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KNOWN MINERAL DEPOSITS OF THE BROOKS RANGE, ALASKA

By

Donald Grybeck

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This report is preliminary
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This report, one of a series under the Regional Alaska Mineral Resource Assessment Program (RAMRAP), summarizes the known mineral deposits of the Brooks Range. The Regional Alaska Mineral Resource Assessment Program is directed specifically toward an assessment of the land selected under section 17 (d)(2) of the Alaska Native Claims Settlement Act. Because the mineral potential of these areas in the Brooks Range is so poorly known, this report includes the whole of the Range and adjacent areas to facilitate projection of the geology and trends of the mineralization into the (d)(2) lands.

Compilation of Mineral Deposit Data

The map and table 1 summarize the location and details of the geology of all the known mineral occurrences in the Brooks Range. Most of the deposits indicated in this report contain metals as their significant commodities. This orientation reflects geology and(or) the status of exploration and is not a commodity bias. Hydrocarbons are unlikely in most of the area with the exception of the Arctic National Wildlife Range. There are no published reports of hydrocarbons in the (d)(2) lands. Extensive coal deposits are known along the north side of the report area but are poorly documented and few of these deposits extend into the (d)(2) lands. The few known occurrences of industrial minerals reported in the literature, chiefly barite and phosphates, are noted, but little detailed information is

available about their extent. Except in conjunction with the Alyeska pipeline, sand and gravel are rarely mentioned by location as potentially valuable mineral commodities, although immense amounts occur throughout the Brooks Range.

The most useful sources for information on the mineral deposits of the Brooks Range are the comprehensive summaries of the governmental literature by Cobb (1972a-l, 1973, 1975a-b, 1976). Geologists with the U.S. Geological Survey and Alaska Division of Geological and Geophysical Surveys provided additional, as yet unpublished, information. Data from the claim records maintained by the Alaska Division of Geological and Geophysical Surveys and the claim location maps prepared by the U.S. Bureau of Mines were also used. Details on claim location covering previously known mineralization are generally not included except where they indicate substantial recent work. However, because legal claims indicate mineral-bearing ground, the location of claims is shown on the map where there is no other report of mineralization, even if the mineralization is not described in the claim records. Mining companies that have worked or are working in the area provided information from their files. Geochemical data for the Brooks Range are given on another map of the Brooks Range RAMRAP series (Grybeck, 1977).

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U.S. Bureau of Mines allowed the use of unpublished work on the (d)(2) lands of the Brooks Range. The following companies graciously provided information and helpful discussion: the Anaconda Mining Company; Bear Creek Mining Company; BP Alaska Exploration, Inc.; C. C. Hawley and Associates; Little Squaw Gold Mining Company; Noranda Exploration, Inc.; Placid Oil Company; Resource Associates of Alaska, Inc.; and WGM, Inc.

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Table 1.-- Known mineral deposits of the Brooks Range, Alaska arranged by U.S. Geological Survey 1:250,000-scale quadrangles.

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
DeLong Mountains Quadrangle							
1	(Ikuk Cr.)	T8&9S, R50&51W (approx. 6.9, 12.3)	0	Au?	--	Auriferous pyrite reported in late 1880's was said to contain up to 0.4 ounces per ton in Au. Unsubstantiated and geologically unlikely.	Smith and Mertie (1930) Berg and Cobb (1967)
2	(Mt. Kelly)	T11S, R50W (approx. 8.8, 8.4)	0	Au	--	Rich gold lode reported prior to 1913; unsubstantiated and geologically unlikely.	Smith and Mertie (1930)
3	--	T32N, R20W (13.1, 3.1)	P	--	--	Seven lode claims staked 1975.	DGGS Kardex file
4	--	T32N, R19W (12.5, 3.8)	P	Pb, Zn	--	Four prominant color anomalies. Brief examination indicated weak geochemical anomalies and minor galena. May be similar to Red Dog prospect (loc. 7). Two hundred and eighteen lode claims staked 1975.	USBM unpublished data DGGS Kardex file
5	--	T32N, R19W (13.1, 3.4)	P	--	--	One lode claim staked 1975.	DGGS Kardex file
6	--	T32N, R19W (13.5, 2.7)	P	--	--	One lode claim staked 1975.	DGGS Kardex file
7	Red Dog	T31N, R18W (14.3, 1.3)	P	Pb, Zn, barite	Volcanogenic? Mississippi-valley type?	Mineralized area about 3000 by 1000 meters in area. Mineralization consists of sphalerite and galena in bedded chert; massive sphalerite; sphalerite and galena with barite; sphalerite and galena in massive siliceous rocks and in veins and breccia in black chert. Estimate of 768,000 tons per vertical foot of material that assays 0.65-5.0% Pb, 1.4-24.0% Zn, 14-82 grams per metric tonne Ag, and substantial barite. An additional 9 square kms anomalous in Pb and Zn.	Tailleur (1970) USBM unpublished data

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Misheguk Mountain Quadrangle							
1	Avan	T33N, R14W (centered about 0.6, 4.2)	O	Cr	Magmatic	Limited traversing in ultramafic body indicated minor disseminated to banded chromite. Very few Pt-group analyses not anomalous.	USBM unpublished data
2	(Kuguruok River)	T32N, R12W? (approx. 3.8, 3.0)	P	Cr	--	Specimen of chromite collected from a "large amount of similar material said to occur in that area." Unsubstantiated but geologically probable associated with the gabbro-ultramafic complex at Misheguk Mountain.	Anderson (1947)
3	(Misheguk Mountain)	T33N, R10W (centered about 6.0, 4.2)	O	Cr	Magmatic	Limited traversing in ultramafic body about 52 km by 20 km in size indicated widespread chromite in minor amounts.	USBM unpublished data

Map No.	Name(s) 1/	Location 2/	Category 3/	Resources 4/	Type 5/	Brief Description	Principal References 6/
Baird Mountains Quadrangle							
1	--	T27&28N, R13&14W (centered about 0.6, 13.8)	O	Cr, Cu	Magmatic	Limited geologic work in a portion of Asik Mountain ultramafic body indicated minor disseminated pyrite, chalcopyrite and chromite. Extensive geochemical prospecting in area indicated little of significance except for one value of 2,075 ppm Zn.	USBM unpublished data
2	Eskimo	T24N, R14W (centered about 1.8, 8.8)	P	Cu, Au	--	Chalcocite and malachite in bleached limestone; twenty-five claims staked in vicinity 1966.	Unpublished industry data DGGS Kardex file
3	--	T24N, R13W (3.05, 9.9)	O	Cu	Vein	Mineralized quartz vein in limestone with malachite containing 1% Cu.	Brosgé, Reiser and Tailleur (1967)
4	(Ell River)	T26N, R12W (3.8, 11.25)	O	Cu	Vein	Malachite in quartz vein.	Brosgé, Reiser and Tailleur (1967)
5	--	T26N, R12W (centered about 4.9, 11.3)	P	Cu	--	Eighteen lode claims staked 1966.	DGGS Kardex file
6	Gallahorn	T21N, R15W (0.4, 3.2)	P	Cu	Vein	Two quartz veins with chalcopyrite in schist and phyllite. One claim staked in 1970's.	Unpublished industry data
7	Uhl	T21N, R14W (1.75, 3.1)	P	Cu	Vein	Quartz vein with chalcopyrite in schist and phyllite.	Unpublished industry data
8	Omar	T24N, R10W (7.6, 8.7)	P	Cu	Hydrothermal breccia and fracture filling (Ruby Creek type)	Compound fracture 3000 meters long trending about N20°W with individual zones 30 meters wide by 300-1000 meters long. Faulted and brecciated gossan in tan-weathering Devonian dolomite associated with malachite, bornite, chalcopyrite and covellite. About 900 meters of diamond drilling.	USBM unpublished data Unpublished industry data
9	Frost	T24N, R9W (8.9, 8.7)	P	Barite (Zn, Cu)	Stratiform	Lenses and pods of barite at least 10 meters thick by 25-30 meters long occur along a strike distance of about 1600 meters in Devonian dolomite. Several occurrences of sphalerite and chalcopyrite in undulating quartz-calcite-barite veins. Exposures strongly suggest resources of 1 million tonnes of barite and possibly as much as 10 million tonnes.	USBM unpublished data Unpublished industry data
10	--	T24N, R9W (8.5, 8.0)	P	Zn, Barite	Stratiform(?)	Zn, barite mineralization trends northwest for about 1 km.	Unpublished industry data
11	(Kiery Cr., Caribou Cr., Gold Run Cr., Joe Gulch)	T21,22, 23N, R8W (centered about 11.0, 4.0)	H	Au	Placer	More than 16 kms of creek worked in varying degree on an intermittent basis from 1909 to present. Mining by hand method, various mechanical apparatus and small dredge. Total production through 1931 estimated at about 974,000 grams. Gold probably derived from local veins and stringers of quartz in limestone and schist. Prospecting on various tributaries of Kiery Creek with minor production from at least one.	Reed (1931) Cobb (1973)

Map No.	Name(s) 1/	Location 2/	Category 3/	Resources 4/	Type 5/	Brief Description	Principal References 6/
Baird Mountains Quadrangle (cont.)							
12	(Nakolikurok Creek)	T26N, R8W (10.75, 11.25)	0	Cu, Mo	Vein	Quartz vein in greenstone contains Cu, Mo.	Brosgé, Reiser and Tailleur (1967)
13	--	T29N, R6W (14.6, 15.3)	0	Cu	Vein	Quartz vein in greenstone sill contains 1% Cu.	Brosgé, Reiser and Tailleur (1967)
14	Chevron	T5N, R5W (14.6, 15.3)	0	Cu	Vein	Several quartz veins with chalcopyrite occur in phyllite over an area about 30 meters across.	USBM unpublished data
15	Hub	T27N, R4W (15.9, 13.7)	0	Cu	Vein	Two 15 cm quartz-calcite veins with chalcopyrite in dolomite contain an average of 0.72% Cu.	USBM unpublished data
16	(Salmon River)	T26N, R5W (14.4, 12.2)	0	Cu	Vein	Chalcopyrite in rubble of quartz vein in schist.	USBM Unpublished data
17	Temby	T25N, R4W (16.45, 10.4)	0	Cu	Vein	Chalcopyrite and pyrite in quartz vein in phyllite over 60 by 30 meter area.	Brosgé, Reiser and Tailleur (1967) USBM unpublished data

Map No.	Name(s) 1/	Location 2/	Category 3/	Resources 4/	Type 5/	Brief Description	Principal References 6/
Selawik Quadrangle							
1,6,7	--	T7&8N, R9&10W (blocks centered about 10.6, 1.26; 10.3, 0.4; 8.2, 0.3)	P	U	--	Fourteen lode claims staked at three locations 1969-1971.	DGGS Kardex file
2,3, 5,9	--	T8N, R9W; T9N, R9&10W; T10&11N, R8W (blocks centered about 11.7, 6.5; 9.35, 4.6; 8.7, 3.05; 9.8, 2.25)	P	U	Disseminated and veins in felsic intrusive rock	Three hundred and twenty-three lode claims staked 1968-1974 in four claim blocks.	DGGS Kardex file
4	--	T9N, R9W (9.5, 3.1)	O	Fluorite	Breccia zone	Outcrop 20-25 meters long in cutbank of fault breccia composed of argillized intrusive rock cemented by purple fluorite. Grab sample contained about 13% F.	Unpublished data, T. P. Miller
8	--	T8&9N, R8W (centered about 11.6, 2.45)	P	U	--	Sixteen lode claims staked 1974.	DGGS Kardex file
10	(Hunt Cr.)	T9N, R5W (16.0, 3.25)	O	Pb, Zn	Hydrothermal vein	Galena, sphalerite, and pyrite in quartz-calcite vein cutting pink syenite.	Elliott and Miller (1969)

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Howard Pass Quadrangle							
1	(Siniktan-negak Mtn.)	T34N, R1-3E (centered about 3.95, 6.9)	0	--	--	Sixty-five lode claims staked in 1972. Commodity of interest not given but includes most of large gabbro-ultramafic complex.	DGGS Kardex file
2	(Mt. Bupto)	T11S, R24W (9.7, 9.1)	0	P_2O_5, (V_2O_5, U)	Chemical sediment	Sample probably from black chert and shale member of Alapah member of Alapah Ls. contians 13.7% P_2O_5 and 0.004% U.	Patton and Matzko (1959)
3	(Lisburne Ridge)	T9S, R20W (14.6, 11.25)	0	P_2O_5, (V_2O_5, U)	Chemical sediment	Sample in interbedded black chert and dark-gray dolomite unit in Lisburne Group contains 24.8% P_2O_5 and 0.17% V_2O_5.	Patton and Matzko (1959)

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Ambler River Quadrangle							
1	Malflatti	T25N, R2W (0.0, 9.25)	P	Cu	--	Copper prospect discovered about 1912 at limestone and schist contact.	Brooks (1914)
2	(Kobuk River)	T20N, R1W	P	Jade?	Claims	Unstated number (1-27) of claims staked 1968-1970. Assessment work reports "Jade cutting."	DGGS Kardex file
3	--	T25N, R3E (5.3, 9.8)	O	Pb, Cu fluorite	Contact metamorphic	Minor amounts of galena, fluorite, and malachite in granite near contact zone over a distance of about 1.6 km. Area of 13 km^2 geochemically anomalous in Pb and Zn.	USBM unpublished data
4	(Jade Mtns.)	T21N, R3E (5.7, 4.4)	O	Cu, Pb	Vein	Mineralized vein in limestone with malachite, azurite and galena.	Brosgé, Reiser and Tailleur (1967)
5	(Jade Mtn.)	T21N, R4E (approx. 6.5, 4.25)	P	Asbestos, jade	Magmatic (ultramafic)	Highly serpentinized ultramafic body at least 5 km^2 in area contains chrysotile and tremolite asbestos and nephrite jade, some of which is gem quality.	Anderson (1945, 1947) Fritts (1970)
6	(Jade Mtns.)	T21N, R5E (approx. 8.2, 3.5)	P	Ni, asbestos, jade	Magmatic (ultramafic)	Location uncertain and may refer to loc. 5. Garnierite, nephrite jade and asbestos associated with a serpentinized ultramafic body.	Anderson (1945)
7	--	T25N, R8E (centered about 12.6, 9.7)	P	--	Claims	Six lode(?) claims staked 1968.	DGGS Kardex file
8	--	T28N, R9E (14.8, 14.3)	O	Cu, Ag, (Sb)	?	Prominent rusty colored peaks of brecciated dolomite. Tetrahedrite, tennantite(?), chalcopyrite and malachite at four localities over an area of about 0.4 km^2.	USBM unpublished data
9	(Ningyoyak Creek)	T29N, R11E (17.9, 15.4)	P	Cu	?	Copper mineralization over an area of about 25 x 30 meters. Consists of quartz-carbonate stringers with chalcopyrite in phyllite.	USBM unpublished data
10	--	T23N, R10E (centered about 15.8, 7.3)	P	Cu, Pb (Au)	Contact metamorphic	Numerous small quartz veins and veinlets with chalcopyrite and galena in quartose rocks in contact aureole of granite. Twenty lode claims staked 1974.	Unpublished industry data
11	--	T23&24N, R11E (centered about 17.1, 7.5)	P	Cu, Pb (Au)	Contact metamorphic	Numerous small quartz veins and veinlets with chalcopyrite and galena in quartose rocks in contact aureole of granite. Forty-six lode claims staked 1974 in blocks.	Unpublished industry data

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Ambler River Quadrangle (cont.)							
12	(Shishakshin-ovik Pass)	T24N, R11E (18.05, 8.2)	P	Cu, Pb (Au, Ag)	--	Selected specimens that include tetrahedrite and native copper in the streams reported to have assayed 9.81% Cu, 27.73% Pb and some Au and Ag.	Smith (1913) Anderson (1947)
13	(Shishakshin-ovik Pass)	T23N, R12E (18.4, 7.75)	O	Pb, Zn, Cu, Ag, Mo, (Au)	Contact metamorphic	Minor galena, chalcopyrite, sphalerite and molybdenite in granite near its contact zone. Also geochemically anomalous in Pb, Zn, and Mo. Float boulder contains 2% Pb, 1.6% Zn, and more than 90 grams of Ag per metric tonne.	USBM Unpublished data Unpublished Industry data
14	--	T22&23N, R10&11E (centered about 16.9, 6.5)	P	--	Claims	Eighty-three lode claims staked in three blocks, 1974.	DGGS Kardex file
15	Smucker, "Sleet Creek"	T22N, R8E (12.4, 5.3)	P	Cu, Zn, (Ag)	Stratabound massive sulfide	Malachite, disseminated pyrite, chalcopyrite and sphalerite in chlorite and graphitic muscovite-quartz schist. Samples in massive sulfide layer at surface contain up to 1.2% Cu, 0.94% Zn, and 220 grams of Ag per metric tonne. Strong mineralization occurs over an area of at least 60 x 1200 meters and at scattered locations elsewhere in vicinity.	Unpublished Industry data
16	"Horse Creek"	T22N, R10E (15.4, 5.0)	P	Cu, Zn (Pb, Ag, Au)	Stratabound massive sulfide	Details and reserves not published but deposit similar to Arctic deposit (19).	Sichermann, Russell and Fikkan (1976)
17	"Sunshine Creek"	T21N, R10E (16.1, 3.7)	P	Cu, Zn (Pb, Ag, Au)	Stratabound massive sulfide	Details and reserves not published but deposit similar tc Arctic deposit (19).	Sichermann, Russell and Fikkan (1976)
18	"Dead Creek"	T21N, R11E (16.9, 3.7)	P	Cu, Zn (Pb, Ag Au)	Stratabound massive sulfide	Details and reserves not published but deposit similar to Arctic deposit (19).	Sichermann, Russell and Fikkan (1976)
19	Arctic	T21N, R10E (17.9, 3.2)	P	Cu, Zn (Pb, Ag, Au)	Stratabound massive sulfide	Polymetallic, stratabound, volcanogenic deposit within a suite of low- to medium-grade metamrophic rocks that include metarhyolite, porphyrobasitic schist, quartz-muscovite schist and graphite schist. Pyrite, chalcopyrite and sphalerite comprise 20-90% of a number of sulfide-rich horizons 0.3 to over 18 meters thick that comprise a triangular-shaped mineralized zone about 1030 by 730 meters in plan and about 90 meters thick. Deposit drilled and estimated to contain 30 to 35 million tons of material that averages 4% Cu, 5.5% Zn, 46 grams Ag per metric tonne, 1% Pb and a small amount of Au.	Wiltse(1975) Sichermann, Russell and Fikkan (1976)

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Ambler River Quadrangle (cont.)							
20	"Diane Creek"	T20N, R12E (19.0, 3.1)	P	Cu, Zn	Stratabound	Weakly disseminated chalcopyrite, bornite, sphalerite, and pyrrhotite in calcareous schist and skarn, mainly as float.	Unpublished industry data
21	"Que Creek"	T20N, R12E (19.4, 2.75)	P	Cu	Stratabound	Disseminated malachite in muscovite, quartz schist for at least 275 meters.	Unpublished industry data
22	(Riley Cr.)	T19N, R9&10E (centered about 15.1, 0.8)	P	--	Claims	Substantial number of lode claims staked 1960.	DGGS Kardex file
23	(Asbestos Mtn.)	T19N, R9E (14.9, 0.45)	M	Asbestos, Jade (quartz, talc)	Magmatic (ultramafic)	Serpentinized ultramafic body contains veins and veinlets of cross- and slip-fiber tremolite and chrysotile asbestos. About 33.1 metric tonnes of tremolite and about 1 tonne of chrysotile shipped during World War II. Small deposits of talc and soapstone common. Small shipment of optical quartz cyrstals shipped in 1943 from float in vicinity.	Anderson (1945, 1947) Heide and others (1949) Fritts (1970)
24	Bornite, Ruby Creek	T19N, R9E (14.1, 1.6)	P	Cu, Zn, (Pb, Ag, Au, U)	Hydrothermal breccia filling	Deposit occurs in a 760 meter-thick Devonian carbonate sequence that includes dolomite, limestone, limestone breccia, phyllite and calcarenite. The ore bodies occur along two northeast-trending breccia zones that may be related to large bioherms. Pyrite is the most common sulfide but chalcopyrite and bornite are the chief minerals of interest. Chalcopyrite, sphalerite, tennanitite, tetrahedrite, galena and pyrrhotite are locally present in noticeable amounts; and marcasite, carrolite and germanite are present in trace amounts. Various secondary copper minerals occur especially near the surface; selected samples reach 0.02% eU but the U content of the ore is apparently negligible. No published data on the Ag and Au content of the ore. Wallrock alteration associated with mineralization minor or absent. The deposit has been extensively explored by many thousands of meters of diamond drilling and a vertical shaft 326 meters deep. Current grade and tonnage figures not available but they are appreciable.	Smith and Eakin (1911) Matzko and Freeman (1963) Fritts (1970) Sichermann, Russell and Fikkan (1976)

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Ambler River Quadrangle (cont.)							
25	Pardners Hill (Aurora Mtn)	T18N, R8E (13.5, 1.3)	P	Cu (Au, Ag, Pb, Zn)	Hydrothermal breccia filling	Chalcopyrite and bornite in a reef(?) breccia that occurs in a synclinal, dolomitic limestone above dark slate and schist. Minor galena; selected sulfide samples contain up to 1.24 grams per metric tonne Au and 44 grams per metric tonne Ag. Secondary copper minerals locally. Probably similar in origin and general characteristics to the Bornite deposit (24).	Smith and Eakin (1911) Fritts (1970) Sichermann, Russell and Fikkan (1976)
26	(Cosmos Cr.)	T19N, R8E (12.9, 0.5)	M	Au, asbestos, jade	Magmatic (ultramafic) placer	Sheared serpentinite with low-grade chrysotile asbestos. Colors of Au in creek above canyon but no production. Some nephrite jade from creek gravels produced and sold.	Reed (1931) Anderson (1945, 1947)
27	(Aurora Mtn.)	T19&20N, R8E (centered about 13.0, 1.4)	P	--	Claims	Substantial number of lode claims staked 1960.	DGGS Kardex file
28	(Bismark Mtn.)	T19N, R7E (11.9, 1.0)	P	Asbestos	Magmatic (ultramafic)	Serpentinized ultramafic body contains veins and veinlets of cross- and slip-fiber crysotile asbestos; magnesite veinlets locally. Small test shipment made but no production.	Anderson (1945, 1947) Heide and others (1949)
29	(Shungnak River)	T19N, R7E (centered about 11.9, 0.6)	M	Au, jade, asbestos (Cu, Ag)	Placer	Intermittent mining from 1898 to 1940. May have produces as much as 310,000 grams of gold; concentrates mainly magnetite with nuggets of native copper and silver. Low-grade asbestos occurs in greenstone and serpentinite along river. Several tonnes of nephrite have been produced from the gravels as a gemstone.	Smith and Eakin (1911) Reed (1931) Fritts (1970)

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Shungnak Quadrangle							
1	(Cosmos Creek)	T18N, R8E (12.7, 17.6)	M	Jade	Placer	Float jade shipped in 1945.	Anderson (1945)
2	(Wesley Creek)	T18N, R8E (13.65, 17.65)	O	Pb, Au asbestos, jade	Hydrothermal vein; magmatic (ultramafic); placer	Galena occurs in quartz vein cutting dolomite. Tremolite asbestos and nephrite jade occurs near head of creek. Fine gold found during prospecting but no placer mining.	Smith (1913) Anderson (1945)
3	(Dahl Creek)	T18N, R9E (centered about 14.6, 17.2)	M	Au, asbestos, jade (Cr, Cu, Ag)	Placer; magmatic (ultramafic)	Creek mined intermittently from 1898 to at least 1968. Placer concentrates contain boulders of chromite up to 0.3 meters in diameter as well as nuggets of native copper and silver. Total gold production may have been as much as 622,000 grams. Serpentinite in upper part of creek contains chrysotile asbestos and some jade or jade-like serpentine has been produced as a gemstone from float in the creek.	Smith (1913) Reed (1931) Fritts (1970) Cobb (1973)
4	(California Creek)	T18N, R10E (16.3, 17.1)	M	Au, asbestos, jade, quartz	Placer; magmatic (ultramafic)	Placer mining nearly every year between 1918 and 1940. Stream draining area of metavolcanic rocks and phyllite with quartz veins that are probably the source of the gold. Total production probably less than 622,000 grams of gold. Quartz crystal, asbestos-bearing boulders and nephrite jade of poor quality found during placer mining.	Reed (1931) Anderson (1945, 1947) Fritts (1970)
5	(Shovel Creek)	T11N, R5E (8.35, 6.1)	M	Au	Placer	Two-man placer operation during 1950's and 1960's near contact of quartz monzonite pluton and andesite country rock. Production unknown. Gold may have been derived from the quartz-tourmaline-sulfide veins near the contact. One hundred lode claims staked in vicinity in 1972.	Miller and Ferrians (1968) Cobb (1973) DGGS Kardex file
6	(Hawk River)	T10N, R6E (10.6, 4.6)	P	Cu, Pb Ag	Hydrothermal vein	A belt of pyritiferous quartz veins occur in an area about 10.5 by 2.4 kms in size where they cut Upper Jurassic and Lower Cretaceous volcanic rocks. Veins are generally less than 0.6 meters thick and contain argeniferous galena, chalcopyrite, and malachite. One hundred and fifty lode claims staked in 1972.	Miller and Ferrians (1968) DGGS Kardex file

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Shungnak Quadrangle (cont.)							
7	--	T12N, R11E (about 18.2, 8.2)	0	Cu, Ag, Au, Pb	Hydrothermal vein	Chalcopyrite-bearing quartz vein cuts meta-andesite at one locality. At another in vicinity an oxidized pyritiferous quartz sample contains 3 ppm Ag, 0.6 ppm Au and 150 ppm Pb.	Miller and Ferrians (1968)
8	--	T12N, R12E (19.1, 7.3)	0	Ag, Pb, Mo	Hydrothermal vein	Oxidized, pyritiferous quartz sample contains 1 ppm Ag, 30 ppm Pb and 3 ppm Mo.	Miller and Ferrians (1968)
9	[Dakli]	T11N, R12E (centered about 19.45, 6.6)	0	Cu, Au Ag	Hydrothermal vein	Float of quartz veins near contact of granodiorite pluton and andesite wallrock contains pyrite, covellite, and malachite with chalcopyrite; contains up to 155 ppm Ag and 0.8 ppm Au. One hundred and fifty-six lode claims staked from 1968 to 1972.	Miller and Ferrians (1968) DGGS Kardex file
10	--	T11N, R13E (19.85, 6.25)	0	Mo	Hydrothermal vein	Grab sample of molybdenite-bearing quartz veins up to 0.6 meters thick near andesite-granodiorite contact contains 0.2% Mo.	Miller and Ferrians (1968)

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Survey Pass Quadrangle							
1	--	T21N, R13E (0.4, 3.6)	P	Pb, Zn, (Cu)	--	More than forty 1-5 cm bands of galena and sphalerite in 122 meter drill hole in carbonates. Bands are apparently conformable, stratabound lenses or beds.	Unpublished industry data
2	"Sharp Creek"	T21N, R14E (1.6, 3.6)	P	Cu	Stratabound massive sulfide	Minor chalcopyrite in chlorite-muscovite-quartz schist.	Unpublished industry data
3	"Jerry Creek"	T20N, R13E (0.3, 2.25)	P	Cu, Zn (Ag)	Stratabound massive sulfide	Weakly disseminated chalcopyrite and sphalerite in muscovite-quartz schist over a strike distance of at least 1200 meters. Selected samples up to 0.72% Cu, 2.15% Zn, and 12 grams Ag per tonne.	Unpublished industry data
4	--	T20N, R14E (1.0, 2.55)	O	Au, Ag Cu, Pb, Zn	--	Rock sample taken during geochemical sampling program contained 2.5 ppm Au, 35 ppm Ag, 7250 ppm Cu, 1750 ppm Pb, and 1500 ppm Zn.	Garland, Eakins, Trible, and McClintock (1975b)
5	--	T20N, R14E (0.6, 1.9)	P	Cu	Stratabound massive sulfide	Malachite staining in porphyroblastic chlorite-quartz schist.	Unpublished industry data
6	--	T20N, R16E (4.2, 1.95)	O	Au, Ag, Pb, Zn	Vein	Twenty-five rock samples of metamorphic rocks and quartz vein with galena contain up to 2 ppm Au, 2850 ppm Ag, 4750 ppm Pb and 6.3% Zn.	Garland, Eakins, Trible, and McClintock (1975b)
7	--	T19N, R16E (4.8, 1.1)	P	--	--	Thirty-five lode claims staked, 1974.	DGGS Kardex file
8	--	T20N, R17E (5.3, 3.0)	O	Au	--	Rock sample taken during geochemical sampling program contained 3 ppm Au.	Garland, Eakins, Trible, and McClintock (1975b)
9	--	T20N, R17E (6.2, 2.2)	O	Au	--	Rock sample taken during geochemical sampling program contained 1.5 ppm Au.	Garland, Eakins, Trible, and McClintock (1975b)
10	--	T20N, R18E (6.8, 2.7)	O	Au	--	Rock samples taken during geochemical sampling program contained up to 3.5 ppm Au. Probably related to the mineralization at Picnic Creek (11).	Garland, Eakins, Trible, and McClintock (1975b)
11	Picnic Cr.	T29N, R17&18E (6.7, 1.3)	P	Cu, Zn (Pb, Ag, Au)	Stratabound massive sulfide	No specific description of deposit but similar to the Arctic deposit (19 Ambler River quadrangle): a stratabound, volcanogenic deposit in a low- to medium-grade metamorphic sequence of metarhyolite and schists. Pyrite, chalcopyrite, and sphalerite are the principal sulfides. Extensively drilled and of substantial size.	Sichermann, Russell, and and Fikkan (1976) Unpublished industry data

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Survey Pass Quadrangle (cont.)							
12	--	T20N, R20E (10.6, 2.2)	0	Au, Ag, Cu	--	Rock sample taken during geochemical sampling program contained 2.5 ppm Au, 2 ppm Ag and 810 ppm Cu.	Garland, Eakins, Trible and McClintock (1975a)
13	--	T20N, R20E (11.1, 2.75)	0	Au	--	Rock sample taken during geochemical sampling program contained 2.0 ppm Au.	Garland, Eakins, Trible and McClintock (1975a)
14	--	T21N, R21E (12.1, 3.5)	0	Au	--	Rock sample taken during geochemical sampling program contained 2.5 ppm Au.	Garland, Eakins, Trible and McClintock (1975a)
15	(Arrigetch Creek)	T23N, R21&22E (12.8-13.2, 7.6)	0	Cu, Zn W	Contact metamorphic	Several tactite bodies up to 700 meters long by 70 meters thick at granite-limestone contact. Contain magnetite lenses and pods with minor disseminated chalcopyrite and sphalerite and tungsten values.	USBM unpublished data
16	(Anguneleichak Pass)	T22N, R16E (4.9, 6.0)	0	Ag	--	Silver reported by a prospector prior to 1913.	Smith (1913)
17	Wood Prospect	T25N, R14E (2.3, 9.55)	P	Cu	Vein	Copper in quartz vein cutting(?) massive gray limestone and black slate.	Unpublished industry data
18	(Tuplk Cr.)	T24N, R17E (6.3, 8.3)	0	Cu, Pb Zn, Mo, Ag, Sn	Contact metamorphic	Minor Cu, Pb, Zn, Mo, Ag, and Sn mineralization widely distributed near the contact zone of granite.	USBM unpublished data
19	--	T24N, R17E (6.65, 9.9)	0	Au, Ag, Pb, Zn, Sn, Mo	Disseminated in granite and contact metamorphic	Area about 900 meters long traversed during geochemical sampling program. Seventeen samples taken which reached as high as 55 ppm Au, 55 ppm Ag, 6,320 ppm Pb, 8500 ppm Zn, and 450 ppm Sn. Traverse across contact between granite and metamorphic rocks. Fluorite and molybdenite visible in granite.	Garland, Eakins and Trible (1975b)
20	--	T25N, R17E (6.7, 10.0)	0	Au, Ag	--	Rock sample taken during geochemical sampling program contained 3.5 ppm Au and 480 ppm Ag.	Garland, Eakins and Trible (1975b)
21	--	T25N, R18E (8.1, 10.35)	0	Ag	--	Rock sample of quartzite taken during geochemical sampling program contained 3 ppm Ag. Small lens of high-grade Ag ore reported during early prospecting.	Garland, Eakins and Trible (1975b) Anderson (1947)
22	(Lucky Six Creek)	T26N, R18E (approx. 8.0, 10.8)	0	Cu, Sb, Au	Hydrothermal vein	Six or more quartz veins with pyrite chalcopyrite, bornite, malachite and stibnite discovered 1902-03. Apparently no more recent work.	Schrader (1904)

Map No.	Name(s)[1/]	Location[2/]	Category[3/]	Resources[4/]	Type[5/]	Brief Description	Principal References[6/]
Survey Pass Quadrangle (cont.)							
23	--	T25N, R18E (8.6, 10.4)	O	Au, Ag Cu	--	Rock samples taken of marble, dolomite, quartzite, and diabase during geochemical sampling program contained up to 10 ppm Au, 3 ppm Ag, and 170 ppm Cu.	Garland, Eakins and Trible (1975a)
24	--	T26N, R20E (11.1, 11.1)	P	Cu	?	Copper in chlorite schist.	Unpublished industry data

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Hughes Quadrangle							
1	--	T8N, R14E (0.2, 2.0)	O	Cu, W	Vein	Chalcopyrite in quartz contains 7000 ppm W.	Miller and Ferrians (1968)
2	--	T8N, R14E (0.4, 2.3)	O	Ag, Pb, Bi, W	Altered felsic intrusive	Pyritiferous silicified intrusive contains 200 ppm Ag, 500 ppm Pb, 1000 ppm Bi and 700 ppm W.	Miller and Ferrians (1968)
3	--	T8N, R14E (centered about 0.5, 2.1)	O	U, Th	Dessiminated felsic intrusive	Border phase of the Zane Hills pluton contain 5 to 10 times the background radioactivity of the rest of the pluton.	Miller and Ferrians (1968)
4	--	T9N, R14E (centered about 1.2, 3.3)	O	Ag, Au, Pb, Zn, Mo, Bi	Vein	Pyrite in quartz vein at two localities contains 15 ppm Ag, 2.4 ppm Au, 300 ppm Pb, 300 ppm Zn and 500 ppm Cu. Sample at another locality in vicinity contains molybdenite and 3000 ppm Bi.	Miller and Ferrians (1968)
5	--	T9N, R14E (1.1, 3.6)	O	Sb	Breccia	Altered quartz breccia contains 200 ppm Sb.	Miller and Ferrians (1968)
6	--	T9N, R14E (centered about 1.2, 3.3)	O	U, Th	Disseminated felsic intrusive	Border phase of the Zane Hills pluton contain 5 to 10 times the background radioactivity of the rest of the pluton.	Miller and Ferrians (1968)
7	Bear Creek	T9N, R15E (2.05, 3.4)	M	Au	Placer	Auriferous gravels derived from glaciofluvial deposits; original source of gold may be contact zone of porphyritic monzonite and andesite. Dredge operated from 1957 to 1975. Concentrates also contain minor cassiterite, platinum-group metals and uranothorite. Substantial production.	Cobb (1973)
8	Red Mountain Creek	T10N, R23E (14.9, 5.4)	O	Zn, Au	Altered felsic intrusive	Pyritic latite porphyry with large gossan that contains traces of Zn and Au.	Berg and Cobb (1967)
9	Akoliakruich Hills	T16N, R18E (7.6, 13.1)	P	Zn, Cu, Mo	Altered felsic intrusive	Porphyritic granite where intensely oxidized to pyritized soda rhyolite bodies are weakly anomalous in Zn.	Unpublished industry data
10	(Lake Selby)	T17N, R14E (1.5, 15.55)	O	Cu (Ag)	Hydrothermal vein	Chalcopyrite with malachite and azurite stain in quartz vein cutting Cretaceous conglomerate; 100 ppm Ag by analysis.	Patton and Miller (1966)

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Chandler Lake Quadrangle							
1	(Chandler Lake)	T13S, R2W (3.9, 5.8)	0	P_2O_5, (U, V, fluorite)	Chemical sediment	Samples from near the top of the Mississippian Alapah Limestone contain 25.6% P_2O_5, 0.02% U_2O_5, 0.009% eU, and purple fluorite.	Patton and Matzko (1959)
2	(Tiglukpuk Creek)	T13S, R1E (7.2, 5.2)	0	P_2O_5, (U, V, fluorite)	Chemical sediment	A 11 meter zone of a black chert and shale unit in the Mississippian Alapah Limestone contains an average of 8% P_2O_5; a 1.1 meter sequence in it contains 21% P_2O_5. Samples contain up to 0.10% V_2O_5 and ubiquitous fluorite.	Patton and Matzko (1959)
3	(Natvakruak Lake)	T13S, R2E (8.5, 4.8)	0	P_2O_5, (U, V, fluorite)	Chemical sediment	A sample of phosphate rock in the black chert and shale unit of the Alapah Limestone contain 27.9% P_2O_5.	Patton and Matzko (1959)
4	(Anaktuvuk River)	T14S, R2&3E (8.6, 4.55; 10.4, 4.3)	0	P_2O_5, (U, V, fluorite)	Chemical sediment	Samples of phosphate rock in the black chert and shale member of the Alapah Limestone contain up to 21.4% P_2O_5, 0.014% eU, and ubiquitous fluorite.	Patton and Matzko (1959)

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Wiseman Quadrangle							
1	--	T27N, R24W (centered about 0.8, 2.4)	P	Cu, Zn	Stratiform	Seventy-seven lode claims staked 1975. Geology and geochemistry similar to that along the Copper belt to the west.	DGGS Kardex file Unpublished industry data
2	--	T27N, R24W (centered about 1.6, 3.2)	P	Cu, Zn	Stratiform	Twenty-one lode claims staked 1975. Geology and geochemistry similar to that along the Copper belt to the west.	DGGS Kardex file Unpublished industry data
3	--	T27N, R23W (centered about 2.65, 2.5)	P	Cu, Zn	Stratiform	Thirty-six lode claims staked 1975. Geology and geochemistry similar to that along the Copper belt to the west.	DGGS Kardex file Unpublished industry data
4	Ann Groups	T30N, R24W (centered about 1.1, 7.2)	P	--	Replacement(?) in carbonates	Fifty-eight lode claims staked 1975 in three blocks. General character of mineralization in area is sphalerite and galena in carbonates.	DGGS Kardex file Unpublished industry data
5	--	T30N, R23W (centered about 2.3, 7.0)	P	--	--	Eight lode claims staked 1975. General character of mineralization in area is sphalerite and galena in carbonates.	DGGS Kardex file Unpublished industry data
6	--	T30N, R23W (centered about 2.15, 7.8)	P	--	Replacement(?) in carbonates	One hundred ninty-one lode claims staked 1975. General character of mineralization in area is sphalerite and galena in carbonates.	DGGS Kardex file Unpublished industry data
7	--	T33N, R24W (0.4, 11.8)	0	Cu	--	Copper sulfides and malachite stains in Devonian slate and phyllite.	Brosgé and Reiser (1960)
8	(Hunt Fork)	T35N, R22W (approx. 2.6, 14.8)	0	Pb	Vein	Two quartz veins with galena in Devonian slate and phyllite unit.	Brosgé and Reiser (1960)
9	(John River)	W½ of quadrangle	0	Sb, Cu Au	--	Chalcopyrite and bornite in river gravels (location not reported). Stibnite lode near Hunt Fork. Twenty-four claims staked 1975.	Schrader (1904) Joesting (1942) DGGS Kardex file
10	--	T31N, R21W (5.0, 9.2)	0	Cu	--	Copper sulfides and malachite in faulted Skajit limestone.	Brosgé and Reiser (1960)
11	--	T31N, R20W (6.4, 9.6)	0	Cu	--	Copper sulfides and malachite at fault contact between Devonian limestone and phyllite and siltstone unit.	Brosgé and Reiser (1960)
12	--	T32N, R20W (6.8, 10.0)	0	Cu	--	Copper sulfides and malachite in Devonian conglomerate.	Brosgé and Reiser (1960) USBM unpublished data

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Wiseman Quadrangle (cont.)							
13	--	T32N, R19&29W	O	Cu, Pb	--	Copper sulfides, galena and malachite along thrust fault.	Brosgé and Reiser (1960)
14	--	T31N, R19W (7.6, 8.7)	O	Cu	--	Copper sulfides and malachite beneath thrust plate of Skajit limestone.	Brosgé and Reiser (1960)
15	--	T31N, R19W (8.4, 9.0)	O	Cu	--	Copper sulfides and malachite in Devonian phyllite and siltstone unit.	Brosgé and Reiser (1960)
16	--	T31N, R18W (8.9, 8.5)	O	Cu	Vein	Sulfides and malachite in vein quartz.	Chipp (1972)
17	--	T31N, R18W (9.5, 9.4)	O	Cu, Pb	Stockwork	Minor malachite and galena in vein quartz stockworks.	Chipp (1972)
18	--	T31N, R18W (10.15, 9.6)	O	Cu	Vein	Bornite and malachite in vein quartz. In calcareous Devonian schist in at least three localities in the area.	Chipp (1972) Brosgé and Reiser (1960)
19	--	T31N, R18W (10.0, 8.85)	O	Cu, Pb	Vein	Malachite or tetrahedrite in samples of vein quartz.	Chipp (1972)
20a	(Spring Cr.)	T31N, R18W (centered about 10.0, 9.05)	M	Au	Placer	Mining from 1903 to at least 1937 and may have been minor production since. Total production through 1937 about 89,000 grams of Au.	Reed (1938) Brosgé and Reiser (1960)
20b	(Lake Creek)	T31N, R18W (centered about 9.9, 8.5)	M	Au	Placer	Intermittent mining from 1904 to at least 1937. Production at least 31,000 grams of Au; concentrates contain stibnite, scheelite, native copper and native bismuth.	Reed (1938) Joesting (1943) Cobb (1973)
21	(Matthews Dome)	T31N, R18W (10.2, 8.4)	O	Cu	--	Bornite and malachite in calc-schist and vein quartz.	Chipp (1972)
22	(Birch Cr., Eagle Gulch)	T30N, R17W (11.2, 8.0)	P	Au	Placer	Total production of about 31,000 to 47,000 grams of Au prior to 1934. Creek mined for about 1.6 kms.	Reed (1938)
23	(Jay Cr., Rye Cr., Lucky Cr.)	T30N, R17W (centered about 11.4, 7.3)	M	Au	Placer	Creeks mined for about 3 kms from 1904 to at least 1935. Production about 310,000 grams of Au.	Reed (1938)
24	(Kay Cr.)	T30N, R16W (11.2, 7.2)	M	Au	Placer	Drift and hand mining through at least 1937. Production about 78,000 grams of Au.	Reed (1938) Cobb (1973)

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Wiseman Quadrangle (cont.)							
25	(Bourbon Creek)	T28N, R16W (12.45, 5.1)	M	Au	Placer	Was extensively mined in the early days and considered to have been mined out by 1937.	Reed (1938)
26	--	T29N, R17W (centered about 11.15, 5.6)	P	--	--	Six lode claims staked 1975.	DGGS Kardex file
27	(Galena Cr.)	T29N, R17W (10.7, 5.3)	O	Pb	--	Large piece of galena found in creek as float. Creek said to drain mineralized area of Galena Mtn. but no published report of mineralization in the drainage basin to creek.	Reed (1938)
28	(Michigan Creek)	T28&29N, R17W (11.3, 5.2)	P	Pb, Ag, Au	Vein	Quartz vein with argentiferous galena in limestone, phyllite or slate. Short adit driven but no production. Restaked in 1968.	Reed (1938) Brosgé and Reiser (1960) DGGS Kardex file
29	(Allen River)	T30N, R20W (centered about 6.7, 7.0)	O	Cu	--	Copper sulfides and malachite in Devonian black phyllite and slate unit. Twenty-four claims staked in area 1975.	Brosgé and Reiser (1960) DGGS Kardex file
30	(Crevice Creek)	T20N, R19&20W (7.5, 6.2)	O	Cu, Pb	--	Galena and copper sulfides in Devonian Skajit limestone.	Brosgé and Reiser (1960)
31	--	T29N, R21W (centered about 4.7, 5.2)		Cu, Pb, Zn	Stratiform	Eight prospecting sites staked 1976. Pyrrhotite, galena, and sphalerite chalcopyrite in interbedded schist, quartzite, and limestone.	Unpublished industry data
32	--	T31N, R15W (14.6, 10.4)	O	Pb	Vein	Quartz vein with galena in Devonian slate, phyllite and siltstone unit.	Brosgé and Reiser (1960)
33	(Vermont Dome)	T31N, R12W (18.6, 9.5)	O	Cu, Zn	--	Copper sulfides with malachite and vein quartz with traces of Cu and Zn in Devonian phyllite and siltstone unit.	Brosgé and Reiser (1960) Mulligan (1974)
34a	(Vermont Creek)	T31N, R12W (19.3, 9.4)	M	Au	Placer	Major producer in Wiseman area, production from 1901 to at least 1969. Known production at least 156,000 grams and total is probably more.	Reed (1938) Mulligan (1974)

Map No.	Name(s)[1/]	Location[2/]	Category[3/]	Resources[4/]	Type[5/]	Brief Description	Principal References[6/]
Wiseman Quadrangle (cont.)							
34b	(Hammond River, Swift Gulch)	T31N, R11W (centered about 19.7, 9.2)	M	Au	Placer	One of the most productive placers at Wiseman. Gold found along 21 kms of the river but only lowest 5 kms mined extensively. Gold in deep channel that extends into the Middle Fork where it is truncated probably by a glacier. Much of gold was coarse and one nugget weighed 137 ounces. Production unknown but substantial; produced almost 62,000 grams from 1900 to 1905 alone.	Reed (1938) Cobb (1973)
35	(Nolan Cr., Archibald Gulch, Fay Gulch, Smith Creek, Acme Creek)	T31N, R12W (centered about 18.8, 8.7)	M	Au	Placer	Nolan River and its tributaries comprise the richest and most productive placers in the district. Placers mined on benches, in shallow gulches and in deeply buried frozen gravels. Much placer ground buried by Pleistocene muck and gravel up to 65 meters thick. Mined from 1901 until 1974(?). Total production unknown but probably 3.1 million grams of gold or more; more than 1.2 million grams produced from 1904 to 1909 alone.	Reed (1938) Cobb (1973) Mulligan (1974)
36	Ferguson; Jones and Boyle; Wannemaker and Wortman	T30&31N, R12W (centered about 19.1, 8.8)	M	Sb, Au	Hydrothermal vein	At least seven quartz-stibnite veins as much as 0.15 meters thick with up to 9 ppm Au. Five tons of stibnite shipped from one during World War II.	Joesting (1943) Ebbley and Wright (1948) Mulligan (1974)
37	(Union Gulch)	T30N, R11W (19.55, 8.4)	M	Au	Placer	Sporadic mining from 1901 to at least 1937. Total production unknown but probably minor; about 53,000 grams recovered from 1900 to 1909.	Reed (1938)
38	(Mascot Cr.)	T31N, R13W (16.6, 8.9)	M	Au	Placer	Intermittently mined from 1902 until at least the 1950's. Production over 233,000 grams of Au.	Reed (1938) Brosgé and Reiser (1960)
39	(Cow Creek)	T30N, R12W (19.25, 7.4)	O	Cu	Vein	Copper sulfides and malachite in quartz vein cutting Devonian schist and marble unit.	Brosgé and Reiser (1960)
40	(Emma Dome)	T29N, R13W (17.5, 6.05)	O	Au, Ag	Vein	Quartz vein with Au and Ag.	Brosgé and Reiser (1960)

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Wiseman Quadrangle (cont.)							
41	(Emma Cr.)	T29N, R12W (centered about 18.8, 6.10)	M	Au	Placer	About 4½ kms of steep, narrow, boulder-laden gulch mined from 1900 to at least 1974. Small scale mining. Total production between 239,000 and 302,000 grams of Au.	Reed (1938) Mulligan (1974)
42	(Slate Cr.)	T28N, R13W (20.25, 4.4)	M	Au	Placer	One of biggest producers in district. Creek gravels mined for at least 9 kms above mouth. Relatively shallow gravel mined by hand and by hydraulic methods with mechanical equipment. Mined intermittently from 1899 to at least 1953. Total production unknown but about 286,000 grams produced from 1900 to 1909.	Maddren (1913) Mulligan (1974)

Map No.	Name(s)[1/]	Location[2/]	Category[3/]	Resources[4/]	Type[5/]	Brief Description	Principal References[6/]
Bettles Quadrangle							
1	(Gold Bench, Ironside Bench, Rock Creek)	T25N, R14W (centered about 17.7, 16.1)	M	Au	Placer	Substantial placer gold production. Active through 1975.	Reed (1938) DGGS Kardex file

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Philip Smith Mountain Quadrangle							
1	Beacoup Group	T14S, R19E (14.8, 4.0)	P	Cu	Vein	Chalcopyrite and malachite in remnants of quartz vein in limestone. Eight claims staked in 1971.	Unpublished industry data DGGS Kardex file
2	Occasional Group	T13S, R20E (16.0, 5.25)	P	Pb, Zn, Cu	Vein	Galena, sphalerite and chalcopyrite in vein and boxwork of veinlets in limestone. Twenty claims staked in 1971.	Unpublished industry data
3	Hungry Group	T15S, R20E (16.8, 3.9)	P	Cu	Vein	Quartz vein with malachite and minor chalcopyrite.	Unpublished industry data

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Chandalar Quadrangle (cont.)							
10	(Big Jim Creek)	T35N, R11W (0.3, 15.15)	O	Cu, Pb	--	Galena and copper sulfides and/or copper carbonates in Upper Devonian phyllite.	Brosgé and Reiser (1964)
11	--	T36N, R10W (16.4, 0.6)	O	Cu	--	Copper sulfides and malachite near contact between Skajit Limestone and slate, phyllite siltstone unit.	Brosgé and Reiser (1964)
12	(Snowden Creek)	T34N, R10W (2.0, 13.2)	O	Cu, Gypsum	Vein	Graphite, pyrite, and chalcopyrite in vein quartz float near contact of Devonian limestone and greenstone. Gypsum-calcite zone 0.15 meter thick contains abundant fine-grained pyrite.	Brosgé and Reiser (1964) Mulligan (1974)
13	--	T35N, R8&9W (centered about 3.6, 14.8)	P	?	--	Claims staked in 1967.	DGGS Kardex file
14	--	T33N, R9W (centered about 2.75, 12.5)	P	?	--	Claims staked in 1967.	DGGS Kardex file
15	(Matthews River)	T33N, R9W	O	Cu, Pb Zn, Au, (Ag)	--	Sulfide mineralization in quartz veins in Devonian(?) greenstone and greenschist. Iron-stained quartz float. Vein assayed 3.4 ppm gold and trace of silver.	Brosgé and Reiser (1964) Mulligan (1974)
16	Victor	T32&33N, R8W (centered about 3.95, 11.15)	P	Cu	Porphyry copper(?)	At least 23 lode claims staked 1967-1970. Details of mineralization not known but may be similar to contiguous Venus claims (17).	DGGS Kardex file
17	Venus	T32&33N, R8W (centered about 4.5, 11.0)	P	Cu	Porphyry copper	Disseminated chalcopyrite in granodiorite porphyry and associated skarn. At least 37 lode claims staked 1967-1970 and prospect drilled.	Unpublished data, M. A. Wiltse and S. P. Marsh DGGS Kardex file
18	Limestone Creek	T32N, R8W	O	Pd, Ag, Ni	--	Nickel, palladium, and silver identified from x-ray analysis of material in limestone thrust over quartz-mica schist.	Brosgé and Reiser (1964)
19	Evelyn Lee	T33N, R8W (centered about 4.9, 11.55)	P	Cu	Contact metamorphic	Chalcopyrite, bornite, and pyrite in contact skarn developed in marble close to or within a hornblende granodiorite porphyry. At least 24 lode claims staked in 1969 and 1970.	Unpublished data, M. A. Wiltse and S. P. Marsh DGGS Kardex file

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Chandalar Quadrangle (cont.)							
20	--	T33N, R8W (4.9, 12.45)	P	Cu	--	Copper sulfide minerals and/or malachite-azurite stains in thrust fault-bounded block of Devonian Skajit Limestone. Eight lode claims staked 1969-1970.	Brosgé and Reiser (1964) DGGS Kardex file
21	--	T34N, R7W (centered about 5.5, 13.9)	P	Cu	Contact metamorphic	Copper mineralization associated with tactite. About 20 lode claims staked 1967 to 1970.	Unpublished data, M. A. Wiltse and S. P. Marsh DGGS Kardex file
22	--	T34N, R7W (centered about 5.6, 13.3)	P	--	--	Six lode claims staked 1967 to 1970 in two blocks.	DGGS Kardex file
23	--	T34N, R6&7W (centered about 6.5, 13.8)	P	--	--	Five lode claims staked in four locations, 1972.	DGGS Kardex file
24	(Quartz Cr.)	T35N, R7W (5.6, 14.2)	O	Cu, Zn	Vein	Small quartz vein cutting Devonian chlorite schist contains geothite, malachite, and trace of zinc. Malachite and possibly chalcopyrite in float.	Brosgé and Reiser (1964) Mulligan (1974)
25	--	T35N, R7W (5.9, 15.45)	P	--	--	Eight lode claims staked, 1968.	DGGS Kardex file
26	--	T35N, R6W (centered about 7.4, 14.3)	P	Cu	--	Eighty-two claims staked in two blocks 1972 to 1975. Copper sulfides and copper carbonates near limestone contact at one location.	DGGS Kardex file Brosgé and Reiser (1964)
27	Jim-Montana Group; Mowgli Group)	T35N, R6W (approx. 7.6, 14.4)	P	Cu, Zn, Ag, (Pb)	Contact metamorphic	Chalcopyrite, sphalerite and minor galena, tennantite, and malachite stain in skarn. About 100 claims staked 1971 and 1972 in two locations.	Unpublished industry data
28	Steph Group	T35N, R6W (7.9, 15.05)	P	Cu, Ag	Vein	Quartz vein with malachite, azurite and tennantite. Five claims staked 1971 and 1972.	Unpublished industry data
29	Bob Group; Gayle Group	T35N, R5W (approx. 8.5, 15.2)	P	Pb, Zn, Ag	Contact metamorphic	Galena and sphalerite with Ag values in skarn associated with limestone. Twenty-seven claims staked 1972 in two locations.	Unpublished industry data Unpublished data, M. A. Wiltse and S. P. Marsh
30	Bibbon Group	T35N, R5W (8.3, 15.5)	P	Cu	Vein	Quartz vein with malachite and chalcopyrite. Nineteen claims staked 1972.	Unpublished industry data

Map No.	Name(s)[1/]	Location[2/]	Category[3/]	Resources[4/]	Type[5/]	Brief Description	Principal References[6/]
Chandalar Quadrangle							
1	--	T27N, R9W (2.5, 2.35)	O	Cu, Ni	--	Copper sulfide minerals and/or malachite-azurite stains at contact between Devonian(?) volcanics and underlying phyllite and slate unit. Nickel identified by analysis.	Brosgé and Reiser (1964)
2	(Siwash Cr.)	T26N, R8W (4.15, 2.0)	O	Cu	--	Copper sulfides and/or malachite-azurite stains in cherty part of Devonian(?) volcanic rock unit.	Brosgé and Reiser (1964)
3	(Myrtle Cr.)	T28N, R11W	M	Au	Placer	One of the biggest gold producers in the Koyukuk district with recorded production of about 274,000 grams of Au from 1900 through 1909 from stream gravels and bench gravels. Deeper gravels mined by hydraulicking and mechanized equipment through 1960's. Nugget weighing 23 ounces found in 1940.	Maddren (1913) Reed (1938) Smith (1942) Cobb (1973) Mulligan (1974)
4	(Slate Cr.)	T28N, R11W (0.75, 4.0)	M	Au	Placer	Thin gravels on mica schist bedrock. Mining reported sporatically from 1899 through present (1974). Production from 1900 through 1909 was 4500 grams.	Schrader (1900) Maddren (1913) Mulligan (1974)
5	--	T28N, R10W (1.75, 3.75)	O	Cu	--	Copper sulfide minerals and/or malachite-azurite stains in Devonian(?) micaceous graywacke.	Brosgé and Reiser (1964)
6	(West Fork)	T27N, R5W (8.7, 3.5)	O	Cu	--	Copper minerals in Devonian(?) volcanic rocks.	Brosgé and Reiser (1964)
7	(Howard Cr.)	T30N, R11W (0.6, 6.65)	O	Cu, Pb, Ni	--	Cherry-sized pods of quartz and pyrrhotite with traces of galena and chalcopyrite in Devonian chloritic schists. Pyrite veinlets along fractures contain traces of copper. Ni by analysis.	Brosgé and Reiser (1964) Mulligan (1974)
8	(Gold Cr. Magnet Cr.)	T31N, R10W (centered about 1.7, 9.05)	M	Au	Placer	Gold discovered in 1900 with sporadic mining through 1974. Production of gold from 1900 through 1909 was about 348,000 grams. Angular fragments of stibnite with quartz stringers have been found in stream gravels.	Schrader (1904) Maddren (1913) Reed (1938) Cobb (1973)
9	--	T32N, R11W (0.15, 11.0)	O	Cu	--	Copper sulfide minerals and malachite-azurite stains in Upper Devonian siltstone and grit unit.	Brosgé and Reiser (1964)

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Chandalar Quadrangle (cont.)							
31	--	T36N, R5W (8.7, 16.15)	O	Cu	--	Copper sulfide minerals and/or malachite-azurite stains in Devonian limestone-siltstone unit overlying Devonian Skajit Limestone.	Brosgé and Reiser (1964)
32	--	T36N, R4&5W (9.45, 16.6; 10.7, 16.6; 9.3, 15.9)	O	Cu	Vein	Malachite, pyrite and pyrrhotite disseminated in small veinlets in limestone at three localities.	Unpublished industry data
33	--	T35N, R5W (centered about 9.1, 14.8)	P	--	--	Four placer claims staked in vicinity 1973. Sample of limestone with galena from area contained 360 ppm Ag and 6.5 ppm Au.	DGGS Kardex file Schrader (1900) Brosgé and Reiser (1972)
34	--	T35N, R4W (centered about 10.2, 14.9)	P	Pb	Vein	Claims staked in 1972 in area of galena-bearing veinlets and stockworks.	DGGS Kardex file
35	--	T33N, R5W (8.3, 12.5)	O	Zn	--	Sphalerite in boxwork of veinlets found in float.	Unpublished industry data
36	(Geroe Cr.)	T33N, R6W (centered about 7.9, 11.9)	P	Mo, Cu	Mo-Cu porphyry	Disseminated molybdenite associated with Geroe Creek pluton. Associated copper sulfide minerals. Two hundred and thirty-nine lode claims staked 1975 and 1976.	Unpublished industry data DGGS Kardex file
37	--	T33N, R5W (centered about 8.8, 11.7)	P	Au	--	Six lode claims staked in 1975 on "Au-arsenic lode."	DGGS Kardex file
38	(Anderson Cr.)	T33N, R5W (9.25, 11.5)	O	Cu	Vein	Malachite and chalcopyrite in quartz vein.	Unpublished industry data
39	(Horse Cr.)	T30N, R6W (7.0, 7.0)	O	Cu	--	Copper sulfides and/or malachite-azurite stains in Devonian quartz-mica schist.	Brosgé and Reiser (1964)
40	--	T30N, R4W (10.4, 7.55)	O	Au	Vein	Gold in quartz vein in Devonian quartz-mica schist.	Brosgé and Reiser (1964)
41	(Big Joe Creek)	T30N, R3W (11.4, 8.25)	O	Au	Vein	Gold in quartz vein in Devonian(?) quartz-mica schist.	Brosgé and Reiser (1964)
42	--	T31N, R3&4W (centered about 11.3, 8.9)	P	Au	Vein?	Thirty-four lode claims staked in 1973.	DGGS Kardex file

Map No.	Name(s)[1/]	Location[2/]	Category[3/]	Resources[4/]	Type[5/]	Brief Description	Principal References[6/]
Chandalar Quadrangle (cont.)							
43	(Tobin Cr.)	T31N, R3W (11.4, 9.5)	M	Au	Placer	No data available on gold production that has taken place from early prospecting in 1930 to reported activity in 1969. Concentrates include monazite, hematite, scheelite, gold, pyrite, magnetite, rutile, and galena.	Chipp (1970) Cobb (1973)
44	Kelty	T32N, R3W (approx. 11.5, 9.9)	P	Au	Hydrothermal vein	Steeply dipping auriferous quartz veins in schistose rocks.	Maddren (1913)
45a	Mikado (& numerous others)	T31N, R3W (11.75, 9.45)	M	Au	Hydrothermal vein	Steeply dipping auriferous quartz vein structure up to 4.5 meters thick explored for at least 900 meters in schist. Over 600 meters of underground working mostly through an adit. Active exploration program and minor production since early 1960's. Vein structure highly faulted with much gouge. Sulfides minor; include arsenopyrite, sphalerite, galena and stibnite. Visible native Au in quartz which commonly assays 60 to 750 ppm Au. Estimated reserves at Mikado Mine of at least 778,000 grams of Au. Numerous other similarized-mineralized quartz veins found at other prospects in vicinity but none explored so thoroughly.	Maddren (1913) Chipp (1970) Brosgé and Reiser (1972) Unpublished industry data
45b	Star, Summit and others	T31N, R3W (12.0, 9.55)	M	Au	Hydrothermal vein	Quartz veins at Summit Mine assayed at 90 ppm gold in 1913. Workings included 16-meter shaft and 22-meter drift on vein about 0.5 meters wide. Dump samples assayed 0.5-6.6 ppm gold in 1970 with abundant arsenopyrite and scorodite. Nearby Star prospect has 1.8 meter wide quartz vein that assayed 11 ppm Au.	Maddren (1913) Chipp (1970) Brosgé and Reiser (1972)
45c	Little Squaw	T32N, R3W (12.2, 10.0)	M	Au	Hydrothermal vein	Development work from 1910 to 1933 included a short adit on an auriferous quartz vein in schist. Arsenopyrite lenses common. Small stamp mill set up early in cnetury for ore from this mine; probably some minor production, Current activity mainly surface trenching.	Maddren (1913) Mertie (1925) Berg and Cobb (1967) Chipp (1970)

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Chandalar Quadrangle (cont.)							
46	(Little Squaw Cr.)	T31N, R3W (12.1, 10.1)	M	Au	Placer	Complex glacial history; creek was dammed during part of Pleistocene and gold-bearing creek and bench gravels mingled. Source of gold in auriferous quartz veins in headwaters. Concentrates contain gold, pyrite, hematite, arsenopyrote, scheelite, galena and monazite. Mining reported in most years between 1914 and 1940. Production unknown but significant.	Chipp (1970) Maddren (1913) Mertie (1925) Cobb (1973)
47	(Big Creek)	T31N, R3W (12.1, 9.3)	M	Au	Placer	Gold discovered in 1906. Production has been estimated as high as 1.2 million grams of which about 466,000 grams have been produced since 1950 with mechanical equipment.	Chipp (1970) Maddren (1913) Mertie (1925) Brosgé and Reiser (1972) Cobb (1973)
48	--	T30N, R3E (19.55, 8.0)	O	Au, Ag	Vein	High concentration of gold and silver in thin arsenic-rich quartz vein system north of Thazzik Mountain.	Brosgé and Reiser (1972)

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Mt. Michelson Quadrangle							
1	(Nanook Cr.)	T2N, R25E (approx. 5.7, 9.7)	0	Cu	--	"Minor malachite and azurite stains in amygaloidal basalt" at one locality. "Native copper reported in basalt. Azurite and malachite in breccia zone in Devonian or older dolomite overlying the basalt" at another.	Brosgé and Reiser (1976)
2	--	T3N, R29E (22.9, 10.3)	0	Cu	--	Native copper occurs in basalt.	Brosgé and Reiser (1976)
3	(Mt. Weller)	T3N, R30E (13.8, 10.3)	0	Cu	--	Copper sulfides occur in amygdaloidal basalt.	Brosgé and Reiser (1976)
4	--	Extensive in central portion of quadrangle	0	P_2O_5,(U)	Chemical sediment	Extensive outcrop of phosphate-bearing unit of the Triassic Shublik Formation. Samples analyzed from at least six localities; richest was a 6.1 meter section of phosphate rock in a 30 meter sequence of black oolitic limestone that contianed 35.8% P_2O_5 and a 0.008% eU.	Patton and Matzko (1959) Detterman (1970) Tourtelot and Tailleur (1971)
5	--	Extensive in east-central portion of quadrangle	0	P_2O_5,(U)	Chemical sediment	Extensive outcrop of phosphate-bearing unit of the Triassic Shublik Formation. Sampled in two localities; a 6.1 meter section contained 15% P_2O_5 and 0.003% eU.	Patton and Matzko (1959)
6	--	T1S, R30E (12.6, 5.7)	0	Cu	Vein(?)	"0.3% Cu in thin veins in quartzite."	Brosgé and Reiser (1976)
7	(Katak Cr.)	T2S, R31E (14.25, 5.45)	0	Sn	--	Thin section of sample from the Paleozoic Kekiktuk Conglomerate contains cassiterite, tourmaline, sphene, magnetite and ilmenite. Source of cassiterite to east in Romanzof Mountains area.	Reed (1962)
8	(Esotuk Glacier)	T2S, R32E (16.3, 5.6)	0	Pb, Zn, Sn, Cu, W	Contact metamorphic	Skarn contains galena, sphalerite, malachite, axinite, up to 300 ppm Sn, 1500 ppm W, and quartz-tourmaline veins.	Brosgé and Reiser (1976)
9	--	T1S, R33E (17.9, 6.1)	0	Mo	--	Disseminated molybdenite in granite at two localities.	Sable (1965)
10	--	T4S, R32E (15.6, 0.75)	0	Cu	--	Chalcopyrite in sheared volcanic rocks.	Brosgé and Reiser (1976)

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Mt. Michelson Quadrangle (cont.)							
11	--	T5S, R31E (14.8, 0.4)	0	Cu	--	Chalcopyrite in brecciated quartzite of Mississippian Kekiktuk Conglomerate.	Brosgé and Reiser (1976)
12	(Itkillik Creek)	T5S, R32E (15.6, 0.75)	0	Cu	--	Chalcopyrite in phyllite interbedded with chert and volcanic rocks.	Brosgé and Reiser (1976)
13	(Okpilak Cr.)	T1S, R33E (18.6, 6.7)	0	U	Disseminated, felsic igneous	Representative sample in peripheral zone of Okpilak granite contains 50 ppm eU.	White (1952)

Map No.	Name(s)[1/]	Location[2/]	Category[3/]	Resources[4/]	Type[5/]	Brief Description	Principal References[6/]
Arctic Quadrangle							
1	--	T6S, R34E (18.5, 16.4)	0	Cu	--	Malachite and azurite in sandstone.	Brosgé and Reiser (1976)

Map No.	Name(s)[1]	Location[2]	Category[3]	Resources[4]	Type[5]	Brief Description	Principal References[6]
Demarcation Point Quadrangle							
1	--	T1S, R34E (0.4, 6.2)	0	Pb, Zn	Vein	Fluorite in small isolated body of granite; As, Pb, and Zn by analysis in quartz veins.	Brosgé and Reiser (1976)
2	(vic. McCall Glacier)	T2S, R34E (0.5, 5.3)	0	Cu, Zn Pb, Sn	Vein	Sulfides including galena, sphalerite(?) and chalcopyrite in deformed quartz veins and schist along sheared contact between granite and quartz monzonite dikes at two localities.	Sable (1965) Brosgé and Reiser (1976)
3	(vic. McCall Glacier)	T2S, R34E (0.2, 5.2)	0	Fluorite	Greisen	Fluorite in greisen in granite.	Brosgé and Reiser (1976)
4	(trib. to Okpilak River)	T2S, R34E (0.1, 4.4)	0	Mo	--	Molybdenite at contact of quartz veins with granite.	Brosgé and Reiser (1976)
5	--	T2S, R34E (0.5, 4.5)	0	Au, Ag	--	Pyritic zone in granite contains traces of Au and Ag.	Brosgé and Reiser (1976)
6	(Boulder Creek)	T1S, R35E (2.5, 5.7)	0	Cu	Shear zone	Chalcopyrite in quartz in shear zone concordant with bedding of lower part of Neruokpuk Formation.	Sable (1965)
7	(creek below Contact Glacier)	T2S, R35E (2.4, 4.8)	0	Cu	Contact metamorphic	Malachite and azurite in calcareous hornfels.	Brosgé and Reiser (1976)
8	--	T1S, R37E (4.7, 5.8)	0	Phosphates	Chemical sediment	Limited exposure of Shublik Formation which is probably phosphatic.	Brosgé and Reiser (1976)
9	--	T1N, R38E (7.3, 8.4)	0	Cu	Vein	"Chalcopyrite in quartz vein in volcanic rocks."	Brosgé and Reiser (1976)
10	--	T4S, R41E (10.6, 1.7)	0	Mn	Sedimentary rock	Up to 5% Mn in manganiferous siltstone with manganese nodules at two localities in Lower Cretaceous rocks.	Detterman (1970) Brosgé and Reiser (1976)

Map No.	Name(s)[1/]	Location[2/]	Category[3/]	Resources[4/]	Type[5/]	Brief Description	Principal References[6/]
Table Mountain Quadrangle							
1	--	T8S, R35E (1.2, 13.05)	0	Cu, Pb, (Ag)	--	Sample of quartz vein in green slate and volcanic rocks contains 0.5% Cu, 0.15% Pb, and 2.8 ppm Ag.	Brosgé and Reiser (1968)
2	--	T10S, R39E (6.6, 9.9)	0	Mo?	--	An area of granite interpretated from aerial photographs with possible Mo potential.	Brosgé and Reiser (1976)
3	(Bear Mtn.)	T12S, R44E (11.75, 6.75)	0	W, Sn	--	Random samples contain up to 200 ppm W and 10 ppm Sn.	Brosgé and Reiser (1968)
4	(Bear Mtn.)	T12S, R44E (approx. 12.6, 7.3)	0	Pb, Cu	--	Pyrite and chalcopyrite in greenstone at contact of conglomerate on phyllite; samples contain 0.06% Pb. A gossan at another locality contains 0.05% Pb.	Brosgé and Reiser (1968)
5	(Bear Mtn.)	T12S, R44E (12.6, 6.75)	0	Pb	--	Galena veinlets in greenstone.	Brosgé and Reiser (1976)
6	(Bear Mtn.)	T12S, R44E (12.5, 6.5)	0	Pb, Zn Cu	--	Several occurrences of galena, sphalerite and chalcopyrite in quartz at contact of rhyolite dike in quartzite and phyllite; contains 1% Cu, 0.16% Zn, and 0.002% Mo.	Brosgé and Reiser (1968)

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

U. S. GEOLOGICAL SURVEY
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MAP SHOWING KNOWN MINERAL DEPOSITS OF THE BROOKS RANGE, ALASKA

Compiled by Donald Grybeck

1977

Base map from the National Atlas of the United States of America, U. S. Geological Survey, 1970

Albers Equal Area Projection

SCALE 1:1,000,000

10 0 20 40 60 80 100 MILES
10 0 50 100 150 KILOMETERS

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

GENERAL REFERENCES

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_____1973, Placer deposits of Alaska: U.S. Geol. Survey Bull. 1374, 213 p.

_____1975a, Summary of references at mineral occurrences (other than mineral fuels and construction materials) in five quadrangles in west-central Alaska (Hughes, Kateel River, Melozitna, Selawik, Shungnak): U.S. Geol. Survey open-file rept. 75-627.

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_____1976, Summary of references to mineral occurrences (other than mineral fuels and construction materials) in the Chandalar and Wiseman quadrangles, Alaska: U.S. Geol. Survey open-file rept. 76-390, 395 p.

Note: Also see references to specific deposits, table 1, in accompanying text.

EXPLANATION OF SYMBOLS

Numbers near deposit symbols refer to table 1 in accompanying text. Deposits tabulated by U.S. Geological Survey 1:250,000 scale topographic quadrangles outlined on map.

Chief commodity or commodities of interest shown adjacent to the symbols.

LODE DEPOSITS

Size of Deposit: Small[1]/ Large[2]/

- Strata-bound, massive sulfide deposits
- Strata-bound, disseminated sulfide deposits; includes Mississippi Valley type deposits and replacement bodies in carbonate rocks
- Stockworks, pipes, and deposits of irregular or tabular shape; includes porphyries and ore minerals disseminated in felsic igneous rocks
- Deposits in veins and shear zones and breccia fillings
- Magmatic deposits; mainly sulfides and oxides in mafic and ultramafic igneous rocks
- Skarn, tactite and contact metamorphic deposits
- Pegmatites and graisen
- Miscellaneous deposits including industrial minerals

[1]/ Production less than $1,000,000 or comparable reserves or identified resources. With rare exception, however, the deposits have no recorded production and their resource potential is largely speculative. Metal values reflect prices as of January 1, 1977.

[2]/ Production greater than $1,000,000 or comparable reserves or identified resources. Metal values reflect prices as of January 1, 1977.

PLACER DEPOSITS

- Gold (and byproduct silver) production = less than 31,100 grams (1,000 ounces) or not specifically known and probably small. These placers are not included in table 1.
- Gold (and byproduct silver) production between 31,100 and 311,000 grams (1,000 and 10,000 ounces).
- Gold (and byproduct silver) production greater than 311,000 grams (10,000 ounces).

Note: Most placers also carry varying amounts of a wide variety of heavy minerals; see Cobb (1973) for details.

NON-METALLIC DEPOSITS

Coal

- Local occurrence of coal (after Barnes, 1967)
- Outline of area containing one or more substantial coal beds (after Barnes, 1967)
- Outline of area with significant occurrences of industrial minerals. Sand and gravel not included.

MISCELLANEOUS

- Boundary of Brooks Range Regional Mineral Resource Assessment Program (RAMRAP) as used in this study.
- Outline of area selected under sec. 17(d)(2) of the Alaska Native Claims Settlement Act. Numbers refer to the Four National Systems proposal of the Department of the Interior, Dec. 18, 1973. Compiled from maps prepared by the Bureau of Land Management, December 1973 and March 1974.
  1. Gates of the Arctic National Park
  2. Kobuk Valley National Monument
  3. Noatak National Ecological Monument
  13. Arctic National Wildlife Refuge Addition
  15. Selawik National Wildlife Refuge
  19. Noatak National Arctic Range
- Approximate route of Alyeska pipeline