bulletin 894, 137 p.

Moffit, F. H., 1954, Geology of the Prince William Sound region, Alaska: U.S. Geological Survey Bulletin 989-E, p. 225-310.

Moffit, F. H., and Fellows, R. E., 1950, Copper deposits of the Prince William Sound district, Alaska: U.S. Geological Survey Bulletin 963-B, p. 47-80.

Moffit, F. H., and Maddren, A. G., 1908, The mineral resources of the Kotsina and Chitina valleys, Copper River region: U.S. Geological Survey Bulletin 345, p. 127-175.

Moffit, F. H., and Maddren, A. G., 1909, Mineral resources of the Kotsina-Chitina region, Alaska: U.S. Geological Survey Bulletin 374, 103 p.

Moffit, F. H., and Mertie, J. B., Jr., 1923, The Kotsina-Kuskulana district, Alaska: U.S. Geological Survey Bulletin 745, 149 p.

Moxham, R. M., and Nelson, A. E., 1952, Reconnaissance for radioactive deposits in south-central Alaska, 1947-49: U.S. Geological Survey Circular 184, 14 p.

Mulligan, J. J., 1974, Mineral resources of the trans-Alaska pipeline corridor: U.S. Bureau of Mines Information Circular 8626, 24 p.

Overbeck, R. M., 1920, Nickel deposits in the lower Copper River valley: U.S. Geological Survey Bulletin 712, p. 91-98.

Pierce, H. C., 1946, Exploration of Spirit Mountain nickel prospect, Canyon Creek, lower Copper River region, Alaska: U.S. Bureau of Mines Report of Investigations 3913, 8 p.

Ransome, A. L., and Kerns, W. H., 1954, Names and definitions of regions, districts, and subdistricts in Alaska (used by the Bureau of Mines in statistical and economic studies covering the mineral industry of the Territory): U.S. Bureau of Mines Information Circular 7679, 91 p.

Rohn, Oscar, 1900, A reconnaissance of the Chitina River and the Skolai Mountains, Alaska: U.S. Geological Survey 21st Annual Report, part 2, p. 393-440.

Rose, A. W., 1965, Geology and mineralization of the Midas mine and Sulphide Gulch areas near Valdez, Alaska: Alaska Division of Mines and Minerals Geologic Report 15, 21 p.

Schrader, F. C., 1900, A reconnaissance of a part of Prince William Sound and the Copper River district, Alaska, in 1898: U.S. Geological Survey 20th Annual Report, part 7, p. 341-423.

Schrader, F. C., and Spencer, A. C., 1901, The geology and mineral resources of a portion of the Copper River district, Alaska: U.S. Geological Survey Special Publication, 94 p.

Smith, P. S., 1926, Mineral industry of Alaska in 1924: U.S. Geological Survey Bulletin 783, p. 1-30.

Smith, P. S., 1929, Mineral industry of Alaska in 1926: U.S. Geological Survey Bulletin 797, p. 1-50.

Smith, P. S., 1930, Mineral industry of Alaska in 1927: U.S. Geological Survey Bulletin 810, p. 1-64.

Smith, P. S., 1930, Mineral industry of Alaska in 1928: U.S. Geological Survey Bulletin 813, p. 1-72.

Smith, P. S., 1932, Mineral industry of Alaska in 1929: U.S. Geological Survey Bulletin 824, p. 1-81.

Smith, P. S., 1933, Mineral industry of Alaska in 1930: U.S. Geological Survey Bulletin 836, p. 1-83.

Smith, P. S., 1934, Mineral industry of Alaska in 1933: U.S. Geological Survey Bulletin 864-A, p. 1-94.

Smith, P. S., 1936, Mineral industry of Alaska in 1934: U.S. Geological Survey Bulletin 868-A, p. 1-91.

Smith, P. S., 1937, Mineral industry of Alaska in 1935: U.S. Geological Survey Bulletin 880-A, p. 1-95.

Smith, P. S., 1938, Mineral industry of Alaska in 1936: U.S. Geological Survey Bulletin 897-A, p. 1-107.

Smith, P. S., 1939, Mineral industry of Alaska in 1937: U.S. Geological Survey Bulletin 910-A, p. 1-113.

Smith, P. S., 1939, Mineral industry of Alaska in 1938: U.S. Geological Survey Bulletin 917-A, p. 1-113.

Smith, P. S., 1941, Mineral industry of Alaska in 1939: U.S. Geological Survey Bulletin 926-A, p. 1-106.

Smith, P. S., 1942, Mineral industry of Alaska in 1940: U.S. Geological Survey Bulletin 933-A, p. 1-102.

Smith, S. S., 1917, The mining industry in the Territory of Alaska during the calendar year 1915: U.S. Bureau of Mines Bulletin 142, 66 p.

Smith, S. S., 1917, The mining industry in the Territory of Alaska during the calendar year 1916: U.S. Bureau of Mines Bulletin 153, 89 p.

Twenhofel, W. S., 1953, Potential Alaskan mineral resources for proposed electrochemical and electrometallurgical industries in the upper Lynn Canal area, Alaska: U.S. Geological Survey Circular 252, 14 p.

Van Alstine, R. E., and Black, R. F., 1946, Copper deposits of the Kotsina-Kuskulana district, Alaska: U.S. Geological Survey Bulletin 947-G, p. 121-141.





USGS LIBRARY-RESTON



3 1818 00074366 4