UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUMMARY OF REFERENCES TO MINERAL OCCURRENCES (OTHER THAN MINERAL FUELS AND CONSTRUCTION MATERIALS) IN THE CIRCLE QUADRANGLE, ALASKA

OPEN-FILE REPORT 76–633

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

Menlo Park, California

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By

Edward H. Cobb

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Introduction

These summaries of references are designed to aid in library research on metallic and nonmetallic (other than mineral fuels and construction materials) mineral occurrences in the Circle quadrangle, Alaska. All references to reports of the Geological Survey, to most reports of the U.S. Bureau of Mines, and to most reports of the State of Alaska Division of Geological and Geophysical Surveys and its predecessor State and Territorial agencies released before January 1, 1976, are summarized. Certain, mainly statistical, reports such as the annual Minerals Yearbook of the U.S. Bureau of Mines and the biennial and annual reports of the State of Alaska Division of Geological and Geophysical Surveys and its predecessor State and Territorial agencies are not included.

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

Index map

Summaries of References

For each mineral occurrence there is a page that gives the name of the occurrence; the mineral commodities present (listed alphabetically for metallic commodities and then for nonmetallic commodities [FM is used for uranium and(or) thorium determined chemically or present as a constituent of an identified mineral other than monazite; RE is used if a mineral (other than monazite) containing any rare-earth element was identified]; the mining district (Ransome and Kerns, 1954) in which the occurence is located; the name of the 1:250,000-scale topographic quadrangle (Circle); coordinates (as described by Cobb and Kachadoorian, 1961, p. 3-4); the metallic mineral resources map number (MF-391) and the 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 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
BMB	U.S. Bureau of Mines Bulletin
C	U.S. Geological Survey Circular
GC	Alaska Division of Geological and Geophysical Surveys (and predecessor State agencies) Geochemical Report
IC	U.S. Bureau of Mines Information Circular
OF	U.S. Geological Survey Open-file Report (numbers are informal and used only within the Alaskan Geology Branch of the U.S. 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 Investigations
TDM	Alaska Territorial Department of Mines Pamphlet
W	U.S. Geological Survey Water-Supply Paper

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

(Bachelor Cr.) Gold

Circle district
MF-391, loc. 15

Circle (6.85, 8.65) approx.
65°29'-65°30'N, 146°04'W approx.

Summary: Bedrock is schist and a granite porphyry intrusive body 75 ft. thick. Stream gravels thin or absent. Low bench on E side of creek. Gold discovered, 1908. In 1910 small-scale mining of bench gravel.

Brooks, 1909 (B 379), p. 54-55 -- Bedrock is mica schist. Encouraging prospects said to have been found, 1908.

Ellsworth, 1910 (B 442), p. 238-239 -- Ditch being built, 1909. Bedrock exposed in creek bottom in many places.

Prindle, 1910 (B 442), p. 208-209 -- Bedrock is quartz-mica, quartzitic and carbonaceous schists and a sill (?) 75 ft. thick of granite porphyry. Stream gravels contain considerable vein quartz and are 7-8 ft. thick and unfrozen. Ditch being built preparatory to hydraulicking, 1909.

Ellsworth and Parker, 1911 (B 480), p. 164-165 -- Only mining in Preacher Cr. drainage basin in 1910.

Prindle and Katz, 1913 (B 525), p. 149-150 -- Data from B 442, p. 208-209. Mining, 1910; ditch begun in 1909 was not finished.

Cobb, 1973 (B 1374), p. 123 -- Only recorded production from Preacher Cr. basin; gravel on a low bench east of stream was sluiced in 1910.

(Bedrock Cr.) Copper, FM, Monazite, Tungsten

Circle district Circle (13.65, 9.1)
MF-391, loc. 5 65°30'N, 145°07'W

Summary: Bedrock is schist with Mesozoic (?) granitic intrusive. Concentrate from a sample of granite contained 10% monazite and traces of scheelite and malachite. Fluorimetric tests indicated the presence of uranium in several minerals.

Nelson and others, 1954 (C 348), p. 12-14 -- Sample of granite bedrock, when concentrated, contained 10% monazite and a trace of scheelite; also present were pyrrhotite, garnet, ilmenite, zircon, biotite, topaz, and a trace of malachite. Fluorimetric tests indicated the presence of uranium in several minerals.

Freeman, 1963 (B 1155), p. 32 -- Birch Creek Schist with Mesozoic (?) granite intrusive in headwater part of basin. Prospect uncovered iron-stained schist that is slightly more radioactive than unstained schist nearby.

Berg and Cobb, 1967 (B 1246), p. 210 -- Small amount of scheelite in granitic rock.

Overstreet, 1967 (P 530), p. 110 -- Quotation from C 348, p. 13.

(Birch Cr.)	Gold
Circle district	Circle
MF-391, loc. 33 (in part)	S 1/2 quad.

Summary: Only placer production from Birch Cr. itself has been from river bars, of which Buckley Bar (60°20'N, 144°33'W approx., (17.85, 6.15) approx.) was probably the most productive. Includes references to (Buckley Bar).

Brooks, 1907 (B 314), p. 192 -- River bars are auriferous and were mined with rockers during low water. Original gold discovery in district was on bars of Birch Cr.

Ellsworth and Parker, 1911 (B 480), p. 160 -- Summer mining at Buckley Bar, 1910.

Ellsworth, 1912 (B 520), p. 245 -- Mining along bars, 1911.

Ellsworth and Davenport, 1913 (B 542), p. 213 -- Unsuccessful prospecting on bench about a mile below Twelvemile Cr. Mining near Buckley Bar and elsewhere along Birch Cr., 1912.

(Bonanza Cr.) Gold, Lead

Circle district Circle (11.9-12.2, 9.55-9.9)
MF-391, loc. 20 65°33'-65°34'N, 145°19'-145°21'W

Summary: Bedrock is schist. Gravel is 3-6 ft. thick beneath 2-8 ft. of muck; pay streak is as much as 150 ft. wide. Gold rather coarse with much intergrown quartz; on bedrock and in cracks in top 4-5 ft. of bedrock. Concentrates contain gold, zircon, garnet, ilmenite, limonite, pyrolusite, pyrrhotite, pyrite, and galena. Mining reported in most years from 1929 to 1937.

Mertie, 1932 (B 824), p. 169 -- Bedrock is schist. Pay streak 60-80 ft. wide. Coarse gold on and in bedrock; as much as 5 ft. of bedrock must be taken up. A sample of concentrate contained zircon, garnet, ilmenite, limonite, pyrolusite, pyrrhotite, pyrite, and galena. Hydraulicking, 1929.
Smith, 1932 (B 824), p. 36 -- Mining, 1929.
Smith, 1933 (B 836), p. 37 -- Mining, 1930.
Smith, 1934 (B 857-A), p. 35 -- Mining, 1932.
Smith, 1934 (B 864-A), p. 38 -- Mining, 1933.
Smith, 1936 (B 868-A), p. 39 -- Mining, 1934.
Smith, 1937 (B 880-A), p. 43 -- Mining, 1935.
Mertie, 1938 (B 897-C), p. 226-228 -- Valley nearly symmetrical. Bedrock Birch Creek Schist. Pay streak in lower valley is 75-150 ft. wide; gravel is 3-6 ft. thick beneath 2-8 ft. of muck. Most of gold is in crevices in top 4-5 ft. of bedrock; rather coarse with much intergrown quartz. Gold is .850 Au, .140 Ag (mean of 15 assays).
Smith, 1939 (B 910-A), p. 49 -- Mining, 1937.

(Bottom Dollar Cr.) Gold

Circle district Circle (16.05, 7.55)
MF-391, loc. 29 65°25'N, 144°48'W

Summary: Tributary of Harrison Cr. where gold was found in winter of 1909-10. Pay streak is narrow and gold distribution spotty. Prospecting or mining reported in 1909-10, 1912, 1936, 1938-39.

Ellsworth and Parker, 1911 (B 480), p. 160 -- Small strike made, 1910.
p. 164 -- Winter prospecting, 1909-10, netted good returns from small dumps. Pay streak narrow and gold distribution spotty.
Ellsworth and Davenport, 1913 (B 542), p. 213 -- Mining, 1912.
Mertie, 1938 (B 897-C), p. 231 -- Has been prospecting and mining.
p. 235 -- Prospecting and small-scale mining, 1936. Fineness of bullion from one place was .702 Au and .285 Ag; from another it was .797 Au and .195 Ag.
Smith, 1938 (B 897-A), p. 50 -- Mining, 1936.
Smith, 1939 (B 917-A), p. 48 -- Mining, 1938.
Smith, 1941 (B 926-A), p. 44 -- Mining, 1939.

(Boulder Cr.) Cu, FM, Gold, RE; Fluorite

Circle district Circle (14.45, 9.05)
MF-391, loc. 26 65°29'N, 145°02'W

Summary: Bedrock is schist and granite. Gold was mined from bench gravel in 1929 and possibly at other times. Concentrate from sample of granite contained allanite, chalcopyrite, and other minerals; several, as indicated by fluorimetric tests, contained uranium. Fluorite in vugs in granite.

Brooks, 1918 (B 662), p. 56 -- Good prospects reported to have been found in benches, 1916.

Mertie, 1932 (B 824), p. 164 -- Bedrock is schist. In 1929 one man was hydraulicking on a bench; depth to bedrock is 8 ft. with gold in lower 3-1/2 ft. of gravel.

Mertie, 1938 (B 897-C), p. 250 -- Has been small-scale mining.

Nelson and others, 1954 (C 348), p. 12-14 -- Sample of granite bedrock, when concentrated, contained 45% allanite, 15% chalcopyrite, and smaller amounts of other minerals. Fluorite in vugs in granite. Fluorimetric tests indicated the presence of uranium in several minerals.

(Butte Cr.) Gold

Circle district Circle (10.5-10.65, 7.05-7.3)
MF-391, loc. 16 65°24'N, 145°33'-145°34'W

Summary: Placer mining reported in 1916, 1937, and possibly in 1932. Tributary of Birch Cr.

Brooks, 1918 (B 662), p. 56 -- Hydraulic plant installed, but operated only a short time because of water shortage, 1916.
Smith, 1934 (B 857-A), p. 35 -- Mining near junction of Butte and Birch Creeks, 1932.
Mertie, 1938 (B 897-C), p. 231 -- Mining, 1937. Gold was .900 Au and .088 Ag.
Smith, 1939 (B 910-A), p. 49 -- Mining, 1937.

(Charity Cr.) Gold

Fairbanks district Circle (5.5, 7.3)
MF-391, loc. 12 65°25'N, 146°15'W

Summary: Placer gold discovered in early 1900's or earlier. Very little mining reported.

Ellsworth, 1910 (B 442), p. 233 -- Development work which had been done for several years was not continued in 1909.
Prindle and Katz, 1913 (B 525), p. 149 -- Creek was staked for placer gold "many years ago."
Burand, 1965 (GC 5), p. 3 -- Placer gold present.
Cobb, 1973 (B 1374), p. 129 -- Has been mining by methods other than dredging.

(Chena R.) Gold

Fairbanks district Circle
MF-391, loc. 36 (in part) S 1/2 SW 1/4 quad.

Summary: Prospecting at least as early as 1911. Mining reported in 1912, 1921, 1927-40; probably more recently also. Includes references to: (Big Chena R.), (Chena R., Middle Fork), (Van Curlers Bar). See also: (Palmer Cr.), (Shamrock Cr.), (Beaver Cr.) Big Delta quad., (Pyne Cr.) Big Delta quad. Most mining was probably at or near Van Curlers Bar (65°05'N, 145°26'W; (11.6, 0.7)).

Ellsworth, 1912 (B 520), p. 244 -- Prospecting in headwaters, 1911. Company organized for dredging and hydraulicking near Palmer and Shamrock Creeks.
Ellsworth and Davenport, 1913 (B 542), p. 208 -- Mining on river bars of South Fork above Shamrock Cr. Also some prospecting, 1912.
Brooks, 1923 (B 739), p. 33 -- Mining, 1921.
Smith, 1930 (B 810), p. 25 -- Mining, 1927.
Smith, 1930 (B 813), p. 28 -- Mining, 1928.
Smith, 1932 (B 824), p. 33 -- Mining, 1929.
Smith, 1933 (B 836), p. 33 -- Mining, 1930.
Smith, 1933 (B 844-A), p. 32, 34 -- Mining, 1931.
Smith, 1934 (B 857-A), p. 30-31 -- Mining, 1932.
Smith, 1934 (B 864-A), p. 35-36 -- Mining, 1933.
Smith, 1936 (B 868-A), p. 36-37 -- Mining, 1934.
Smith, 1937 (B 880-A), p. 39-41 -- Mining, 1935.
Smith, 1938 (B 897-A), p. 46, 48 -- Mining, 1936.
Smith, 1939 (B 910-A), p. 48 -- Mining, 1937.
Smith, 1939 (B 917-A), p. 43-44, 46 -- Mining, 1938.
Smith, 1941 (B 926-A), p. 40, 43 -- Mining, 1939.
Smith, 1942 (B 933-A), p. 39-40 -- Mining, 1940.
Cobb, 1973 (B 1374), p. 129 -- Small dredge has operated at Van Curler's Bar.

(Crazy Mts.)	Gold (?)
Circle district	Circle S 1/2 NE 1/4 quad.

Summary: Unconfirmed report of placer gold.

Brooks and Capps, 1924 (B 755), p. 38 -- Promising new discovery of placer ground reported, 1922.

(Crooked Cr.)	Gold
Circle district MF-391, loc. 22	Circle (13.3-13.4, 9.9) 65°33'N, 145°09'-145°10'W

Summary: Placer mining in 1952. Assumed to be near mouth of Mammoth Cr.

Nelson and others, 1954 (C 348), p. 11 -- Was mining in 1952.

(Deadwood Cr.)

FM, Gold, Lead, Mercury, Silver, Tin, Tungsten; Fluorite

Circle district
MF-391, locs. 6, 27

Circle (14.3-15.8, 7.55-9.3)
65°26'-65°31'N, 144°49'-144°58'W

Summary: Bedrock is Birch Creek Schist intruded by granitic rocks and a few more mafic dikes; schist locally garnetiferous near contacts with granite; many quartz veins. Veins containing gold, argentiferous galena, pyrite, wolframite (not all in any one vein) have been reported. Minerals in placer concentrates include gold, cassiterite, wolframite (all three of which were recovered at same time), scheelite, cinnabar, arsenopyrite, galena, pyrite, tourmaline, and garnet. Several minerals in heavy fraction of concentrates of bedrock and placer samples contain uranium. Fluorite is present in granite. Mining began in 1894 and continued with few interruptions until as recently as 1968. Dredge operated 1937-38; most production was by other methods. Includes references to (Discovery Gulch).

Spurr, 1898, p. 293 -- Wide vein rich in galena found beneath gravel. Random sample assayed 44 oz. in silver.

p. 342-345 -- Stream hugs east side of valley; terrace on west side. Bedrock is quartzitic and micaceous schists with quartz veins; belt of granitic rock 2-3 mi. wide. Gravels on granite less rich than elsewhere; richest at contacts between granite and schist. Some of claims being worked in 1896 yielded 2-3 oz. gold per man per day. Pyrite and galena in vein fragments in gravel. Same data on galena vein as on p. 293.

Brooks, 1904 (B 225), p. 58 — Good values found on benches, 1903.

Prindle, 1905 (B 251), p. 59-61 -- Bedrock is quartzite, mica schist, granite, and occasional more basic intrusives. Depth to bedrock in creek is 3-12 ft.; on bench west of creek is 6-20 ft. Gold generally close to bedrock and in cracks as much as 4 ft. into bedrock. Production through 1903 was worth about $1,500,000.

Purington, 1905 (B 263), p. 208 -- Gold worth $16.73 an ounce.

Prindle, 1906 (B 284), p. 126 -- Mining, 1905.

Prindle, 1906 (B 295), p. 21 -- Data same as in B 251, p. 59-61.

Brooks, 1907 (B 314), p. 188-193 -- Bedrock mainly schistose quartzite and mica schist intruded by granite bodies and a few diabase dikes. Vein quartz is widely distributed. Mineralized fracture zone near head of creek is permeated with stringer veins containing pyrite and galena and said to carry $6 in gold and $8 in silver. Gold least pure of that from any creek in the district. Gold has been found in commercial quantities along 9 mi. of stream course; mining by simple methods. Production in 1906 worth about $120,000. Total production (including tributaries), 1894-1906, worth $700,000 [much less than reported in B 251; $1,500,000 through 1903].

Brooks, 1908 (B 345), p. 50 -- Mining, 1907. Holes 14-20 ft. deep in flats along lower part of creek did not hit bedrock, but penetrated unfrozen gravel estimated to contain $0.40 to $1.50 a yard in gold.

(Deadwood Cr.) - Continued

Brooks, 1909 (B 379), p. 29 — Small vein of wolframite discovered, 1908.
p. 53-54 -- Mining, 1908; winter work hampered by warm weather. Prospecting of potential dredging ground. Wolframite vein discovered.
Brooks, 1910 (B 442), p. 39 — Stream tin associated with wolframite.
Ellsworth, 1910 (B 442), p. 235-236 -- Mining, 1909. Results of prospecting of potential dredging ground not known.
Johnson, 1910 (B 442), p. 246-250 -- Wolframite and cassiterite in placers. Bedrock is schist intruded by porphyritic biotite granite. 2 generations of quartz veins in schist. Concentrates below Discovery Gulch mainly wolframite and cassiterite; none of either above Discovery Gulch. Wolframite reported to have been found in prospect hole in bench gravel near Discovery Gulch; none on dump in 1909. Mineralized shear zone near head of creek is permeated with quartz veinlets carrying pyrite and galena. Gravels below Discovery Gulch contain wolframite and gold with pieces of quartz attached. Concentrates from Deadwood and Switch Creeks contain gold, wolframite, cassiterite, magnetite, ilmenite, arsenopyrite, pyrite, galena, limonite, garnet, tourmaline, and quartz.
Brooks, 1911 (B 480), p. 88 -- Stream tin and wolframite in concentrates.
p. 90 -- Incorrect summary of data in Johnson, 1910 (B 442), p. 246-250.
Ellsworth and Parker, 1911 (B 480), p. 162-163 -- Small-scale mining, 1910.
Ellsworth, 1912 (B 520), p. 245 -- Mining, 1911. Drilling of prospective dredging ground.
Hess, 1912 (B 520), p. 89 -- Cassiterite and wolframite in placers.
Ellsworth and Davenport, 1913 (B 542), p. 211 -- Mining, 1912.
Prindle, 1913 (B 538), p. 60-62 -- Valley asymmetrical with steep E wall and bench on west wall. Bedrock mainly quartzite schist and quartz-mica schist; granite underlies 1 mi. of stream course; diabase dike near mouth. Depth to bedrock 3-12 ft. in creek and 6-20 ft. on bench. Creek gravels have maximum thickness of 8 ft.; some gold throughout, but most is close to or in cracks in bedrock. Pay streak averages about 175 ft. wide. Wolframite and cassiterite in concentrates; quotation from B 442, p. 246-248.
Chapin, 1914 (B 592), p. 360 -- Mining, 1913.
Brooks, 1915 (B 622), p. 61 -- Mining, 1914.
Brooks, 1916 (B 642), p. 63 -- Mining, 1915.
Brooks, 1918 (B 662), p. 56 -- Mining, 1916. Shipment of wolframite saved from placers was made.
Martin, 1919 (B 692), p. 37 -- Material for hydraulic plant being shipped in, 1917. [Probably also was mining.]
Smith, 1930 (B 813), p. 31 -- Mining, 1928.
Mertie, 1932 (B 824), p. 161-164 — Data from older reports summarized or repeated. Hydraulicking and small-scale mining in 1929.
Smith, 1932 (B 824), p. 36 -- Mining, 1929.
Smith, 1933 (B 836), p. 37 -- Mining and ditch construction, 1930.
Smith, 1933 (B 844-A), p. 37 -- Mining, 1931.
Smith, 1934 (B 857-A), p. 35 -- Mining, 1932.

(Deadwood Cr.) - Continued

Smith, 1934 (B 864-A), p. 38 -- Mining, 1933.
Smith, 1936 (B 868-A), p. 39 -- Mining, 1934.
Smith, 1937 (B 880-A), p. 43 -- Mining, 1935.
Mertie, 1938 (B 897-C), p. 235-245 -- Several bedrock benches northwest of Deadwood Cr. below Switch Cr. Gravel shallow in part of course in mountains; suddenly becomes very deep (more than 100 ft.) where valley emerges into Crooked Cr. valley. Bedrock is various kinds of schist intruded by granitic rocks and basic dikes. Schists locally garnetiferous along contacts with granitic rocks. Gold probably derived from quartz veins gentically related to granitic rocks; fragments of schist containing gold-bearing vein quartz have been found. Mineralized fracture zones contain pyrite and galena. Much wolframite, some with mica and quartz attached, and cassiterite in placers above Switch Cr.; none in Switch Cr. Mean (of 7 assays) fineness of gold is .796 Au and .198 Ag. Mining in 1936; both creek and bench placers. In 1937 a dredge was built; began mining in fall.
Smith, 1938 (B 897-A), p. 49-50 -- Mining, 1936. Dredge on order.
Smith, 1939 (B 910-A), p. 49, 76-77 -- Mining, including a new dredge, 1937.
Smith, 1939 (B 917-A), p. 47-48, 74 -- Mining, including a dredge, 1938. Dredge had problems with frozen ground.
Smith, 1941 (B 926-B), p. 43-44, 72 -- Mining other than dredging, 1939. Dredge was moved to Nome Cr.
Joesting, 1942 (TDM 1), p. 27 -- Scarce placer cinnabar.
p. 32 -- Abundant placer cassiterite.
p. 37 -- Scarce scheelite and abundant wolframite in placers.
p. 41 -- Considerable wolframite and cassiterite have been recovered from placers. Small amounts of scheelite also present. Reference to B 897-C, p. 237-238.
Smith, 1942 (B 933-A), p. 40-41 -- Mining, 1940; hampered by water shortage.
Wedow and others, 1952 (OF 51), p. 103-104 -- Wolframite and cassiterite prominent in placer concentrates. Minor amounts of arsenopyrite and galena also found.
Wedow and others, 1953 (C 248), p. 3 -- Fluorite in granite bedrock.
Nelson and others, 1954 (C 348), p. 11-14 -- Mining, 1952. Bedrock is Precambrian Birch Creek Schist intruded by Mesozoic (?) granitic rocks. Schist, granite, and placer samples contained cassiterite, galena, garnet, hematite, ilmenite, pyrite, scheelite, sphene, spinel, tourmaline, wolframite, and zircon; fluorimetric tests indicated the presence of uranium in several of these minerals. Fluorite occurs in granite.
Wedow and others, 1954 (C 335), p. 4-5 -- Reference to B 442, p. 246-250. Cassiterite in concentrates. Uranium-bearing minerals are fluorite and scheelite.
Burand, 1965 (GC 5), p. 3 -- Was a major gold-placer stream.
Malone, 1965 (IC 8252), p. 54 -- Placer cinnabar present.

(Deadwood Cr.) - Continued

Berg and Cobb, 1967 (B 1246), p. 210 -- Faults containing quartz, pyrite, and galena cut schist. Small wolframite-bearing vein reported near wolframite- and cassiterite-bearing placers that were worked in 1916; both minerals probably genetically related to porphyritic granite that crops out nearby.

Cobb, 1973 (B 1374), p. 119 -- Small wolframite-bearing vein in schist. Two-man nonfloat mining operation in 1968.

p. 122 -- Heavy minerals in concentrates include gold, cassiterite, wolframite, and cinnabar; some cassiterite and wolframite were recovered.

(Deep Cr.) Gold

Fairbanks district Circle (4.9-5.3, 6.5-6.55)
MF-391, loc. 14 65°22'N, 146°17'-146°20'W

Summary: Small placer mine, 1946.

Wedow and others, 1954 (C 331), p. 8 -- Small placer mine, 1946. Bedrock is Birch Creek Schist.

(Dempsey Pup) — Antimony, Gold (?)

Fairbanks district — Circle (3.95, 6.1) approx.
MF-391, loc. 1 — 65°21'N, 146°27'W approx.

Summary: Quartz vein contains small lenses and stringers of stibnite; may also be some gold. Country rock is quartzite schist. Explored by one or more short tunnels in about 1920. Includes reference to antimony lode on tributary of Sourdough Cr.

Joesting, 1943 (TDM 2), p. 11 -- Quartz vein contains small lenses and stringers of stibnite. Explored by several short tunnels in about 1920. In 1942 only a few thin seams of stibnite could be seen. A few thin discontinuous seams of stibnite in about 50 tons of mineralized quartz on dumps.

Killeen and Mertie, 1951 (OF 42), p. 6 -- Isolated stibnite deposit, Sourdough Cr.

p. 13 -- Sample of stibnite contained 27.38% Sb [28.38% on p. 39].

p. 39 -- On tributary of Sourdough Cr. Tunnel driven N 50° W apparently along a gold-quartz vein is caved. A few hundred pounds of low-grade ore remains on dump. Assay of best material showed 28.38% Sb [27.38% Sb on p. 13].

Berg and Cobb, 1967 (B 1246), p. 220 -- Stibnite- and gold-bearing quartz vein in quartzitic schist explored by several short tunnels. Selected specimens from dump contained about 23% Sb. [It is not certain that gold is present.]

(Dome Cr.)	Gold (?)
Circle district	Circle (10.4, 9.5) approx. 65°32'N, 145°34'W approx.

Summary: Unconfirmed report of discovery of placer gold.

Brooks and Capps, 1924 (B 755), p. 38 -- Promising new discovery of placer ground reported, 1922.

(Eagle Cr.) Gold

Circle district
MF-391, loc. 18

Circle (11.25-11.75, 7.9-8.1)
65°27'N, 145°23'-145°28'W

Summary: Bedrock mainly quartzose schists with many quartz veins. Gold lowest several feet of gravel, in clay near bedrock, on bedrock, and in cracks in top few feet of bedrock. Quartz intergrown with some of gold. Gold discovered in 1895; mining reported in nearly every year to 1940. Includes references to (Eagle Cr., Mastodon Fork).

Spurr, 1898, p. 293 -- Quartz veins reported at head of creek.
p. 354-355 -- Gold discovered, 1895. Bedrock and gravels quartz schist and vein quartz. Gold on weathered bedrock or on clay on bedrock. Some of ground mined reported to have run $61 per man per day.
Brooks, 1904 (B 225), p. 58 -- Mining, 1903.
Prindle, 1905 (B 251), p. 59 -- Creek of economic importance.
p. 64-65 -- Gold discovered, 1895. Quartzite-schist bedrock. Gold in clay on bedrock, on bedrock, and in cracks in bedrock. Depth to bedrock 8-18 ft. Mining in 1903.
Purington, 1905 (B 263), p. 208 -- Gold worth $18.93 and $18.50 an ounce.
Prindle, 1906 (B 284), p. 126 -- Mining, 1905.
Prindle, 1906 (B 295), p. 23 -- Same data as in B 251, p. 64-65.
Brooks, 1907 (B 314), p. 188-189 -- Production through 1906 worth about $600,000. 4-ft. gold-bearing quartz vein said to have been found during drift placer mining.
p. 191 -- Gold purest of that from any creek in district.
p. 197 -- Bedrock chiefly schist; much quartz. Alluvium 8-20 ft. thick (5-15 ft. of muck); bottom 1-2 ft. is sticky clay; gravels not frozen. Pay streaks 4-8 ft. thick and 30-80 ft. wide. Mining on main creek and Mastodon Fork.
Brooks, 1908 (B 345), p. 50 -- Ditches built, 1907.
Brooks, 1909 (B 379), p. 54 -- Overburden ground sluiced, 1908.
Ellsworth, 1910 (B 442), p. 234 -- Hydraulicking, 1909.
p. 237-238 -- Hydraulicking and pick and shovel mining, 1909.
Ellsworth and Parker, 1911 (B 480), p. 160 -- Successful hydraulicking, 1910.
p. 163-164 -- Hydraulicking; can make a profit on ground that runs as low as $1 a yard.
Ellsworth, 1912 (B 520), p. 245 -- Mining, 1911.
Ellsworth and Davenport, 1912 (B 542), p. 212 -- Mining, 1912.
Prindle, 1913 (B 538), p. 64-65 -- On Mastodon Fork depth to bedrock is 8 to 10 ft. or more; 4-5 ft. of productive gravel. In places clay present in gravel; much of gold in seams in clay a few inches above bedrock. Gold also in cracks in bedrock. Below forks depth to bedrock is 14-18 ft.; gold in about 6 ft. of gravel over width of 30-80 ft. Gold of higher value than elsewhere in district.

(Eagle Cr.) - Continued

Brooks, 1914 (B 592), p. 68 -- Mining, 1913.
Brooks, 1915 (B 622), p. 61 -- Mining, 1914.
Brooks, 1916 (B 642), p. 63 -- Mining, 1915.
Brooks, 1918 (B 662), p. 56 -- Mining, 1916.
Brooks and Martin, 1921 (B 714), p. 87 -- Hydraulic mine operated, 1919.
Brooks, 1923 (B 739), p. 32 -- Hydraulic mine operated, 1921.
Smith, 1929 (B 797), p. 21 -- Hydraulic mine operated, 1926.
Smith, 1930 (B 810), p. 28 -- Mining, 1927.
Smith, 1930 (B 813), p. 31 -- Mining, 1928.
Mertie, 1932 (B 824), p. 169-171 -- Most of geologic data from B 538, p. 64-65. Recent hydraulicking mines width of 200 ft. Several feet of slabby schist bedrock must be taken up to recover a high percentage of gold. Gold coarse; worth $18.46 an ounce. Mining, 1929.
Smith, 1932 (B 824), p. 36 -- Mining, 1929.
Smith, 1933 (B 836), p. 37 -- Mining, 1930.
Smith, 1933 (B 844-A), p. 37 -- Mining, 1931.
Smith, 1934 (B 857-A), p. 35 -- Mining, 1932.
Smith, 1936 (B 868-A), p. 39 -- Mining, 1934.
Mertie, 1938 (B 897-C), p. 228-231 -- Bedrock mainly quartzite schist. Pay streak extends down Mastodon Fork and Eagle Cr. for about 3 mi.; 150-200 ft. wide. Gravel is 5-20 ft. thick, overlain by 2-15 ft. of muck. Gold in cracks in upper few ft. of bedrock as well as in gravel. Considerable quartz intergrown with gold. Weighted mean fineness of gold mined in 3 years is .883 Au and .108 Ag. Gold discovered about 1895. Mined in every year but one or two; 1901-36. Mainly hydraulicking after 1907.
Smith, 1938 (B 897-A), p. 50 -- Mining, 1936.
Smith, 1939 (B 910-A), p. 49 -- Mining, 1937.
Smith, 1939 (B 917-A), p. 48 -- Mining, 1938.
Smith, 1941 (B 926-A), p. 44 -- Mining, 1939.
Smith, 1942 (B 933-A), p. 41 -- Mining, 1940.
Burand, 1965 (GC 5), p. 3 -- Was a major gold-placer stream.

(Faith Cr.) Gold

Fairbanks district Circle (5.3, 6.5-6.6)
MF-391, loc. 14 65°22'N, 146°17'W

Summary: Very little specific information on Faith Cr. Placer gold mining reported, 1937-40. See also: (Deep Cr.), (Homestake Cr.), (Hope Cr.).

Brooks, 1907 (B 314), p. 37 -- Some gold has been found (1906).
Prindle, 1908 (B 337), p. 30 -- Quotation from B 314, p. 37.
Prindle, 1910 (B 442), p. 208 -- Upper part of valley has been investigated with a view toward a hydraulic operation.
Prindle and Katz, 1913 (B 525), p. 149 -- Was staked for placer gold "many years ago."
Smith, 1939 (B 910-A), p. 48 -- Mining in vicinity, 1937.
Smith, 1939 (B 917-A), p. 43-44, 46 -- 3 outfits mining, 1938.
Smith, 1941 (B 926-A), p. 40, 43 -- 2 small mining camps, 1939.
Smith, 1942 (B 933-A), p. 39 -- Mining, 1940.
Burand, 1965 (GC 5), p. 3 -- Placer gold present.
Cobb, 1973 (B 1374), p. 129 -- Has been mining by methods other than dredging.

(Frying Pan Cr.)	Gold
Circle district	Circle (10.6, 5.75) approx.
MF-391, loc. 37	65°19'N, 145°33'W

Summary: Gold in prospect hole about 20 ft. deep, winter of 1909-10.

Ellsworth and Parker, 1911 (B 480), p. 160 -- Small strike.
p. 164 -- Good values in hole sunk about 20 ft. to bedrock about half a mile below the forks during winter of 1909-10. 4-5 ft. of pay gravel beneath 15 ft. of overburden.

(Golddust Cr.) Gold

Circle district Circle (11.1, 7.45)
MF-391, loc. 17 65°25'N, 145°28'-145°29'W

Summary: Prospect drilling in 1936 must have been successful as modern topographic maps show a placer mine on Gold Dust Cr.

Mertie, 1938 (B 897-C), p. 231 -- Was being prospected by drilling, 1936.

(Greenhorn Cr.) (Gulch) — Gold, Silver

Circle district — Circle (14.05, 8.15)
MF-491, loc. 25 — 65°27'N, 145°04'W

Summary: Small tributary of Boulder Cr. where there was small-scale placer mining in 1896, 1911-12, and possibly a few other years. Ground is shallow. Mining hampered by lack of water. Fragments of vein quartz contain visible free gold; one also assayed 24 oz. silver a ton.

Spurr, 1898, p. 293 -- Fragment of vein quartz with cavities from which sulfides had been weathered out assayed 24 oz. silver and contained specks of free gold.

p. 345 -- Mining, 1896. Gravels thin. Largest nugget contained gold worth $54. Vein quartz fragments contain disseminated free gold.

Broooks, 1907 (B 314), p. 188 -- Creek has been productive.

p. 193 -- Placer values have been found. Gravels 4 ft. deep. Lack of water hampers mining.

Ellsworth, 1912 (B 520), p. 245 -- Mining, 1911.

Ellsworth and Davenport, 1913 (B 542), p. 213 -- Mining, 1912.

Prindle, 1913 (B 538), p. 62 -- Placer gold has been found. Ground shallow. Shortage of water.

Mertie, 1932 (B 824), p. 164 -- Shallow, easily worked placer ground located years ago [as of 1929]; lack of water was a handicap to mining.

Mertie, 1938 (B 897-C), p. 250 -- Has been mining.

(Half Dollar Cr.)	FM, Gold, RE, Tin, Tungsten
Circle district	Circle (16.1-16.15, 7.65-7.7)
MF-391, loc. 29	65°25'N, 144°47'-144°48'W

Summary: Granite in basin; minerals in heavy-mineral fraction of concentrates from samples of granite include allanite, hematite, limonite, pyrite, pyrrhotite, scheelite, sphene, and zircon; some of them contain uranium. Stream placer concentrates contain gold, scheelite, and cassiterite. Prospecting or mining, 1909-14, 1935, 1938-40, and probably in a few other years.

Ellsworth and Parker, 1911 (B 480), p. 164 -- Winter prospecting, 1909-10, netted good returns from small dumps. Pay streak narrow and gold distribution spotty.
Ellsworth, 1912 (B 520), p. 245 -- Mining, 1911.
Ellsworth and Davenport, 1913 (B 542), p. 213 -- Mining, 1912.
Brooks, 1914 (B 592), p. 68 -- Mining, 1913.
Chapin, 1914 (B 592), p. 360 -- Mining, 1913.
Brooks, 1915 (B 622), p. 61 -- Mining, 1914.
Smith, 1937 (B 880-A), p. 43 -- Mining, 1935.
Smith, 1939 (B 917-A), p. 48 -- Mining, 1938.
Smith, 1941 (B 926-A), p. 44 -- Mining, 1939.
Smith, 1942 (B 933-A), p. 41 -- Mining, 1940.
Joesting, 1943 (TDM 2), p. 19-20 -- Abundant cassiterite and common scheelite in placers.
Thorne and others, 1948 (RI 4174), p. 27 -- Quotation from TDM 2.
Nelson and others, 1954 (C 348), p. 12-14 -- Samples of granite contained allanite, garnet, hematite, limonite, pyrite, pyrrhotite, scheelite, sphene, and zircon. Fluorimetric tests indicated the presence of uranium in several of these minerals.
Cobb, 1973 (B 1374), p. 122 -- Cassiterite reported.

(Harrison Cr.) Gold, Tin

Circle district Circle (13.1-13.7, 6.6-7.55)
MF-391, locs. 23, 24 65°22'-65°25'N, 145°08'-145°12'W

Summary: Bedrock is quartz-mica schist and mica schist; many quartz veins. Schist fragment with quartz vein with visible gold was found. Most of mining has been on North Fork; gravel 4-12 ft. thick, not frozen, and with little or no overlying muck. Gold in lower 3 ft. of gravel, on bedrock, and in cracks in top foot or two of bedrock. Concentrates contain a little cassiterite and considerable garnet and pyrite. Gold discovered at Pitka Bar (at mouth of North Fork) in 1893. Intermittent mining until 1929. Mining reported annually except for one year, 1929-40. Includes references to: (Harrison Cr., North Fork), (Harrison Cr., South Fork), (Pitka Bar).

Spurr, 1898, p. 293-294 -- Fragment of quartz vein that cuts across schistosity of a block of schist contained beads of gold as much as 3/16 inch in diameter.

p. 351-354 -- Gold probably discovered in 1895. Bedrock is various kinds of schist. Ground generally shallow. Gold on bedrock or (more commonly) in clay on bedrock. Another description of auriferous quartz vein fragment described on p. 293-294.

Brooks, 1907 (B 314), p. 188 -- Gold has been mined.

p. 190 -- Quotation from Spurr, 1898, p. 353-354.

p. 195-197 -- Fairly low-grade unfrozen gravels as much as 12 ft. thick on weathered schist bedrock. Gold fine, flaky, and bright; considerable garnet and pyrite in concentrates. Mining, 1906.

Ellsworth, 1910 (B 442), p. 238 -- Prospecting and mining, 1909.

Ellsworth and Parker, 1911 (B 480), p. 164 -- No mining, 1910.

Prindle, 1913 (B 538), p. 65-66 -- Data from B 314, p. 195-197.

Mertie, 1932 (B 824), p. 171-172 -- Geologic and historical data from Spurr, 1898, and B 314, p. 195-197. One or 2 ft. of decayed schist bedrock must be taken up to get good gold recovery. One small hydraulic plant operated, 1929.

Smith, 1932 (B 824), p. 36 -- Mining on North Fork, 1929.

Smith, 1933 (B 836), p. 37 -- Mining, 1930.

Smith, 1933 (B 844-A), p. 37 -- Mining, 1931.

Smith, 1934 (B 864-A), p. 38 -- Mining, 1933.

Smith, 1936 (B 868-A), p. 39 -- Mining, 1934.

Smith, 1937 (B 880-A), p. 43 -- Mining, 1935.

Mertie, 1938 (B 897-C), p. 231-235 -- Bedrock is mainly quartz-mica schist and mica schist with many quartz veins. Gold discovered at Pitka Bar (at mouth of North Fork) in 1893. Most of workable placers are on North Fork. Gravel 4-12 ft. thick, unfrozen, and with little or no overlying muck; gold in lower 3 ft. of gravel, on bedrock, and in cracks in upper foot or two of bedrock. Mean

(Harrison Cr.) - Continued

fineness of gold from N. Fork (13 assays) is .837 Au and .154 Ag. Mining, 1936.

Smith, 1938 (B 897-A), p. 50 -- Mining, 1936.

Smith, 1939 (B 910-A), p. 49 -- Mining, 1937.

Smith, 1939 (B 917-A), p. 48 -- Mining, 1938.

Smith, 1941 (B 926-A), p. 44 -- Mining, 1939.

Joesting, 1942 (TDM 1), p. 32 -- Scarce placer cassiterite, North Fork.

Smith, 1942 (B 933-A), p. 41 -- Mining on North Fork, 1940.

Burand, 1968 (GC 13), p. 28 -- Gold in South Fork probably derived from mineralized zone on Mastodon Dome.

Cobb, 1973 (B 1374), p. 122 -- Cassiterite reported from North Fork.

(Holdem Cr.) Gold

Circle district Circle (16.45, 8.75)
MF-391, loc. 30 65°29'N, 144°45'W

Summary: Tributary of Ketchem Cr. on which gold was found in 1932 and mined in 1933-34. See also (Ketchem Cr.)

Smith, 1934 (B 857-A), p. 35 -- Promising prospects discovered, 1932.
Smith, 1934 (B 864-A), p. 38 -- Mining, 1933.
Smith, 1936 (B 868-A), p. 39 -- Mining, 1934.

(Ketchem Cr.)	Gold, RE, Tin, Tungsten
Circle district	Circle (16.4-16.6, 8.5-9.0)
MF-391, loc. 30	65°28'-65°30'N, 144°43'-144°45'W

Summary: Bedrock mainly schist; granite near head of creek. Depth to bedrock 10-20 ft., including 1-5 ft. of muck and sand. Gold in lower part of gravel, on bedrock, and in cracks in bedrock. Concentrates contain scheelite, cassiterite, allanite, garnet, sphene, and zircon; in one reference some are listed as uranium-bearing; no analytical data presented. Mining, 1933-40, and possibly more recently.

Smith, 1934 (B 857-A), p. 35 -- Promising prospects discovered, 1932.
Smith, 1934 (B 864-A), p. 38 -- Mining, 1933.
Smith, 1936 (B 868-A), p. 39 -- Mining, 1934.
Smith, 1937 (B 880-A), p. 43 -- Mining, 1935.
Mertie, 1938 (B 897-C), p. 248-250 -- Bedrock schist and, near head of creek, granite. Depth to bedrock 10 to 20 ft.; including 1-5 ft. of muck and sand. Fineness of gold about .783 Au and .207 Ag. Gold in lower part of gravel and on and in bedrock.
Smith, 1938 (B 897-A), p. 50 -- Mining, 1936.
Smith, 1939 (B 910-A), p. 49 -- Mining, 1937.
Smith, 1939 (B 917-A), p. 48 -- Mining, 1938.
Smith, 1941 (B 926-A), p. 44 -- Mining, 1939.
Smith, 1942 (B 933-A), p. 41 -- Mining, 1940.
Bates and Wedow, 1953 (C 202), p. 10 -- Placer allanite and zircon present; listed as thorium bearing [no analytical data presented].
Wedow and others, 1954 (C 335), p. 5 -- Scheelite, cassiterite, allanite, garnet, and sphene in placers. All but cassiterite are uraniferous [no analytical data presented].
Cobb, 1973 (B 1374), p. 122 -- Cassiterite and uranium and(or) rare-earth minerals in concentrates.

(Homestake Cr.) Gold

Fairbanks district Circle (5.85, 7.25)
MF-391, loc. 13 65°25'N, 146°13'W

Summary: Placer gold was mined in early 1900's; no mining reported after 1912. Gold said to have been found in place along a contact between intrusive granite porphyry and schist.

Brooks, 1907 (B 314), p. 37 -- Gold has been found (as of 1906).
Prindle, 1908 (B 337), p. 30 -- Quotation from B 314, p. 37.
Prindle, 1910 (B 442), p. 209 -- Gold is found in place along contact between intrusive granite porphyry and schist; such contacts are a probable source of placer gold.
Ellsworth and Parker, 1911 (B 480), p. 157 -- Small hydraulic plant, 1910. Gravel averages about 8 ft. deep.
Ellsworth, 1912 (B 520), p. 242 -- Hydraulicking, 1911.
Ellsworth and Davenport, 1913 (B 542), p. 205 -- Hydraulic plant did not operate. One man hand mined, 1912.
Prindle and Katz, 1913 (B 525), p. 150 -- Data from B 480, p. 157.

(Hope Cr.) — Antimony, Copper, Gold, Lead, Molybdenum, RE (?), Tungsten; Fluorite

Fairbanks district — Circle (4.6-5.0, 7.05-7.15)
MF-391, locs. 2, 10, 11 — 65°24'N, 146°19'-146°22'W

Summary: Bedrock is Birch Creek Schist intruded by granitic rocks. Samples of granite from near head of creek contained trace to small amounts of allanite (?), fluorite, galena, malachite, molybdenite, pyrite, pyrrhotite, rutile, scheelite, stibnite, and other heavy minerals. Stibnite deposit reported to have been found in 1926 while constructing a bedrock drain was apparently reburied. Gold found in early 1900's, but never mined extensively.

Brooks, 1907 (B 314), p. 37 -- Gold has been found (as of 1906).
Prindle, 1908 (B 337), p. 30 -- Quotation from B 314, p. 37.
Prindle and Katz, 1913 (B 525), p. 149 -- Was staked for placer gold "many years ago."
Joesting, 1943 (TDM 2), p. 12 -- Stibnite deposit reported to have been found in 1926 while constructing a bedrock drain. Apparently was covered later.
Wedow and others, 1952 (OF 51), p. 102 -- Fluorite abundant near head of creek; occurs with pyrite in quartz veins cutting schist. Veins appear to be genetically related to nearby tourmaline granite.
p. 106 -- Occurrence is suggestive of uranium.
Wedow and others, 1953 (C 248), p. 3 -- No evidence could be found of reported [OF 51, p. 102] quartz-pyrite-fluorite veins.
p. 5 -- Precambrian Birch Creek Schist intruded by granite and dikes of Tertiary age.
Nelson and others, 1954 (C 348), p. 7, 10-11 -- Precambrian Birch Creek Schist intruded by Mesozoic (?) granitic rocks. Samples of granite near head of creek contained trace to small amounts of allanite (?), fluorite, galena, malachite, molybdenite, pyrite, pyrrhotite, rutile, scheelite, stibnite, and other heavy minerals.
Burand, 1965 (GC 5), p. 3 -- Placer gold present.
Cobb, 1973 (B 1374), p. 129 — Has been placer mining.

(Hot Springs Cr.) RE, Tungsten

Circle district Circle (16.95, 8.65) approx.
MF-391, loc. 31 65°29'N, 144°40'W approx.

Summary: Scheelite, allanite, sphene, and zircon present; last 3 listed as being uranium and(or) thorium bearing, but no analytical data are presented.

Bates and Wedow, 1953 (C 202), p. 10 -- Placer allanite and zircon present; listed as thorium bearing [no analytical data presented].

Wedow and others, 1954 (C 335), p. 5 -- Scheelite, allanite, and sphene present. The allanite and sphene are uraniferous [no analytical data presented].

Cobb, 1973 (B 1374), p. 122 -- Scheelite and(or) wolframite and uranium and(or) rare-earth minerals reported in concentrates.

(Independence Cr.) FM, Gold, Lead, RE, Tin, Tungsten

Circle district Circle (12.9-13.0, 8.35-9.0)
MF-391, loc. 22 65°28'-65°30'N, 145°13'W

Summary: Branch of Mammoth Cr. Bedrock is mica schist, quartz-mica schist, and quartzite schist. Gold probably derived from a localized source on Mastodon Dome. Pay gravels are generally no more than 300 ft. wide and 4-8 ft. thick beneath 0-10 ft. of muck. Gold mainly near, on, or in top several feet of bedrock. Concentrates contain allanite, cassiterite, galena, gold, scheelite, wolframite, xenotime, zircon, garnet, and hematite; uranium in several heavy minerals. Creek was a fairly steady producer from 1894 or 1895 until as recently as 1952. Dredge operated near mouth for a short time in middle 1920's. Most of mining was by hydraulicking.

Spurr, 1898, p. 345-346 -- Gravels consist of schist and vein quartz fragments. Mining, 1896. One foot of pay dirt on bedrock is overlain by 10 ft. of gravel.
Prindle, 1905 (B 251), p. 59 -- Creek of economic importance, 1903. p. 63 -- Mining, 1903.
Prindle, 1906 (B 295), p. 22 -- Valley similar to that of Mastodon Cr. Mining was near mouth; very little in recent years [as of 1905].
Brooks, 1907 (B 314), p. 194 -- Irregular pay streak swings from side to side of valley. Gravels 3-9 ft. deep. Mining, 1906.
Ellsworth, 1910 (B 442), p. 238 -- Small-scale mining, 1909.
Ellsworth and Parker, 1911 (B 480), p. 163 -- Pick-and-shovel and drift mining, 1910.
Ellsworth, 1912 (B 520), p. 245 -- Mining, 1911.
Ellsworth and Davenport, 1913 (B 542), p. 212 -- Mining, 1912.
Prindle, 1913 (B 538), p. 63 -- Considerable gold has been mined. Gravels 3-9 ft. deep. Some well-defined benches.
Chapin, 1914 (B 592), p. 360 -- Hydraulic plant to be installed, 1913.
Brooks, 1915 (B 622), p. 61 -- Mining, 1914.
Brooks, 1918 (B 662), p. 56 -- Preparation for installing hydraulic plant, 1916.
Martin, 1919 (B 692), p. 37 -- Hydraulic plant installed, 1917.
Smith, 1930 (B 813), p. 31 -- Hydraulic plant operated, 1928.
Mertie, 1932 (B 824), p. 164-165 -- All mining has been of creek gravels. Creek has been a small but steady producer for many years. Mining, 1929. As much as 5 ft. of schist bedrock must be taken up to recover gold.
Smith, 1932 (B 824), p. 36 -- Mining, 1929.
Smith, 1933 (B 836), p. 37 -- Mining, 1930.
Smith, 1933 (B 844-A), p. 37 -- Mining, 1931.
Smith, 1934 (B 857-A), p. 35 -- Mining, 1932.
Smith, 1934 (B 864-A), p. 38 -- Mining, 1933.
Smith, 1936 (B 868-A), p. 38-39 -- Mining, 1934.
Smith, 1937 (B 880-A), p. 43 -- Mining, 1935.
Mertie, 1938 (B 897-C), p. 210-211 -- Gold probably derived from a sharply localized source on Mastodon Dome.

(Independence Cr.) - Continued

p. 213 -- Dredged near mouth in middle 1920's (dredge dismantled in 1926).

p. 219-222 -- Placers have been worked since 1894 or 1895. Bedrock is mica schist, quartz-mica schist, and quartzite schist. Pay gravels are as much as 425 ft., but generally no more than 300 ft., wide; 4-8 ft. thick with most of pay near, on, or in bedrock. From 0 to 10 ft. of muck over gravel. In one part of creek mean fineness of gold was .787 Au and .201 Ag; at another place it was .810 Au and .175 Ag. Mining, 1936.

Smith, 1939 (B 910-A), p. 49 -- Mining, 1937.

Smith, 1939 (B 917-A), p. 48 -- Mining, 1938.

Smith, 1941 (B 926-A), p. 44 -- Mining, 1939.

Smith, 1942 (B 933-A), p. 41 -- Mining, 1940.

Nelson and others, 1954 (C 348), p. 11-14 -- Mining, 1952. Heavy minerals in a placer sample included allanite, cassiterite, galena, gold, scheelite, wolframite, xenotime, zircon, garnet and hematite; fluorimetric tests indicated the presence of uranium in several of them.

Burand, 1965 (GC-5), p. 3 -- A productive placer gold creek.

Cobb, 1973 (B 1374), p. 122 -- Cassiterite and small amounts of uranium and(or) rare-earth minerals in concentrates.

(Lawson Cr.)	Gold (?)
Circle district	Circle SE 1/4 SE 1/4 SW 1/4 quad.

Summary: Unconfirmed report of placer gold.

Ellsworth and Davenport, 1913 (B 542), p. 213 -- Rich placers reported to have been found in 1912. "A quartz vein that crosses the valley above this discovery is believed to be the source of the placer gold."

(Loper Cr.)	Gold
Circle district	Circle SE 1/4 NW 1/4 quad.

Summary: Gravels not frozen; carry some gold; prospecting in 1910's and 1932. No record of production.

Brooks, 1909 (B 379), p. 54 -- Good prospects reported to have been found, 1908. Ground not frozen and less than 8 ft. deep.

Ellsworth, 1910 (B 442), p. 239 -- Carries gold; has been prospected for several years in a small way (1909).

Smith, 1934 (B 857-A), p. 35 -- Prospecting to investigate possibility of installing a dredge; no data on results; 1932.

(Mammoth Cr.)

Copper, FM, Gold, Lead, Molybdenum, RE, Tungsten

Circle district
MF-391, loc. 22

Circle (12.9-13.35, 9.0-9.8)
65°30'-65°33'N, 145°09'-145°14'W

Summary: Formed by junction of Independence and Mastodon Creeks. Wide valley bottom merges with broad, gravel-floored valley of Crooked Cr. Bedrock is mainly quartzite schist and mica schist intruded by granitic bodies; many quartz veins. Gold discovered, 1894. Most of mining was by hydraulicking (before 1915) and dredging 1915-16, 1936 to 1940 or later). Sample of granite talus contained allanite, galena, molybdenite, scheelite, iron sulfides and hematite, copper carbonates, garnet, and topaz; uranium in several of them.

Spurr, 1898, p. 346-347 -- Valley bottom widens rapidly below Independence Cr. and merges with broad gravel-floored valley of Crooked Cr. Pay streak not related to present course of creek.

Brooks, 1904 (B 225), p. 58 -- Mining using a steam shovel, 1903.

Brooks, 1905 (B 259), p. 29 -- Steam shovel did not operate, 1904.

Prindle, 1905 (B 251), p. 59 -- Creek of economic importance, 1903.

p. 61-62 -- Bedrock is quartzite schist and granite. Small amount of vein quartz in gravel. Average depth to bedrock is 10 ft., of which top 2-3 ft. is waste. Mined with steam shovel in 1903.

Purington, 1905 (B 263), p. 208 -- Gold worth $17.38 an ounce.

Prindle, 1906 (B 295), p. 21-22 -- Data the same as in B 251, p. 61-62.

Brooks, 1907 (B 314), p. 188-189 -- Including Mastodon Cr. and other tributaries, produced gold worth $2,060,000 through 1906. Bedrock mainly schistose quartzite and mica schist intruded by granite bodies.

p. 193 -- Alluvium 10-15 ft. deep; some large boulders. In 1906 possible dredging ground was being investigated.

Brooks, 1909 (B 379), p. 54 -- Ditch to bring water from Bonanza Cr. completed, 1908; has been little mining since 1905.

Ellsworth, 1910 (B 442), p. 234 -- Hydraulicking, 1909.

p. 236-237 — Much trouble with ditch maintenance. Details of hydraulic set-up used in 1909.

Ellsworth and Parker, 1911 (B 480), p. 160-162 — Large-scale hydraulicking, 1910. Ditch 10.3 mi. long.

Ellsworth, 1912 (B 520), p. 245 -- Mining, 1911.

Ellsworth and Davenport, 1913 (B 542), p. 212 -- Mining, 1912.

Prindle, 1913 (B 538), p. 62-63 -- Alluvium 10-15 ft. thick. Large granite boulders. Gold fine.

Brooks, 1915 (B 622), p. 60-61 -- Mining, 1914. Dredge to be brought in.

Brooks, 1916 (B 642), p. 63 -- New dredge installed and operated, 1915.

Smith, 1917 (BMB 153), p. 53 -- Dredge operated, 1916.

Brooks, 1918 (B 662), p. 56 -- Dredge operated, 1916.

Martin, 1919 (B 692), p. 37 -- Ground surveyed for patent, 1917. [Probably also was mining.]

Mertie, 1938 (B 897-C), p. 205-208 -- Gold discovered, 1894. Bedrock mainly quartzite schist and mica schist; a granitic body along E side of Mammoth Cr. opposite Miller Cr.; dikes and small intrusive bodies in many other places in area. Bedrock cut by many quartz veins, some of which are probable sources of placer gold.

(Mammoth Cr.) - Continued

p. 212-213 -- Data on history of mining; dredge about 2 mi. below Miller House in 1937.

p. 218-219 -- Data on dredge machinery, etc. Estimated 10 years worth of dredging ground below Miller House.

Smith, 1938 (B 897-A), p. 49, 71 -- New dredge began operating, 1936.

Smith, 1939 (B 910-A), p. 49, 76 -- Dredge operated, 1937.

Smith, 1939 (B 917-A), p. 47, 74 -- Dredge operated, 1938.

Smith, 1941 (B 926-A), p. 43-44, 70 -- Mining, including a dredge, 1939.

Smith, 1942 (B 933-A), p. 40-41, 67 -- Mining, including a dredge, 1940.

Nelson and others, 1954 (C 348), p. 11-14 — Has been placer mining; none in 1952. Sample of granitic talus contained allanite, azurite, galena, garnet, hematite, malachite, molybdenite, pyrite, pyrrhotite, scheelite, and topaz; fluorimetric tests indicated that uranium is present in several of them.

Burand, 1965 (GC 5), p. 3 -- Was a productive creek.

(Mastodon Cr.) Gold, Tin

Circle district Circle (12.25-12.9, 7.85-9.0)
MF-391, loc. 22 65°26'-65°30', 145°14'-145°19'W

Summary: Major fork of Mammoth Cr. Bedrock is mainly quartzite schist and mica schist cut by many quartz veins; some closely folded impure limestone near mouth; some small granite dikes. Gold mineralization seems to have been localized on Mastodon Dome; gold near head of creek is coarsest and has much quartz adhering. Depth to bedrock 10 or 15 ft. Gold in base of gravel (mainly unfrozen), on bedrock and in cracks extruding as much as 7 ft. into bedrock. Cassiterite in concentrates. Mining from 1894 to as recently as 1952. Dredges operated 1912-13, 1918-26.

Spurr, 1898, p. 347-349 -- Gold discovered, 1894. Rises on Mastodon Dome. Bedrock is various kinds of schist cut by 2 sets of joints; rock breaks into rhombohedral blocks. Most of gold on bedrock, but pay streak is as much as 6 ft. thick. Much of ground is 10-15 ft. deep. Gravels not frozen.

Brooks, 1904 (B 225), p. 58 -- Mining, 1903.

Brooks, 1905 (B 259), p. 29 -- Hydraulic plant flooded out, 1904.

Prindle, 1905 (B 251), p. 59 -- Creek of economic importance in 1903.

p. 62-63 -- Bedrock is quartzite schist and mica schist with quartz veins; limestone near mouth of creek; some small granitic dikes. Depth to bedrock as much as 20 ft. Gold in gravel, on bedrock, and in cracks in bedrock. Mining, 1903, including winter drifting.

Purington, 1905 (B 263), p. 208 -- Gold worth $17.00 an ounce.

Prindle, 1906 (B 284), p. 126 -- Mining, 1905; new discoveries on bench W of creek.

Prindle, 1906 (B 295), p. 22 -- Data the same as in B 251, p. 62-63.

Brooks, 1907 (B 314), p. 188 -- With Mammoth Cr. has been major gold-producing creek in district. Steam scraper operated, 1906.

p. 191 -- Width of over 200 ft. has been mined at a profit.

p. 194 -- Richest gravels in district. Has been the largest producer. Pay streak in lower valley is 200 ft. wide and 7-10 ft. thick. Some of ground is frozen, but much is not. Mining, 1906.

Brooks, 1908 (B 345), p. 50 -- Mining, 1907.

Brooks, 1909 (B 379), p. 54 -- Mining, 1908.

Ellsworth, 1910 (B 442), p. 235 -- Mining, 1909.

Johnson, 1910 (B 442), p. 246 -- Cassiterite identified in concentrates.

Ellsworth and Parker, 1911 (B 480), p. 161 -- Much mining, 1910.

Ellsworth, 1912 (B 520), p. 244-245 -- Much mining, 1911.

Ellsworth and Davenport, 1913 (B 542), p. 210-211 -- Dredge brought from Klondike to Mastodon Cr. began operating, 1912. Also large-scale hydraulicking.

Prindle, 1913 (B 538), p. 63 -- Bedrock is quartzite schist and mica schist with many small quartz veins; granitic dikes. Average depth to bedrock 10 or 12 ft. Gold is generally fine and assays $17.35 to $17.38 an ounce.

(Mastodon Cr.) - Continued

Brooks, 1914 (B 592), p. 68 -- Dredge operated, 1913.
Chapin, 1914 (B 592), p. 360 -- Dredge and hydraulic mining, 1913.
Brooks, 1915 (B 622), p. 60-61 -- Old dredge dismantled; mining by other methods, 1914.
Ellsworth and Davenport, 1915 (W 342), p. 182 -- Most gold-producing stream in Circle district; water supply very small.
Brooks, 1916 (B 642), p. 63 -- Mining, 1915.
Smith, 1917 (BMB 142), p. 25 -- Dredge installed and operated, 1915. [This undoubtedly is an error; the dredge was on Mammoth Cr.]
Brooks, 1918 (B 662), p. 56 -- Mining, 1916.
Martin, 1919 (B 692), p. 37 -- Ground surveyed for patent, 1917. [Probably also was mining.]
Martin, 1920 (B 712), p. 45 -- Dredge operated, 1918.
Brooks and Martin, 1921 (B 714), p. 87 -- Dredge and hydraulic operations, 1919.
Brooks, 1923 (B 739), p. 9, 32 -- Dredge operated, 1921.
Brooks and Capps, 1924 (B 755), p. 14, 38 -- Dredge operated, 1922.
Brooks, 1925 (B 773), p. 27 -- Dredge operated, 1923.
Smith, 1926 (B 783), p. 14, 18 -- Dredge operated, 1924.
Moffit, 1927 (B 792), p. 18, 25 -- Dredge operated, 1925.
Smith, 1929 (B 797), p. 21, 30 -- Mining, including a dredge, 1926.
Smith, 1930 (B 810), p. 28 -- Dredge did not operate; other types of mining, 1927.
Smith, 1930 (B 813), p. 31 -- Mining other than dredging, 1928.
Mertie, 1932 (B 824), p. 165-168 -- Bedrock is mainly quartzite schist and mica schist cut by quartz veins; feldspathic schists, impure limestone, and small bodies of granitic rock also present. Both stream and bench gravels are auriferous. Gold recovered in 1929 assayed $15.25 to $16.15 an ounce. Major producing creek in district; total to 1929 probably worth $2,000,000 to $3,000,000. Most of gold in bottom few feet of gravel and cracks in top 2-7 ft. of bedrock. 3 hydraulic plants operating, 1929.
Smith, 1932 (B 824), p. 36 -- Mining, 1929.
Smith, 1933 (B 836), p. 37 -- Mining, 1930.
Smith, 1933 (B 844-A), p. 37 -- Mining, 1931.
Smith, 1934 (B 857-A), p. 35 -- Mining, 1932.
Smith, 1934 (B 864-A), p. 38 -- Mining, 1933.
Smith, 1936 (B 868-A), p. 38-39 -- Mining, 1934.
Smith, 1937 (B 880-A), p. 43 -- Mining, 1935.
Mertie, 1938 (B 897-C), p. 206-208 -- Major fork of Mammoth Cr. Valley asymmetrical; steep east valley wall; bedrock benches (not prominent on surface) on west wall. Bedrock mainly quartzite schist and mica schist cut by many quartz veins; some thin-bedded, impure, closely folded limestone near mouth. Gold increases in fineness downstream (.740 to .811 Au).

p. 210-218 -- Gold mineralization appears to have been sharply localized in Mastodon Dome. Gold coarsest and with adhering quartz near head of creek; gold finer and no quartz farther downstream. Gold in lower 4-5 ft. of gravel, on bedrock, and in bedrock crevices. As

(Mastodon Cr.) - Continued

of 1936 was major gold producer of district; $2,000,000 to $3,000,000 in value. Much information on mining methods and equipment. Mining, 1936.

Smith, 1938 (B 897-A), p. 50 -- Mining, 1936.
Smith, 1939 (B 910-A), p. 49 -- Mining, 1937.
Smith, 1939 (B 917-A), p. 48 -- Mining, 1938.
Smith, 1941 (B 926-A), p. 44 -- Mining, 1939.
Joesting, 1942 (TDM 1), p. 32 -- Scarce placer cassiterite.
Smith, 1942 (B 933-A), p. 41 -- Mining, 1940.
Nelson and others, 1954 (C 348), p. 11 -- Mining, 1952.
Burand, 1965 (GC 5), p. 3 -- Has been a productive creek.
Burand, 1968 (GC 13), p. 28 -- Gold probably derived from mineralized zone on Mastodon Dome.
Koschmann and Bergendahl, 1968 (P 610), p. 25 -- Hydraulic methods were used.
Cobb, 1973 (B 1374), p. 119, 122 -- First dredge in district brought in in 1912; operated for only 2 years. Cassiterite in concentrates.

(McLain Cr.)	Gold (?)
Circle district	Circle (13.65, 4.75) approx. 65°15'N, 145°08'W approx.

Summary: Some work in 1910. May not have been any gold found.

Ellsworth and Parker, 1911 (B 480), p. 164 -- Two men reported to be working an automatic dam; shortage of water; 1910. Prospects would have to be good enough to warrant 15 mi. of ditch from Clums Fork.

(Miller Cr.) Gold

Circle district Circle (12.15-12.7, 8.8-9.3)
MF-391, loc. 21 65°30'-65°31'N, 145°15'-145°20'W

Summary: Bedrock is quartzite and quartzite schist with many quartz veins; granitic dikes on divide between Miller and Eagle Creeks. Ground 12-16 ft. deep; gold in lower part of gravel, in clay between gravel and bedrock, on bedrock, and in weathered bedrock. Placer gold was mined intermittently from 1895 to as recently as 1940. No data on total production or on composition of concentrates.

Spurr, 1898, p. 349-350 -- NW valley wall steep; SW wall more gentle and with a gravel terrace. Bedrock is quartzite schist and granitic and aplite intrusives. Gold in basal 4 ft. of 8-15 ft. of gravel and in top of decomposed bedrock. Mining in 1896.

Brooks, 1904 (B 225), p. 58 -- Small-scale mining, 1903.

Prindle, 1905 (B 251), p. 59 -- Creek of economic importance, 1903.

p. 63-64 -- Bedrock is quartzite, quartzite schist, quartz veins, and granitic dikes on divide with Eagle Cr. Depth to bedrock is 8-16 ft. Gold scattered through several feet of gravel. Mining, 1903.

Purington, 1905 (B 263), p. 208 -- Gold worth $17.25 an ounce.

Prindle, 1906 (B 295), p. 22-23 -- Data same as in B 251, p. 63-64.

Brooks, 1907 (B 314), p. 188 -- Has been placer gold production.

p. 194 -- Bedrock schist. Gravel 4-12 ft. thick; Pay streak is 2-6 ft. thick and 20-40 ft. wide. Mining, 1906; mined fairly continuously since 1895.

Ellsworth, 1910 (B 442), p. 238 -- Mining, 1909.

Ellsworth and Parker, 1911 (B 480), p. 163 -- Very little mining, 1910. Preparations for constructing a ditch.

Prindle, 1913 (B 538), p. 64 -- Bedrock is quartzite and quartzite schist; vein quartz; granitic dikes. In places clay as much as 3 ft. thick between gravel and bedrock contains most of the gold. Most of gold is fine.

Brooks, 1915 (B 622), p. 61 -- Mining, 1914.

Martin, 1919 (B 692), p. 37 -- Ground surveyed for patent, 1917.

Smith, 1930 (B 813), p. 31 -- Mining, 1928.

Mertie, 1932 (B 824), p. 168-169 -- Geologic data summarized from older reports. Creek has never been a large producer, but has been mined intermittently since 1895. Ditch building, 1929.

Smith, 1932 (B 824), p. 36 -- Mining, 1929.

Smith, 1933 (B 836), p. 37 -- Mining, 1930.

Smith, 1933 (B 844-A), p. 37 -- Mining, 1931.

Smith, 1934 (B 857-A), p. 35 -- Mining, 1932.

Smith, 1934 (B 864-A), p. 38 -- Mining, 1933.

Smith, 1936 (B 868-A), p. 39 -- Mining, 1934.

Smith, 1937 (B 880-A), p. 43 -- Mining, 1935.

(Miller Cr.) - Continued

Mertie, 1938 (B 897-C), p. 222-224 -- Bedrock is mainly quartzite and quartzite schist with quartz veins. Granitic dikes on divide between Miller and Eagle Creeks. Ground 12-16 ft. deep. Most of gold in lower part of gravel, in clay betwen gravel and bedrock and on bedrock. Intermittent mining since 1895. Mining in 1936. Mean fineness of 2 groups of assays was .832 Au and .162 Ag; .838 Au and .153 Ag.
Smith, 1938 (B 897-A), p. 50 -- Mining, 1936.
Smith, 1939 (B 910-A), p. 49 -- Mining, 1937.
Smith, 1941 (B 926-A), p. 44 -- Mining, 1939.
Smith, 1942 (B 933-A), p. 41 -- Mining, 1940.
Burand, 1965 (GC 5), p. 3 -- Has been a productive creek.

(Miller House) — Copper, Lead

Circle district — Circle (13.0, 9.3)
MF-391, loc. 4 — 65°31'N, 145°13'W

Summary: Heavy-mineral fraction of sample of granite contained malachite, galena, pyrite, zircon, and iron-oxide minerals. Some of minerals probably are uranium bearing; a sample with concentration ratio of 325:1 contained 0.065 eU.

Wedow and others, 1954 (C 335), p. 5 -- Minerals of heavy-mineral fraction of a sample of granite from near Miller House include hematite and limonite in rock fragments, malachite, zircon, galena, and pyrite. eU of unconcentrated material was 0.007%; concentrates contained 0.053 and 0.065 percent eU (concentration ratios of 150:1 and 325:1). Table indicates that rock fragments of hematite and limonite, malachite, and zircon are uranium-bearing [no analytical data presented].

Berg and Cobb, 1967 (B 1246), p. 210 -- Small amounts of lead and copper minerals in granitic rock.

(Nome Cr.) Gold, Monazite, Tin

Tolovana district
MF-391, loc. 8

Circle (1.3-2.85, 5.8-6.3)
65°20'-65°21'N, 146°37'-146°50'W

Summary: Placers probably derived from area near the head of the creek where a small Mesozoic(?) pluton intruded Precambrian(?) schist. Gold discovered in 1910. Dredge operated, 1926-31; burned in 1932. Another dredge operated, 1939-40, 1946, and probably more recently. Abundant cassiterite and sparse monazite in concentrates. See also (Nome Cr.) Livengood quad.

Ellsworth and Parker, 1911 (B 480), p. 165 -- All ground in drainage basin staked, 1910. Preparations made for mining with a scraper; ground about 15 ft. deep with 2-4 ft. of pay gravel.

Ellsworth and Davenport, 1913 (B 542), p. 210 -- Much dead work and a little mining, 1912.

Prindle and Katz, 1913 (B 525), p. 150 -- Prospects were found in 1910.

Smith, 1929 (B 797), p. 19, 30 -- Dredge installed and operated, 1926.

Smith, 1930 (B 810), p. 26, 40 -- Dredge operated, 1927.

Smith, 1930 (B 813), p. 30, 47 -- Dredge operated, 1928.

Smith, 1932 (B 824), p. 35, 52 -- Dredge operated, 1929.

Smith, 1933 (B 836), p. 35, 54 -- Dredge operated, 1930.

Smith, 1933 (B 844-A), p. 35, 54 -- Dredge operated, 1931; burned in spring of 1932.

Smith, 1934 (B 857-A), p. 34 -- Dredge burned before 1932 season. No production.

Smith, 1937 (B 880-A), p. 44 -- Drilling to test prospective dredging ground [may be in Livengood quad.].

Smith, 1941 (B 926-A), p. 40, 43, 70, 72 -- Dredge formerly on Deadwood Cr. was moved to Nome Cr., and operated most of season, 1939. Ground not frozen.

Joesting, 1942 (TDM 1), p. 32 -- Scarce placer cassiterite.

Smith, 1942 (B 933-A), p. 38-39, 67 -- Mining, including a dredge, 1940. [Some of mining other than by dredge may have been in Livengood quad.]

Wedow and others, 1954 (C 331), p. 8 -- Dredge operated, 1946. Concentrate sample contained topaz, cassiterite, monazite, and tourmaline. eU of heavy fraction was 0.012%.

Bates and Wedow, 1953 (C 202), p. 10 -- Placer monazite present.

Overstreet, 1967 (P 530), p. 109 -- Reference to C 331, p. 8. Monazite may have come from Mesozoic(?) granite stock at head of creek.

Cobb, 1973 (B 1374), p. 174 -- Ground staked, 1910. Gold in placers probably had a common source with that in Sourdough Cr.; both drain an area where a small granitic pluton intruded Precambrian(?) schists. Dredges operated for many years; a concentrate sample contained abundant cassiterite and topaz and scarce monazite and tourmaline.

(Palmer Cr.) Gold, Tungsten

Fairbanks district Circle (11.3-11.5, 0.15-0.45)
MF-391, loc. 34 65°00'-65°01'N, 145°27'-145°29'W

Summary: Country rock is schist with many quartz stringers. Mining 1937 to 1941 or later. Much scheelite in concentrates.

Smith, 1939 (B 910-A), p. 48 -- Extensive prospect drilling, 1937.
Smith, 1939 (B 917-A), p. 43-44, 46 -- Mining, 1938.
Smith, 1941 (B 926-A), p. 40, 43 -- Mining, 1939.
Joesting, 1942 (TDM 1), p. 39 -- Abundant placer scheelite.
p. 41 -- During mining operations in 1941 most of the concentrates consisted of scheelite. Scheelite probably occurs in some of the numerous quartz stringers in the schist country rock. No granitic rocks known in drainage area; no igneous rocks in stream gravels.

(Porcupine Cr.) Gold, Tin

Circle district Circle (10.75-10.9, 9.65-9.8)
MF-391, loc. 19 65°33'N, 145°30'W

Summary: Bedrock is Birch Creek Schist. Gold is coarse, intergrown with quartz, and found mainly on and in cracks in bedrock; a little cassiterite in concentrates. Both probably derived from mineralized zone of which the lode occurrence on Porcupine Dome is a part. Gold discovered in 1890's; mining was in 1930's. See also (Porcupine Dome).

Spurr, 1898, p. 350-351 -- Creek meanders in wide valley. Prospecting in 1894 and 1896 was not very successful. Ground 12-15 ft. deep.
Brooks, 1907 (B 314), p. 198 -- A little mining has been done near mouth of Miller Cr.
Smith, 1934 (B 857-A), p. 35 -- Prospecting and possibly mining, 1932.
Smith, 1934 (B 864-A), p. 38 -- Mining, 1933.
Smith, 1936 (B 868-A), p. 39 -- Mining, 1934.
Smith, 1937 (B 880-A), p. 43 -- Mining, 1935.
Mertie, 1938 (B 897-C), p. 224-226 -- Gold discovered, but not mined, early in history of Circle district. Gold lodes like that on Porcupine Dome may have been a source of placer gold in the creek. Bedrock is Birch Creek Schist. Gold mainly on and in cracks in bedrock. Gold is coarse; quartz is intergrown with gold in all of larger nuggets. Fineness .818 to .822 Au and .168 to .172 Ag. A little cassiterite in concentrates. Mining, 1936.
Smith, 1938 (B 897-A), p. 50 -- Mining, 1936.
Smith, 1939 (B 910-A), p. 49 -- Mining, 1937.
Smith, 1939 (B 917-A), p. 48 -- Mining, 1938.
Smith, 1941 (B 926-A), p. 44 -- Mining, 1939.
Burand, 1968 (GC 13), p. 29 -- Gold and cassiterite probably derived from the mineralized zone of which the lode occurrence on Porcupine Dome is a part. See also (Porcupine Dome).
Cobb, 1973 (B 1374), p. 122 -- Cassiterite in placer concentrates.

(Porcupine Dome)	Gold, Silver, Tin
Circle district	Circle (10.45, 9.15)
MF-391, loc. 3	65°31'N, 145°34'W

Summary: Quartz vein (or veins) in metamorphic rocks contains gold, silver, and some cassiterite. This and similar lode deposits on Porcupine Dome may have been the source of gold and cassiterite in Porcupine Cr.

Mertie, 1938 (B 897-C), p. 225-226 -- Gold lode prospect was found recently [as of 1936]. Lodes in this area may be source of some of placer gold in Porcupine Cr.

Berg and Cobb, 1967 (B 1246), p. 210 -- Quartz veins were prospected for gold.

Burand, 1968 (GC 13), p. 29 -- Gold-silver lode contains some cassiterite.

Cobb, 1973 (B 1374), p. 119 -- Auriferous quartz veins in metamorphic rocks may have been source of minerals reported from placer concentrates.

(Portage Cr.)	Bismuth, Copper, FM, Gold, Monazite, RE, Tin, Tungsten, Zinc; Fluorite
Circle district	Circle (17.35-17.5, 8.35-8.7)
MF-391, locs. 7, 32	65°27'-65°29'N, 144°36'-144°37'W

Summary: Granite bedrock. Many heavy boulders in gravel. Samples of granite and of placer concentrate contained allanite, arsenopyrite, bismuthinite, cassiterite, garnet, gold, hematite, ilmenite, magnetite, monazite, pyrite, scheelite, sphalerite, sphene, spinel, topaz, tourmaline, uranothorianite, wolframite, and zircon; uranium in many of them. Fluorite occurs in vugs in granite. Cassiterite is a common constituent of placer concentrates. Gold discovered in early 1900's and a little recovered; sustained mining begun in about 1933 and was being carried on as recently as 1952.

Brooks, 1907 (B 314), p. 198 -- $200 in gold said to have been taken out of one claim in 1906. Further prospecting failed to find values.

Ellsworth and Davenport, 1913 (B 542), p. 213 -- Mining; bedrock granite; many heavy boulders; mining difficult and expensive; 1912. [No data on gold recovery.]

Chapin, 1914 (B 592), p. 360 -- Mining, 1913.

Smith, 1934 (B 864-A), p. 38 -- New locality on Portage Cr. A little gold recovered, 1933.

Mertie, 1938 (B 897-C), p. 250-251 -- Mining, 1936-37.

Smith, 1938 (B 897-A), p. 50 -- Mining, 1936.

Smith, 1939 (B 910-A), p. 49 -- Mining, 1937.

Smith, 1939 (B 917-A), p. 48 -- Mining, 1938.

Smith, 1941 (B 926-A), p. 44 -- Mining, 1939.

Joesting, 1942 (TDM 1), p. 32 -- Common cassiterite in placers.

Smith, 1942 (B 933-A), p. 41 -- Mining, 1940.

Bates and Wedow, 1953 (C 202), p. 10 -- Placer allanite and zircon present.

Wedow and others, 1953 (C 248), p. 3 -- Fluorite in vugs of granitic rock. Uranium mineral in sample of granitic bedrock has not been identified.

Nelson and others, 1954 (C 348), p. 11-15 -- Mining, 1952. Uranium content of water sample (40.2 ppb) abnormally high. Samples of granite bedrock and of a placer concentrate contained allanite, arsenopyrite, bismuthinite, cassiterite, garnet, gold, hematite, ilmenite, magnetite, monazite, pyrite, scheelite, sphalerite, sphene, spinel, topaz, tourmaline, uranothorianite, wolframite, and zircon; fluorimetric tests indicated the presence of uranium in many of them. Portage Cr. is the least unfavorable part of the Miller House-Circle Hot Springs arc for further prospecting for uranium.

Wedow and others, 1954 (C 335), p. 4-5 -- Heavy-mineral fraction of samples contained allanite, zircon, apatite, magnetite, sphene, garnet, and scheelite, some of which were uraniferous [no analytical data presented].

Berg and Cobb, 1967 (B 1246), p. 210 -- Small amount of sphalerite in granitic rock.

(Portage Cr.) - Continued

Overstreet, 1967 (P 530), p. 110 -- Quotation from C 348, p. 13.
Cobb, 1973 (B 1374), p. 122 -- Cassiterite and uranium and(or) rare-earth minerals in concentrates.

(Preacher Cr.)	Gold (?)
Circle district	Circle N 1/2 quad.

Summary: Gold strike reported in 1913. May have meant a strike on Bachelor Cr. or Loper Cr.

Chapin, 1914 (B 592), p. 360 -- New strike was reported from Preacher Cr. in 1913.

(Shamrock Cr.) Gold

Fairbanks district Circle (11.6-11.7, 0.3-0.5)
MF-391, loc. 35 65°01'N, 145°25'-145°26'W

Summary: Tributary of East Fork of Chena R. on which there was placer mining in 1938-39.

Smith, 1939 (B 917-A), p. 46 -- Placer mining, 1938.
Smith, 1941 (B 926-A), p. 43 -- Placer mining, 1939.

(Sourdough Cr.) Antimony, Gold, Tin, Tungsten

Fairbanks district Circle (3.8-3.9, 5.25-6.25)
MF-391, loc. 9 65°18'-65°22'N, 146°28'-146°29'W

Summary: Bedrock is Birch Creek Schist; granitic pluton near head of creek. Placer concentrates contain gold, stibnite, and scarce cassiterite. Sample of granite talus contained stibnite and scheelite. Mining, 1932-40. See also (Dempsey Pup).

Smith, 1934 (B 857-A), p. 30 -- Mining, 1932.
Smith, 1934 (B 864-A), p. 35 -- Mining, 1933.
Smith, 1936 (B 868-A), p. 36 -- Mining, 1934.
Smith, 1937 (B 880-A), p. 39 -- Mining, 1935.
Smith, 1939 (B 910-A), p. 48 -- 2 outfits had a successful season, 1937.
Smith, 1939 (B 917-A), p. 43-44, 46 -- 2 outfits had a successful season, 1938.
Smith, 1941 (B 926-A), p. 40, 42-43 -- Mining, 1939.
Joesting, 1942 (TDM 1), p. 14 -- Stibnite in placer concentrates.
p. 32 -- Scarce cassiterite in placers.
Smith, 1942 (B 933-A), p. 29 -- Mining, 1940.
Nelson and others, 1954 (C 348), p. 10-11 -- Sample of granite talus contained stibnite and scheelite.
Wedow and others, 1954 (C 331), p. 8 -- Bedrock Birch Creek Schist; granitic intrusive near head.
Cobb, 1973 (B 1374), p. 129 -- Was mining by methods other than dredging.

(Squaw Cr.) (Gulch)	Gold
Circle district	Circle (15.25, 7.15) approx.
MF-391, loc. 28	65°23'N, 144°55'W approx.

Summary: Tributary of Harrison Cr. Gold discovered as early as 1894. Has been prospecting and, perhaps, mining.

Brooks, 1907 (B 314), p. 195 -- Gold found as early as 1894.
Prindle, 1913 (B 538), p. 65 -- Gold discovered as early as 1894.
Mertie, 1938 (B 897-C), p. 231 -- Tributary of Harrison Cr. on which there has been some prospecting and mining.

(Switch Cr.) Gold, Lead, Tungsten (?)

Circle district Circle (15.25-15.45, 8.25-8.6)
MF-391, loc. 27 65°28'N, 144°53'-144°54'W

Summary: Tributary of Deadwood Cr. Bedrock mainly quartzite schist and quartz-mica schist; lower 500 ft. of valley in part of a granite pluton; granite at head of creek. Schist garnetiferous near contacts with granite. Quartz-feldspar-arsenopyrite veins present. Gold is coarse; larger pieces have much adhering quartz. Concentrates contain gold, arsenopyrite, pyrite, galena, magnetite, ilmenite, garnet, tourmaline, limonite, and quartz. Scheelite also reported. No wolframite or cassiterite; both are in Deadwood Cr. Mining reported intermittently from 1906 to 1939. Some mining was of bench gravels. See also (Deadwood Cr.)

Prindle, 1905 (B 251), p. 59 -- Most important tributary of Deadwood Cr.; about 3 mi. long; in narrow V-shaped valley.
Prindle, 1906 (B 284), p. 126 -- New discoveries, 1905.
Brooks, 1907 (B 314), p. 192 -- Creek has "yielded values," 1906.
Ellsworth, 1910 (B 442), p. 235 -- Mining, 1908-09.
Johnson, 1910 (B 442), p. 248-250 -- Arsenopyrite in quartz-feldspar veins. Gold nuggets with attached vein quartz have been found. Concentrates contain gold, arsenopyrite, pyrite, galena, no wolframite, little magnetite, cassiterite, ilmenite, garnet, tourmaline, limonite, and quartz. [According to B 897-C, p. 238, Johnson found neither wolframite or cassiterite in concentrations from Switch Cr.]
Ellsworth and Parker, 1911 (B 480), p. 163 -- Shortage of water caused shut-down after winter dumps had been sluiced, 1910.
Ellsworth, 1912 (B 520), p. 245 -- Mining, 1911.
Ellsworth and Davenport, 1913 (B 542), p. 212 -- Mining, including on a bench, 1912.
Prindle, 1913 (B 538), p. 60-62 -- A major tributary of Deadwood Cr. that carries pay gravel. Quotation from B 442, p. 246-248.
Brooks, 1915 (B 622), p. 61 -- Drift mining, 1914.
Brooks, 1916 (B 642), p. 63 -- Hydraulicking, 1915.
Brooks, 1918 (B 662), p. 56 -- Mining, 1916.
Mertie, 1932 (B 824), p. 161-164 -- Geologic data summarized from older reports. Mining, 1929. 5 ft. of bedrock has to be taken up to recover gold.
Smith, 1932 (B 824), p. 36 -- Mining, 1929.
Smith, 1933 (B 836), p. 37 -- Mining, 1930.
Smith, 1933 (B 844-A), p. 37 -- Mining, 1931.
Smith, 1934 (B 857-A), p. 35 -- Mining, 1932.
Smith, 1934 (B 864-A), p. 38 -- Mining, 1933.
Smith, 1936 (B 868-A), p. 39 -- Mining, 1934.
Smith, 1937 (B 880-A), p. 43 -- Mining, 1935.
Mertie, 1938 (B 897-C), p. 236-238 -- Bedrock mainly quartzite schist and quartz-mica schist; part of a granitic pluton in lower 500 ft. of

(Switch Cr.) - Continued

valley; more granite at head of creek. Schist garnetiferous near contacts with granite. Quartz-feldspar-arsenopyrite veins on Switch Cr. Wolframite and cassiterite found in concentrates from Deadwood Cr., but not Switch Cr.

p. 245-248 -- Repetition of many of above data. Both creek and bench placers mined. Gold is coarse; larger nuggets (up to 4 oz.) have considerable adhering quartz. Fineness of gold (mean of 8 assays) is .760 Au and .231 Ag. Mining, 1936.

Smith, 1938 (B 897-A), p. 50 -- Mining, 1936.
Smith, 1939 (B 910-A), p. 49 -- Mining, 1937.
Smith, 1939 (B 917-A), p. 48 -- Mining, 1938.
Smith, 1941 (B 926-A), p. 44 -- Mining, 1939.
Joesting, 1942 (TDM 1), p. 37 -- Scarce scheelite in placers.

p. 41 -- Some wolframite on lower Switch Cr. [These reports are at variance with each other and with earlier reports, so presence of either scheelite or wolframite is questionable.]

Wedow and others, 1954 (C 335), p. 4 -- Reference to B 442, p. 246-250.
Cobb, 1973 (B 1374), p. 122 -- Scheelite reported.

(Traverse Cr.)	Gold (?)
Circle district	Circle (16.5, 6.75) approx. 65°23'N, 143°44'W approx.

Summary: Said to have been prospecting and mining before 1936. No other mention of this creek, so report must be suspect.

Mertie, 1938 (B 897-C), p. 231 -- Tributary of Harrison Cr. In a list of 3 creeks where there supposedly was prospecting and mining before 1936.

(Two Bit Gulch)	Gold
Circle district MF-391, loc. 29	Circle (16.2, 7.75) 65°26'N, 144°47'W

Summary: Mining, winter of 1909-10. Any other activity in this gulch probably was reported as on Half Dollar Cr.

Ellsworth and Parker, 1911 (B 480), p. 164 -- Good prospects found and some profitable winter mining, 1909-10.

(Yankee Cr.) Gold, Tin

Circle district Circle (10.95, 9.75)
MF-391, loc. 19 65°33'N, 145°30'W

Summary: Gold and cassiterite in placer near mouth. Mined, 1932, and probably at other times. Source of gold and cassiterite was probably the mineralized belt of which the lode on Porcupine Dome is a part. See also (Porcupine Dome).

Smith, 1934 (B 857-A), p. 35 -- Small camp established, 1932, near junction of Yankee and Porcupine Creeks.

Mertie, 1938 (B 897-C), p. 225 -- Tributary of Porcupine Cr. Has been mining near mouth.

Burand, 1968 (GC 13), p. 29 -- "It [lode on Porcupine Dome] is believed to be part of a mineralized zone that produced the placer gold and cassiterite found on Yankee and Porcupine creeks."

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.

Anderson -- see (Mastodon Cr.)
Beaver Dredging Co. -- see (Nome Cr.)
Berry & Lamb -- see (Mastodon Cr.)
Berry, C. J., Dredging Co. -- see (Independence Cr.), (Mammoth Cr.), (Mastodon Cr.)
Berry Holding Co. -- see (Eagle Cr.), (Independence Cr.),(Mastodon Cr.)

(Big Chena R.) -- see (Chena R.)
(Buckley Bar) -- see (Birch Cr.)
Carstens -- see (Portage Cr.)
(Chena R., Middle Fork) -- see (Chena R.)
Clark -- see (Mastodon Cr.)

Clayworth Assn. -- see (Harrison Cr.)
Deadwood Mining Co. -- see (Deadwood Cr.), (Nome Cr.)
Deep Creek Mining Co. -- see (Deep Cr.)
(Discovery Gulch) (Cr.) -- see (Deadwood Cr.)
(Eagle Cr., Mastodon Fork) -- see (Eagle Cr.)

Eaton -- see (Deadwood Cr.)
Elmer -- see (Mastodon Cr.)
Erickson -- see (Mastodon Cr.)
(Harrison Cr., North Fork) -- see (Harrison Cr.)
(Harrison Cr., South Fork) -- see (Harrison Cr.)

(Hog'em Cr.) -- see (Deadwood Cr.)
Independence Mining Co. -- see (Independence Cr.)
Kelley -- see (Miller Cr.)
Knutson (& Larson) -- see (Deadwood Cr.)
Langlow & Larson -- see (Switch Cr.)

Lee & McGregor -- see (Dome Cr.)
(Mastodon Fork) -- see (Eagle Cr.)
Mastodon Mining Co. -- see (Mastodon Cr.)
(McLean Cr.) -- see (McLain Cr.)
Nome Creek Dredging Co. -- see (Nome Cr.)

Nome Creek Mining Co. -- see (Nome Cr.)
Peterson & Co. -- see (Faith Cr.)
(Pitka(s) Bar) -- see (Harrison Cr.)
Swanson -- see (Hope Cr.)
(Van Curlers Bar) -- see (Chena R.)

Zimmerman -- see (Sourdough Cr.)

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