UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUMMARY OF REFERENCES TO MINERAL OCCURRENCES (OTHER THAN MINERAL FUELS AND CONSTRUCTION MATERIALS) IN FIVE QUADRANGLES IN WEST-CENTRAL ALASKA (HUGHES, KOTZEBUE, MELOZITNA, SELAWIK, SHUNGNAK)

OPEN-FILE REPORT 75-627

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

Menlo Park, California
December 1975

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By
Edward H. Cobb

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Illustration

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 5 quadrangles in west-central Alaska. All references to published and open-filed reports of the Geological Survey, to most published and open-filed reports of the U.S. Bureau of Mines, and to most published reports of the State of Alaska Division of Geological and Geophysical Surveys and its predecessor State and Territorial agencies released before January 1, 1975, are summarized. Occasionally reports from other sources have been included; in such instances references have been summarized in greater detail than those to the kinds of reports listed above. 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.

This report is divided into three parts: a section made up of summaries of references arranged alphabetically first by quadrangle and second 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.

Quadrangle location map, west-central Alaska

Summaries of References

For each mineral occurrence there is a page that gives the name of the occurrence; the mineral commodities present (listed alphabetically for metallic commodities and then for nonmetallic commodities); the mining district (Ransome and Kerns, 1954) in which the occurrence is located; the name of the 1:250,000-scale topographic quadrangle, coordinates (as described by Cobb and Kachadoorian, 1961, p. 3-4); the metallic mineral resources map number (Cobb, 1972, in the reference list for each quadrangle) and occurrence number on that map if the occurrence is shown; and the latitude and longitude of the occurrence. 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 all 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 are given if such names appear in the reports summarized. If a deposit does not have such a name, but is near a named geographic feature, the name of that feature is shown in parentheses in lieu of a proper name. If a deposit has no proper name and is not near a named geographic feature, it is titled "Unnamed occurrence" and appears at the end of the list. If a part of a proper name is not always used in a reference, that part of the name is shown in parentheses; this is most common in company names and in place names with minor variations in spelling.

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:

B	U.S. Geological Survey Bulletin
C	U.S. Geological Survey Circular
GR	Alaska Division of Geological and Geophysical Surveys (and predecessor State agencies) Geological Report
I	U.S. Geological Survey Miscellaneous Geologic Investigations Map
OF	U.S. Geological Survey Open-file Report (numbers with a hyphen in them are formal. Numbers without a hyphen are informal and are used only within the Alaskan Geology Branch of the Geological Survey).
MF	U.S. Geological Survey Miscellaneous Field Studies Map
P	U.S. Geological Survey Professional Paper
RI	U.S. Bureau of Mines Report of Investigation
TDM	Alaska Territorial Department of Mines Pamphlet
USBM OF	U.S. Bureau of Mines Open-file Report

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

References cited only in these introductory paragraphs are:

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. Geol. Survey Bull. 1139, 363 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. Bur. Mines Inf. Circ. 7679, 91 p.

(Bear Cr.)

Gold, Platinum, Tin

Hughes district
MF-458, loc. 7

Hughes (1.5-2.3, 3.2-3.6)
66°11'-66°12'N, 155°40'-155°47'W

Summary: Auriferous gravels derived from glaciofluvial deposits of local origin. Gold may have come from contact zone between porphyritic monzonite and andesitic volcanic rocks. Cassiterite and platinum-group metals identified in samples collected in early 1920's. Small-scale mining in 1921. Dredge operated from 1957 to as recently as 1969. Includes references to (Hogatza R.).

Brooks, 1923 (B 739), p. 41 -- 3 men mining in 1921.

U.S. Geological Survey, 1965 (P 525-A), p. A102 -- Small dredge being operated in 1965 on Bear Cr. along eastern edge of Zane Hills pluton (quartz monzonite-granodiorite).

Patton and Miller, 1966 (I-459) -- Location of placer gold mine shown. Upper Cretaceous granodiorite and quartz monzonite pluton intruded Lower Jurassic and Lower Cretaceous andesite volcanics; zone of thermal metamorphism borders pluton.

Miller and Ferrians, 1968 (C 570), p. 9 -- Auriferous gravels derived from outwash streams from a glacier lobe that terminated at Bear Cr. Gold may have come from contact zone between porphyritic monzonite and andesitic volcanic rocks. Contact about 1 mi. above mined area.

Cobb, 1973 (B 1374), p. 144-145 -- Dredge operated 1957 to as recently as 1969. Cassiterite and platinum-group metals identified in samples collected in early 1920's.

(Black Cr.) Copper, Gold

Hughes district Hughes (15.3-15.4, 1.6-1.8)
MF-458, locs. 4, 10 66°05'N, 153°50'-153°52'W

Summary: Placer gold mining reported in 1913, 1915, 1917. Bedrock is altered Mesozoic rocks near a granitic pluton. Sparse chalcopyrite disseminated in metavolcanic rocks and aplites near head of creek.

Eakin, 1914 (B 592), p. 383 -- A little gold has been recovered (1913).
Brooks, 1916 (B 642), p. 65 -- Mining, 1915.
Eakin, 1915 (B 631), p. 83-84 -- Bedrock is altered Mesozoic rocks near a granite pluton. Depth to bedrock about 20 ft.; deposit about 12 ft. wide. Gravels finer than in Indian R. Some production in 1915.
Martin, 1919 (B 692), p. 39 -- Mining, 1917.
Miller and Ferrians, 1968 (C 570), p. 5-6 -- Pyrite and sparse chalcopyrite disseminated in metavolcanic rocks and aplites near pluton at head of creek. Bedrock grab samples showed anomalous Cu, but only 2 contained detectable Au.

(Felix Fork) (Cr.)

Gold

Hughes district
MF-458, loc. 10

Hughes (15.65, 1.6) approx.
66°04'N, 153°47'W approx.

Summary: Creek not shown on available maps, but is assumed to have been mined with Indian R. Gold discovered in 1910; mining in 1911 and 1917.

Brooks, 1912 (B 520), p. 38 -- Auriferous gravel discovered, 1910.
Smith, 1913 (B 536), p. 143 -- A few claims had been developed by 1911.
Martin, 1919 (B 692), p. 39 -- Small-scale mining, 1917.

(Helpmejack Cr.) Gold

Koyukuk district Hughes (16.95, 17.9) approx.
MF-458, loc. 12 67°00'N, 153°32'W approx.

Summary: Colors of gold, but not enough for profitable mining.

Mendenhall, 1902 (P 10), p. 50 -- Colors found; practically no work since 1898 rush; nothing found that was rich enough to justify much time or money.
Cobb, 1973 (B 1374), p. 158 -- Gold could not be mined profitably.

(Hughes Bar) Gold

Hughes district Hughes (12.3, 0.8)
MF-458, loc. 8 66°02'N, 154°16'W

Summary: Fine gold on bar of Koyukuk R. discovered in early 1890's. Little, if any, mining after 1898.

Schrader, 1900, p. 483 -- Gold discovered on bars of Koyukuk R. in early 1890's or earlier. Hughes Bar was one of the more noted auriferous bars.
Schrader, 1904 (P 20), p. 98 -- Same as Schrader, 1900, p. 483.
Maddren, 1910 (B 442), p. 297 -- Before 1898, Hughes, Florence, and Tramway Bars were best-known occurrences of placer gold in Koyukuk Valley; total production was probably about $4,000.
Smith, 1913 (B 536), p. 142 -- References to P 20 and B 442 and conclusion that the very fine gold had "been carried for a considerable distance."
Cobb, 1973 (B 1374), p. 144 -- Placer gold discovered late in 19th century.

(Indian R.)

Gold, Molybdenum, Silver, Zinc

Hughes district
MF-458, locs. 5, 6, 10

Hughes (15.3-16.0, 1.0-1.8)
66°01'-66°05'N, 153°45'-153°50'W

Summary: Granodiorite and quartz monzonite pluton intruded Jurassic and Cretaceous andesitic volcanic rocks, graywacke, and mudstone. Placer area underlain by plutonic rocks. Molybdenite deposit uncovered by placer mining. Sphalerite in altered intrusive rock that also contains as much as 6 ppm gold downstream from placer area. Placer mining from 1911 to as recently as 1965. Large-scale operations ceased in 1961.

Smith, 1913 (B 536), p. 143 -- Bedrock reported to be disintegrated slate and granite; stream gravels shallow. Mining on tributaries. Total production for 1911 estimated at about $14,000.

Eakin, 1914 (B 592), p. 383-384 -- Mainly stream placers; even those in banks next to present stream bed are at same level. Gravels 2-6 ft. deep and about 50 ft. wide. Bedrock granite and gravel derived from granite; many boulders. Gold discovered in 1909; mining began in 1911. Production through 1913 was about $67,500.

Brooks, 1916 (B 642), p. 65 -- Mining, 1915. Production from area was about $15,000.

Eakin, 1916 (B 631), p. 82-84 -- Essentially the same data as in B 592, p. 383-384. Total production from Indian R. and its tributaries (including Utopia Cr., Melozitna quad.), 1911-15, was 5,154.35 oz. Au and 653 oz. Ag.

Martin, 1919 (B 692), p. 39 -- Mining, 1917; total production from area only $4,000.

Joesting, 1942 (TDM 1), p. 29 -- Molybdenite deposit discovered during placer mining. Said to contain high-grade ore, but was not systematically sampled.

U.S. Geological Survey, 1965 (P 525-A), p. A102 -- Small sluicing operation at head of river, 1965.

Patton and Miller, 1966 (I-459) -- Granodiorite and quartz monzonite pluton (K-Ar age of one sample is 81.5± 3.0 m.y.) intruded Upper Jurassic and Cretaceous andesitic volcanic rocks, graywacke, and mudstone. Pluton surrounded by thermal-metamorphic aureole. Site of mining in that part of stream course in pluton.

Berg and Cobb, 1967 (B 1246), p. 226 -- Molybdenite described in TDM 1, p. 29, probably genetically related to nearby felsic intrusive rocks.

Miller and Ferrians, 1968 (C 570), p. 5-6 -- Pyritiferous highly-altered intrusive rock contains disseminated pyrite and sphalerite. One sample contained 6 ppm Au (about 0.16 oz. per ton). No obvious sources for gold in placers (all upstream from intrusive rock mentioned above).

Cobb, 1973 (B 1374), p. 144-145 -- Molybdenite found in bedrock exposed by placer mining. Placer deposits first mined by hand and later by larger scale nonfloat operations that ceased in 1961.

(Lake Selby) — Copper

Shungnak district — Hughes (1.5, 15.55)
MF-458, loc. 1 — 66°53'N, 155°48'W

Summary: Chalcopyrite, limonite, and secondary copper minerals in quartz vein in conglomerate.

Patton and Miller, 1966 (I-459), locality 4 -- Chalcopyrite and limonite with malachite and azurite stain in quartz vein in metamorphosed Cretaceous conglomerate.

Berg and Cobb, 1967 (B 1246), p. 106 -- Semiquantitative spectrographic analysis indicated 0.01% Ag and traces of other metals.

(Pocahontas Cr.)

Gold (?)

Hughes district
MF-458, loc. 9

Hughes (14.5, 0.45)
66°01'N, 153°58'W

Summary: Gold prospects reported.

Eakin, 1916 (B 631), p. 83 -- Prospects said to have been found; stream heads against Utopia Cr.

(Red Mtn.)

Gold

Hughes district
MF-458, loc. 11

Hughes (15.25, 5.4) approx.
66°02'N, 153°50'W approx.

Summary: A little gold has been recovered from south bank of Koyukuk R.

Eakin, 1914 (B 592), p. 383 - A little gold has been recovered (1913) from south bank of Koyukuk R.
Eakin, 1916 (B 631), p. 82 -- Same as B 592, p. 383.

(Red Mountain Cr.) Gold, Zinc

Hughes district Hughes (14.85, 5.4)
MF-458, loc. 3 66°18'N, 153°53'W

Summary: Gold and zinc in pyritic latite porphyry marked by a large gossan.

Berg and Cobb, 1967 (B 1246), p. 226 -- Pyritic latite porphyry marked by a large gossan contains traces of zinc, gold, and other metals.

(Reed R.) — Gold (?)

Shungnak district — Hughes
NE¼NW¼ quad.

Summary: Prospecting in 1929-30; no information on results.

Smith, 1932 (B 824), p. 50 -- Prospecting in 1929; no data on results.
Smith, 1933 (B 836), p. 51 -- 3 men spent winter and spring of 1929-30 trapping and prospecting; no data on results.

(Rocky Bottom Cr.) Gold

Koyukuk district Hughes (18.75, 17.4) approx.
MF-458, loc. 13 66°58'N, 153°47'W approx.

Summary: Colors of gold, but not enough for profitable mining.

Mendenhall, 1902 (P 10), p. 50 -- Colors found. 2 prospectors working in 1901.
Cobb, 1973 (B 1374), p. 158 -- Gold could not be mined profitably.

(Snyder Cr.) Gold

Hughes district
MF-458, loc. 10

Hughes (15.65, 1.6) approx. (?)
66°04'N, 153°47'W approx. (?)

Summary: Headwater tributary (not shown on available maps) of Indian R. on which auriferous gravel was discovered in 1910. May have been mined with Indian R.; may be the same as Black Cr.

Brooks, 1912 (B 520), p. 38 -- Auriferous gravel discovered, 1910.
Smith, 1913 (B 536), p. 143 -- A few claims had been developed by 1911.

Unnamed occurrence

Manganese

Koyukuk district
MF-458, loc. 2

Hughes (14.5, 17.75)
67°00'N, 153°53'W

Summary: Rhodochrosite, manganite, and pyrolusite in altered volcanic rocks and phyllite.

Patton and Miller, 1966 (I-459), locality 5 -- Rhodochrosite, manganite, and pyrolusite in altered mafic volcanic rocks and phyllite.

(Alder Cr.) Gold

Fairhaven district Kotzebue (19.95, 1.4)
MF-421, unnumbered loc. 66°03'N, 162°12'W

Summary: Near mouth of stream wave erosion of schist bedrock resulted in about a foot of beach gravel on schist. Fine, bright gold on bedrock; some wire gold; probably locally derived from small quartz veins. A few hundred ounces recovered in 1902-1903. Small-scale mining on Alder Cr. reported in 1927.

Mendenhall, 1902 (P 10), p. 51 -- Reported to have been prospected; "good indications." Beach near mouth of creek reported to have yielded $8-$10 in gold per man per day. Gold is fine and "is evidently derived from dark-gray schists which form the bluffs back of the beach." Bedrock lies about a foot under beach shingle; gold on bedrock; some wire gold.

Moffit, 1904 (B 225), p. 78-79 -- Gold-bearing gravels are shallow and of no great extent. Gold is flaky and bright and includes some wire gold; occurs on bedrock, is little worn, and is clearly derived from neighboring schist. Output for 1902-1903 was reported to be between $12,000 and $14,000.

Moffit, 1905 (B 247), p. 65-66 -- Quotation from P 10. Production, 1902-1903, was about $12,000. Combined production of Bear Cr. [Candle quad] and Alder Beach, 1901-1903, was over $20,000.

Smith, 1930 (B 810), p. 34 -- Small production from Alder Cr. reported in 1927.

Berryhill, 1962, p. 3 -- Small-scale beach mining near mouth of Alder Cr., 1901.

p. 5 -- Surf erosion of schist bluffs produced a beach deposit 1-2 ft. thick; small quantities of placer gold.

p. 7 -- Trace of gold in concentrate from 3 pans of beach gravel.

Cobb, 1973 (B 1374), p. 72-73 -- A few hundred ounces of gold mined from beach in 1902 and 1903. Gold probably of local derivation; on schist bedrock beneath about 1 ft. of beach gravel. A little gold reported to have been mined from creek in 1927.

(Rex Point)

Fairhaven district

Tungsten

Kotzebue (11.95, 1.5)
66°05'N, 163°19'W

Summary: A trace of scheelite was reported from a sample of beach gravel.

Berryhill, 1962, p. 6, 12 -- Sample 41, the concentrate from 15 pans of creek-mouth beach deposit, contained a trace of scheelite, and minor to trace amounts of iron-oxide minerals and zircon.

(Batza Slough) COPPER, LEAD, SILVER

Hughes district Melozitna (6.7, 15.0)
MF-396, loc. 1 65°51'N, 155°04'W

Summary: A float block of silicified rock contained galena, cerussite, malachite and 3 oz. silver per ton.

Miller and Ferrians, 1968 (C 570), p. 6 -- Two-foot-long angular block of altered silicified rock in cutbank at south end of Batza Slough. Contained disseminated cerussite, galena, and malachite; 3 oz. Ag per ton, 5% Pb, o.5% Cu.

Cobb, 1973 (B 1374), p. 144 -- Float block of altered silicified rock contained disseminated cerussite, galena, malachite, and 3 oz. Ag per ton.

(Florence Bar) GOLD

Hughes district
MF-396, loc. 2

Melozitna (12.0, 16.8) Approx.
65°57'N, 154°20'W approx.

Summary: Fine gold, probably not of local derivation. Occurs in bar of Koyukuk R. A little mining before 1898.

Schrader, 1900, p. 483 -- Gold known from bars of Koyukuk R. since early 1890's. In the early days Hughes and Florence Bars were the most noted.
Schrader, 1904 (P 20), p. 98 -- Same as Schrader, 1900, p. 483.
Maddren, 1910 (B 442), p. 297 -- Before 1898 about $4,000 worth of gold had been mined from Florence, Hughes [Hughes quad.], and Tramway [Wiseman quad.] Bars.
Smith, 1913 (B 536), p. 142 -- References to P 20 and B 442 and additional statement that prospectors reported that the gold was very fine and "had evidently been carried for a considerable distance".
Cobb, 1973 (B 1374), p. 144 -- Placer gold discovered in late 19th century.

(Golden Cr.) GOLD

Melozitna district
MF-396, loc. 7

Melozitna (21.9, 5.6)
65°17'N, 153°01'W

Summary: Small-scale placer-gold mining reported.

Chapman and others, 1963 (OF 239), p. 16 -- Placer gold has been mined on Golden Cr. about 6 mi. SSW of Moran Dome. No placer tin reported.
Cobb, 1973 (B 1374), p. 163 -- Has been recent small-scale mining.

(Illinois Cr.) GOLD

Melozitna district
MF-396, loc. 6

Melozitna (21.1, 5.25)
65°16'N, 153°07'W

Summary: Placer gold has been mined. One hole (133 ft. deep) did not reach bedrock, but passed through several beds containing gold.

Brooks, 1911 (P 70), p. 184 -- Placer gold has been found.
Eakin, 1912 (B 520), p. 281 -- Preliminary to B 535.
Eakin, 1913 (B 535), p. 34 -- Good prospects reported (1911). One prospect hole is said to have been sunk 133 ft. without reaching bedrock; abandoned because of water; passed through several beds containing fine gold.
Chapman and others, 1963 (OF 239), p. 16 -- Placer gold has been mined; no placer tin reported.

(Mason Cr.) GOLD, TIN

Melozitna district
MF-396, loc. 4,5

Melozitna (19.3-19.75, 3.75-4.35)
65°11'-65°13'N, 153°19'-153°22'W

Summary: Bedrock quartz-mica schists. Gravels average 12-20 ft. in thickness. Gold and cassiterite (for which no bedrock source has been found) in lower part of gravel and top few feet of bedrock. Gravels mainly unfrozen. Prospecting or small-scale mining reported 1908, 1917, 1918, 1926, 1929-1932.

Maddren, 1909 (B 379), p. 237 -- Gold in pellets about the size of bird shot reported from head of creek (1908).
Brooks, 1910 (B 442), p. 44 -- Mining in 1909.
Maddren, 1910 (B 410), p. 83 -- $700 worth of gold reported to have been mined in 1908 from near mouth of Last Chance Cr. [called Buster Cr. on 1:250,000 quad. map, 1961 printing].
Brooks, 1911 (P 70), p. 184 -- Placer gold has been found.
Martin, 1919 (B 692), p. 39 -- Hydraulic plant installed, 1917. Ground said to average 12-20 ft. deep. Benches not frozen.
Martin, 1920 B 712), p. 22 -- A little cassiterite recovered with gold, 1918.
p. 47-48 -- Small amount of placer tin saved, 1918.
Smith, 1929 (B 797), p. 23 -- Mining, 1926.
Smith, 1932 (B 824), p. 40 -- Prospecting, 1929.
Smith, 1933 (B 836), p. 42 -- Prospecting, 1930.
Smith, 1933 (B 844-A), p. 41 -- Prospecting, 1931.
Smith, 1934 (B 857-A), p. 39 -- Prospecting, 1932.
Smith, 1934 (B 864-A), p. 43 -- No prospecting, 1933.
Joesting, 1942 (TDM 1), p. 34 -- Reference to B 712, p. 22.
Chapman and others, 1963 (OF 239), p. 33-35 --Bedrock is quartz-sericite and quartz-chlorite schists cut by unmineralized white veinlets and lenses. Creek gravels mainly schist with a little vein quartz and a very little fine-grained mafic igneous rock. No mineralization in pebbles or cobbles. All creek and most bench gravels unfrozen. Most of mining was in creek gravels. Gold said to have been in base of gravel and top few feet of bedrock. About 1 ton cassiterite concentrates said to have been recovered from 4,000 cu. ft. of gravel; not assayed or shipped; report not confirmed. USGS in 1944 found very little cassiterite or gold, but most samples were from tailings.
Cobb, 1973 (B 1374), p. 163 -- No bedrock source for either cassiterite or gold has been found.

(Melozimoran Cr.) GOLD (?), TIN (?)

Melozitna district Melozitna (18.0, 8.0) approx.
65°26'N, 153°32'W approx.

Summary: Cassiterite and gold said to have been recovered from prospect pits, 1913-1918.

Chapman and others, 1963 (OF 239), p. 16 -- "A few prospect pits are said to have been sunk about 1913-1918 near the mouth of Melozimoran Creek, and reportedly some cassiterite and gold were recovered."

(Sun Mtn.) COPPER

Hughes district Melozitna
NE¼NW¼ quad.

Summary: Scattered occurrences of chalcopyrite, malachite, and pyrite.

Miller and Ferrians, 1968 (C 570), p. 6 -- Quartz latite porphyry dikes and widespread zone of thermally metamorphosed andesite suggest a buried pluton at shallow depth. Scattered occurrences of chalcopyrite, malachite, and pyrite along Koyukuk R. near Sun Mtn.

(Utopia Cr.) GOLD, LEAD, SILVER, ZINC; BARITE

Hughes district
MF-396, loc. 3

Melozitna (15.8-16.5, 17.5-17.7)
65°59'-66°00'N, 153°41'-153°47'W

Summary: Bedrock is slightly metamorphosed andesite cut by fine-grained felsic intrusives. Near head of creek barite boulders (for which the bedrock source has not been found) contain galena, sphalerite, and argentiferous tetrahedrite. Before 1936 mining was sporadic and small scale. Large-scale nonfloat mining began in 1938 or 1939 and ceased in 1952; during this time Utopia Cr. was a major producer in the district; no production figures available.

Brooks, 1916 (B 642), p. 65 -- Mining in 1915.
Eakin, 1916 (B 631), p. 83 -- A little gold has been found.
Smith, 1939 (B 897-A), p. 54 -- Prospecting, 1936.
Smith, 1939 (B 910-A), p. 56 -- Prospecting and preparatory work, 1937.
Smith, 1939 (B 917-A), p. 55 -- Development work; dragline and bulldozers; 1938.
Smith, 1941 (B 926-A), p. 52 -- 30 employees hydraulicking and nonfloat mining, 1939. Most productive camp in Koyukuk region. Some of ground as much as 25 ft. deep.
Smith, 1942 (B 933-A), p. 47 -- Mining, 1940. About as in 1939.

Miller and Ferrians, 1968 (C 570), p. 3, 5 -- Bedrock is slightly metamorphosed andesite cut by fine-grained felsic intrusives. Stream does not drain contact zone of nearby Indian Mtn. pluton. Barite boulders in tailings of abandoned placer mine near head of creek contain fine-grained tetrahedrite, galena, and sphalerite. Tetrahedrite-bearing sample contained about 21 oz. Ag per ton. Source of metals and barite may have been tetrahedrite-sphalerite-galena-bearing veins in andesite volcanics. Paystreak in upper valley south of center of valley.
Cobb, 1973 (B 1374), p. 144-145 -- Most of data from C 570. Large-scale nonfloat mining ceased in 1952.

(Hunt Cr.) Lead, Zinc

Selawik district
MF-406, unnumbered loc.

Selawik (16.0, 3.25)
66°10'N, 159°44'W

Summary: Galena, sphalerite, and pyrite in quartz-calcite veins and in pink syenite.

Elliott and Miller, 1969 (OF 353), p. 6 -- Minor amounts of disseminated galena, sphalerite, and pyrite in quartz-calcite veins and in pink syenite. Composite grab samples of sulfide-bearing rock contained up to 2% Pb and up to 1% Zn. Extent of mineralized area could not be determined because of poor exposures.

(California Cr.) — Gold; Asbestos, Jade, Quartz

Shungnak district — Shungnak (16.3, 17.1)
MF-448, loc. 16 — 66°57'N, 156°38'W

Summary: Stream drains an area of metavolcanic rock and phyllite that is cut by many quartz veins from which gold in placers was probably derived. Gold discovered in 1918; mining reported in nearly every year through 1940. Total production probably less than 20,000 oz. Quartz crystals have been recovered from gold placers. Asbestos fibers said to be as long as about 3 in. were found in placer workings. Nephrite boulders common, but very little gem-quality material.

Cathcart, 1920 (B 712), p. 197-198 -- Favorable prospects found, 1918. Both creek and bench deposits auriferous. Creek gravels frozen; about 18 ft. thick.

Martin, 1920 (B 712), p. 52 -- Favorable prospects reported, 1918.

Brooks and Capps, 1924 (B 755), p. 49 -- Hydraulic plant being installed, 1922.

Brooks, 1925 (B 773), p. 52 -- Hydraulic plant installed; to be operated in 1924.

Moffit, 1927 (B 792), p. 23 -- Hydraulic plant was one of major producers of district, 1925.

Smith, 1929 (B 797), p. 28 -- Hydraulic plant is largest in district, 1926.

Smith, 1930 (B 810), p. 37 -- Hydraulic plant operated, 1927.

Smith, 1930 (B 813), p. 44 -- Some mining and considerable dead work, 1928.

Smith and Mertie, 1930 (B 815), p. 325 -- Hydraulicking; hampered by large, presumably glacial, boulders.

Reed, 1931a, p. 25-27 -- Bedrock greenstone schist. Gravel is coarse (up to 3 in. in diameter) and up to 20 ft. thick. Gold is coarse and flattened and in lower 5 ft. of gravel; not in bedrock crevices. Mining in canyon, 1918-1931, by hydraulicking. Details of mining methods given.

Smith, 1932 (B 824), p. 49 -- Mining, 1929.

Smith, 1933 (B 836), p. 51 -- Mining, 1930.

Smith, 1933 (844-A), p. 51-52 -- Hydraulic mining, 1931.

Smith, 1934 (B 857-A), p. 48 -- Hydraulic mining, 1932.

Smith, 1937 (B 880-A), p. 58 -- Mining, 1935.

Smith, 1938 (B 897-A), p. 68 -- Mining, 1936.

Smith, 1942 (B 933-A), p. 64 -- Preparatory work and beginning of large-scale mining.

Anderson, 1945 (TDM 3-R), p. 13 -- Amphibole and cross-fiber chrysotile have been found.

p. 25 -- Nephrite boulders common, but very little of the material approaches gem quality.

Anderson, 1947 (TDM 5-R), p. 14 -- Asbestos bas been found in placer workings; fibers said to have been as long as about 3 in.

p. 47 -- Quartz crystals recovered during placer mining.

Fritts, 1969 (GR 37), p. 28 -- Gold discovered, 1918. Valley unglaciated. Stream drains area of metavolcanic rock and phyllite that is cut by many quartz veins, from which gold in placers was probably derived. Gold in placers close to bedrock. Total production probably no more than that of Dahl Cr. [Probably less than 20,000 oz.]. Mined intermittently, 1918-1940. Hydraulicking, 1924 and later.

(California Cr.) - Continued

Fritts, 1970 (GR 39), p. 57 --Same as GR 37.
Cobb, 1973 (B 1374), p. 59-60 -- One of principal producing creeks of district.

(Cosmos Cr.) Jade

Shungnak district Shungnak (12.7, 17.6)
67°00'N, 157°09'W

Summary: Float jade shipped in 1945.

Anderson, 1945 (TDM 3-R), p. 26 -- Jade from float in creek was shipped in 1945.

(Dahl Cr.)

Cadmium, Chromite, Copper, Gold, Silver; Asbestos, Jade

Shungnak district
MF-448, locs. 13, 14

Shungnak (14.4-14.7, 16.9-17.6)
66°57'-66°59'N, 156°52'-156°54'W

Summary: Bedrock slate, schist, greenstone, limestone; serpentinite near creek close to 67°00'N contains chrysotile and fibrous serpentine. 2 placer deposits; upper (and richer) one on and in crevices of schist bedrock in unglaciated part of valley. Lower deposit on false bedrock on or in glacial drift; commonly less than 10 ft. below surface. Some of gold in upper deposit very coarse (one nugget worth about $600 at old price); probably derived from quartz veins in schist. Chromite boulders up to 1 ft. in diameter. Native copper and silver (some containing cadmium) nuggets. Much of material collected (as recently as 1969) as jade was probably serpentinite rather than nephrite. Total gold production may have been as much as 20,000 oz. Best placer ground is worked out, according to Fritts. See also (Asbestos Mtn.) Ambler River quad.

Brooks, 1909 (B 379), p. 59 -- Total production through 1908 was about $40,000. Bedrock schist; gravels 2-8 ft. in depth.
Brooks, 1910 (B 442), p. 46 -- Largest producer in district, 1909.
Smith and Eakin, 1911 (B 480), p. 292-294 -- Preliminary to B 536.
Brooks, 1912 (B 520), p. 42 -- Nugget worth about $600
Smith, 1913 (B 536), p. 126-129 --Bedrock in area being mined is black slate and schist with many quartz veins and some sulfide mineralization; limestone near creek, but not in creek bottom. Creek gravels 1-8 ft. thick. Deposits on low benches (not mined) are 15 ft. thick. Many large boulders in creek gravel. Gold unevenly distributed and patchy. Total production through 1910 probably no more than $30,000. Some large gold nuggets. Magnetite most abundant mineral in concentrates; chromite in pieces 1 ft. in diameter; native silver nuggets, some of which contain cadmium. Gold probably derived from quartz veins in slate and schist.
Brooks, 1914 (B 592), p. 72 -- A little mining, 1913.
Brooks, 1916 (B 642), p. 71 --Small-scale mining, 1915.
Martin, 1919 (B 692), p. 42 -- Small-scale mining, 1917.
Brooks and Martin, 1921 (B 714), p. 95 -- Mining, 1919.
Brooks, 1922 (B 722), p. 67 --3 small mines, 1920.
Brooks and Capps, 1924 (B 755), p. 49 -- Small-scale mining, 1922.
Brooks, 1925 (B 773), p. 51 -- Reference to B 536.
Moffit, 1927 (B792), p. 23 -- Small production from hydraulic plant, 1925.
Smith, 1929 (B 797), p. 28 -- Hydraulic plant operated, 1926.
Smith, 1930 (B 810), p. 37 -- 3 one-man mines, 1927.
Smith, 1930 (B 813), p. 44 -- 3 small mines, 1928.
Smith and Mertie, 1930 (B 815), p. 322-324 -- Quotation from B 536.
Reed, 1931a, p. 18-22 -- Major gold producer in district. South of mountain front bedrock is buried to an unknown depth. Bedrock greenstone, schist, and limestone. Native silver nuggets have been found. Much of mining by hydraulic methods. Gold in lower 1-2 ft. of gravel and in bedrock crevices. Gravel is generally coarse with scattered large boulders.

(Dahl Cr.) - Continued

Smith, 1932 (B 824), p. 49 -- Small-scale mining, 1929.
Smith, 1933 (B 836), p. 51-52 -- Small-scale mining, 1930.
Smith, 1933 (B 844-A), p. 51-52 -- Small-scale mining, 1931; hydraulic plant did not operate.
Smith, 1934 (B 857-A), p. 48 -- Small-scale mining, 1932.
Smith, 1934 (B 864-A), p. 53-54 -- Small-scale mining, 1933. 18-oz. nugget picked up.
Smith, 1936 (B 868-A), p. 55 -- Mining, 1934.
Smith, 1937 (B 880-A), p. 58 -- Mining, 1935.
Smith, 1938 (B 897-A), p. 68 -- 4 small mines, 1936.
Smith, 1939 (B 910-A), p. 72-73 -- 3 small mines, 1937.
Smith, 1939 (B 917-A), p. 71 -- 4 small mines, 1938.
Smith, 1941 (B 926-A), p. 67 -- 3 small mines, 1939.
Smith, 1942 (B 933-A), p. 64 -- 2 small mines, 1940.
Anderson, 1945 (TDM 3-R), p. 25-26 -- Nephrite boulders are common along creek. Most are not of gem quality, but some were shipped out in 1945.
Anderson, 1947 (TDM 5-R), p. 18 -- Reference to B 815; (chromite boulders in placers).

p. 23 -- Small copper and silver nuggets in concentrates; cadmium in one of the silver nuggets. (Ref. to B. 815).

Fritts, 1969 (GR 37), p. 4-5 -- Very brief summaries of older literature.

p. 18 -- Serpentinite near creek at north boundary of quadrangle contains some chrysotile and fibrous serpentine.

26-29 -- Mined intermittently, 1898-1961. 2 deposits separated by a canyon. Upper deposit underlain by phyllite that forms natural riffles; this part of valley unglaciated. Lower deposit on false bedrock in or on glacial drifts; false bedrock commonly less than 10 ft. below surface of ground. Upper deposit richer; contained coarse gold (one nugget valued at $600), some with attached quartz. Concentrates contained much magnetite, practically no garnet, some chromite, and a little native silver. Total production may have been as much as 20,000 oz. gold, but this estimate may be high. Green boulders from stream have been sold (since 1958) as jade; much is undoubtedly serpentine rather than nephrite, but makes attractive objets d'art.

Fritts, 1970 (GR 39), p. 28 -- Serpentinite on Asbestos Mtn. was probable source of chromite boulders and of green boulders sold as jade and of rhodochrosite found on Stewart claim.

p. 54-56 -- Major producing stream in area by 1909. Essentially the same data as GR 37, p. 26-29.

p. 58 -- Best looking placer ground in area (upstream from canyon of Dahl Cr.) has been worked with modern heavy equipment.

p. 60-61 -- Jade (as recently as 1969) was recovered from old placer areas and used for jewelry and objets d'art; much seems to have been serpentinite rather than nephrite.

p. 64 -- Richest and oldest (Tertiary(?) to Pleistocene) placer has been worked out.

Cobb, 1973 (B 1374), p. 59-60 -- Gold discovered, 1898; still being mined, 1968. One of principal producing creeks of district.

(Dakli) — Copper, Gold, Silver

Hughes district, Shungnak district — Shungnak (19.3-19.6, 6.5-6.7)
MF-448, locs. 8-10 — 66°21'-66°22'N, 156°13'-156°15'W

Summary: Quartz veins in float along contact between granodiorite pluton and andesite contain pyrite, chalcopyrite that contains silver and gold, covellite, and malachite.

Miller and Ferrians, 1968 (C 570), p. 6, 8 -- Along gently dipping contact between hornblende-biotite granodiorite pluton and andesite wallrock; may be near original roof of pluton. Massive chalcopyrite in fractured quartz gangue in frost-riven blocks of meta-andesite. Minor amounts of covellite and malachite; pyrite with chalcopyrite in some of the veins. Analyses of chalcopyrite in quartz showed as much as 4.5 oz. Ag and 0.023 oz. Au per ton.

(Hawk R.)

Copper, Lead, Silver

Shungnak district
MF-448, locs. 3, 4

Shungnak (10.5-10.65, 4.55-4.6)
66°15'N, 157°30'-157°31'W

Summary: Argentiferous galena, chalcopyrite, malachite, and much pyrite in quartz veins in upper Mesozoic volcanic rocks.

Miller and Ferrians, 1968 (C 570), p. 10-11 -- Andesitic volcanic rocks of Late Jurassic(?) and Early Cretaceous age and quartz latite volcanic rocks of Late Cretaceous age intruded by alaskite and quartz monzonite of Late Cretaceous age. A belt of pyritiferous quartz veins showing well-developed comb structure that cut both volcanic units covers an area 6-1/2 by 1-1/2 mi. Veins are generally less than 2 ft. wide. Locally they contain irregular segregations of argentiferous galena with lesser amounts of chalcopyrite and malachite. Pyrite is the only sulfide found in wall rocks.

(Lynx Cr.) Gold

Shungnak district Shungnak (16.0, 17.5)
MF-448, loc. 15 66°59'N, 156°40'W

Summary: Thin veneer of gravel on garnetiferous mica schist and related rocks cut by quartz veins; bedrock acted as natural riffles for gold. Supported 1- or 2-man mining operation for at least 28 years (1912-1940).

Brooks, 1913 (B 542), p. 50 -- Workable placers reported to have been found, 1912.
Brooks, 1914 (B 592), p. 72 -- A little mining, 1913.
Brooks, 1916 (B 642), p. 71 -- Small-scale mining, 1915.
Martin, 1919 (B 692), p. 42 -- Small-scale mining, 1917.
Moffit, 1927 (B 792), p. 23 -- Small-scale mining, 1925.
Smith, 1930 (B 813), p. 44 -- 1 small mine, 1928.
Reed, 1931a, p. 27-28 -- Bedrock in upper part of valley is mica schist; granite gneiss farther downstream. Gravel fairly fine (up to 1 in.) and unfrozen. Bedrock decomposed; 1-2 ft. taken up in mining. Half of gold in small nuggets; the rest is in fine rounded grains. Was worked by ground sluicing overburden and shovelling in.
Smith, 1932 (B 824), p. 49 -- Small-scale mining, 1929.
Smith, 1933 (B 836), p. 51 -- Small-scale mining, 1930.
Smith, 1933 (B 844-A), p. 51 -- Small-scale mining, 1931.
Smith, 1934 (B 857-A), p. 48 -- Small-scale mining, 1932.
Smith, 1934 (B 864-A), p. 53 -- Small-scale mining, 1933.
Smith, 1936 (B 868-A), p. 55 -- Mining, 1934.
Smith, 1937 (B 880-A), p. 58 -- Mining, 1935.
Smith, 1938 (B 897-A), p. 68 -- Mining, 1936.
Smith, 1939 (B 910-A), p. 73 -- 1 small mine, 1937
Smith, 1939 (B 917-A), p. 71 -- 1 small mine, 1938.
Smith, 1941 (B 926-A), p. 67 -- 1 small mine, 1939.
Smith, 1942 (B 933-A), p. 64 -- 1 small mine, 1940.
Fritts, 1969 (GR 37), p. 29 -- Small-scale mining, 1912-1940 or later. Thin veneer of gravel on garnetiferous mica schist and related rocks which are cut by quartz veins. Gold, probably derived from quartz veins, near bedrock, which acted as natural riffles. No production figures available, but deposit supported a 1- or 2-man operation for at least 28 years.
Fritts, 1970 (GR 39), p. 57 -- Same as GR 37.
Cobb, 1973 (B 1374), p. 59-60 -- One of principal producing creeks of district.

(Shovel Cr.) Gold

Selawik district
MF-448, loc. 17

Shungnak (8.35, 6.1)
66°21'N, 157°49'W

Summary: Gold was mined in 1950's and 1960's from stream that crosses contact between andesitic volcanic rocks and a quartz monzonite pluton.

Miller and Ferrians, 1968 (C 570), p. 11 -- Small inactive placer mine on stream that crosses contact between quartz monzonite and andesite. No altered bedrock observed, but abundant tourmaline in tailings and creek gravels. Source of gold may be quartz-tourmaline-sulfide veins which cut and altered quartz monzonite near contact with andesite.

Cobb, 1973 (B 1374), p. 57 -- Has been mining.

p. 59 -- 2 men used nonfloat methods for about 10 years in 1950's and 1960's. Production not known. Creek crosses contact between Jurassic(?) and Lower Cretaceous andesitic volcanic rocks and quartz monzonite pluton. Gold may have been derived from quartz-tourmaline-sulfide veins near contact.

(Stockley Cr.) Nickel

Shungnak district
MF-448, loc. 2

Shungnak (14.7, 17.65)
67°00'N, 156°51'W

Summary: Nickel in asbestiform minerals.

Anderson, 1945 (TDM 3-R), p. 18 -- "A specimen of chrysotile and antigorite taken from near the mouth of Stockley Creek and submitted to the U.S. Bureau of Mines gave a good test for nickel."
Berg and Cobb, 1967 (B 1246), p. 106 -- Nickel in asbestiform minerals.
Fritts, 1969 (GR 37), p. 18 -- Reference to TDM 3-R.
Fritts, 1970 (GR 39), p. 28 -- Reference to TDM 3-R.

(Wesley Cr.)

Gold (?), Lead; Asbestos, Jade

Shungnak district
MF-448, loc. 1

Shungnak (13.65, 17.65)
67°00'N, 157°00'W

Summary: Quartz veins in dolomite west of creek contain a little galena. Fine gold in unminable concentrations said to have been found in creek gravels; no shafts reached bedrock. Tremolite asbestos and gem-quality nephrite jade found near head of creek.

Smith, 1913 (B 536), p. 153 -- Galena in vein quartz and brecciated dolomite on hill west of Wesley Cr. Shallow prospect hole.

Smith and Mertie, 1930 (B 815), p. 343 -- Same data as B 536.

Reed, 1931a, p. 17 -- Fine gold (not profitably minable) said to have been found; no prospect shafts reached bedrock.

Anderson, 1945 (TDM 3-R), p. 9, 11 -- Asbestos and jade deposits were investigated by USBM in 1944 and/or 1945.

21-22 -- Tremolite occurrences noted by USBM in 1944. Also gem-quality nephrite.

p. 25-26 -- Gem-quality jade found between tremolite asbestos stringers near head of creek; found by USBM in 1944.

Berg and Cobb, 1967 (B 1246), p. 106 -- Sparse galena in one or more quartz veins.

Unnamed occurrence	Asbestos
Shungnak district	Shungnak (14.7, 17.65) 67°00'N, 156°51'W

Summary: Veins as much as 3 in. thick contain slip-fiber chrysotile; some intergrown with magnetite. In serpentine.

Coats, 1944 (OF 7), p. 2-3 -- Prominent serpentine outcrop 1,500 ft. north of mouth of Stockley Cr. and 1,000 ft. east of Dahl Cr. Slip-fiber chrysotile in faults that strike N 30° - 40° W. Chrysotile seams as much as 3 in. thick, but generally less than 1/2 in. thick. Locally fibers are intergrown with magnesite. A few similar veinlets as much as 1 in. thick of slip-fiber chrysotile are in serpentine on north side of small stream that enters Dahl Cr. from west just below Stockley Cr.

Unnamed occurrence

Copper

Hughes district
MF-448, loc. 12

Shungnak (21.2, 2.5)
66°07'N, 156°01'W

Summary: Chalcopyrite in quartz vein in monzonite.

Miller and Ferrians, 1968 (C 570), p. 8, 10 -- Chalcopyrite-bearing quartz vein cuts monzonite. Sample contains anomalous tungsten also (7,000 ppm) [no tungsten mineral mentioned in reference.]

Unnamed occurrence	Copper
Shungnak district MF-448, loc. 5	Shungnak (18.1, 8.2) 66°27'N, 156°25'W

Summary: Chalcopyrite-bearing quartz vein cutting meta-andesite.

Miller and Ferrians, 1968 (C 570), p. 8 -- Chalcopyrite-bearing quartz vein cuts meta-andesite north of Zane Hills pluton.

Unnamed occurrence

Molybdenum

Shungnak district
MF-448, loc. 11

Shungnak (19.85, 6.25)
66°20'N, 156°11'W

Summary: Quartz veins near andesite-granodiorite contact contain molybdenite.

Miller and Ferrians, 1968 (C 570), p. 6, 8 -- Molybdenite-bearing quartz veins as much as 2 ft. thick cut andesite near contact with granodiorite pluton. A grab sample contained 0.2% Mo.

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 as synonyms. Descriptions of placer deposits commonly give little information on the location of individual mines or claims, so the names of all operators and owners of placer mines and claims are in this section with a notation to refer to the description of the stream that was mined or prospected.

For several quadrangles only one name for each deposit appears in the literature searched. Therefore this section of this report does not have a page for every quadrangle for which there are entries in the other two sections.

McGee -- see (Utopia Cr.)

Arctic Circle Exploration Co. -- see (Dahl Cr.)
Bear Fraction -- see (Dahl Cr.)
Coffin -- see (Dahl Cr.)
(Dall Cr.) -- see (Dahl Cr.)
Ferguson (& Son) -- see (California Cr.)

Garland -- see (Dahl Cr.)
Johnson (& Hanson) -- see (Dahl Cr.)
Kotzebue Fur & Trading Co. -- see (Dahl Cr.)
Lammers and associates -- see (California Cr.)
Lloyd -- see (Dahl Cr.)

Lucky Three -- see (Dahl Cr.)
Orline -- see (Dahl Cr.)
Patterson -- see (Dahl Cr.)
Pohl -- see (Lynx Cr.)
(Purcell Mtn.) -- see (Shovel Cr.)

Tuohy -- see (Dahl Cr.)

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References are listed, by quadrangle, in standard format alphabetically by author and, secondarily, chronologically if an author prepared more than one report or map. This section was prepared by stacking bibliography cards in a document protector and duplicating them on an office copying machine. This procedure makes retyping unnecessary, but has the disadvantages that the edges of cards reproduce as horizontal lines between entries and that margins and spacing are not constant.

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